



SCHOOL OF ECONOMICS AND MANAGEMENT

Authors: Benedict Birkbeck & Filip Nilsson

Supervisor: Ester Barinaga

Final seminar: 2022-05-27

Interactive approaches for teaching entrepreneurship: The perception of gamification in entrepreneurial education

Acknowledgements

We would like to thank a few key individuals in the process of writing our thesis. First, Ester, our thesis supervisor for all the support throughout this semester and helping to shape our research proposal. You pushed us to shape our topic and we enjoyed our interactive discussions. Second, Joel, Natali, Rick and Bence for their support throughout our seminars. Third, all of the student cohort during the interview process and Anna Brattström for her insightful impact on our case study. And finally, our families, for putting up with us during this process!

We couldn't have done it without you all, so thank you very much.

Abstract

Games are not a new method of teaching in education; however, their impact is not well understood in Entrepreneurial Education. These two concepts have been merged in the past with mostly quantitative approaches viewing existing structures. This study contributes to the combination by inductively elaborating on a gamified experience (The Mount Everest Challenge) by presenting the perception of students and a teacher in Entrepreneurial Education. Initially the domain of Entrepreneurial Education is presented in a theoretical framework. The phenomenon seems to have transitioned from a strict causal practice to a socially constructed complex experience. Institutions have adapted and adopted action oriented and experiential methods for approaching this complexity in Entrepreneurial Education, including games and gamified simulations. With theory on Entrepreneurial Education, we define three dimensions in fostering entrepreneurial activities: agency, self-awareness and social awareness. With the commonly presented perspective in entrepreneurship of effectuation and the perceptions from students in Entrepreneurial Education we found that institutions are well aligned with theory in the understanding of what fosters entrepreneurial activities however both effectuation and gamification appear to have limited impact on students' social awareness. This has implications to further explore methods for increased social awareness in entrepreneurial education.

Keyword: Gamification, Games in entrepreneurial education, entrepreneurial education, self-awareness, social awareness, effectuation

Table of Content

Part 1 – Introduction	5
1.1 – Entrepreneurial Education	6
1.2 - The combination of EE and Games	6
1.3 - Research Purpose	7
Part 2 - Theoretical Framework	8
2.1 Entrepreneurial Education	8
2.1.1 - The role of institutions in EE	9
2.1.2 – The role of agency in EE	9
2.1.3 - Combining agency with social awareness to unify EE	10
2.1.4 - Effectuation Logic as Bridging Theory in EE	11
2.2 - Pedagogical Influence & Methods within EE & Gamification	13
2.2.1 – Pedagogical influence on methods within in EE	13
2.2.2 – Pedagogical methods within in EE	14
2.2.3 - Gamification	15
2.2.4 - Gamification as a method in EE	16
Part 3 – Methodology	18
3.1 - Epistemology and ontology	18
3.2 - Research Design	19
3.3 - Case Selection/Design	20
3.4 - Participants and setting	21
3.5 - Data analysis	22
3.6 - Methodology limitations	23
3.6.1 - Research Design Limitations	23
3.6.2 - Data Collection	24
3.6.3 - Ethical Considerations	25
Part 4 - Findings and analysis	26
4.1 - The interplay between institutional education and entrepreneurial agency	26
4.1.1 - Institutional intentions with EE	26
4.1.2 - Institutions impact on agency	29
4.2 - Interplay between perceived unique learning outcomes from EE and institutional intentions - understood via the effectual process	32
4.2.1 – Experiences that accommodate failure	32
4.2.2 – Perception of the course acting as a business incubator	35
4.2.3 – Social Networks and Key Partnerships	36
4.2.4 - Experiential, hands on learning as the dominant learning method	38
4.3 - Games in EE	41
4.3.1 – The connection between a gamified experience and the initial perception of MEC	41
4.3.2 – The Interplay Between a Gamified Experience (MEC) and the Intended Learning Outcome	43
4.3.3 - The Interplay Between EE and Games as a Learning Method	45
Part 5 – Conclusions and implications	49
5.1 - Aim of the study, research findings & future recommendations	49
5.2 - Academic implications & future recommendations	51
5.3 - Practical implications & future recommendations	52
Reference List	54
Appendix A – Interview guide	60

Part 1 – Introduction

These days, games are increasingly everywhere in our lives. They can make us laugh, act, engage and enjoy, which in essence promotes behaviour outside of our normal patterns. Traditionally, games were thought as having a more conscious application, such as choosing to interact in social games with our family and friends. However, in parallel with the rise of video games and the prominence of more obvious gaming environments, games have also become present in more unexpected environments.

The use of games in unexpected environments comes from the realization of the diverse potential for the application of games. This has triggered research into using games in areas not traditionally seen as being relevant or appropriate. This process is often termed as “gamification”. Relatively recently, Deterding (2011) defined gamification in an academic paper and a new conversation emerged of the application of game design and the use of game elements in everyday tasks. Now we see these engaging traits in all sorts of daily applications traditionally aligned with an educational, working or more serious environment to enhance our experiences. These range from popular applications such as language e-learning platform Duolingo from Learn a Language for Free (2022) to exercise apps such as Nike Run Club-app (2022), which both utilise fun and entertaining game elements such as badge achievements and leader boards to generate more interest in these alternative environments. As it stands, younger generations of people seem to be getting more used to interacting with and consuming games, in all types of situations.

We seem to be drawn to these activities for various reasons. Notably, one poignant reason is the ability of games to release us from the fear of repercussions connected to failure with “real” activities. Additionally, there is something that triggers us to try again even if we fail in games. The elimination of the fear of failure and coping with failure would be considered superpowers in the line of entrepreneurship. Thus, in this paper we will elaborate on the theoretical origins of gamification, aiming to discover and research its application and relationship to entrepreneurial education (EE).

1.1 – Entrepreneurial Education

The research topic of entrepreneurship has, to say the least, not developed in a very straightforward manner. However, to simplify debates and complexities, Davidsson (2005) presents two major tracks, Drucker's (1985 in Davidsson, 2005) definition and the Shumpeterian definition, where Drucker (1985 in Davidsson, 2005) has a more societal perspective and Shumpeter (1934 in Davidsson, 2005) a more individual agency perspective. Although these are high level ideas of entrepreneurship, they support two perspectives that must be balanced in theory and practice on the phenomenon of EE; entrepreneurial impact on society and impact on individuals.

When following the historical track by Landström (2020), entrepreneurship in academia has been seen as its own domain (Domain distinctive), a combined domain (Domain integrative) or domain eclectic. These perspectives account for a debate surrounding the education in entrepreneurship. The opposite ends do not exclude each other, and the dynamics have been shown in literature where different Entrepreneurial settings can breed entrepreneurship by completely different means (Harmeling and Sarasvathy, 2013). Harmeling and Sarasvathy (2013) discusses the role of the educational institutions in light of Baumol (1990) and Gerschenkron (1962) definitions, where Baumol (1990) has the view of the institution as a cage meaning it provides a fixed set of skills and traits for entrepreneurship and Gerschenkron (1962) portrays the institution as propelling the entrepreneurial actor, but not as the exclusive source of EE content.

The diverse nature of entrepreneurship has led to much experimentation with approaches and pedagogy in EE (Hägg and Gabrielsson, 2019). The educational institutions in entrepreneurship must cope with the complex task of aligning agency for societal impact (social awareness) and individual impact (self-awareness). The behavioural impact of games alludes to promising such balance.

1.2 - The combination of EE and Games

There has been a rise of experiential methods in EE as presented by Hägg and Gabrielsson (2019), which rely on individuals experiencing certain movements in society and institutions. This calls for an ever-increasing dynamic approach to communication of experiences between individuals and different structures in society, such as marketplaces, and institutions,

such as universities. There seems to be a lack of practical, evidence-based approaches and educational institutions are experimenting with new methods at a faster rate than theory can keep up in terms of validating them. On the other hand, the game industry is a huge industry with ever increasing data about the behaviour of the world's population. With the increased usage of gamified apps with positive and productive outcomes such as Duolingo and Nike run, the testimonials speak of a positive impact on an individual's agency. While similar types of gamified experiences or games have been used in education, the potential impact of combining EE and game design is still largely unknown, especially from a theoretical perspective. Furthermore, the usage of games in institutions differs in the sense that it is not the individual's choice to use them, and the purpose might be perceived as hidden and not fully understood. Thus, this thesis aims to further research the novel relationship of EE and gamification/games, as elaborated on in the following section.

1.3 - Research Purpose

In this thesis, our research purpose is to build off the three core dimensions of EE, agency, self-awareness and social awareness, as presented by the likes of Hägg and Jones (2021) and Harmeling and Sarasvathy's (2013), combined with the use of inductive qualitative research that we will carry out to hypothesize about the perception of gamification as a teaching method in EE. We have found limited academic research that explores the impact of gamification as a method within the phenomenon of EE, and not found any that reflects on the relationship between the dimensions of agency, self-awareness and social awareness in EE to gamification/games as a methodology.

Any existing studies we found connecting gamification and EE, involved mostly experimental or quantitative approaches. With our qualitative approach, we also use Sarasvathy's (2001) effectual process as a popular theoretical manifestation that aligns with the three core dimensions of EE to analyse and interpret our data. The aim is to link gamification with more rooted, practical and experiential theory related to EE to draw further insights from the students' perceived experiences.

This thesis' purpose to explore how gamification is perceived as a teaching method in EE, will be done via in-depth, semi-structured interviews in an inductive, exploratory qualitative study. This study uses a cohort comprised of ten entrepreneurial students and their professor

who were all involved in a gamified classroom experience during an EE course. Our case study is comprised of students from the masters in Entrepreneurship and Innovation at Lund University to ensure participants have received an Entrepreneurial Education. To explore this interplay between gamification and EE, the target and research proposal for this paper is:

How is gamification perceived as a teaching method in entrepreneurial education?

Part 2 - Theoretical Framework

In this theoretical framework, to understand EE further, we will breakdown the dynamic nature of the phenomenon first considering the individualistic side of entrepreneurship education into two subsections: the influence of institutions and the role of individual agency. We then elaborate on the influence of the other side of EE, the role of social awareness, focusing on bridging the fundamentals of EE, and presenting effectuation logic as theory that enables the manifestation of EE before presenting pedagogical methods within EE including gamification.

2.1 Entrepreneurial Education

To address our proposal, we must first investigate the theoretical frameworks and underlying concepts in both EE and gamification. EE and the pedagogy have been scrutinized by academics, with many varying approaches argued. Fundamentally, EE is often presented as possessing a dual nature, where the focus has either been on (1), entrepreneurship education, which concentrates on the individual learning a specific set of skills for creating a business or venture that narrowly covers the role of entrepreneur, or (2), enterprising education, the broader development of skills needed to conceptualize and produce ideas, learning enterprising, socially aware competencies to deal with generally uncertain contexts (Lackeus, Lundqvist & Williams Middleton, 2016). However, understanding the role of modern EE is not about seeing the phenomenon as being dual in nature. Instead, more recent studies such as Hägg and Jones (2021) describe successful EE as intending to unify both narrow (entrepreneurship) and broad (enterprising) approaches to result in a prudently (cautiously), entrepreneurially educated individual. Therefore, effective EE utilises means to prepare students to be both individually and socially capable in novel and uncertain working environments. How to teach EE is then a question of manifesting theories and approaches that effectively inter-link its dual, narrow, and broad nature. (Hägg & Jones, 2021). A

popular, modern theory we consider is effectuation logic. Popularized by Sarasvathy (2001), effectuation processes, “take a set of means as given and focus on selecting between possible effects that can be created with that set of means” (Sarasvathy, 2001, p.245). Here, when we consider the EE student, we see them as possessing and developing various individual and social skills that can enable them to take control and prosper in uncertain environments.

2.1.1 - The role of institutions in EE

Looking into the origins of EE, we first have to consider the role of institutions, where we first turn to the conclusions of economist William Baumol (Baumol, 1990). He outlined a predetermined amount of entrepreneurial talent exists at any point, where this talent will prosper depending on the dominant system of rewards in a specific economy, which determines if entrepreneurship will be either productive, unproductive or destructive (Baumol, 1990). In terms of education, Baumol’s (1990) theory supports the idea of teaching institutions acting like a particular economy, driving a productive, linear learning process that enables talent to flourish within the confines of a defined environment. According to Hägg and Gabrielsson (2019), this traditional approach to entrepreneurship education focused upon a set of instructions related to knowledge as opposed to a more modern take where EE is developed more collaboratively. In essence, this original more static, institutional means of teaching Entrepreneurship is in line with traditional concepts of educating that are focused on theoretical content, more passive, one-dimensional and standardized (Lackéus, Lundqvist & Williams Middleton, 2016). This approach lacks the individual and their personal interaction with not only the institution (environment) they work within, but also mutes the development of unique personal skills to help cope with varying situations typically faced in entrepreneurship. Research on EE in the 1990s recognized these flaws, seeking to develop programs with more applicable skills, values and knowledge to students, recognizing the role of the individual and their experiences as crucial (Hägg & Gabrielsson, 2019). This shift towards the individual has an emphasis on being in control over one's actions, otherwise known as agency, and forms another critical construct within EE.

