Putting entrepreneurial competencies to work - an exploration of the early careers of entrepreneurship education graduates

Entreprenøriell kompetanse satt i arbeid – et studie av entreprenørskapsutdanningskandidaters tidlige karriere

Philosophiae Doctor (PhD) Thesis

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   Published in Industry and Higher Education.
2. **Exploring the transition to working life of entrepreneurship education graduates: A longitudinal study**
   Authors: Nils Magne Killingberg, Elin Kubberød and Inger Beate Pettersen
   Published in Entrepreneurship Education and Pedagogy.
3. **Developing career identities through entrepreneurship education – an analysis of graduates' life stories**
   Author: Nils Magne Killingberg
   Under review in Education + Training.
4. **The project management trap: A mixed-methods study of the innovative work behaviour of entrepreneurship education graduates**
   Authors: Nils Magne Killingberg, Joachim Scholderer and Elin Kubberød
   Working paper.

Summary

This thesis contributes to build knowledge about how entrepreneurship education (EE) prepares students for working life, how entrepreneurial competencies that are developed through EE are utilized in career trajectories in established organizations, and the challenges and opportunities that graduates from EE encounter in their early careers.

The recent decades, we have seen a large expansion of EE programmes that aim to inspire and enable individuals to engage in entrepreneurship (Vanevenhoven and Drago, 2015; Gabrielsson et al., 2020). Studies have shown that a large number of EE graduates don't become entrepreneurs when they graduate but seek jobs within established organizations (Charney and Liebcap, 2000; Alsos et al., 2023). Studying how EE affect the employability of these graduates, and how they apply their competencies in their careers, is both a timely and important topic.

Research have shown that EE graduates find entrepreneurial competencies to be relevant to various positions in the labour market – including graduates that are employed in conventional positions that are less related to entrepreneurship (Jones et al., 2017; Alsos et al., 2023). However, these studies are rather descriptive and there is a need for more fined grained understandings of how the entrepreneurial competencies are applied in the labour market. Researchers have therefore called for qualitative studies that explore the careers of EE graduates (Jones et al., 2017).

This thesis contributes to answer the call by studying EE graduates in the labour market. Employability defined as "the capability of being an efficient operator in the labour market" (Killingberg et al., 2021). This understanding of employability goes beyond merely getting a job or securing employment but include making a useful contribution to the labour market. Employability is also understood as a process (Hillage and Pollard, 1998) that consist of the following phases: *entering the labour market*, which include securing initial employment and adapting to the workplace; *developing in the labour market* which includes updating and learning in order to stay relevant, as well as adapting to changes in the workplace; and *transitioning* which includes obtaining new work, and transitioning between different employers

in order to achieve optimal career outcomes. By drawing on the entrepreneurial competency taxonomy of Haase and Leutenschlager (2011), the thesis explores how graduates use their entrepreneurial competencies in different aspects of their working life.

The thesis main contribution is to bring a career perspective to the literature and theory of EE. Through identifying conceptual and empirical evidence, the thesis demonstrates several ways on how EE can be beneficial for employability. In addition, specific challenges and shortcomings are also explored that contribute to a more nuanced view of the link between EE and employability than previous research on this topic.

The four research papers appended to the thesis address this further. Each of them highlights different aspects of the link between EE and employability, by studying the careers of graduates from three EE master's programmes in the Norwegian labour market. The four research papers are:

Paper 1, Preparing for a future career through entrepreneurship education: Towards a research agenda, discusses how entrepreneurial competencies relate to different career orientations. In addition, the paper delineates conceptual links between EE and employability. The thesis proposes seven researchable propositions that lay the foundation for this thesis, but also can serve as a starting point for further research. It thus contributes to set the agenda for a new research agenda.

Paper 2, Exploring the Transition to Working Life of Entrepreneurship Education Graduates: A Longitudinal Study, explores the process of transitioning from EE to working life, and how entrepreneurial competencies aid in this process. The paper applies the theory of legitimate peripheral participation (Lave and Wenger, 1991; Wenger, 1998) to discover how graduates gradually learn to become accepted member of the workplace community. 10 graduates from three EE master programs were interviewed within three months after graduation, with a follow up interview after 18-24 months. Through a qualitative analysis, we identified two distinct learning trajectories, that differed both in terms of their learning trajectories, relevance of entrepreneurial competencies, and challenges that the graduates encountered. One group of students, the innovation manager group, was given a lot of trust early on because of their knowledge in innovation but were challenged with being overwhelmed and having to familiarize themselves with the larger organization. Another group, the consultant group, followed a more

conventional trajectory, where they started at the periphery and had to become legitimized in order to get more advanced task. This group were especially attractive because of their broad combinations of different competencies, and ability to bridge different work functions.

Paper 3, Developing career identities through entrepreneurship education: an analysis of graduates' life stories, investigate how alternative career identities (to the entrepreneurial identity) are developed through EE, and how these career identities motivate further career choices (Fugate et al., 2004). Five alumni from two EE programs were interviewed using a life story approach. The analysis of these interviews revealed the following three career identity archetypes: *change agent*, *career seeker* and *maverick specialist*, which gave direction in the graduates' career after graduating. These career identities were a continuation of aspirations the students brought with them coming into EE. In addition, EE contributed differently to the development of these identities. The paper contributes to shed light on the motivational factors of the careers of EE graduates.

Paper 4: The project management trap: a mixed-methods study of the innovative work behaviour of entrepreneurship education graduates, investigate the innovative work behaviour (IWB) of EE graduate and how educational and contextual factors foster or prevent IWB. A survey was sent to graduates from two EE programs and four comparison groups. Surprisingly, the quantitative analysis revealed that the IWB scores of EE graduates decrease for each year since graduation. The quantitative analysis was therefore followed by a qualitative analysis. This qualitative analysis suggests that the decrease in IWB can be explained by the lack of subject specific and technical skills and a mismatch between the knowledge and expectations of EE students and the organizational bureaucracy of larger organizations. The paper nuances the view that entrepreneurial competencies can be utilized in many different contexts.

Sammendrag

Denne doktorgradsavhandlingen bidrar til å bygge kunnskap om hvordan entreprenørskapsutdanning forbereder studentene til arbeidslivet, hvordan entreprenørskapskompetanser som utvikles gjennom entreprenørskapsutdanning utnyttes i karriereløp i etablerte organisasjoner, og hvilke utfordringer og muligheter kandidater fra entreprenørskapsutdannig møter i sin tidlige karriere.

De siste tiårene har vi sett en økning av masterprogrammer innen entreprenørskapsutdanning med mål om å inspirere og sette enkeltpersoner i stand til å drive med entreprenørskap (Vanevenhoven og Drago, 2015; Gabrielsson et al., 2020). Studier har vist at et stort antall entreprenørskapsutdannede ikke blir gründere når de uteksamineres, men søker jobber i etablerte organisasjoner (Charney og Liebcap, 2000; Alsos et al., 2023). Å studere hvordan entreprenørskapsutdanning påvirker arbeidsevnen til kandidater, og hvordan disse bruker entreprenørskapskompetanse i sin karriere, er derfor både et betimelig og viktig tema.

Forskning har vist at kandidater fra entreprenørskapsutdanning bruker entreprenøriell kompetanse i flere ulike stillinger i arbeidslivet, inkludert stillinger som er mindre relatert til entreprenørskap (Jones et al., 2017; Alsos et al., 2023). Disse studiene er imidlertid stort sett deskriptive, og det er behov for å utvikle en dypere forståelse av hvordan entreprenørskapskompetanse brukes i arbeidsmarkedet. Forskere har derfor etterlyst kvalitative studier som utforsker karrieren til kandidater fra entreprenørskapsutdanning. (Jones et al., 2017)

Denne oppgaven bidrar til å svare på denne oppfordringen ved å studere kandidater fra entreprenørskapsutdanning i arbeidslivet. Arbeidsevne defineres som «evnen til å være en effektiv aktør i arbeidsmarkedet» (Killingberg et al., 2021). Denne forståelsen av arbeidsevne inkluderer mer enn å bare å få jobb eller å kunne holde seg i arbeid, men inkluderer også å gi et nyttig bidrag til arbeidsmarkedet. Arbeidsevne forstås også som en prosess som består av tre faser: *å komme inn i arbeidsmarkedet* som inkludere å få seg jobb og å tilpasse seg arbeidsgivere; *å utvikle seg i arbeidsmarkedet* som inkluderer evnen til å lære seg nye ting og holde

seg oppdatert, samt håndtere store endringer; og en *overgangsfase* som inkluderer å kunne finne nytt arbeid og å bygge karriere på tvers av forskjellige arbeidsgivere. Videre utforsker avhandlingen hvordan entreprenørskapsutdannede (Haase and Leutenschlager, 2011) kandidater bruker sin entreprenørielle kompetanse i ulike aspekter i arbeidslivet.