2.1.2 – The role of agency in EE

We can define the origins of agency in EE by going back to Harmeling and Sarasvathy’s (2013) debate on the foundations of EE, Gerschenkron (1962) challenged the idea of a predetermined number of entrepreneurs in society presented by Baumol (1990), stating instead that it is a question of choice or agency, where anyone can decide they want to take

action, and learn to be an entrepreneur. In the same vein, Gerschenkron (1962) concluded that since anyone can endeavour to learn entrepreneurship, it is difficult to define the required rules or conditions for productive success, where entrepreneurs are actually creating new rules themselves (Harmeling & Sarasvathy, 2013). In educational terms, this view supports the idea of entrepreneurs learning to exist in contingent environments, where success is determined via their own drive or agency. In defining EE, similarly, Wadhvani and Viebig (2021) explain a historical shift from institutional dependence to a more independent and autonomous form of business education that helps the individual liberate themselves from the social status quo. Hägg and Jones (2021) go further in defining agency's role in EE, outlining it as the process of developing the individual via a conscious awakening in relation to self-control (self-awareness) and dealing with what-if scenarios in new venture creation. Despite agency being crucial to the development of the individual in their pursuit of entrepreneurship, other factors are influential in EE. Hägg and Jones (2021) present the argument that entrepreneurship occurs in social settings via dialogue and relationships, meaning that viewing EE in light of only the individual is limiting. Therefore, focusing solely on agency and the development of the individual is understood to be deficient in providing an EE.

2.1.3 - Combining agency with social awareness to unify EE

Harmeling and Sarasvathy (2013) conclude that it is not agency of the entrepreneur or the influence of institutions that really impact EE, but rather fostering the belief that an individual's agency can impact their working environment. In essence, the role of the institution is to provide both a supportive intellectual background and a social environment that allows students to critically reflect upon and assess their practices (Fayolle, 2013). As a result, according to Jack and Anderson (1999), institutions should help nurture and develop self-aware and reflective individuals. This can lead to more impactful Entrepreneurial agency in a society. Harmeling and Sarasvathy (2013) go on to suggest that practical methods of EE should emphasize students look at social ventures and create multiple suggestions for solving potential problems, where such a practice can encourage the individual to overcome a fear of failure as they are prepared in multiple ways. Here, the underlying message concludes that what individuals do, in response to unpredictable social circumstances, form crucial parts of the practice of EE to help develop means to create productive opportunities.

Similarly, Hägg and Jones (2021) seek to establish a definition of EE that ensures both agency and social awareness develop in tandem, avoiding one taking precedence over another

in order to have students become prudent (cautious) in both general enterprising practices and more specific entrepreneurship activities. In this definition, the enterprising individual has a broad mindset, where with entrepreneurship is a narrower consideration related to new venture creation (Ball, 1989). Furthermore, social awareness refers to “forming attitudes on how to create value for the broader scope of society” (Hägg & Jones, 2021, p.95), meaning the individual considers their social environment in their decision making. In line with Sarasvathy (2001), Hägg and Jones (2021) go further to stipulate that there is a general move away from linear career progression, where educating individuals to be prudent is especially important in EE regardless of a focus on agency or social awareness, in order to be able to deal with the inherent uncertainty in the field. Thus, there is an overall interplay in EE between reflective self-awareness, agency and social awareness that are both encouraged by institutions to produce prudent Entrepreneurial individuals that are adept at dealing with uncertainty to create value in society.

2.1.4 - Effectuation Logic as Bridging Theory in EE

In line with such direction is the need to use versatile theories in order to manifest improvements in the phenomenon of EE. Hägg and Jones (2021) conclude that just as is true for other fields of education, EE should also focus on the advances in theories and practices that can push the legitimacy of the field in connection with learning outcomes. As previously introduced, incorporating effectuation logic is a leading practice in creating intentional variation that can help EE students create productive opportunities in uncertain social contexts (Hägg and Gabrielsson, 2019). Sarasvathy (2001) popularised effectuation in EE, proposing that effectuation takes a given collection of causes and characteristics (of the individual) that can be utilised to create a certain set of means which eliminates the assumption of pre-existing goals. Here, pre-existing goals would be the more linear idea of an established, predetermined objective, where effectuation instead summarises the use of varying personal skills and knowledge to deal with uncertain outcomes. Sarasvathy (2001) defines effectuation as a process theory. Process driven theories try to assess the development of phenomenon such as EE via attempting to make sense and understand patterns within a wide range of events (McMullen, 2015). Essentially, the underlying logic of effectuation as a process is that we use varying means to somewhat control the future, therefore eliminating the need to predict it (Sarasvathy & Dew, 2005).

There are four main pillars of effectuation to be considered in EE; (1) affordable loss, (2) strategic alliances, (3) exploitation of contingencies and (4) controlling an unpredictable future (Sarasvathy, 2001). To elaborate, affordable loss refers to estimating the potential downside and preparing for the limit of risk you can take before you lose more than you can afford (Sarasvathy & Dew, 2005). Strategic alliances relate to partnerships, where the individual co-creates their market with various stakeholders including customers, suppliers and potential competitors, while exploitation of contingencies is investing time into developing techniques that can help harness surprises and use them as opportunities for growth (Sarasvathy & Dew, 2005). Lastly, controlling an unpredictable future accounts to manipulating conditionals, where analytic skills lead to calculated estimates in order to try to act upon future conditions that may produce more concrete and robust outcomes as opposed to choosing less fruitful avenues (Sarasvathy & Dew, 2005). In terms of EE, all of these principles combine to provide a theoretical framework for students that emphasises developing means to deal and cope with uncertainty both individually and within a social context. As Sarasvathy & Dew (2005) explain, under the effectuation, “successes and failures are inputs into a process that needs to be managed such that failures are outlived and successes are accumulated” (Sarasvathy & Dew, 2005, p.390).

Additionally, utilising the key concepts and principles of effectuation simultaneously develops individual skills, while maintaining social awareness, influencing the student to act with prudence that Hägg and Jones (2021) stress as paramount to EE. Effectuation logic’s ability to bridge the development of individual and social skills that are critical to EE can be attributed to the idea that “it is inherently dynamic, interactive, and pluralistic” (Sarasvathy & Dew, 2005). In a sense, applying effectual logic in EE helps students focus not just on their own competencies, but prepares them to be fluid in their decision making, concerned and aware about their social settings and multifaceted in their approach. Therefore, we can understand effectuation to be a theory in line with the fundamentals required to progress EE.

In terms of applying such theory as effectuation logic, certain practical methods need to be considered. Hägg and Gabriellson (2021) state the need for both training and formal education, where the student can solve problems and identify opportunities by combining a practical method with more specialized knowledge. Building off the application of effectual logic to unify the multi-faceted nature of EE, the following section will elaborate on methods

of pedagogy in EE and how gamification is a practical method that can be utilized to enhance this effectual process.

Having introduced effectuation logic as a focal theory within the phenomenon of EE, we next consider methods within EE that enable an effectual process. Before discussing gamification as one such method, we will briefly introduce types of pedagogical methods within EE in order to understand how gamification can be categorized.

2.2 - Pedagogical Influence & Methods within EE & Gamification

2.2.1 – Pedagogical influence on methods within in EE

Entrepreneurship education is a relatively new phenomenon but in the last 30 years it has developed into its own research field (Gabrielsson, Hägg, Landström, & Politis, 2020). Gabrielsson et al. (2020) showed a diverse set of nuances exist in the field including Introspection- the current state of EE research, Entrepreneurial intentions, pedagogy – methods and approaches for teaching entrepreneurship, and Entrepreneurial learning – how entrepreneurs learn from experience and studies that explore the outcome and effectiveness of EE. Gabrielsson et al. (2020) conclude that “entrepreneurial intention” is the most significant. We recognise that intentions are highly influential in entrepreneurial education and will target the interplay between approaches and agency, specifically in the utilisation of games.

Pedagogy has, since Freire’s (2018) highly influential “Pedagogy of the oppressed”, transformed from the traditional banking model, which positioned the teacher in an authoritative and centre stage in education, to include dialogue for the purpose of the liberation with the logic that it infers commitment to others. The purpose of education in light of Freire (2018) is to liberate the oppressed. In a general sense education has a dualistic nature to either oppress or liberate the student. Pedagogy of the oppressed has in more recent literature been connected to “Norm critical pedagogy”, which incorporates the focus on dominant structures in society that alienate certain personality traits. In his dialogic approach Freire (2018) sets a base and emphasizes the need for teachers to constantly participate and learn together with the students, ruling out student inaction in education. An ongoing debate is still present among scholars on the outcome of the general pedagogy in education which seem to be inconclusive (Björkman, Bromseth & Hill, 2021).

Education in entrepreneurship loosely follows the transition from teacher focused to experiential pedagogies, starting to emerge in the 90's (Hägg & Gabrielsson, 2019). In the 2000s there was a debate surrounding if certain skills for entrepreneurial practice could be taught via traditional didactic approaches, however studies showed students propensity and intention was influenced by EE although the subsequent entrepreneurial behaviour was inconclusive (Hägg & Gabrielsson, 2019). To a large extent research on EE has been done in isolation and the connection to other theoretical foundations on pedagogy is limited (Hägg & Gabrielsson, 2019). Hägg and Gabrielsson, (2019) further argue that existing research doesn't have a consistent body for guidance on content and pedagogy for EE. Despite this, in recent years experiential and constructive methods have had more focus in the phenomenon and practice of EE.

2.2.2 – Pedagogical methods within in EE

Looking at the literature on EE methods, we find the classifications of Nabi, Liñán, Fayolle, Krueger and Walmsley (2017) to be a simple and clear way of look into the pedagogical methods in the phenomenon. They organize the framework into four areas: Supply model, Demand model, Competence model and Hybrid models. The supply model entails methods that focus on reproducing work, theory and concepts including academic reading and lectures (Bécharde & Grégoire, 2005; Fayolle & Gailly, 2008). This can be understood to be more in line with the traditional knowledge-based academic teaching methods with a focus on coursework and theory to drive learning outcomes.

The demand model instead concerns more participative and personal methods that include explorative simulations, experimentation and interactive tasks that aim to discover the needs of students (Nabi et al., 2017; Bécharde & Grégoire, 2005; Fayolle & Gailly, 2008).

Competence model pedagogy refers to teaching methods that aim to create communication, production, and discussions in order to improve social interactions and encourage deeper learning (Nabi et al., 2017; Bécharde & Grégoire, 2005; Fayolle & Gailly, 2008). Here, the students would be encouraged to start ventures and learn via their interactions in developing the ventures in the real-world. Compared to supply model methods, demand and competence models can be considered more practical, learning by doing and generally in line with the action-oriented process of effectuation (Sarasvathy, 2001).

Finally, there are hybrid models, where either supply, demand or competence models are paired. According to Nabi et al. (2017), two common pairings are supply-demand and demand-competence, where the distinction is that supply-demand hybrid models use a lighter level of experiential learning that concentrates on supporting knowledge transmission (theory backed up with practical experiences). While somewhat similar, demand-competence models tend to focus on more real-world exercises such as business venture creation during EE, although more rigorous problem-based simulations and learning can fall into the category (Kirkwood, Dwyer & Gray, 2014). Nabi et al. (2017) found in their study that all of these pedagogical methods have a positive impact on at least influencing entrepreneurial intentions and attitudes when teaching EE, however demand and competence related methods often create higher impact results such as the creation of actual start-ups.

2.2.3 - Gamification

Gamification is a topic with widespread interpretation in literature. We introduced gamification in the introduction to this paper using a commonly expressed understanding of the phenomenon. Similarly, in academic research, a widely cited definition is that of Deterding, O'Hara, Sicart, Dixon and Nacke (2011), who consider gamification to be, "the use of game design elements in non-game contexts" (Deterding et al. 2011, p 2). This definition is used in multiple studies (Ruiz-Alba, Soares, Rodriguez-Molina & Banoun 2018; Yang, Ye & Feng, 2021; Laine & Lindberg, 2020; Mitchell, Schuster & Jin, 2020). It is worth explaining that game design elements in this definition refer to game mechanics, which popularly include badges, experience points and leader boards (Werbach & Hunter, 2012). Non-game contexts are environments such as the workplace or areas including, but not limited to, exercise. While this definition might be cited by many academics it is not mutually exclusive and inherently forces the definition of non-gaming environments. Instead of relying on this definition we approach the term with the semantic meaning of the utilisation of game mechanics for more than entertainment value which implies the adaptation of existing practices and the utilisation of games to do so. We also understand that gamification can be seen as a method of influencing experience and motivation towards tasks. This is summarised well by Dichev and Dicheva (2017), who outline that gamification is more than just using game mechanics, but rather a methodology that can lead to behavioural changes. Dicheva, Dichev, Agre and Angelova (2015) comment on gamification's ability to influence behaviour stemming from the motivational power of games in general, where a typical game uses varying mechanics to encourage people to keep playing and interacting. Individuals often

continue to participate, even with little reward other a desire to win or personal enjoyment. We will use this interpretation to further discuss the role of gamification as a method in EE.

We began this theoretical framework by exploring and unravelling EE and its progression into more experiential methods of teaching, this might be one of the reasons why game mechanics has a good fit with EE.

2.2.4 - Gamification as a method in EE

In section 2.2.1 we discussed varying methods in EE in light of four proposed models by Nabi et al. (2017). Now that we have defined gamification, we can discuss the current role of games in EE as a methodology. As noted, Nabi et al. (2017) outline that they found all four described models (Supply, Demand, Competence, Hybrid) related to methods in EE at least impacted entrepreneurial intentions and attitudes positively. This is in line with Dichev and Dicheva (2017) who describe gamification as a method that can impact behaviour. Such an impact on behaviour from game mechanics is supported by the findings of Lovelace, Eggers & Dyck (2016) who found games and simulations in educational settings predominantly resulted in greater interest and participation from students compared to more traditional methods like lecturing and critical thinking. DuHadway and Dreyfus (2017) go one step further and conclude that beyond the interest and participation gamification can create, discussions and reflections can help link up theory and experiences to student game performance.

Reflecting on Nabi et al.'s (2017) models, the use of games/gamification seems aligned with the supply-demand hybrid model, where traditional learning methods such as lectures and theories are supported by practical and interactive related experiences. Additionally, a study by Antonaci, Dagnino, Ott, Bellotti, Berta, De Gloria and Mayer (2015) discovered that gamification improves both social and collaborative experiences, bringing students closer together in their actions. This is elaborated on further by Patricio, Moreira and Zurlo (2018) who conclude that gamification in innovation improves social experiences by helping to create team spirit and encourage consensus building while also promoting the development of creative thinking and productivity. The ability to interact efficiently within a social environment is a key concept within EE, highlighting the potential effectiveness of gamification as a method.

Despite these academic reports of gamification appearing to be perceived as a potentially impactful method within EE, the topic is still understood to be relatively novel. Isabelle (2020) and Ruiz-Alba et al. (2018), both explain that research linking EE and gamification as a pedagogical approach is still scarce. This opinion is echoed by Kauppinen and Choudhary (2021), who outline that a lot of research currently focuses on studies that did not necessarily have aligned outcomes in terms of learned skills and abilities from using gamification in EE. Empirical data findings are therefore fragmented and underdeveloped. As a result, the need for further research and conclusions surrounding the perception of gamification on EE is still relevant and something our proposal seeks to elaborate upon.

Part 3 – Methodology

3.1 - Epistemology and ontology

Before diving into our research methods, we must explain the root of our choice of methods. These roots can otherwise be called assumptions, where we are making a set of assumptions that lead to our choice of methodology for carrying out our study. These assumptions are based upon ontology, which focuses on what is understood to be real or exist, and epistemology, the ways and nature under which we have knowledge of what is real (Scotland, 2012). In order to explain our research methodology, it is important for us to first highlight some of our ontological and epistemological assumptions related to our study. Considering our thesis topic, we aim to contribute to theory about how gamification has the potential to impact EE in its application as a learning method for students. In order to do this, we are exploring how students perceived the use of a gamified experience in EE via semi-structured interviews. As we seek to explore the perceived impact of games and thus will be inductively coming up with theories based upon detailed and elaborate responses, we are performing a qualitative study (Bell, Bryman & Harley, 2019). By employing a qualitative approach, how our knowledge may be developed, otherwise known as the research methodology, is via what is termed as the interpretivist paradigm (Al-Ababneh, 2020). Interpretivism looks at both descriptive and subjective methods to help interpret personal experiences and social life interactions (Al-Ababneh, 2020). Therefore, interpretivism helps influence and shape all of our assumptions surrounding our study.

Revisiting ontology, our assumptions can be seen as what Scotland (2012) terms as relativism, where, in line with qualitative approaches, social constructs result from interpersonal actions between individuals as opposed to phenomena that occur independently (Bell, Bryman & Harley, 2019). Considering our proposal, we assume that EE is a reality created as a social construct that leads to our comprehension of individual and social elements that develop the phenomena. Looking deeper into the epistemological position of our assumptions, considering our qualitative and interpretive paradigm, subjectivism is the defining view, where the world is interpreted through our social knowledge, meaning it does not exist independently of the interpretation of individuals (Bell, Bryman & Harley, 2019; Scotland, 2012). Epistemologically, we assume we can know how and interpret the ways in which gamification can influence the development and practice of EE via interviewing

individuals during our case study. Lastly, our methodological assumptions rest on the plan for analysing these methods, where interpretive methodology focuses on processing the individuals experience and their interactions in a social context (Scotland, 2012). For us, this is how we interpret and process the data we collect during our interviews from our case study related to the perception of gamification in EE.

3.2 - Research Design

Our study has the intention of adding to academic research on EE and the use of gamification and games as pedagogical methods. More specifically, this study aims to create a stronger understanding of how students of EE perceive the use of gamification and games as effective methods of learning. To complete our study and collect empirical data, we are carrying out semi-structured interviews of students of EE. In doing so, we are implementing an inductive, qualitative approaches (Yin, 2010).

In order to test our research proposal, we have had to consider a few factors. Our goal is to find out how gamification is perceived as a teaching method in EE among students, meaning we will have what Scotland (2012) describes as an overall qualitative interpretivist paradigm, where reality is relative and subjective based on each different individual. To do so, our research is gathered via a single, idiographic case study. Case studies are research strategies that focus on creating theoretical propositions and constructs from empirical data that is collected (Eisenhardt, 1989). An idiographic case study contains unique features and serves to discover relationships, with case studies having an emphasis on creating or improving theories (Bell, Bryman & Harley, 2019). In addition, we are using purposive sampling, selecting our cohort with our research goals in mind, ensuring diversity in backgrounds and experiences (Bell, Bryman & Harley, 2019). Our case is both single and idiographic due to our sampling being students having specifically completed the Mount Everest Challenge (MEC) on the leadership course during the master programme in Entrepreneurship and Innovation at Lund University.

Ultimately, we have formulated a qualitative inductive research question that seeks to explore and generate theory from our research approach (Bell, Bryman & Harley, 2019). We plan to generate such theoretical, interpretive outcomes via semi-structured interviews, where each interviewee is guided by questions on a generally specific topic (gamification), but the

responses are expected to be open and subjective (Bell, Bryman & Harley, 2019). Semi-structured interviews help keep the research generally in line with the research to avoid unrelated data gathering (Gioia, Corley & Hamilton, 2013). By using a case study built off of semi-structured interviews, Eisenhardt & Graebner (2007) conclude this method to be a strong means for building theory due to its ability to link detailed qualitative evidence with more generalized quantitative deductive research, enabling potential replication in the future. We will cover more on this in our data collection section.

3.3 - Case Selection/Design

Our research topic implies the following variables: EE institution, Entrepreneurial students, application of a game for the purpose of learning outcome. The relevance in this thesis is to build theory around the perception of gamification, this justifies the theoretical selection of the case (Eisenhardt & Graebner, 2007).

Looking at this in reverse, we understand the master's programme in Innovation and Entrepreneurship at Lund University to provide the perfect qualitative case selection for our research proposal. First, it covers EE as presented by Hägg and Gabrielsson (2021) who outline addressing the phenomena as needing both experiential training and formal education to help the student solve problems and identify opportunities. The course covers this due to the practical and specialized knowledge-based approach the course takes. Secondly, students have continually been encouraged to develop means to deal with uncertainty, focusing on key concepts of effectuation including formulating strategic alliances and exploiting/seeking to control an uncertain future (Sarasvathy, 2001). The course attempts to provide experiences that help foster the development of knowledge of means to deal with contingencies. Lastly, due to student venture teams existing as a practical experience-based process that makes up a part of the EE, methods that enable experiential training are required. As Dichev and Dicheva (2017) conclude, gamification is a methodology that can be used to enhance engagement and lead to behavioural changes in diverse environments. In this case selection, the environment is defined as the master's programme in Innovation and Education at Lund University.

The entrepreneurial students were selected by asking if they would participate by free will, we paid some attention to selecting candidates with a diverse demography in mind.

The curriculum in the master programme was filled with exercises and courses that could be perceived as games however the MEC had the most obvious game structure, this is the description on the presenting website:

“This award-winning simulation uses the dramatic context of a Mount Everest expedition to reinforce student learning in group dynamics and leadership. Students play one of 5 roles on a team of climbers attempting to summit the mountain. During each round of play they must collectively discuss whether to attempt the next camp en route to the summit. Ultimately, teams must climb through 5 camps in 6 simulated days totaling approximately 1.5 actual hours of seat time. Team members analyze information on weather, health conditions, supplies, goals, and hiking speed, and determine how much of that information to communicate to their teammates. Along the journey, the team must also make decisions in response to 3 hidden challenges which affect their ascent, hiking speed, health, and overall success” (Leadership and Team Simulation: Everest V3, 2022)

It also had clear learning objective targeting beneficial traits for entrepreneurs in effectual logic:

“Learning Objectives

To learn how to build, participate in, and lead effective teams, as well as to examine:

How teams can improve the way they make decisions,

How opposing interests and asymmetric information affect team dynamics,

How leaders shape team decision-making and performance in competitive and time-sensitive situations,

How teams and their leaders deal with trade-offs between short-term task completion and longer-term team effectiveness, and

How cognitive biases impair decision making.” (Leadership and Team Simulation: Everest V3, 2022)

3.4 - Participants and setting

In total 11 interviews with 10 students from the master program in Innovation and Entrepreneurship at Lund University was conducted. The participants spanned from 22-37 in age and was a 50/50 mix in female and male gender. The participants came from Thailand, Germany, America, Hungary, UK, Sweden, the Netherlands and Ecuador. One interview was

held with the teacher in entrepreneurial leadership. The interviews were approximately 60 minutes.

The research was conducted by relying on semi structured interviews. While conducting the interview our approach was to have a reporting stance in representing our subjects voice and respecting them as knowledgeable agents (Gioia, Corley & Hamilton, 2013). Before the interviews we roughly framed out questions to accommodate the research areas, background, perception on activities in the master program and relatedness too entrepreneurship, perception on the MEC and finally the perception on games in education in general. During the interviews were open to exploring and going in depth into any of the topics based on the interest of our interviewer. As we discovered new topic or patterns, we made room for it to populate the conversation. After the interview we as researchers reviewed the conversation already noting emerging concepts. The questions were iterated to enable more accuracy in the following interviews.

3.5 - Data analysis

After our empirical data collection, we used a thematic analysis followed by the 1st and 2nd order analysis by Gioia, Corley & Hamilton (2013) in order to organize and process our empirical data. To begin with, we completed a thematic analysis, where the data we collected was analysed to understand if there was an interplay between the data set and theoretical concepts and frameworks (Bell, Bryman & Harley, 2019). In doing so, we were able to discover and understand links between EE and the perception of gamification as an effectual method within the phenomenon. By completing a thematic analysis, we used Ryan & Bernard's (2003) recommendations for uncovering themes by searching for theory-related material, similarities and differences, repetitions, transitions and language related connectors. This process enabled us to iterate codes, categories, concepts and themes, uncovering links between EE and the perception of gamification as learning method in our empirical data. We followed Gioia, Corley and Hamilton's (2013) 1st and 2nd order analysis to iterate between concepts/codes and more developed themes. Codes and categories formulate the 1st order, where informant terms and statements are accumulated to begin to organize the data. This is followed by a more analytical 2nd order, where the process of considering what collective groups of codes and categories help us explain the phenomenon we are researching helps to shape the concepts and themes that appear in the data. Finally, these groups of

relevant concepts and themes are revisited to see if we can iterate the empirical data one step further and formulate aggregate dimensions of themes (Gioia, Corley & Hamilton, 2013).