Avhandlingens hovedbidrag er å introdusere et karriereperspektiv til litteraturen og teorien om entreprenørskapsutdanning. Gjennom konseptuelle og empiriske bevis, demonstrerer avhandlingen flere måter for hvordan entreprenørskapsutdannig kan være fordelaktig for arbeidsevne. I tillegg utforskes også spesifikke utfordringer og mangler som bidrar til et mer nyansert syn på sammenhengen mellom entreprenørskapsutdanning og ansettbarhet enn tidligere forskning på dette temaet.

De fire forskningsartiklene som er vedlagt avhandlingen ser nærmere på dette. Hver av dem viser ulike aspekter ved koblingen mellom entreprenørskapsutdanning og arbeidsevne, ved å studere karrierene til kandidater fra tre masterprogrammer i entreprenørskap i det norske arbeidsmarkedet. De fire forskningsartiklene er som følger:

Artikkel 1, baserer seg på tidligere forskning, og diskuterer hvordan entreprenøriell kompetanse relaterer seg til ulike karriereorienteringer. I tillegg skisserer artikkelen konseptuelle koblinger mellom entreprenørskapsutdanning og arbeidsevne. Avhandlingen foreslår syv proposisjoner som legger grunnlaget for denne oppgaven, men som også kan være utgangspunkt for videre forskning. Artikkelen bidrar dermed til å sette dagsorden for en ny forskningsagenda.

Artikkel 2, utforsker prosessen med overgangen fra entreprenørskapsutdanning til arbeidslivet, og hvordan entreprenøriell kompetanse hjelper i denne prosessen. Artikkelen anvender teorien om legitim perifer deltakelse (Lave og Wenger, 1991; Wenger, 1998) for å oppdage hvordan nyutdannede gradvis lærer å bli et akseptert medlem av arbeidsfellesskapet. 10 kandidater fra tre masterprogrammer i entreprenørskap ble intervjuet innen tre måneder etter endt utdanning, med et oppfølgingsintervju etter 18-24 måneder. Gjennom en kvalitativ analyse identifiserte vi to distinkte læringsbaner, som skilte seg både med hensyn til deres læringsløp, relevansen av entreprenørielle kompetanser og utfordringer som de nyutdannede møtte. En gruppe studenter, innovasjonsledergruppen, fikk tidlig mye tillit på grunn av sin kunnskap innen innovasjon, men møtte utfordringer da de følte

seg overveldet og måtte arbeide for å bli kjent smed den større organisasjonen. En annen gruppe, konsulentgruppen, fulgte en mer konvensjonell bane, hvor de startet i periferien og måtte legitimere sin kompetanse for å få mer avanserte oppgaver. Denne gruppen var spesielt attraktiv på grunn av deres brede kombinasjoner av ulik kompetanse og evne til å bygge bro mellom ulike arbeidsfunksjoner.

Artikkel 3, undersøker hvordan alternative karriereidentiteter (til entreprenøriell identitet) utvikles gjennom entreprenørskapsutdanning, og hvordan disse karriereidentitetene motiverer til videre karrierevalg (Fugate et al., 2004). Fem alumner fra to entreprenørskasputdanningsprogrammer ble intervjuet med en livshistorietilnærming. Analysen av disse intervjuene avslørte følgende tre karriereidentitetsarketyper: *endringsagent*, *karrieresøker* og *uortodoks spesialist*, som ga retning i kandidatenes karriere etter endt utdanning. Disse karriereidentitetene var en fortsettelse av ambisjoner studentene hadde da de begynte på entreprenørskapsutdanning. I tillegg bidro entreprenørskapsutdanning annerledes til utviklingen av disse identitetene. Oppgaven bidrar til å belyse motivasjonsfaktorene i karrieren til entreprenørskapsutdanningskandidater.

Artikkel 4, undersøker den innovative arbeidsatferden til entreprenørskapsutdannede og hvordan utdanningsmessige og kontekstuelle faktorer fremmer eller forhindrer innovativ arbeidsadferd. En undersøkelse ble sendt til kandidater fra to entreprenørskapsutdanningsprogrammer og fire sammenligningsgrupper. Overraskende nok viste den kvantitative analysen at innovativ arbeidsadferd til kandidater fra entreprenørskapsutdanning avtar for hvert år etter eksamen. Den kvantitative analysen ble fulgt opp med en kvalitativ analyse. Denne kvalitative analysen antyder den avtagende innovative adferden kan forklares med mangel på fagspesifikke og tekniske ferdigheter og et misforhold mellom kunnskap og forventninger til entreprenørskapsutdanning og organisasjonsbyråkratiet i større organisasjoner. Artikkelen nyanserer synet om at entreprenøriell kompetanse kan brukes i mange forskjellige kontekster og bidrar til forskning på innovativ arbeidsadferd gjennom å vise hvordan utdanningsmessige faktorer påvirker slik adferd.

1 Introduction and objectives

This thesis offers an in-depth understanding of how entrepreneurship education (EE) prepares students for working life in established organisations, how entrepreneurial competencies are employed in early career trajectories and what opportunities and challenges EE graduates are faced with in their early careers.

Scholars have recognised that entrepreneurs are a disruptive force in the economy (Schumpeter, 1942) and that entrepreneurship is important for driving innovation, restructuring the economy and creating new businesses and jobs (Van Praag and Versloot, 2007; Bjørnskov and Foss, 2016; Urbano, et al., 2019). Policymakers have therefore sought to lay the groundwork for entrepreneurs and to inspire individuals to engage in entrepreneurial start-up activities (European Commission, 2013; Regjeringen, 2015). In the wake of this, there has been a large increase in EE programmes in recent decades (Gabrielsson et al., 2020; Katz, 2003; Kuratko, 2005; Vanevenhoven and Drago, 2015). The main goal of which has been to inspire and facilitate individuals to engage in entrepreneurial activities and create business start-ups. Nevertheless, scholars have also increasingly recognised the value of these programmes for the development of existing organisations (Blenker et al., 2011; Jones et al., 2014; Neck and Corbett, 2018; Rae, 2008; Walmsley et al., 2022).

Despite one of the main goals of EE being to inspire and enable students to engage in entrepreneurial activities (Blenker et al., 2011; Gabrielsson et al., 2020), studies have shown that a considerable number of graduates from EE do not become entrepreneurs but find employment in established organizations upon graduation (Charney and Libecap, 2000; Jones et al., 2017). In a recent study of 483 graduates from venture creation programmes in Norway and Sweden, 156 (32.3%) were self-employed, 151 (31.3%) worked as intrapreneurs in established organisations, 115 (23.8%) worked as conventional employees without much relevance to entrepreneurship and 61 (12.6%) worked as hybrid entrepreneurs (partly self-employed while employed in established organisations) (Alsos et al., 2023). It is therefore timely to explore how EE graduates apply their entrepreneurial skillset as employees in established organisations. This leads us to consider the concept of employability.

Little is known about the employability of EE graduates, and scholars have called for more research to explore this intriguing topic (Galloway et al., 2015; Jones et al., 2017; Mwasalwiba, 2010; Neergaard et al., 2020; Pittaway and Cope, 2007a). Previous studies of the labour market performance of EE graduates indicated that EE graduates perform better in the labour market than other graduates in terms of both salaries (Charney and Libecap, 2000) and ability to secure leadership or advanced professional positions (Bell, 2016). Other studies have looked at employability more indirectly and demonstrated that EE students also develop soft skills that are frequently sought after among potential employers, thereby making it more likely that EE graduates will become successful in the labour market when they graduate (De Villiers Scheepers et al. 2018; Huq and Gilbert, 2013). Although these studies indicated important linkages between entrepreneurial competencies and employability, they are inconclusive in that they don't include empirical evidence of graduates' applications of these skills in the labour market. It is therefore unclear whether and how these competencies are applied in the labour market and if they are relevant and functional in the workplace context.

A final stream of literature deals with how EE graduates across different work functions perceive the value of EE and the relevance of EE for different work functions (Alsos et al., 2023; Galloway et al., 2015; Jones et al., 2017). This research shows that entrepreneurial competencies are relevant for a wide variety of functions and that even EE graduates who are employed in more conventional jobs in established organisations report that EE has been useful for their jobs.

However, there is a need for a finer-grained and more nuanced understanding of how EE graduates use their competencies in different aspects of their working lives and work roles and of the challenges they face when entering and operating in a work-related context different to a start-up. Scholars have therefore called for more qualitative studies to explore the career trajectories of EE graduates in the labour market (Jones et al., 2017). This thesis aims to explore this intriguing topic through an in-depth analysis of career trajectories of EE graduates, thereby bringing greater understanding of the link between EE and employability.

In this thesis, the concept of employability is defined as 'the capability of being an effective operator in the labour market' (Killingberg et al., 2021). This definition extends beyond merely securing a job or achieving individual success in the labour market. According to this understanding, employability also entails becoming an effective operator and making a useful contribution in the labour market. In later

chapters, the concept of employability will be further discussed. This doctoral thesis has the following four objectives:

1. To delineate the theoretical links between EE and employability and introduce a future research agenda.

2. To explore the early career trajectories of EE graduates and build knowledge of how EE competencies are utilised in established organisations.

3. To explore how alternative career identities (other than the entrepreneurial identity) are developed through EE and how they motivate career choices after graduation.

4. To examine the innovative work behaviour of EE graduates and shed light on the contextual and educational factors that foster or prevent innovative work behaviour.

The first objective is addressed in a conceptual paper that delineates theoretical links between a processual understanding of employability (Hillage and Pollard, 1998) and entrepreneurial competencies (Haase and Lautenschläger, 2011) and also to suggest a research agenda that lays the groundwork for the rest of this thesis. The second objective is addressed by exploring the transition from EE to working life of 10 EE graduates by drawing on the theory of legitimate peripheral participation (Lave and Wenger, 1991) in communities of practice (Wenger, 1998). The third objective is addressed by identifying the specific career identity archetypes (Fugate et al., 2004) of EE graduates through life story interviews. The final objective is addressed by exploring the innovative work behaviour (Janssen, 2000; Messmann and Mulder, 2012) of EE graduates in comparison to several other groups. Figure 1-1 illustrates the objectives of the thesis.

In the following chapter, the theoretical framework applied in this thesis is introduced.

			Phases of the employability process (paper 1)		
Objective	**Paper**	**Research literature**	**Entering**	**Developing**	**Transitioning**
Delineate the theoretical links between EE and introduce a future research agenda	Paper 1	- Dynamic career orientations - Employability - Entrepreneurial competencies			
Explore the early career trajectories of EE graduates and build knowledge of how EE competencies are utilised in established organisations	Paper 2	- Situated learning - Legitimate peripheral participation in communities of practice			
Explore how career identities other than the entrepreneurial identity are developed through EE, and how they motivate career choices after graduation	Paper 3	- Career identity			
Investigate the innovative work behaviour of EE graduates and shed light on contextual and educational factors that foster or prevent innovative work behaviour	Paper 4	- Innovative work behaviour			

Figure 1-1 Objectives of the thesis

2 Theoretical framework

The following sections elaborate on a theoretical framework for the thesis. Through a literature review, the research gaps underpinning the research question are outlined. By taking a qualitative and mixed-methods approach, the early career trajectories of EE graduates are explored as seen from the point of view of the graduates. The thesis is informed by and aims to contribute to the literature on EE in general and on the employability of EE graduates in particular by studying the early career trajectories of EE graduates in Norway.

Scholars have suggested that EE might be useful to enhance the employability of graduates (Rae, 2007; Walmsley et al., 2022). Prior research identified that EE graduates find learning outcomes from EE to be relevant across various careers—even those within established organisations (Alsos et al., 2023; Galloway et al., 2015; Jones et al., 2017). However, this research was rather descriptive, and knowledge of how graduates apply their competencies and the challenges they encounter in the labour market is currently lacking in the field. This thesis aims to expand the literature on the link between EE and employability and offer an in-depth study of how entrepreneurial competencies are applied in the early career trajectories of EE graduates for them enter, develop and transition in the labour market.

The thesis draws upon several theoretical lenses to study the early career trajectories. First, it draws on the entrepreneurial competency taxonomy of Haase and Lautenschläger (2011) to demonstrate conceptual links between entrepreneurial competencies that can be developed through EE as well as employability in different phases of a graduate's career. This taxonomy is applied as the thesis's understanding of entrepreneurial competencies. Second, the thesis explores the transition from EE to working life and becoming an accepted member of a workplace community by looking at this transition as a process of legitimate peripheral participation (LPP) (Lave and Wenger, 1991) in communities of practice (CoP) (Wenger, 1998). Third, the thesis draws on the career identity literature to explore how individuals develop alternative career identities and how these identities motivate graduates' career decisions (Ashforth, 2000; Fugate et al., 2021;

Ibarra and Barbulescu, 2010; Meijers, 1998). Finally, the concept of innovative work behaviour (IWB) (Janssen, 2000) is applied to explore the innovative behaviours of EE graduates in the workplace context between 1 and 6 years after graduation.

This thesis explores the careers of EE graduates as seen from the graduates point of view. Their careers are understood as being idiosyncratic, unfolding within and across various organisations (Arthur and Rousseau, 1996) and largely dependent on the motivations and capabilities of the EE graduates themselves (Briscoe and Hall, 2006). Drawing on Hillage and Pollard (1998), employability is understood as an ongoing process of entering, developing and transitioning in the labour market, and each of these phases involves different characteristics and challenges in which various EE competencies come into play. Set against this backdrop, the thesis is guided by the following overall research question:

RQ: To what extent does entrepreneurship education enhance the employability of graduates and how do their acquired entrepreneurial competencies influence their career trajectories in the labour market?

2.1 Development of entrepreneurship education and as a field of research

Broadly, researchers have classified EE within the following three approaches: teaching *about,* teaching *for* and teaching *through* entrepreneurship (Hannon, 2005; Heinonen and Hytti; 2010; Kakouris and Liargovas, 2021). *Teaching about* entrepreneurship can be defined as a mainly theoretical approach aiming to give the students' knowledge about entrepreneurship as a phenomenon (Hannon, 2005; Lackéus, 2015). *Teaching for* entrepreneurship represents a more instrumental approach wherein the focus is on developing the competencies necessary for engaging in entrepreneurship (Lackéus, 2015). Finally, *teaching through* entrepreneurship focuses on experiential learning by engaging in an actual entrepreneurial process (Lackéus, 2015; Rasmussen and Sørheim, 2006). The historical development of EE as a field of research is discussed in line with this classification.

EE originated from the idea that students can be taught and learn how to start up a business (Blenker et al.; 2011; Hynes, 1996; Katz, 2003). It can be argued that the first attempts to teach entrepreneurship go back to agricultural development

stations of the late nineteenth century (Gabrielsson et al., 2020; Katz, 2003). Nevertheless, an MBA course on entrepreneurship that began at Harvard in 1947 is widely recognised as the first course teaching business startup at a higher education institution (Gabrielsson et al., 2020; Katz, 2003). In the 1970s, separate entrepreneurship programmes were launched, and EE started to catch on. In the 1980s, EE became widespread as the number of universities in the US that taught entrepreneurship increased from 300 in 1980 to 1050 in 1990 (Kuratko, 2005; Solomon et al., 1994). The first attempts at EE mainly relied on teaching aspects of general business and strategy as well as theoretical knowledge *about* entrepreneurship (Blenker et al., 2011; Gabrielsson et al., 2020; Katz, 2003).