After applying this 1st and 2nd order analysis, we were able to derive ten themes in our 2nd order analysis. Some themes such as the impact of institutions in EE focused more on findings related to theoretical frameworks introduced in section 2. Others were more related to emergent categories within the phenomena of EE from our 1st order analysis, including experiences that accommodate failure. Given our semi-structured interviews introducing a chronological order within our empirical research, we were able to clearly organize our themes into three core aggregate dimensions; (1) the interplay between institutionalised education and Entrepreneurial agency, (2) perceived unique learning outcome from EE and connection to effectual logic and methods, and (3) games in EE. The following table elaborates on 1st and 2nd order analysis in greater detail:

1st Order Concepts	2nd Order Themes	Aggregated Dimensions
Mixed method approach key in EE	Institutional intentions with EE	The interplay between institutional education and entrepreneurial agency
Earning a degree		
Desire to create own business	Institutions impact on agency	
Perception of impact of EE on personal goals		
Failing with venture creation	Experiences that accommodate failure	
Failing on the course is unique		
Failing is beneficial for learning experience/outcome	Perception of the course acting as a business incubator as opposed to a traditional educational course	Interplay between the perceived unique learning outcomes from EE and institutional intentions as understood via the effectual process
I wanted to build a business on the course		
I was able to learn about building a business	Social Networks and Key Partnerships	
Building a business more important than earning degree		
Academic group work on the course	Experiential, hands on learning as the dominant learning method	
Business venture group work on the course		
Developing external partnerships/key stakeholders	The connection between a gamified experience and the initial perception of MEC	
Practical teaching methods preferred to theoretical		
Enjoyed interactive experiences	The Interplay Between a Gamified Experience (MEC) and the Intended Learning Outcome	Games in EE
Examples of interactive experience and benefit		
Unique teach methods on the course	The Interplay Between EE and Games as a Learning Method	
The experience was fun and engaging		
The experience had time constraints		
The experience was competitive		
We had to work as a team		
We had to communicate personal goals vs. team goals		
We had to share unclear information		
Repetition is limited		
Reflection is key to creating an impact		
Rewards are important		

3.6 - Methodology limitations

3.6.1 - Research Design Limitations

As stated in this section, we have gathered data by taking an inductive, qualitative approach using a single-case study. While qualitative research provides a host of benefits in the empirical data it generates, there are also many critiques of it. Bell, Bryman & Harley (2019)

outline these criticisms relating to an overall lack of transparency, difficulties with replicating studies, troubles with generalizing the data findings and overly subjective research. As a result, we took many steps to mitigate the impact of such limitations. Regarding transparency, we have taken the time in this section to meticulously outline the way we conducted our research, covering our single-case study approach coupled with the inductive semi-structured interviewing technique, even including details on participants to ensure clarity and diversity.

Concerning replication of the research and generalizing the research approach, we took measures to ensure that the setting and cohort were not overly specific. We did so by linking academic literature concerning EE with students of the master's programme in Entrepreneurship and Innovation at Lund University to find participants who had completed a simulation (MEC) that is run every year in the leadership module. This ensures replicability due to the annual nature of the course. On top of this, we used Gioia, Corley & Hamilton's (2013) 1st and 2nd order analysis to formulate aggregate dimensions and themes that we could iterate between in order to produce further findings between our empirical data and academic literature. Furthermore, while Yin (1994) outlines single-case studies as being less impactful at driving theory than multiple-case studies, and Flyvbjerg (2006) concludes that empirical generalizations concerning large subsets of the population are not feasibly made based on a single-case study, the steps we took to make sure our research design was both replicable and generalized means at the very least our approach can be repeated year on year to drive further iterations. Despite this, we are aware of the usage of a specific gamified experience (MEC) presents some limitations to generalizing our approach to say alternative courses in EE.

Finally, we mitigated subjectivity with our cohort by selecting students we had non-personal relationships with and ensuring we maintained a diverse pool of participants, varying in age, ethnicity, gender and vocational experience.

3.6.2 - Data Collection

A common limitation with using qualitative interviews to derive empirical data is the propensity to produce unsystematic views due to the subjectivity of inductive interviews (Bell, Bryman & Harley, 2019). As mentioned previously, our usage of a semi-structured interview approach that focused on specific events within the cohorts EE enabled a degree of structure to reduce variance. Additionally, we also conducted all interviews with two

interviewers to mitigate issues related to overlooking key research areas within our inductive qualitative study. Finally, we also ensured that participants had no prior knowledge of the interview question content, only introducing that our study required personal accounts.

3.6.3 - Ethical Considerations

To ensure that all interviewees were comfortable and aware of our intentions with the data collected, we made it clear that our interview would involve personal accounts, which we would record with each student's consent for the purpose of transcription in order to find out about their experiences and perceptions on our thesis topic.

Part 4 - Findings and analysis

4.1 - The interplay between institutional education and entrepreneurial agency

Our initial finding is the interplay between institutionalised education and Entrepreneurial agency. We found in line with Hägg and Gabrielsson (2019) that there were many stimulating structures that had an impact on agency for the participants in the master programme. As presented by Harmeling & Sarasvathy (2013), Gerschenkron (1962) outlined entrepreneurship in society is built up by the agency of the individual entrepreneurs in the market and we found that the institution, in this case the master program in Innovation and Entrepreneurship at Lund university, had several connections to the entrepreneurial agency of the individuals in line with other studies on EE (Hägg & Jones, 2021; Isabelle, 2020).

4.1.1 - Institutional intentions with EE

In literature there is debate about what constitutes the role of institutions in EE, however what creates Entrepreneurial activities is built up by individuals' agency whether they are aware of their impact or not. Hägg and Jones (2021) present the institutional role as a balancing actor between agency, self-awareness and social awareness. In our finding we rely on this idea that the institution can influence individual's agency, self-awareness and social awareness.

In our research we talked to Anna who was a teacher in the Entrepreneurial Leadership course. She represents the institutional side of our finding in the interplay between institutions and agency.

The role of the institution Anna discusses in more broad terms: Professor - Anna: *“the overall purpose of a university degree, is this ability to reflect and think and question you are taken for granted assumptions about the world”*

Anna describes in this sentence the role of the institution to increase self-awareness and also the individual's interpretation of the world. This is very much aligned with the balancing nature of institutions described by Hägg and Jones(2021) and Harmeling and Sarasvathy (2013).

The balance between agency and self-awareness is not inherently disconnected and in this next quote Anna expresses the need for approaches that can support and also consider the development of social awareness:

Professor - Anna: "...So I think especially for entrepreneurship, it's important to achieve an understanding of the world as complex and socially constructed in many ways and find a way of approaching that complexity with good structure and logical and critical thinking, but I mean, that would apply I guess also to if you're in medicine or if you're a 15-year-old and taking a class. So, I think as a general principle of education, that's, important. It's not the only thing that's important, but I think it's a really, really important aspect."

Anna reveals the responsibility of the institution as an important entity to increase the awareness of the socially constructed world. She also talks about institutions helping students find ways to approach this complexity in other words increasing agency. This is however applicable to other topics and not unique to EE. Hägg and Gabrielsson (2019) have identified the usage of more experiential approaches to teaching in recent years, with such an approach aimed at dealing with the social complexities, with the need for such measures supported by the lack of "few laws of nature" as Anna expresses it:

"It's extremely relevant in an entrepreneurship education because entrepreneurship is a type of activity where there are very few laws of nature. You know, anyone who say that they can predict good performance in a team or good performance in a start-up. They don't know what they're talking about."

The lack of ability to predict the social outcome can explain why more practical and experiential approaches are better suited for EE rather relying on theoretical frameworks that depict the world as black and white.

Building on this interplay between institutions and EE, the role entrepreneurship in society should also be considered by the educating institution. As outlined by Fayolle (2013), it is implied the institution will foster the supportive intellectual background and social environment that leads to students reflecting on the agency needed to impact society. Anna describes this need in the following quote:

Professor - Anna: *“Okay. Now so I think entrepreneurship is important for, economic development, for growth and for social development. So I think entrepreneurs and entrepreneurship has a very important role to play in society, in terms of disrupting established structures and coming up with new things and new inventions and we owe much of what we have today to entrepreneurs and their activities. So given the importance of entrepreneurship in general, I think it's also important that we have a solid entrepreneurship education offered as part of the universities. I also think it's important that this is something that the university provides and not just something you sort of would get from private actors or that you only learn by doing because there is a lot of rubbish, if I may say so, related to entrepreneurship and advice, we get from entrepreneurs that actually have very little scientific validation. So, they're based on people guessing or believing or in inferring correlations when there is actually no or inferring causality whether it's, in fact a weak correlation. So, I think what we can offer as a university is a more reflective and critical and solid way of understanding entrepreneurship. And that I think is important because the market for this type of knowledge is huge. The number of books, inspirational TED talks, inspirational meetings, network events, hubs, accelerators, coaches, you name it, it's a multimillion-dollar market on a global scale. And I think there's it's important that we as a university, we're not here to make money. We're here to sort of create more fundamental understanding of this phenomena of entrepreneurship. And I think we have an important role to play in that sense.”*

Entrepreneurship is important in society to stimulate economic development, growth and social development. Entrepreneurial agency leads to necessary disruption in established structures, coming up with new inventions. Because of all the “*rubbish*” more scientific validation is needed by established institution such as universities. By reflecting and thereby increased self-awareness and viewing the world critically will in other words strengthen these correlations. These views are supported by Fayolle (2013) and Jack and Anderson (1999) who conclude on role of institutions in enabling this critical assessment and reflection in EE which can lead to students developing greater self-awareness. Universities as institutions of EE are nuanced facilitators as they generally have a less biased stance compared to other monetary driven actors.

4.1.2 - Institutions impact on agency

In our interviews with the students, we elaborated on their intentions by attending the program and these same intentions had persisted throughout the program. In several cases the intentions had shifted, and we further elaborated on the activities that lead to shifts in intentions.

The intentions of the student varied and Gema for example expressed the desire to be part of a “start-up ecosystem”:

Gema:” *I really really liked the program [In Entrepreneurship & Innovation]. I think it was like it says, it was practical. I really wanted to be like, kind of part in the start-up world.”*

In this sense the expectation on the program was the connection to a social ecosystem rather expecting some personal development outcome or starting a venture. The program did fulfil Gema's expectation because of its practical nature implying that she gained the connection by attending the program. This goes in line with the institutional intention revealed by Anna in the sense that universities should foster both social development and self-development also inline with Hägg and Jones (2021). However, the self-reflecting and self-awareness aspect is not present in Gema's statement.

In contrast some of the students expressed that they came to this program because they wanted to create their own venture for example

Jimmy: *“Work for corporate, I guess [jokes]. No, no, when I was young, I did some like, entrepreneurial behavior I guess with things on the side like side hustles and those kinds of things. ... I think this master gives me a really good base to build something like actually something valuable instead of just side hustles and small entrepreneurial things. So my eventual goal will be having owning my own company...”*

The intentions reveal the agency that drives the students towards the EE and what they wanted to get out of it. Such as Jimmy's statement *“I think this master gives me a really good base”*, implying that the transaction is one sided, the institution is there to give him something. The impact of his presence in the program is not reflected upon in this statement.

The role of the institution is seen both in the context of developing knowledge for the individual but also providing the social setting to enable a community. In the individual's

perspective the institutions' role is to provide them with some gain like providing community or incubation. All the students we interviewed reflected on their own gain rather than their own impact being present in the program.

When interviewing another student in the master program, Cecilia, she expressed that there was no intention to go on with entrepreneurial activities after the completion of the program.

Cecilia: "[on the activity after the program] We will actually not continue with our project[venture]. So I'm going to aim for like a regular corporate job. Yeah. So that's what I'm going to do like, after summer, but then I hope I will still start my own business in the end, but maybe not now. Because I want to do some other things first"

Initially Cecilia expressed that she had an "old dream of starting a business" which indicate the agency towards coming to the program for value creation in the sense of starting a venture, indicating that the institution would provide incubation, this is also a common theme expressed by other students. This shift or realisation on current capabilities, abandoning or adopting a mindset was present in all our interview. In this sense the institution has a large impact in the agency of the students and in some instances the development of the interplay between agency and self-awareness. For example, in Elizabeth's case we found that her confidence had increased, shifting her agency, with the practise of presenting of her subjective thoughts, and gaining appraisal and recognition during the finance course. She explains her intention and shift in mindset:

"... I wanted to be here. I applied for this because I was frustrated with previous jobs I had in that we would spend so much time on these projects like to innovate and try something new and that would never go forward. And I think after COVID I was like you; we have to innovate like the world needs it. COVID just came to this point where like, if you're not innovating, you're gonna die, like the world has just had this huge, huge shift. And so I wanted to really be able to go to a company, whether I was consulting for them or working within a company and help them innovate. And now I think through this program, I'm like, maybe actually, I am an entrepreneur and should go forward with my venture. So that was the original intention. But now I'm going to be an entrepreneur, which is a little weird for me, but we're going to try it out."