By the end of the 1980s, several scholars had suggested placing a more deliberate focus on pedagogies and how entrepreneurship should be thought (Zeithaml and Rice Jr, 1987; Robinson and Haynes, 1991; Ronstadt, 1985) as well as following up with studies on the pedagogies of EE (Zeithaml and Rice Jr, 1987). Since then, EE has broadly developed along two lines.

One of these lines concerns courses and programmes focusing on starting up a business with the goal of providing the necessary skillset to do so. The dominant pedagogical approach is learning *through* engaging in entrepreneurship, where students learn to be entrepreneurs either by starting their own businesses (Rasmussen and Sørheim, 2006) or by simulating a business start-up (Kyro, 2008; Pittaway and Cope, 2007b). This line of programmes has evolved into what is referred to as 'venture creation programmes' (Lackéus, 2020; Lackéus and Williams Middleton, 2015), where students start a real venture that is used as a framework and catalyst for learning (Lackéus, 2020). In the wake of establishing courses with the goal of inspiring and enabling individuals to start their own business, the research field has come to have a somewhat instrumental focus, exploring themes and research questions that are relevant for starting a business or becoming an entrepreneur (Nabi et al., 2017). Extensive research has therefore gone into measuring students' intentions to start a business or engage in entrepreneurial activities (Bae et al., 2014; Huber et al., 2014), the development of entrepreneurial competencies (Lackéus, 2014; Morris et al., 2013; Nabi et al., 2017), entrepreneurial self-efficacy (Karlsson and Moberg, 2013), start-up activity (Gielnik et al., 2017) and start-up performance (Martin et al., 2013).

While the notion of inspiring and enabling students to become entrepreneurs and start ventures still dominates the pedagogies and research surrounding EE, the idea

of teaching students entrepreneurial knowledge and skills has broadened from focusing primarily on start-ups and venture creation to seeing entrepreneurial behaviour as something that can be useful within many different contexts (Blenker et al., 2011; Gibb, 2002; Neck and Corbett, 2018). Courses with a broader focus than starting a business are sometimes referred to as 'enterprise education' (Gibb, 2002; 1993; Hytti and O'Gorman, 2004). The term enterprise education is primarily applied in UK and has evolved as a separate educational and research tradition (Jones et al., 2014). At the same time, EE has also been applied to describe many different types of programmes and courses at all levels of the educational system (Blenker et al., 2011; Neck and Corbett, 2018). It might therefore be hard to separate the different types of courses. As such, there are substantial conceptual and empirical overlaps between the two education and research traditions of enterprise and entrepreneurship education. In this thesis, EE is seen as education where the learning is done *through* entrepreneurship—that is, where the main goal of the education is to learn skills that are relevant for practicing entrepreneurship across many different contexts (Lackéus, 2020; Neck and Corbett, 2018). On the other hand, enterprise education is more focused on specific competency outputs that make individuals more enterprising, such as creativity, self-reliance, agency, and the ability to cope with uncertainty (Gibb, 1993, 2002). This thesis draws on both the enterprise and entrepreneurship education literature to inform our understanding, although the programmes studied fall within the EE category.

Within the scholarly debate of the broader usefulness of EE, there are three different discourses. One of these, the value creation discourse, views entrepreneurship as an activity where an actor creates value by exploiting an entrepreneurial opportunity, but one that can take place within a wide variety of different contexts and not solely within an entrepreneurial venture (Blenker et al., 2011; Lackéus, 2020), such as through intrapreneurship or corporate entrepreneurship (Kuratko and Morris, 2018; Winborg and Hägg, 2023). This also involves a broad understanding of value, not just monetary value, and therefore also social entrepreneurship (Shahid and Alarifi, 2021).

The second discourse of EE, entrepreneurship as a method (Neck and Greene, 2011), encompasses the idea of an entrepreneurial approach that 'unleashes the power of human nature' (Sarasvathy and Venkataraman, 2011, p. 115). More specifically, entrepreneurship is seen as a method that can be applied to a wide variety of problems and not just to starting a venture, such as exploiting an

entrepreneurial opportunity inside a big corporation or creating value in a non-profit setting (Blenker et al., 2011; Sarasvathy and Venkataraman, 2011; Steyaert and Katz, 2004). It can therefore be argued that entrepreneurship should be taught to all students, not just students who are motivated to start a venture (Blenker et al., 2011; Jones et al., 2012). EE has therefore been combined with other disciplines in attempts to empower professionals to act innovatively within their professions (Barba-Sánchez and Atienza-Sahuquillo, 2018; Neergård et al., 2022)

In the third discourse—that of empowering individuals—competencies that are developed through EE can be empowering for individuals. Within this discourse, the competencies are not necessarily tied to creating value or a specific method but involve various competencies that can be applied to different situations and contexts. There is a common notion among educators and scholars that although they teach *through* and *for* entrepreneurship, the skills that are developed through EE might be useful for individuals in many walks of life (Blenker et al., 2011; Neck and Corbett, 2018). Through EE, students might, for example, develop an ability to handle uncertainty that can be applied to an unstable labour market (Rae, 2007, 2008).

Within the Empowering individuals' discourse, scholars have argued that EE might enable and strengthen individuals to strive in the labour market making them more employable. This argument has received little attention in EE research and this thesis aims to fill this gap and also look at potential problematic aspects in terms for employability.

The following section explores the link between EE and employability.

2.2 Entrepreneurship education and employability: an unlikely paradox or a perfect match?

Studying how graduates from EE perform and use their competencies in the labour market is both a timely and a necessary topic (Alsos et al., 2023; Neergaard et al., 2020; Walmsley et al., 2022). The assumed link between EE and employability is, however, not new, and some scholars have found conceptual and empirical links between EE and employability (Rae, 2007; Walmsley et al., 2022).

As stated earlier, enterprise education has several overlaps with EE. Within enterprise education research, employability is seen as a core output (Rae, 2007).

Educating 'enterprising individuals' who can strive in a more flexible and unpredictable society is also at the core of enterprise education (Gibb, 1993, 2002; Hytti and O'Gorman, 2004; Rae, 2007; Walmsley et al., 2022). Scholars have therefore suggested that EE is particularly beneficial for enhancing the employability of individuals (Rae, 2007, 2008).

Some studies have found that EE graduates seem to be more successful than others in the labour market. Charney and Libecap (2000) found that such graduates earned higher salaries and were generally more satisfied than others in the labour market. Bell (2016) found that graduates with entrepreneurial traits such as a proactive disposition and achievement motivation had a greater likelihood of being employed in a managerial or professional position with six months of graduation.

As Walmsley et al. (2022) pointed out, there is a considerable overlap between entrepreneurial competencies (Bacigalupo et al., 2016; Haase and Lautenschläger, 2011; Rae, 2007) and the employability skills often sought by employers (Lowden et al., 2011). Jones et al. (2017) found that entrepreneurial competencies support both entrepreneurial careers and careers within the established labour market. Although this can be used as an argument for the usefulness of enhancing employability through EE, empirical studies are needed to investigate whether such skills actually lead to the success of EE graduates in the labour market.

Alsos et al. (2023) found that graduates from EE across different occupational statuses (self-employed, hybrid entrepreneur, intrapreneur and conventional employee) all reported that they applied entrepreneurial competencies in their jobs—even the group of employees that identified as conventional employees without much relation to entrepreneurship.

There can also be made a case that the link between EE and employability is problematic. Intuitively, the classical view of entrepreneurship as something that concerns start-ups and small businesses stands in contrast to seeking a job within an established organisation. Walmsley et al. (2022) argued that the autonomy one develops during EE (Van Gelderen, 2010) might not harmonise with employment settings where one must fall in line of an organisation and its hierarchy and that there is a limit to how autonomous one can be as an employee. Another problematic aspect might be overly focusing on training entrepreneurship within the context of small businesses, especially within venture creation programmes, and that the differences in contexts might make it harder for individuals to apply entrepreneurial

competencies within other settings or contexts, such as large organisations (Bandera et al., 2021; Walmsley et al., 2022). Consequentially, EE might not be suited to fit all types of organizations in working life.

Despite these objections, the overall impression is that EE empowers individuals, that it graduates commonly find success in the established labour market and that competencies developed through EE can be applied in different employment settings. Yet, the literature lacks in-depth studies investigating how EE graduates apply their skills and how they make career decisions and manoeuvre the labour market. Jones et al. (2017) called for more qualitative studies that examine more closely how EE graduates use their competencies in their careers. This thesis aims to build finer-grained and new knowledge of the applicability and relevance of EE competencies in a dynamic labour market. In this thesis, entrepreneurial competencies are central to studying the employability of EE graduates. In the following section, entrepreneurial competencies are defined and conceptualised for this thesis.

2.3 Developing entrepreneurial competencies through entrepreneurship education

The entrepreneurial learning process that individuals go through in EE will eventually lead to the development of entrepreneurial competencies (Haase and Lautenschläger, 2011; Lackéus, 2014; Morris et al., 2013). Entrepreneurial competencies have been defined as 'knowledge, skills and attitudes that affect the willingness and ability to perform the entrepreneurial job of new value creation' (Lackéus, 2014, p. 377). The underlying assumption of this thesis is that these competencies can be applied in various other settings in addition to entrepreneurship (Neck and Corbett, 2018; Walmsley et al., 2022).

Haase and Lautenschläger (2011) categorised the learning outcomes from EE in three different competency categories—namely, *know what, know-how and know why.*

Know what competencies relate to basic knowledge about entrepreneurship, innovation and business (Haase and Lautenschläger, 2011). These are typical competencies that are developed by learning *about* entrepreneurship (Kakouris and Liargovas, 2021). Haase and Lautenschläger (2011) referred to them as the 'old school of entrepreneurship'. Know what competencies might include theoretical

knowledge of entrepreneurship and innovation as a phenomenon and knowledge of business plans, financial management and marketing (Haase and Lautenschläger, 2011).

Know how competencies are the soft transferable competencies that are typically attributed to entrepreneurial learning processes (Haase and Lautenschläger, 2011) and developed through learning *for* and *through* entrepreneurship (Kakouris and Liargovas, 2021). They are soft skills that enable an individual to learn, adapt and carry out advanced tasks. These competencies include the ability to learn from experience (Cope, 2005; Gibb, 1993; Rae and Carswell, 2000), cope with ambiguity and uncertainty (Kubberød and Pettersen, 2017; Lackéus, 2014), learn from failure (Pittaway and Cope, 2007b; Shepherd, 2004) and recognise opportunities (Morris et al., 2013; Muñoz et al., 2011).

Finally, *know why* competencies refer to the values, motivations and identities that contribute to the conviction and motivation of an individual (Haase and Lautenschläger, 2011). These are typically developed by learning *through* entrepreneurship (Kakouris and Liargovas, 2021; Williams Middleton and Donnellon, 2014).

2.4 From a static to a dynamic career view

Traditionally, an individual's career would typically unfold within a single or a few employers throughout its duration (Sullivan and Baruch, 2009). Career scholars have therefore historically held a linear view of careers—that is, how individuals progress through an organisation hierarchy to achieve optimal career outcomes (Rosenbaum, 1979; Super, 1957). Within this view, the relationship between the employee and employer was understood as the exchange of worker loyalty for the promise of job security and opportunities within the employer's organisation (Rousseau, 1989; Sullivan and Baruch, 2009).

Achieving employability within this discourse was therefore largely dependent on obtaining competencies that were sought by employers (Orsmond et al., 2022). To this day, scholars and career councillors still make attempts to map such competencies, thereby making it more likely that graduates and individuals will succeed in the labour market (Lowden et al., 2011). However, the view that universities should enhance the employability of individuals by teaching them a set of skills that are desired in the labour market has been criticised and disputed

(Orsmond et al., 2022; Rae, 2007). Orsmond et al. (2022) cautioned that although such skills are sought by employers, it is unclear how they relate to performance, 'Which is always context specific and involves complex interactions with others or with artefacts' (p. 3).

In contrast to the linear career research prevalent in the 1960s and 1970s, career scholars in the 1990s shifted their focus to a more dynamic and self-directed perspective on careers (Arthur and Rousseau, 1996; Hall, 1996; Sullivan and Baruch, 2009). This was largely due to the increased instability and uncertainty of working life (Sullivan and Baruch, 2009). Within this view, there are two notable career orientations—namely, boundaryless (Arthur and Rousseau, 1996) and protean careers (Hall, 1996). The boundaryless career concept is mainly concerned with careers that unfold across the boundaries of organisations and geographies (Arthur and Rousseau, 1996)

Meanwhile, building on a metaphor of the Greek god Proteus, who could shapeshift at his own will, protean careers are concerned with flexible and adaptable individuals who manage their own careers within and across different organisations (Hall, 1996). The protean career concept was later broadened to include the self-direction and values-driven dimensions (Briscoe and Hall, 2006). The values-driven dimension concerns personal goals and aspirations and provides guidance for an individual's own measure of success. Rather than being driven by objective career success measures such as salary or prestige, the subjective perception of career success within the protean career orientation is based on the values of the individual. One individual might, for example, be more orientated towards spending more time with family or having more spare time. For such an individual, career success might concern having more time available or flexibility, rather than climbing up the corporate ladder or getting a high salary. Another individual might be orientated towards a certain cause, such as combating climate change, and thus define success as more about what they might achieve within that specific cause throughout their career or towards working for an employer that has a focus on sustainability. The self-direction dimension concerns having the ability to be adaptive in terms of job demands, using and repackaging competencies for different contexts and situations and ability to learning (Briscoe and Hall, 2006). The idea is that self-directed individuals are able to steer their own career progression because they might easily adapt to new positions, roles and organisations as well as be adaptable when facing new job demands or changes that are out of their control.

Eventually, it can be argued that the protean career is well suited to the study of EE graduates' careers. Berglund (2013) proposed that individuals building their careers should be compared to entrepreneurs building their ventures. As such, preparing enterprising individuals through EE might be a way of enhancing their employability, particularly because students become aware of the joy of creating, self-improving and following their own interests and passions. The latter two correspond to the self-direction and values dimensions of Briscoe and Hall (2006).

Because the labour market has become more unstable, insecure and flexible, and consistent with the protean career orientation (Hall, 1996), the focus of employability has shifted away from looking at the employee's relationship with a single employer, towards a more individualistic and agentic focus (Fugate et al., 2021). As single employers cannot guarantee the employment security of individuals, individuals need to strive to maintain their relevance to new employers as well as manage their own careers with voluntary and forced career shifts—what Kanter (1989) called 'employability security'. This is still relevant for employees who spend all or most of their career working for a single employer because technological and socioeconomic factors lead to constantly changing work demands (Frey and Osborne, 2017; World Economic Forum, 2023). Scholars have suggested that EE might be suitable for individuals in facing such trends (Rae, 2008).

2.5 Employability as a processual concept

The employability concept has been criticised for lacking an agreed upon definition and conceptual clarity (Römgens et al., 2020). Several scholars have made various attempts to define and conceptualise employability and argued for various dimensions that have an impact on the employability of individuals (Römgens et al., 2020). Most definitions seem to concern individuals' ability to obtain (and maintain) employment (Harvey, 2001; Hillage and Pollard, 1998; Yorke, 2006). The field of employability is quite fragmented and unclear in terms of which dimensions to include in an employability concept, although there is a certain amount of overlap between the different contributions (Römgens et al., 2020). In a review of the literature, Römgens et al. (2020) found two main streams of literature that conceptualise employability, which are the higher education literature (Bridgstock, 2009; Dacre Pool and Sewell, 2007; Hinchliffe and Jolly, 2011) and the workplace learning literature (DeFillippi and Arthur, 1994; Fugate et al., 2004; Heijde and Van Der Heijden, 2006).