This line of reasoning shows that the institutions assignments impacted her by exposing her to situations that might occur in entrepreneurship in line with the institutional role expressed in Lackéus, Lundqvist and Williams Middleton (2016) and Anna. The initial thought was not to start a venture and didn't seem to be on the radar before the master but entering and acting within the institution nudged her into a different mindset. She further elaborates on what triggered this mindset with the following:

Elizabeth: “..I think for one, people just being interested in my idea was a pivotal moment for me after the finance project. That presentation because we got like, the highest score you can get and I was like, at first, I was like, no, this can't be right. Like, no way this can't be right and then I was like, no you did understand the assignment and you presented well. I think it's now boosted my confidence to just say like, I can own the skills that I know I'm good at. Yeah, I mean I still suck at like, designing beautiful PowerPoints. That's not my forte. Yeah, I think maybe this program has helped my self-confidence and you know, we have a lot of liberty to do things in our own way. And maybe that has helped. Also finding diversity like, I think this program really focuses on that and it helps you focus on using your [unique personal] skills for the project. And why those are important. We talked about this [on the course] on leadership that human capital is important, but it needs to be diverse. And I think now I'm able to say, okay, this is where [my skills] are very important. And I can feel confident in that now.”

As Elizabeth expresses this seems to have been a pivotal moment shifting her mindset and seeing the world in a different light. For her the recognition gave her confidence to believe in herself but also understand her limitation.

With the intention and reflection on the changes in the intention the students have gone through during the program we have found that the institution has a large influence on the agency of the individuals, however, self-awareness, that is one angle of the variables that EE institutions should balance according to Hägg and Jones (2021) and implied by Anna, is more limited in its interplay with agency, while the students' own impact of social constructs, is not reflected upon in our interviews.

4.2 - Interplay between perceived unique learning outcomes from EE and institutional intentions - understood via the effectual process

Building on our data findings from section 4.1 related to the interplay between the role of Entrepreneurial Institutions and Entrepreneurial Agency in EE, we understood from our data how the institutional intentions in EE differed from the perceived institutional impact on the agency of students with reference to their Entrepreneurial intentions. Our next set of findings relate to perceived learning outcomes that are unique to EE and how they compare to the above introduced institutional intentions in EE. We use effectual logic to analyse these findings due to its prominence as a theory of manifesting the EE process. In our findings, we were able to derive four learning outcomes that students considered particularly unique to EE: (1) Experiences that accommodate failure, (2) the perception that the course acted as a business incubator as opposed to traditional educational courses (where you work towards more than just a diploma and knowledge), (3) the development of a social network and key partnerships, and (4) a focus on experiential, hands on learning as the dominant learning method.

4.2.1 – Experiences that accommodate failure

When asked about areas within EE that distinguish the phenomena, a majority of our entrepreneurial student cohort commented on the unique approach to failure presented during the course. Multiple accounts commented early on in our research questioning about the significance of failure in entrepreneurship, and how despite this failure often indicating a lack of success or highlighted issues related to entrepreneurial ventures, the course still accommodated such learnings in a productive and positive manor. This is in line with Hägg & Jones (2021) statement that EE should simultaneously incorporate and protect from failure, which is exemplified by the following quotes:

Oskar: *“My preferred way of learning is definitely learning by doing, but importantly not being judged too hard if you fail. When I say failure, I do not mean in terms of academic grades, but our business venture. For instance, I have I've worked with three different venture projects so far. We failed twice, once as a finding during the feasibility analysis, and again after the finance course, where our venture was found to not be [financially] viable. I really appreciate they have a very open mindset about failing and see it almost as a positive. I have had passing grades on the assignments I mentioned, but this course separates the process from the outcome.”*

Ben: *"I found assignments in this program differs from other topics such as math where the application is linear versus in this program, where you get information that you can keep in mind when you do something also from an emotional perspective such as failure"*

These examples highlight a unique theme interpreted within EE, where in line with Jack & Anderson (1999), the educational institution provides an environment that encourages the parallel development of agency and self-awareness to accumulate experiences with both positive and negative real-world learnings. As Oskar mentions, while there was still a grade attached to the assignments, our findings indicate that the ability to 'fail' to progress business ventures started on the course was a distinct learning outcome that changed perceptions on how you learn within EE.

This finding can be understood through effectual logic as a theory that bridges the complex phenomenon of EE, where effectual methods are being applied that help connect the role of institutions, agency and self-awareness to produce learning outcomes. As introduced in section 2, under effectuation, "successes and failures are inputs into a process that needs to be managed such that failures are outlived and successes are accumulated" (Sarasvathy & Dew, 2005, p.390). Ben comments that the 'emotional perspective such as failure' is unique, highlighting a degree of self-awareness.

However, when assessing these findings in light of the effectual principle of affordable loss, we noticed that the institutional intention of developing social awareness was missing from responses. To recap, affordable loss refers to calculating the potential loss and limiting the risk assumed in order to prevent losing more than you can afford (Sarasvathy, 2001; Sarasvathy & Dew, 2005). In EE, this refers to the need to build up these real-world learnings as means to help shape future decisions that will influence entrepreneurial outcomes. These decisions that will influence entrepreneurial outcomes include reflecting on the impact of an individual's actions on their working environment, otherwise known as social awareness in EE (Harmeling & Sarasvathy, 2013). In our findings we found no reflection on social awareness among students when reflecting on the unique learning outcome of failure. Further examples of agency and self-awareness being reflected on, yet no inclusion of social awareness, are provided below:

Cecilia: *"I think you don't have, like, the perfect recipe to start a business. Whatever happens, happens. And I think, therefore, to try [starting a business] out and realize that, oh,*

this actually was really good to do, and this was not so good to do, and now I failed a bit, and I succeeded a bit, I think that's the best way to learn how to do it. You build up experience in this safe space [university] and hopefully become a better entrepreneur while gaining an education."

Palm: "I think entrepreneurial education prepares us to, like, be comfortable with changes and even failures. And yeah, just be kind of experimental, and with this experimental mindset, be more creative about the way you see the problems."

Jimmy: "[On experimenting with business ventures on the course] It felt like you can't fail academically based on the outcome, even if you failed testing [the venture]. Yeah, so there's definitely an element of opportunity to reflect on like how you shouldn't proceed, but also the trial and error involved in experiences on the course helps develop a skillset that can eventually, hopefully lead to success."

In each of these accounts, the students comment on the interplay between agency and self-awareness by learning how to appreciate and build on failures. As Jimmy mentioned, a beneficial aspect of EE is 'trial and error', where the student is provided with an environment where their venture can fail in certain ways, but you still gain an education, with passable academic grades in the process. As Cecilia mentioned, EE helps individuals build up experiences and discover patterns with what does and does not work related to being an entrepreneur. This pattern recognition is in line with McMullen's (2015) description of the effectual process, where the individual seeks to understand varying means derived from a variety of events that work together for developing more successful future results.

Furthermore, Palm's statement that EE prepares the individual to be 'comfortable with changes and even failures' by becoming creative and experimental appears to coincide with Sarasvathy et al.'s (2008) concept of failure management. Under failure management the individual incorporates failures they are able to manage/contain into their learnings that simultaneously helps them better understand, appreciate and build up successes. Yet again, there are no comments in our data reflecting on learning via failure in terms of how their actions impact the social environment, missing this key EE intention.

4.2.2 – Perception of the course acting as a business incubator

Another distinct finding about the unique learning outcomes from the course, was that an EE is perceived as often acting more like an incubator for business ventures than a traditional educational course. A majority of the student cohort commented about the course as an institution actioning and giving great focus to developing the creation of novel ventures. Examples of this are outlined by the following reflections:

Elizabeth: “[On defining EE] So, learning how to recognize an opportunity. And to build on that into a clear, like, journey that Craig always describes [about] recognizing opportunity, taking all the necessary steps into making your venture a real business. Okay, so for example, you know, I think business model development is very important. And I didn't realize it before. So that's one step. Or actually it can be multiple steps. Practicing this and applying it in our ventures is, I think, different than what happens on other courses.”

[Elizabeth talking about how EE is about recognizing an opportunity and taking all the necessary steps to make it a real business. In other words, incubation.]

Kata: “EE is unique because you work with your own venture and learn team dynamics. I don't see this much in other education.”

For both students, EE presented a unique learning outcome due to the institutions focus on teaching individuals the skills and self-awareness involved to deal with creating a real business venture, in line with Hägg & Jones (2021) defining of agency in EE. As Elizabeth outlines, the emphasis on opportunity recognition and then taking the necessary steps to create a real business, we find is supported by one of Sarasvathy's (2001) principles of effectuation, exploitation of contingencies. Sarasvathy & Dew (2005) elaborate that, exploiting contingencies is investing time on the development of means that can help use surprises as opportunities to grow. As Elizabeth mentioned, with EE helping students develop reflective techniques for opportunity recognition (surprises) and subsequent steps to create a real business venture, we understand our findings to show that EE has helped develop this relationship between agency and self-awareness. Like our finding in section 4.2.1, a reflection on social awareness, which Hägg & Jones (2021) describe as how attitudes to create value for a wider impact in society, has not been found.

A further example supporting this theme of the course acting more as improving individual awareness around the incubation of a business yet falling short of including a reflection on societal impact in the unique EE learning outcomes, is the response of Cecilia:

“Yeah, I think the whole Validation Report was really good, because you couldn't really fake things. Yeah, you had to prove that you did things. And I think that pushed you to really go outside of your comfort zone and really do things for real. And even though it was stressful, I kind of liked the marketing course as well for the same reasons. But, specifically with the validation report, you had to like, actually test how viable your business venture is. It was very real. The course gave us these ways to see if you could actually, like, build [the venture].”

Cecilia mentions this idea of ‘do[ing] things for real’, where her example of the validation report had students test the viability of their novel business ventures. Under effectual logic, the notion that humans are poor at forecasting is central, where individuals should instead spend time on creating and actually taking action which lead to better adaption in the face of new conditions/environments (Sarasvathy, 2001; Mansoori & Lackeus, 2019). Cecilia’s explanation of creating tests that could shape and assess your business venture that allows for further discovery is largely aligned with this concept of taking action to promote adaption. Cecilia’s reflection relates to Wadhvani and Viebig’s (2021) description of EE creating a more independent and autonomous form of business education with self-awareness and agency central. However, when Sarasvathy (2001) and Mansoori and Lackeus (2019) refer to new conditions and environments, they are alluding to interactions with society. Once again, the findings evidence that the student has not reflected on their societal impact but rather only how business incubation as a unique learning outcome of EE is related to developing agency and self-awareness.

4.2.3 – Social Networks and Key Partnerships

Another distinction made surrounding EE was the focus on creating social networks and key partnerships formulated during the education. Students frequently commented on the focus of collaborative experiences, with a core part of the course designed around venture teams. This emphasis on group work and community development built up a narrative that distinguished EE from previous educational experiences as relations were not simply assignment based, but a distinct feature of the overall learning outcomes, as exemplified by the following accounts:

Palm: *“It's nice to, work in different groups. You learn about different and complimentary working styles and this potentially leads to forming the team to create an actual venture that you may potentially go forward with, which felt like one of the main goals [on the course]. This has been a main feature of our [entrepreneurial] education”*

[Palm discussing the importance of group selection and resulting complimentary working styles]

Dan: *“I think in my three-year Bachelor's I did three group projects. Within two months, I think I had done more group projects on this course. The main difference is the constant collaboration and working together. And working in teams really, I think, is a big focal point of Entrepreneurial Education as you constantly learn from each other. I think it's been done very well.”*

[Dan on how collaboration is defining element in EE]

These quotes underline the importance given to group work within EE, and illustrates how working together helps create opportunities to combine knowledge. Palm comments on learning ‘different and complimentary working styles’ via group work while Dan mentions collaboration as a key learning point. This is supported within effectual logic, where the development of knowledge is not only driven by individual experience, but it is also expanded by the collective knowledge of everyone involved in the entrepreneurial process together (Mansoori & Lackeus, 2019). This expansion of knowledge via group work can also be understood under one of the four main principles of effectuation, the development of strategic alliances. As introduced before, strategic alliances are partnerships that enable co-creation of a market via varying stakeholders including collaborators (team members), customers, suppliers and even prospective competition (Sarasvathy, 2001; Sarasvathy & Dew, 2005). This finding once again shows the idea that EE helps develop the interplay between agency and self-awareness with Dan and Palm learning from other students how to work more effectively on reflection. When it comes to the third element of institutional EE intentions, social awareness, we find our data lacks an appreciation for what Harmeling and Sarasvathy (2013) outline as unpredictable social circumstances. The reflections are once more focused on individual learning outcomes and reflections. Even if there was an element of social cohesion required, no answer focused on their entrepreneurial role in impacting society.