The higher education literature is concerned with how educators and higher education institutions can prepare students for working life (Römgens et al., 2020). Overall, this includes dimensions such as disciplinary knowledge, transferable generic skills, emotional regulation, career development skills, self-management and self-efficacy (Römgens et al., 2020). Although EE is a form of higher education, the usefulness of these frameworks for studying the employability of EE graduates is questionable. Primarily, in many of them, there is a particular focus on disciplinary knowledge. EE is not vocational education, and it is hard to define what disciplinary knowledge means for an entrepreneurship graduate other than starting a business or creating and exploiting opportunities. It can be argued that within the labour market, the focus of EE is not on building knowledge within a certain discipline but rather on learning competencies and tools that can be applied to many different disciplines (Blenker et al., 2011). Secondly, an employability conceptualisation to study graduates from EE should be dynamic and include a dimension concerning lifelong learning, since developing reflective individuals with the ability to learn is central to EE (Pittaway and Cope, 2007b). Eventually, the competencies and meta-competencies that individuals develop through EE will also be relevant for developing in the labour market and eventually developing new competencies. Finally, following the protean career orientation (Briscoe and Hall, 2006), where individuals define their own career paths, the framework should include a motivational component that gives the individual direction in their career.

The workplace learning literature concerns employee's performance, development and learning in the workplace and focuses on identifying knowledge, skills and attitudes that lead to employee's performance and movement in the labour market (Römgens et al., 2020). Overall, the workplace learning frameworks include dimensions such as human capital, reflection, lifelong learning and flexibility, social capital and work–life balance (Römgens et al., 2020). The workplace learning literature shows more promise in terms of frameworks, as they include both a motivational component (e.g. career identity) (Fugate, Kinicki and Ashforth, 2004) and a lifelong learning component. However, all these conceptualisations (along with the higher education frameworks) look at the employability of students in a snapshot in time. The focus of this thesis extends beyond this transition and includes graduates further down the road, several years after they graduate from EE, and should therefore be processual.

For the purpose of this thesis, employability is conceptualised as 'the capability of being an effective operator in the labour market' (Killingberg et al., 2021, p. 716, adapted from Oliver, 2015).

In line with the dynamic career view (Briscoe and Hall, 2006), in this understanding of employability, individuals are seen as autonomous agents who develop their own careers. In this thesis, employability is therefore studied from the graduate's point of view. Being an 'effective operator' might have different meanings and encompass various functions for different individuals depending on their aspirations and values (Briscoe and Hall, 2006). This definition therefore goes beyond subjective career measures such as salary, prestige and achieving a high position and instead looks at the individual's contribution to the labour market in various ways (Briscoe and Hall, 2006; Oliver, 2015). Within the definition, employability is also understood as more than merely getting a job or a foothold in the labour market and as concerning the ability to develop and learn to maintain employment as well as to regain employment either voluntarily or because of necessity (Hillage and Pollard, 1998). Employability is thus understood as an ongoing process of entering as well as developing and transitioning in the labour market, and each phase has different challenges and relevance to EE. In the following section, these phases are discussed.

2.5.1 The entering phase of employability

To *enter* the labour market, an individual first needs to secure a job. Although career research has evolved from the linear understanding of careers, it cannot be ignored completely, since the graduate initially needs to convince the employer that there is a match between their own competency and the needs of the organisation and demands of the role. More generally, this typically involves *know what* competencies (Haase and Lautenschläger, 2011) such as knowledge of innovation and entrepreneurship (Lee et al., 2005), business planning (Premand et al., 2016) and marketing skills (Lackéus, 2014), but employers may also be looking for more transferable skills (Lowden et al., 2011)

The *entering* phase of employability is understood as more than merely getting a job or getting a foothold in the labour market. When entering an organisation, employees also need to adapt to the workplace norms, practices and rules and socialise in a workplace environment to eventually become effective operators (Lave and Wenger, 1991; Van Maanen and Schein, 1977). In accordance with Lave and Wenger (1991), this is a process of learning the tasks, vocabulary and

organising principles of the workplace community. *Know how* competencies such as the ability to learn from experience (Rae, 2000) and bring forward knowledge to new situations (Cope, 2005) are therefore relevant in handling this transition. In the entering phase of employability, individuals also need to cope with challenges such as inflated expectations, competency gaps and contextual differences between higher education and working life (Wendlandt and Rochlen, 2008). As such, the ability encompassing resilience when dealing with uncertainty and ambiguity becomes important (Kubberød and Pettersen, 2018; Pittaway and Cope, 2007b).

2.5.2 The developing phase of employability

The developing phase of employability concerns developing oneself and learning new knowledge and competencies to remain attractive for present and future employers (Hillage and Pollard, 1998). To remain an effective operator in the labour market, also graduates that pursues a career within a single organisation needs to keep updated on trends, technologies and work practices (Kanter, 1989)

Know how, competencies such as the ability to learn (Cope, 2005; Rae, 2000) may therefore be especially relevant for the developing phase of employability. In addition, the ability to learn from and deal with failure and setbacks (Shepherd, 2004) may be useful when handling large changes and critical events, such as downsizing, reorganising or technological disruption because of macro-trends that impact the labour market.

In the developing phase of employability, graduates are typically given more advanced tasks that require know how competencies. The ability to recognise, develop and exploit opportunities to create value for others (Morris et al., 2013; Muñoz et al., 2011) can, for example, be relevant for carrying out an entrepreneurial function within a larger organisation through innovation or corporate entrepreneurship (Kuratko and Morris, 2018; Winborg and Hägg, 2023). Empirical studies have demonstrated that EE graduates working in established organisations have a positive view of EE and that these graduates find EE competencies to be relevant for various activities in working life. Based on a survey of EE graduates from two British universities, Jones et al. (2017) identified that the graduates found entrepreneurial opportunity recognition to be useful for intrapreneurship. In addition, their study showed that students found entrepreneurial methods such as bricolage and effectuation to be particularly useful for both intrapreneurship and general activities in the organisations where the graduates worked (Jones et al.,

2017), suggesting that even more tailor-made competencies and tools can be useful in contexts less related to entrepreneurship. In addition, 'entrepreneurial environment assessment' and 'internationalisation' were found to be relevant to general activities in the organisations where the students worked (Jones et al., 2017). Galloway et al. (2015) found examples of students who were employed outside the entrepreneurship domain but still found EE to be relevant, particularly for writing and presenting a company's business plans and seeing its 'big picture'. Alsos et al. (2023) found that students who identified as intrapreneurs had a similar appreciation for entrepreneurial skills as self-employed people but that even graduates who were employed as conventional employees applied entrepreneurial competencies to some extent, especially decision-making under uncertainty and teamwork (Alsos et al., 2023). However, these studies are largely descriptive and do not include how these competencies have been applied. In addition, in asking about what competencies are applied within different work functions, they may have missed any nuances regarding the soft skills applied within the work roles and how the graduates had developed themselves to prepare for such work functions to stay relevant.

2.5.3 The transitioning phase of employability

Finally, the transitioning phase concern the ability to obtain new employment, and to transition between employers and position in order to achieve individual success. Consistent with the view of Arthur and Rousseau (1996), careers are not bound by a single organisation but can unfold across many organizations. As such, it is more up to the individuals to individually determine the direction of their career choices (Briscoe and Hall, 2006). This direction is therefore determined by values, aspirations, convictions and identities (Fugate at al., 2004) rather than the corporate ladder. Within the transitioning phase, the *know why* competencies are therefore relevant because they provide direction for graduates in their careers.

Fugate et al. (2004) referred to career identity as a motivational component of employability since it works as an internal compass that gives direction to an individual's career. By answering questions such as 'who am I?' and 'who do I want to be?' within the context of work, individuals imagine their 'possible selves' (Markus and Ruvolo, 1989). Eventually, the formulation of the career identity of an individual involves arranging past and present career events into a continuous

narrative (Fugate et al., 2004) and negotiating between inner aspirations, identities and accepted work roles (Meijers, 1998).