An interesting finding related to establishing a social network and key partnerships was from Jimmy, who commented about his perceived deficiencies provided by the course in relation to the development of this unique learning outcome:

Jimmy: “What would be nice I guess, is if you have maybe some more organized events where you could meet people from the start-up ecosystem. Yeah, we could meet them, but organized by Lund University because now, while it is possible to go to them, you're there by yourself and also, maybe to make some time for those kinds of things. Because I think network is very important and very beneficial for the future. [The Institution] kind of provide you [with opportunities] to go to those kinds of things, but they don't require it [as part of the course]. You have to do it yourself always. Especially coming from other cultures, it's sometimes hard to make this first step so I guess if [the institution] would set up more of those network events, I guess it could be beneficial.”

Here, the course as a manifestation of EE did not enable Jimmy to create a wide enough network in the community in order to create effective means to influence future outcomes via Sarasvathy's (2001) strategic alliances. While the course offered many opportunities to establish and improve direct relations and partnerships for the development of complementary knowledge (Sarasvathy & Dew, 2005), we can also understand that was not always seen as sufficiently providing wider relationships in an effectual manner. Jimmy implies developing this wider influence of stakeholders could further benefit the social awareness of the entrepreneur to influence future outcomes and suggests a perceived shortcoming in the societal interactions the institution provided.

4.2.4 - Experiential, hands on learning as the dominant learning method

Perhaps the most salient theme that was derived from our empirical data related to learning outcomes is the dominant approach to experiential learning in EE. This was pointed out as distinct from other educational experiences by the majority of our cohort with many references to the amount of time dedicated to practical projects and exercises over theoretical lectures and assignments. The understanding was that experimental, more interactive, real-world learnings helped provide means and structure to manage varying unknown tasks, as shown by the following excerpts:

Gema: “[On practical learnings from EE] for example, with the feasibility analysis or all these things that we have done that are more practical like reaching out to people, talking to

people about their needs and actually doing these kinds of things, that before I was a little bit afraid of doing, it has helped me a lot. I feel like I have been pushed to do things that otherwise I would know how to do, but I wouldn't dare to because, yeah, it's just like, I used to think, why would I reach out someone that I don't know? But now because of the assignments on the course, I have learned and practiced these methods....I feel a difference on this course compared to previous ones I did was you actually learn and remember things very differently, when you're like experimenting with whatever you have in front of you. And feel like I have really learned skills that I understand how will shape my future as I have practiced [using them]. I think this is learning by doing is essential in something like entrepreneurship.”

Palm: “[On EE] I think it's very much encouraged me to actually get my hands dirty and actually do something, act upon knowledge and practice with real world experiences compared to just having that [knowledge] in my head. For instance, I have been working with strategic planning, and it's all about strategy, but not actual experiencing it in practice. On this course, we like, actually used the tools in real scenarios with our ventures. Because of this I kind of know what worked and didn't work for me. This is [a] different learning.”

Both reflections indicate how students have found the level and extent of experiential and interactive hands-on learning unique to EE. Gema comments on the feasibility analysis assignment related to new venture creation pushed her to actually develop interpersonal skills she didn't imagine considering prior to the course. Palm reflects that 'get[ting] my hands dirty' as opposed to simply studying strategic theories has allowed her to develop the self-awareness to know what does and does not work for her when approaching entrepreneurship. Our findings show these experiences seem to push students to combine most of Sarasvathy's (2001) categories of effectual means; “who they are, what they know and whom they know”. (Sarasvathy, 2001, p. 250) As a result, an ability to analyse and manage unknowns is practiced, where students develop a skillset that helps them make more calculated approaches towards future choices that attempt to mitigate less profitable scenarios. This is what (Sarasvathy & Dew, 2005; Sarasvathy 2001) term as controlling an unpredictable future, manipulating conditionals via the development of such practical skills. On top of controlling an unpredictable future, there is the general concept in effectuation of doing versus planning to do. Writing on the subject of business plan development commonly used in EE, Watson & McGowan (2020) describe a distinction when it comes to effectual processes between dynamic business planning and the more static business plan. Here, business planning refers

to learning by doing as opposed to the more theoretical learning of a business plan, a unique feature about the EE learning outcomes that was expressed by both Gema and Palm that linked agency and reflective self-awareness.

Despite not being a student, the professor Anna confirmed this process of controlling an unpredictable future (Sarasvathy, 2001), as a defining part of EE:

Professor - Anna: *“In EE there is a mixing of practical experiences. You listen, you act and then you reflect on your actions and then you take new actions. I think that's a really, really, really good approach of learning entrepreneurship, but I think it's also an approach that's that could work quite well for other topics.”*

This concept is supported by Hägg & Gabrielsson (2019), who outline that using effectuation logic is a prominent way to create intentional variation in outcomes, which helps students of EE develop potentially more fruitful opportunities in uncertain social environments. In other words, having students practice experiences where you act, and then reflect and then are required to act again, helps result in potentially more successful future outcomes. In EE, our findings indicate this is done by utilizing various methods that are both effectual and interactive.

Although a relationship between agency and self-awareness is perceived as a learning outcome of EE, experiential learning was not evidenced in our cohort data as providing reflections on the impact of what Hägg & Gabrielsson (2019) term uncertain social environments beyond relations with fellow students. Despite Gema speaking about interpersonal skills, she did not conclude on a benefit to those she reached out to or comment on the social impact her endeavours had. According to Anna, reflection should be a part of every action you take in order to produce awareness. This includes social interactions. As a result, when we consider Sarasvathy's (2001) categories of effectual means, 'whom they know' (p. 250) is not apparent in the learning outcome.

Looking at Fayolle's (2013) description of the role of the institution providing a supportive intellectual backgrounds and sufficient social environments for students to critically reflect on their practices, we see a lack of social reflection in responses. This applies to all the unique learning outcomes found in our data presented throughout this chapter. This brings into question if the institution has provided sufficient frameworks to capture social awareness

as a key learning outcome of EE. Our findings provide little indication that students have developed this learning outcome, as analysed via theory related to the effectual process as a popular means to manifest the phenomenon of EE.

Our next section gets more granular, exploring the perceptions of the use of a particular game and gamification as an effectual method within EE.

4.3 - Games in EE

Given that our thesis proposal surrounds the perception of gamification as a teaching method in EE, as outlined in chapter 3, we focused part of our empirical research on gamification as a method in EE. Our target gamified experience was the MEC, an interactive team-based simulation completed on the Leadership Course, a module taken by all students on the Masters in Entrepreneurship and Innovation at Lund University and in our cohort. Our aim with the inductive research was to discover the interplay between institutional intentions in EE and the perception of the development of agency, self-awareness and social awareness derived from the use of games/gamification as a learning method.

In our findings from our data, we found gamification to be perceived as a form of experiential learning within EE, arriving at three main discussant themes after conducting our analysis: (1) The connection between a gamified experience and the initial perception of MEC, (2) interplay between a gamified experience and the intended learning outcome, and (3) the interplay between EE and games as a learning method.

4.3.1 – The connection between a gamified experience and the initial perception of MEC

Our first finding related to gamification as a form of experiential learning within EE relates to the perceptions of MEC and the connection to gamified experiences. While asking the interviewees we found that they all could recall and give details into the exercise, and it served as a vessel to turn the conversation towards the utilization of games in education. The spontaneous reactions gave us insight into the initial perception of this concentrated event:

Initially many of the students perceived MEC of being an enjoyable and fun experience, as expressed by Dan: “[on remembering MEC] Yes. I enjoyed that one.”

Elizabeth elaborated a bit more in her answer and expressed her perception:

Elizabeth: *“I thought it was fun, and then at first, I was like, okay, I’m not sure I understand what I’m supposed to do. But then I think what I got out of that was you have to think about your personal goals and how they can align with everybody to get so everybody in the team is succeeding. And like how you can contribute to the overall team success. So, I think that project or exercise was really important to help people see like, how important every single person is on the team and that you should not be thinking only about yourself.”*

Elizabeth expressed the perception of MEC being fun and goes on to express that she got to see her own personal goals and align them with others in a team context for optimal success in the “team” perspective, going beyond her personal goals. In her reasoning social awareness is portrayed when she states the exercise was important: *“how important every single person is on the team and that you should not be thinking only about yourself.”*. The self-awareness in this context is left out however and she seem to be talking about a general thinking that “people” should portray.

In contrast the initial perception was self-reflective in Katas case:

Kata: *“Okay, we had a lot of fun. We were laughing a lot about who’s going to die and who’s going to, like, run out of oxygen and stuff like that. Yeah. But also, I remember proposing a strategy that the others didn’t really hear. Okay, I didn’t manage to get my point across. And I think if I did, then then we would have gained more points.”*

She though it was fun and engaging however she didn’t manage to get her point across and I led to a negative impact on performance.

In conjunction with the positive perception, self-awareness and social awareness many of the students reflected on their performance in the initial statement of perception:

Daan P.: *“[reflecting on MEC] I have to say the whole team worked quite closely together. I think we were in a group of five and four of us reached the top. So, we were really proud about it.”*

Palm: *“[on remembering MEC] Yes. Hectic[laughing]. Because of the time limitation and we had to make the decisions quickly. I think it taught us how to, you know, communicate and be open to achieve like, the common goals of the project, I would say.”*

As indicated by all of these findings, initial reflections on the MEC allude to the experience as often being seen to be both fun and engaging for participants. It is worth noting that the experience itself occurred many months previously, however many students could recall team members and outcomes despite the event occurring for just one hour. Reflections including Elizabeth, Kata, and Dan all describe the experience as ‘fun’ or ‘enjoy[able]’. This touches on Dichev et al.’s (2015; Dichev & Dicheva, 2017) explanation of gamification influencing behaviour, where games typically use varying mechanics to encourage continual participant interaction due in large part to personal enjoyment. As Daan P. mentions, success in this gamified experience led not just to enjoyment, but also a sense of pride. Such positive and engaging accounts of using games in EE from our cohort are supported by Lovelace et al.’s (2016) conclusions. They outline that; interactive experiences such as the MEC in an educational environment tend to create greater participation and interest among students versus traditional pedagogical methods including lectures and critical thinking. Therefore, we can suggest from our findings that the initial joy and engagement interactive games in EE led to memorable participation and interest and thus agency.

4.3.2 – The Interplay Between a Gamified Experience (MEC) and the Intended Learning Outcome

A second key finding from our interview segment on gamification/games was the interplay between the MEC and what students perceived as the intended learning outcome. Responses surrounding the intentions of the professor are presented below and then compared to the professors actual desired outcome. The responses help indicate the impact of gamification as a pedagogical method based on the accuracy of the perceived learning outcome:

As a baseline Anna expresses the target learning with the following:

Professor - Anna: *“I basically want [the students] to understand common information bias. The fact that we tend to talk about the stuff we have in common instead of talking about the stuff where we actually do not have as common knowledge, and why that so easily happens and that this is something that's easy to talk about in a lecture, but once you really experience it, it actually can be quite difficult to share information. Then you get this sort of epiphany, okay, I thought I knew but as it turned out, it was more difficult than I thought. So, if there's*

one thing, I want you guys to take away from that it's the sort of common information bias effect”

The response from the students varied a bit and most of them expressed the perceived learning outcome to be team dynamics, as expressed by Dan in the next quote:

Dan: *“On a deeper level, I guess that the team is bigger than the person. I think, from what I remember, a couple of people in our group, were only thinking about how they were going to finish and their goal and I think we actually did have an argument. We had a bit of a debate or discussion. So, I think it pushed a team perspective over an individual perspective, which I really believe in, actually as a person.”* In this answer Dan also interprets a kind of moral ground as the outcome of the exercise considering that the team is bigger than the person and aligning with it.

Elizabeth has a more balanced position between the individual and the team as equally important: Elizabeth: *“Well, considering [the professor] was working towards or she was teaching about teams. I do think that she was also trying to show the dynamic or like the important dynamics within a team and why a personal, individual end goal is just as important as the overall teams. I think she was really trying to show the end goal for the entire team was very important.”*

In both Dan and Elizabeth’s cases the perceived outcome was collaborative and focused on aligning actions for optimal outcome which more connected to agency. In Kata and Daan’s cases they both perceived communications as one of the target learning outcomes:

Kata: *“But otherwise, we felt, I think in that exercise, there was a time pressure as well, on making decisions. And I think because of the time pressure, a lot of people did not pay attention properly to the information they receive, and therefore they can’t freely give their information or share their information properly with the others. [Overall, I think the professor was trying to show] how difficult it is to progress in a team if the information flow is not smooth between team members.”*

Kata reflects on the time pressure as one factor affecting people's attentions to information. The time pressure was infused by MEC exercise and indicates that it successfully managed to fictively create the perception of time pressure.