It has been suggested that EE is an effective identity workspace because 'it is unique in that it directly connects the individual, with his or her particular interests, knowledge, experience and social networks with the marketplace in which he or she seeks to gain acceptance, implement plans, perform commercial transactions, interact with stakeholders and develop a project, business or organisation (Harmeling, 2011, p. 741).

Scholars investigated how students develop an entrepreneurial identity through EE (Donnellon et al., 2014; Duening and Metzger, 2017). The research on developing an entrepreneurial identity in EE has later evolved to including broader notions of entrepreneurship beyond the stereotypical neoliberal view of starting a business (Frederiksen and Berglund, 2020; Hytti and Heinonen, 2013; Thrane et al., 2016). In turn, this might also include an understanding of being an 'entrepreneur', a creative motor, an innovator or a change maker within an established organisation (e.g., by filling an intrapreneurial or corporate entrepreneurship role). This thesis explores how alternative career identities are developed through EE and how they motivate careers after graduation.

Empirical research implies that EE can influence the career identities of students. Rae and Woodier-Harris (2013) found that as students gained increasing awareness of their entrepreneurial competencies, they were able to envisage more career opportunities. In addition, they became more focused on specific career goals and how to achieve them. Longva et al. (2020) found that some students reconsider entrepreneurship as a career, committing instead to alternative career paths. However, these studies were inconclusive because they did not include data from students in the labour market. In this thesis, the career identities of EE graduates are explored, thereby going further in articulating career identity archetypes and demonstrating how these archetypes motivate career choices after graduation.

3 Research design and methodology

This chapter provide an overview of the overall research design applied to fulfil the overarching objectives of the thesis and thereby give answers to the research question. The chapter provides an account of the research designs and arguments for methodological choices. The chapter also includes a reflection on the limitations of the methodological choices and ethical considerations made during the research process. The thesis makes use of both qualitative and mixed methods to fulfil its objective. A more comprehensive and detailed description of the methods used can be found in the appended papers.

3.1 Empirical setting

In the following section, the empirical setting for the thesis is introduced. The research is conducted on graduates from three master's programs in entrepreneurship in Norway. All the graduates got jobs within the Norwegian labour market. The findings of the thesis should be understood within this context.

3.1.1 The Norwegian Labour market

The thesis was carried out in the context of the Norwegian labour market, which is characterised by stable, low unemployment rates (SSB, 2023a), strong employer rights and labour unions. Almost one-fifth of Norwegian employees work in the health and welfare sector, Norway's largest employment sector (SSB, 2023c), although the oil and gas industry is by far the most profitable industry (SSB, 2023b). The Norwegian business landscape is characterised by many small and medium-sized companies and a few large ones, and only a tiny fraction of Norwegian businesses is staffed by more than 100 employees (SSB, 2023d).

The Norwegian labour market is attractive for higher education graduates. In 2019, 7 percent of newly graduated individuals were unemployed, and in the economics and administration category (of which EE is a part), the unemployment was merely 5,2 percent (Nesje et al., 2020). This economics and administration group was also the group where most were employed in full-time position after graduation.

Although the Norwegian economy is fuelled by the large incomes generated by the oil and gas industry, thereby contributing to low unemployment rates, the industry makes the Norwegian economy vulnerable to low oil prices. Efforts towards mitigating the climate crisis and the drive towards sustainability further underlines the need to shift the economy in a green direction, and to create new jobs outside the oil and gas sector. The government is therefore legislating policies to enable entrepreneurship and start-ups, thereby creating more jobs (Regjeringen, 2015).

3.1.2 The entrepreneurship education programmes

The research informants participating in the empirical studies included in this thesis were enrolled in three different master's programmes in entrepreneurship at two Norwegian Universities. These programmes can be categorised as learning *through* entrepreneurship, with an emphasis on experiential learning, where students learn through a cycle of theory, practice and reflection (Kolb, 1984). All the programs contain practical elements of entrepreneurship, including simulating entrepreneurship or undergoing internships within a start-up or larger company. The programs also include international student exchange with a combination of work placements in startups and lectures at an international university (Kubberød and Pettersen, 2017). The program curricula include learning knowledge that can be applied in an entrepreneurial setting, such as business planning, strategic planning, financial management, marketing management etc., but also academic content through course teaching theory, methodology and research.

One of the programmes is carried out at a university in the countryside just outside Oslo. This university is known for having good ties with the local community and industry as well as an engaged student body with many student organisations and associations, including those within entrepreneurship and innovation. This programme is open to any applicants with a bachelor's degree, which has led to a diverse student body.

The other two programmes are located at a university of applied science in Western Norway. One of the programmes accepts students with a bachelor's degree in economics and administration and the other enrols students with a bachelor's degree in engineering and a STEM subjects. The region around this university is known for the many businesses within the maritime, marine and oil and gas industries located there.

3.2 Research design

This thesis is guided by the following research question: To what extent does entrepreneurship education enhance the employability of graduates and how do their acquired entrepreneurial competencies influence their career trajectories in the labour market? Studies on employability and the relevance of EE in working life are largely quantitative (Alsos et al., 2023; Bell, 2016; Charney and Libecap, 2000), and although this research shows promise, it is unable to deepen our understanding of how EE graduates use their competencies, how they progress through the labour market and what challenges they encounter when doing so. Jones et al. (2017) therefore called for qualitative research to 'explore the detailed career histories of EE graduates and to fully explore the value obtained from their EE courses' (p. 701). To answer this call, this thesis has mainly adopted a qualitative research strategy.

The thesis' conceptual, qualitative and mixed method research designs are aimed to answer the research question and fulfil the objectives of the thesis. The process of writing this thesis started by defining and conceptualising employability, identifying conceptual links between EE and employability and laying out a research agenda for how the link between employability and EE could be researched (paper 1) (Killingberg et al., 2021). This research agenda worked as a road map for the thesis, although adjustments and changes were made as the research process was carried out. The research design for each paper was carefully and deliberately selected to fit the objectives as well as the ontological and epistemological nature of the objectives.

The objective of paper 2 was to explore the early career trajectories of EE graduates and build knowledge of how they utilised EE competencies. There is scant research on the transition to working life of EE graduates, and the research therefore aimed for rich descriptions of this transition process, as seen through eyes of the graduates themselves. A phenomenological design was therefore selected (Berglund, 2007). More, the critical incident technique was used to unfold the early career trajectories of each student (Cope, 2003). The students were also followed over time, using a longitudinal research approach, which enabled us to track their progress and status over time (Ployhart and Vandenberg, 2010)

The object of paper 3 was to explore how career identities were developed through EE and how these identities motivated the students' career choices after graduation. According to Fugate et al., 2004, career identities are formulated as personal narratives (Ashforth, 2000; Fugate et al., 2004; Ibarra and Petriglieri, 2010). The

study therefore followed a qualitative design inspired by narrative inquiry (Kim, 2015), where students were interviewed using a life-story approach (Rae and Carswell, 2000).

Finally, in paper 4, the objective was to explore the IWB of EE graduates and shed light on the contextual and educational factors that fostered or prevented their IWB. The study started with the assumption that IWB would be higher for EE graduates. The thesis therefore followed a mixed-methods design whereby alumni from EE and control groups reported their IWB (Janssen, 2000) and the results from the quantitative analysis were then explained through the qualitative data collected previously.

The overall research followed an abductive approach, whereby we moved back and forth between data and theory to get a good fit between the empirical analysis and the theoretical framework (Dubois and Gadde, 2002). This was especially useful in paper 2, where the initial analysis of the first interview revealed a bad fit between the theoretical framework and the findings, and we therefore made a theoretical redirection. The second interviews allowed for a follow-up, asking new questions that had emerged after the theoretical redirection (Dubois and Gadde, 2002)

3.3 Exploring the early careers of EE graduates as a lived experience

In the thesis, the career trajectories of EE graduates are explored through the graduates' point of view. Phenomenological and narrative methods are therefore applied in order to explore the careers of EE graduates as a lived experience.