Daan: *"Because it was in the leadership course, I would say, how to lead a team and how to manage a team, but also, like how to communicate information within a team. I think that was key in this assignment. Like I said, In the beginning, our communication was lacking. So we made a few mistakes, which could have been prevented if we communicated more clearly from the beginning."*

Given the responses of students, we found a mix of results that differed slightly. Dan and Elizabeth spoke about individual versus personal goals and understanding what was best for the team. They each commented on the learning outcome focusing on the importance of an overall team goal and perspective. Kata and Daan reflected on communication and difficulty of information sharing as the overall intended learning. When compared to Anna's response, we find degrees of accuracy in each of the responses. Dan and Elizabeth focused on individual versus team goals, however this was still the result of communication between team members and highlighted the idea that sharing personal, unique information is difficult when we believe everyone has common knowledge. Our findings imply that in this scenario, the intended learning outcome was mostly understood and reinforced by the use of the MEC, which represents a gamified pedagogical method in EE. This is supported by Antonaci et al.'s (2015) study which found gamification to improve social and collaborative experiences, synchronizing students' actions. As our findings on the MEC indicate, students acted in similar ways based on their roles in the game, which on reflection appears to have led to similar perceptions as to the learning outcome from the experience, showcasing an interplay between agency (actions in the game) and self-awareness (reflections after playing).

4.3.3 - The Interplay Between EE and Games as a Learning Method

Our final finding revolved around the overall perceived use of games/gamification as a learning method in EE. Here we investigated the interpreted usage and impact of games on the course in EE outside of the MEC. The following accounts discuss the strengths, weaknesses, and limitations regarding games as a pedagogical method in EE:

Kata: *“You can learn a lot from games, strategy, and tactics. And you can learn about your opponents, how they do their strategies, how they behave in certain situations, and how it makes you behave, however, for it to be impactful I think there needs to be a reflection part. That reinforces the learning otherwise, you need to repeat [the game] which would be inefficient [as a learning method]. I think this applies to [using games] in all education.”*
[On the effective use of games in EE and education in general]

The focus on playing out a certain scenario with opponents is present in Katas response. She perceives it being a strong method for practising and educating a topic and links it to all type of education not specifically to EE. Perhaps this is because of its isolating nature and lack of external connection expressed as important specifically in EE by Anna as the institutional responsibility to give students ways to approach the complex world. The reflective element is in line with Anna an important element to reinforcing learnings in interactive exercises.

Palm: *“[On if using gamification/games is relevant in EE outside of the MEC] Yeah, I think it is effective, but in my experience, the effectiveness of its application depends on the context. For instance, I just talked to a researcher, and he tried to merge gamification and game theory to research on how to conduct qualitative research. His major finding was maybe it's not always applicable because individuals perform tasks due to different motivations. So, you have to be careful when applying gamification, so you can't for instance always rely on it to measure the real actual performance because it might not be accurate due to people playing the game with a different intention than reality. So, if you design a game for validating, or testing a student in class, it might be too far and not progressing the experience as you make them play for the wrong reason.”*

Anna: *“[On types of games as methods in EE] So I think there are different methods you can use to sort of engage people. [The MEC] is one and I think it works really nicely. I tried role play. We didn't really have time for that in your course. But I'm thinking about bringing that back more. For instance, maybe you noticed I sort of try to start some lectures with writing statements on the board. Well for role-playing we can compare statements like, entrepreneurship is a great way to become rich, for example. And then you guys reflect on those statements and form an opinion about it. And then we have sort of a joint reflection, that sometimes works nicely, because students role-play the situation. But, you know, whatever, engages people and makes them relate to whatever we teach. They sort of need to*

immerse themselves or be a part of interactive situations [like the MEC]. I think this helps learning and reflection.”

In the case of Kata, she finds many strengths in using interactive games as a method to help learn about yourself and the environment you operate and how different stakeholders behave. However, she concludes that without reflection games are ‘inefficient’ as a learning method, highlighting a potential weakness as the execution is fundamental to games being impactful. Such findings are in line with DuHadway & Dreyfus (2017) who concluded that a crucial part of gamification/games in education is to create discussions and reflections that connect theory and performance. This opinion was echoed by the leadership course professor, Anna, who commented on games being important for their engagement that can help ‘immerse’ students in their learnings which leads to more impactful reflections.

Perhaps the most poignant finding on gamification as a pedagogical method in EE was Palm’s reflection that games might not lead to ‘accuracy’ when compared to real world scenarios. She perceives this to be a limit on games/gamification in EE due to people assuming alternative behavioural roles when they part-take due dependent on the influence of the environment individuals are playing within. Considering Nabi et al.’s (2017) models introduced in section 2, given these accounts, games as pedagogical method formulates an example of supply-demand hybrid model, where traditional supply methods such as theoretical lectures are supported by more practical interactive experiences. As Nabi et al. (2017) highlight, when reflected upon, such experiential learning has a focus on supporting knowledge transmission, creating a strong link between theory and practice. However, as Palm outlines, there is a limit to the real-world usage when it comes to gamification/games. This indicates that games in this sense are perceived to not fall under Nabi et al. (2017) demand-competence hybrid model within EE, as related methods usually involve higher-impact, real-world exercises such as venture creation that are aligned with the action-oriented process of effectuation (Sarasvathy, 2001). Thus, our findings indicate games/gamification are perceived as powerful forms of experiential learning in EE by students but contain limits with their replication and application outside of the classroom limiting self-awareness and eliminating social awareness, which are key dimensions in EE (Hägg & Jones, 2021).

Part 5 – Conclusions and implications

5.1 - Aim of the study, research findings & future recommendations

Our thesis aimed at exploring the perception of gamification as a teaching method within EE. Reflecting on our findings and analysis provided in the previous section, we have found three main contributions we can summarise. First, this thesis finds that regardless of intentions with an EE, consideration for unique learning outcomes and their impacts or the use of gamification during a course in EE, there was a dominant interplay between agency and self-awareness- two out of three core dimensions in EE. This leads to our second contribution, which found the third of our identified dimensions in EE as presented by Hägg and Jones (2021) and Harmeling and Sarasvathy (2013), social awareness, did not appear in student reflections and perceptions of any of the introduced topics. Therefore, there was a clear lack of developed consideration for the social impact EE provided our student cohort, despite the intentions of the institution as represented by Anna Brattström, a prominent researcher in EE and professor on the course. Finally, our study found a clear indication from the cohort that there is more room for games to be used as an interactive and effective teaching method in EE, leading to agency and self-reflection.

The discovery of these three main contributions are derived from three essential conclusions in our research findings and analysis. First, whether it was course intentions, unique learning outcomes or the MEC as a gamified experience, there was a strong perceived link between agency and self-awareness by our student cohort. This finding was particularly exploratory when we investigated uniquely perceived learning outcomes in EE. Our findings neatly aligned with many elements of Sarasvathy's (2001) effectual process, where students elaborated on the development of means on the EE course to prepare for and somewhat control uncertainties, removing the pressure to try and predict future outcomes (Sarasvathy & Dew, 2005). Such a mix of action and reflection has led to greater agency and self-awareness in our student cohort as they practice being entrepreneurs; two of the three core dimensions we focus on in this thesis. We believe future studies should compare the effectuation process to other popular practical theories in EE to understand the perceived importance of certain actionable theory in EE over others (say a comparison with discovery-driven planning).

Secondly, our thesis did not find evidence of social awareness being present in any responses related to initial intentions, unique learning outcomes or reflecting on the MEC. Despite

institutional intentions to create a reflective interplay between agency, self-awareness and social awareness, we could not find data concerning the perceived impact of an EE on society or environments interactions too place. These included responses related to business venture creation, classroom experiences such as games or other unique learning outcomes from EE. Of course, our inductive semi-structure research approach could have influenced the findings. As a result, we recommend further pursuit of research related to the discovery of social implications resulting from EE to understand areas of proposed improvement from a student cohort. We believe this could lead to more direct action that would reinforce the perception of EE to include more social considerations.

Lastly, our research found that the MEC was very engaging and fun, with a poignant reflection, leading to the conclusion that games are understood to be dynamic in their application in EE. We can best understand the effectiveness of this finding through theory on methods of EE by Nabi et al. (2017), where gamification appears to fall into a supply-demand hybrid model. Under such a model, traditional supply methods of teaching, including theoretical lectures are supported by practical interactive experiences that focus on knowledge transmission, and establishing a strong interplay between theory and practice. Despite a strong link between two key dimensions of EE, agency and self-awareness, we found limits with replicating and apply this methodology outside of the classroom, eliminating social awareness from the MEC (Hägg & Jones, 2021; Harmeling & Sarasvathy, 2013). Therefore, we recommend further studies to try and understand if a more dynamic simulation/game that takes more time could interact in a wider social context, say gamifying real business venture creation, with an emphasis on recognition for social reflection. This would build on the engaging agency and powerful self-reflection gamification/games have shown to poses in our study.

How is gamification perceived as a teaching method in entrepreneurial education?

Our thesis presents a discussion that in order to evaluate the perception of gamification as teaching method in EE among students, first the dynamic and complex phenomenon of EE must be explored, followed by supporting theory before introducing the practical teaching method. In order to understand the relevance of gamification/games in EE, we argue you must begin by understanding the perceived interplay between the core dimensions within the phenomenon (agency, self-awareness and social awareness). Then, drilling down to theories,

effectuation in our case, that help understand the manifestation of EE, this three-dimensional interplay is elaborated on, followed by clear and constructive research into such a particular methodological approach as gamification and how it can be understood with reference to these EE dimensions. As a result, we conclude that gamification is perceived as a truly engaging, agency driving methodology in EE, with a clear interplay between the impact of acting and self-awareness with appropriate reflection. As evidenced in all our findings, gamification lacks reflective social awareness in its perception, with the above proposals suggesting means to improve the impact of future research.

5.2 - Academic implications & future recommendations

From our study, there are three main findings that have academic implications within EE. First, this study has shown the common understanding in EE theory about developing learning outcomes that contain the influencing factors of agency, self-awareness and social awareness, which are reflected in institutions, in line with the proposals of Hägg and Jones (2021), Harmeling and Sarasvathy (2013) and Lackéus, Lundqvist and Williams Middleton (2016). It then built off this theoretical background within the phenomenon of EE to understand the perceived impact of a common entrepreneurial logic, effectuation, and specifically the use of games/gamification as a learning method. Given the three core influencing factors as a desired learning outcome in EE as highlighted by Anna, the professor and institutional representative in our case study, the targeted students in this study showed strong development of agency, a degree of self-awareness, but very little social awareness. This was evident in both the MEC, a targeted gamified simulation, as well as in a general effectual perspective derived from Sarasvathy (2001) effectuation process. Therefore, while our thesis finds support for the interplay of agency and self-awareness resulting from EE, it found almost no support for social awareness as a learning outcome. Although the findings are limited to our cohort, a suggestion for a further study would be “how to target social awareness in entrepreneurial education” which could investigate practical methods for improving EE to be more in line with contemporary theory as well as institutional intentions.

Second this thesis finds limited support that effectual logic is a sufficient theory for practical implications in EE, where once again when looking at unique learning outcomes in EE against the effectual process, we were only able to discover and interplay between agency and self-reflection. The four pillars of effectuation, (1) affordable loss, (2) strategic alliances,

(3) exploitation of contingencies and (4) controlling an unpredictable future by Sarasvathy (2001) all reflect on the individual's motivation, self-awareness and necessary social considerations towards navigating an uncertain future. However, as the students elaborated, in our study there is little reflection about the influence these actions have on others and in a larger scale, the world. Therefore, we suggest further research has to be conducted in order to understand the effective practical manifestation in EE.

Finally, this thesis finds support for multiple academic accounts on the impact of games/gamification in education. These include (1) Lovelace et al.'s (2016) finding that games in educational settings predominantly result in greater interest and participation; (2) DuHadway and Dreyfus' (2017) finding that interest and participation in gamification in education can create discussion and reflections; (3) Antonaci et al.'s (2015) discovery that gamification in education improves both social and collaborative experiences; and (4) Patricio et al.' (2018) conclusion of gamification in innovation improving and enhancing engagement in social experiences, creating team spirit, encouraging consensus building and developing creative thinking. The only novelty is that in most cases, we are unique in our findings with relation to EE (Patricio et al. 2018) also focused on innovation, but specifically related to EE). Further research should of course focus on the use of games/gamification in EE to see if a simulation can be perceived to incorporate our understanding of the three core learning outcomes of EE; agency, self-awareness and social awareness.

5.3 - Practical implications & future recommendations

On a more practical note, our main finding was that the target of MEC was shown to accurately handle and teach the students specific theory. The perception from the student side was positive in all our conversations. This calls for continued and even increased usage of gamified methods in EE. However even in this case, the lack of connection to social awareness in the practice and perception of MEC makes it hard to connect specifically to EE and keeps it as a general method for teaching. With the focus on agency and self-awareness it is in line with Nabi et al.s' (2017) supply-demand hybrid model in EE, but lacks all three dimensions presented by Hägg and Jones (2021), Harmeling and Sarasvathy (2013) and Lackéus, Lundqvist and Williams Middleton (2016). For further design of interactive experiences and games elements in EE we therefore suggest that in line with both Anna's recommendation and some of the students, to incorporate more reflection related to the learning outcome with the elaboration on not just self, but also social impact.

Reference List

- Al-Ababneh, M.M. (2020). Linking Ontology, Epistemology and Research Methodology, *Science & Philosophy*, vol. 8, No. 1, pp. 75-91.
- Antonaci, A., Dagnino, F. M., Ott, M., Bellotti, F., Berta, R., De Gloria, A., & Mayer, I. (2015). A Gamified Collaborative Course in Entrepreneurship: Focus on objectives and tools, *Computers in Human Behavior*, vol. 51, pp.1276–1283.
- Ball, C. (1989), Towards an ‘enterprising’ Culture: A Challenge for Education and Training, Paris: OECD/CERI.
- Baumol, W.J. (1990). Entrepreneurship: Productive, unproductive, and destructive. *The Journal of Political Economy*, vol. 98, no. 5, pp.893–923.
- Bell, E., Bryman, A. & Harley, B. (2019). *Business Research Methods*, 5: Oxford University Press.
- Béchar, J. P., & Grégoire, D. (2005). Understanding Teaching Models in Entrepreneurship for Higher Education, in P. Kyro, & C. Carrier (eds.), *The Dynamics of Learning Entrepreneurship in a Cross-cultural University Context*, Tampere: Faculty of Education, University of Tampere, pp.104–134.
- Björkman, L., Bromseth, J. & Hill, H. (2021). Normkritisk Pedagogik - Framväxten och Utvecklingen av ett Nytt Begrepp i den Svenska Utbildningskontexten, *Nordisk tidsskrift for pedagogikk & kritikk*, vol. 7, pp.179–195.
- Deterding, S. (2011). Situated Motivational Affordances of Game Elements: A conceptual model, *Gamification: Using Game Design Elements in Non-Gaming Contexts*, a Workshop at CHI 2011, pp.7–12.
- Deterding, S., O’Hara, K., Sicart, M., Dixon, D., & Nacke, L. (2011). Gamification: Using game design elements in non-gaming contexts, in *Conference on Human Factors in*

Computing Systems - Proceedings, Conference on Human Factors in Computing Systems - Proceedings, 01 2011, pp.2425–2428.

Davidsson, P. (2005), Chapter 1 in “Researching entrepreneurship”. US: Springer.

Dichev, C. & Dicheva, D. (2017). Gamifying Education: What is known, what is believed and what remains uncertain: a critical review, *International Journal of Educational Technology in Higher Education*, vol. 14, no. 9, pp.1-36.

Dicheva, D., Dichev C., Agre G., & Angelova G. (2015). Gamification in Education: A systematic mapping study. *Educational Technology & Society*, vol. 18, no. 3, pp.75–88.

DuHadway, S., & Dreyfus, D. (2017). A Simulation for Managing Complexity in Sales and Operations Planning Decisions. *Decision Sciences Journal of Innovative Education*, vol. 15, no. 4, pp.330–348.

Eisenhardt, K. M. (1989). Building Theories from Case Study Research, *Academy of Management Review*, [e-journal] vol. 14, no. 4, pp. 532-550.

Eisenhardt, K.M. & Graebner, M.E. (2007). Theory Building from Cases: Opportunities and challenges, *Academy of management journal*, [e-journal] vol. 50, no. 1, pp.25-32.

Fayolle, A. (2013). Personal Views on the Future of Entrepreneurship Education, *Entrepreneurship and Regional Development*, vol. 25, no. 7-8, pp.692-701.

Fayolle, A., & Gailly, B. (2008). From Craft to Science: Teaching models and learning processes in entrepreneurship education, *Journal of European Industrial Training*, [e-journal] vol. 32, no. 7, pp.569–593.

Flyvbjerg, B. (2006). Five Misunderstandings About Case Study Research, *Qualitative Inquiry*, vol. 12, no. 2, pp.219–245.

Freire, P. (2018). *Pedagogy of the Oppressed*, 50th anniversary edition., [e-book] New York: Bloomsbury Academic.

Gabrielsson, J., Hägg, G., Landström, H. & Politis, D. (2020). Connecting the Past with the Present: The development of research on pedagogy in entrepreneurial education, *Education and Training*, vol. 62, no. 9, pp.1061–1086.

Gerschenkron, A. (1962). *Economic Backwardness in Historical Perspective : A Book of Essays*, Belknap Press.

Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology, *Organizational Research Methods*, vol.16, no. 1, pp.15-31.

Hägg, G & Gabrielsson, J. (2019). A Systematic Literature Review of the Evolution of Pedagogy in Entrepreneurial Education Research, *International Journal of Entrepreneurial Behavior & Research*, vol. 26, no. 5, pp.829–861.

Hägg, G. & Jones, C. (2021). Educating towards the Prudent Entrepreneurial Self – an Educational Journey Including Agency and Social Awareness to Handle the Unknown, *International Journal of Entrepreneurial Behaviour and Research*, vol. 27, no. 9, pp.82–103.

Harmeling, S & Sarasvathy, S. (2013). When Contingency Is a Resource: Educating entrepreneurs in the Balkans, the Bronx, and beyond, *Entrepreneurship, Theory and Practice*, vol. 37, no. 4, pp.713–744.

Isabelle, D. A. (2020). Gamification of Entrepreneurship Education, *Decision Sciences, Journal of Innovative Education*, vol. 18, no. 2, pp. 203-223.

Jack, S.L. and Anderson, A.R. (1999). Entrepreneurship Education Within the Enterprise Culture: Producing reflective practitioners, *International Journal of Entrepreneurial Behaviour and Research*, vol. 5, no. 3, pp. 110-125.

- Kauppinen, A. & Choudhary, A. I. (2021). Gamification in Entrepreneurship Education: A concrete application of Kahoot!, *The International Journal of Management Education*, vol. 19, pp.1-14.
- Kirkwood, J., Dwyer, K., & Gray, B. (2014). Students' Reflections on the Value of an Entrepreneurship Education, *International Journal of Management Education*, vol. 12, no.3, pp.307–316.
- Lackéus, M., Lundqvist, M., & Williams Middleton, K. (2016). Bridging the Traditional-Progressive Education Rift through Entrepreneurship, *International Journal of Entrepreneurial Behaviour and Research*, vol. 22, no. 6, pp.777–803.
- Laine, T. h. & Lindberg, R. s. n. (2020). Designing Engaging Games for Education: A Systematic Literature Review on Game Motivators and Design Principles, *IEEE Transactions on Learning Technologies*, vol. 13, no. 4, pp.804–821.
- Landström, H. (2020). The Domain of Entrepreneurship Research, The Evolution of Entrepreneurship as a Scholarly Field, in A. N. Link & D. B. Audretsch (eds), *Foundations and Trends in Entrepreneurship*, Delft: now Publishers Inc., pp.73-84.
- Leadership and Team Simulation: Everest V3. (2022). *Harvard Business Publishing*, Available Online: <https://hbsp.harvard.edu/product/8867-HTM-ENG> [Accessed 9 May 2022].
- Learn a Language for Free. (2022). *Duolingo*, Available Online: <https://www.duolingo.com/> [Accessed 17 May 2022].
- Lovelace, K. J., Eggers, F., & Dyck, L. R. (2016). I Do and I Understand: Assessing the utility of web-based management simulations to develop critical thinking skills. *Academy of Management Learning & Education*, vol. 15, no. 1, pp.100–121.
- Mansoori, Y. & Lackéus, M. (2020). Comparing Effectuation to Discovery-Driven Planning, Prescriptive Entrepreneurship, Business Planning, Lean Startup, and Design Thinking, *Small Business Economics*, vol. 54, pp.791-818.

McMullen, J. S. (2015). Entrepreneurial Judgment as Empathic Accuracy: A sequential decision-making approach to entrepreneurial action. *Journal of Institutional Economics*, vol. 11, pp.651–681.

Mitchell, R., Schuster, L. & Jin, H. S. (2020). Gamification and the Impact of Extrinsic Motivation on Needs Satisfaction: Making work fun?, *Journal of Business Research*, vol. 106, pp.323–330.

Nabi, G., Liñán, F., Fayolle, A., Krueger, N., & Walmsley, A. (2017). The Impact of Entrepreneurship Education in Higher Education: A systematic review and research agenda, *Academy of Management Learning & Education*, vol. 16, no. 2, pp.277-299.

Nike Run Club-appen. (2022). *Nike.com*, Available Online: <https://www.nike.com/se/nrc-app> [Accessed 17 May 2022].

Patrício, R., Moreira, A.C. & Zurlo, F. (2018). Gamification Approaches to the Early Stage of Innovation. *Creativity and Innovation Management*, vol. 27, no. 4, pp.499–511.

Ruiz-Alba, J. L., Soares, A., Rodriguez-Molina, M. A., & Banoun, A. (2018). Gamification and Entrepreneurial Intentions, *Journal of Small Business and Enterprise Development*, vol. 26, no. 5, pp.661-683.

Sarasvathy, S. D. (2001). Causation and Effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency, *Academy of Management Review*, vol. 26, no. 2, pp.243-263.

Sarasvathy, S. D. & Dew, N. (2005). Entrepreneurial Logics for a Technology of Foolishness, *Scandinavian Journal of Management*, vol. 21, no. 4, pp.385-406.

Scotland, J. (2012). Exploring the Philosophical Underpinnings of Research: Relating ontology and epistemology to the methodology and methods of the scientific, interpretive, and critical research paradigms, *English Language Teaching*, vol. 5, no. 9, pp.9-16.

Wadhvani, R. D. & Viebig, C. (2021). Social Imaginaries of Entrepreneurship Education: The United States and Germany, 1800-2020, *Academy of Management Learning & Education*, vol. 20, no. 3, pp.342–360.

Watson, K. & McGowan, P. (2020). Rethinking Competition-Based Entrepreneurship Education in Higher Education Institutions: Towards an effectuation-informed cooperation model, *Education + Training*, vol. 62, no. 1, pp.31-46.

Werbach, K. & Hunter, D. (2012). *For the Win: How Game Thinking Can Revolutionize your Business*, Philadelphia: Wharton Digital Press

Yang, C., Ye, H. J. & Feng, Y. (2021). Using Gamification Elements for Competitive Crowdsourcing: Exploring the underlying mechanism, *Behaviour & Information Technology*, vol. 40, no. 9, pp.837–854.

Yin, R.K., (1994). Discovering the Future of the Case Study Method in Evaluation Research, *Evaluation Practice*, vol. 15, no. 3, pp.283-290.

Yin, R. K. (2010). *Qualitative Research from Start to Finish*, New York: Guilford Publications

Appendix A – Interview guide

Questions

Background

- What is your name?
- How old are you?
- What did you do before the master programme?
 - Education
 - Work

Education

- What is your intention with the education?
- Can you describe the EE?
- How do you prefer to get educated?
- Do you think some methods are better than others?
- If you were to educate others, how would you go about it?
- Do you prefer to be educated with others or individually?
- How would you define interactive education?
- Do you find interactive forms of education distracting or more effective?
- Do you think any specific method is more suitable in entrepreneurial education?
- What have you found most effective in entrepreneurial education?

The mount everest challenge

- Can you remember the Mt. Everest Challenge?
- Can you take us through the process of what happened?
- Who did you work with?
- What was your role?
- What did you learn?
- What do you think Anna wanted to teach?

Games in education

- Do you think your venture team would benefit from playing this game together?
- Aside from this, have you had other gamified experiences in education?
- Can you think of another one in entrepreneurial education?
- Are there other opportunities to have a game setting in entrepreneurial education (such as thesis work)?