3.3.1 Phenomenology in researching graduates' experiences

Paper 2 adopted a phenomenological design to explore graduates' experiences as they transitioned from EE to working life. Modern phenomenological philosophy was introduced by Edmund Husserl (1970), according to whom, true knowledge is rooted in individuals' experiences.

Phenomena should therefore be analysed for how they (i.e. different objects) present themselves in individuals' consciousness in the purest form, disregarding previous meanings and prejudices (Berglund, 2007). Eventually, this can lead to

new understandings of a theorised phenomenon—for example, by asking entrepreneurs how they understand the concept of 'opportunity' (Berglund, 2007).

Heidegger (1962) elaborated on Husserl's ideas to develop his own understanding of phenomenology (Berglund, 2007), agreeing with Husserl that researchers should strive for a holistic understanding of phenomena but imposing the idea that an objective understanding of objects is the ultimate form of knowledge (Berglund, 2007). Instead, Heidegger's phenomenology acknowledges that an individual cannot remove themself from the context of their everyday life and that individuals bring their own backgrounds and understandings to make sense of the phenomena they encounter (Berglund, 2007).

In addition, researchers bring with them their understanding and personal experiences. For example, as a researcher, I bring my knowledge both of studying and teaching EE and also of transitioning from higher education to working life, which can be useful for interpreting and contextually understanding what students are going through. In essence, the goal of interpreting is to reach a common understanding of the phenomena under study (Benner, 1994; Wojnar and Swanson, 2007). According to Heidegger, the interpretation also includes moving back and forth between the whole and the different parts of the inquiry, with the ultimate goal of phenomenology being to reach a holistic understanding of people's experiences or aspects of their world (Berglund, 2007; Wojnar and Swanson, 2007).

Phenomenological methods have been applied in the literature on entrepreneurship (Berglund, 2015), entrepreneurial learning (Cope, 2011), entrepreneurship education research (Kubberød and Pettersen, 2018) and careers (Ahn et al., 2017), and qualitative research attempting to explore the careers and employability of EE graduates is lacking in the field. By applying a phenomenological approach, the thesis has explored the experiences of EE graduates as they appeared to them, thereby creating a fine-grained, highly contextualised account of the phenomenon (Cope, 2011). This opened up unexpected outcomes, additional challenges and the utilisation of competencies and learning experiences that previous studies and theories could not account for. Another advantage of the phenomenological approach is that it could consider both the events and the actions of the graduates and the insights and reflections surrounding these actions (Hägg and Kurczewska, 2021).

3.3.2 Narrative inquiry and life-story interviews

In paper 3, EE graduates' narratives were analysed to explore their career identities and how EE influenced the development of these. The graduates were therefore interviewed using a life-story interview approach (Rae, 2000; Rae and Carswell, 2000). As with phenomenology, narrative methods involve studying individuals' lived experiences. However, while the focus of phenomenology is to give a holistic account of individuals' experiences of different phenomena (Berglund, 2007), life-story interviews concern making individuals arrange their previous experiences into a coherent life story (narrative) (Kim, 2015).

Narrative identity is therefore both retrospective, since it concerns arranging the different events and episodes into a whole, and dynamic, because it evolves as new events and episodes emerge. While this research focus on career identities, the life-story interviews focused on events and episodes from the participants' careers (Fugate et al., 2004).

These narratives could be analysed in different ways (Kim, 2015). The analysis of this research was twofold. To identity the specific career identity archetypes, the main focus of the analysis process was on gaining a holistic understanding of the participants' life stories. While the analysis of qualitative research often involves reducing the transcript into smaller parts and then giving these parts codes and themes, it is important to preserve the whole when analysing narrated identity (Hytti, 2005). While looking at the whole, special attention was paid to language and the motivations and aspirations behind certain career shifts that pointed to specific career identity archetypes. The other focus of this research was to find how EE influenced the development of career identities. To answer this question, the analysis followed an open coding procedure (Strauss and Corbin, 1997).

3.4 Mixed-methods design – making explanations from quantitative findings with qualitative data

Paper 4 followed an explanatory mixed-methods design (Creswell and Creswell, 2003; Ivankova and Creswell, 2009). In this design, quantitative data gathering and analysis are followed with a qualitative phase, where the goal is to explain the quantitative results. Usually, this happens sequentially, where a new qualitative study is launched (Ivankova and Creswell, 2009), but in this thesis, the qualitative

data were drawn from the qualitative dataset that had been gathered for papers 2 and 3.

The goal of paper 4 was to explore the IWB of EE graduates in relation to other graduates from programmes such as EE. The data for this study were gathered from a survey sent out to graduates from two master's programmes and four comparison groups that contained demographic variables and questions about the graduates' careers as well as an IWB scale that combined the work of Janssen (2000) and Messman and Mulder (2012).

The data were analysed using a linear model, where the interaction the between the master's programmes and the years since graduation was found to be significant. While the quantitative analysis revealed significant findings, it could not explain the observed effect. The qualitative analysis could therefore contribute to the interpretation and understanding of the quantitative findings.

To explain these findings, the qualitative datasets gathered for papers 2, 3 and 4, which were within the same EE population, were analysed using an open coding procedure (Strauss and Corbin, 1997).

3.5 Methodological reflections and strengths and weaknesses of the chosen research designs

In this section, I consider the methods adopted in this thesis. The goal of the section is to reflect on the strengths and weaknesses of the methods and highlight some of the challenges encountered throughout the work. In addition to the strengths and weaknesses discussed here, some of the ethical considerations made in the research process provided some limitations that appeared suboptimal from a pure validity view, but still seemed necessary from an ethical perspective. These are discussed in the following section.

3.5.1 Strengths and weaknesses of the research design

Qualitative studies with an in-depth exploration of EE graduates experiences in the labour market are, to my knowledge, missing from the field. However, there seem to be many assumptions regarding the topic, and its common to view EE education as a sort of a generalist education that can empower individuals and develop competencies that can be applied to many different contexts (Blenker et al., 2011). A

particular strength of the phenomenological method is that it gives detailed accounts of people's experiences that surpass some of the prejudiced notions of this particular topic. In addition, the phenomenological approach allowed me to discover graduates' particular feelings and emotions as they transitioned from EE to working life, providing a much more nuanced view of this topic (Berglund, 2007; Hägg and Kurczewska, 2021).

A common critique of phenomenological studies, along with other qualitative methods, is that they are overly subjective, lack transparency and can be hard to generalise or replicate (Bryman, 2016). Some of this criticism stems from a misunderstanding of evaluating qualitative research with a quantitative and positivistic perspective (Welch and Piekkari, 2017). Still, I acknowledge that contextual differences between the Norwegian labour market and other labour markets as well as differences between the EE programmes studied here and other EE programmes, might limit the external validity of out findings.

Scholars have also questioned the validity of qualitative research, since its interpretation can be highly subjective to the researcher (Welch and Piekkari, 2017). The fact that the interviews for paper 2 were conducted longitudinally provided us a means to cope with this issue, as the initial findings and interpretations could be discussed with the participants. For paper 3, all the transcripts were read and interpreted by both the author and the supervisor, with the interpretations being more or less similar.

The strength of the mixed-methods study approach is that it allowed deeper interpretations of the initial findings than a purely quantitative study would (Creswell and Creswell, 2003). A particular issue with the mixed methods applied in paper 4 concerned the weight given to the quantitative and qualitative data sources (Ivankova and Creswell, 2009). Usually, this mixed-methods design follows a strict protocol, where the qualitative data and analysis proceed once the quantitative phase of data collection and analysis have concluded (Creswell and Creswell, 2003; Ivankova and Creswell, 2009). For the purpose of paper 4, we drew on a rich body of qualitative data gathered simultaneously, but for different purposes. The validity of the different findings should be considered separately, since the findings from the quantitative can be considered more valid, and those from the qualitative analysis should be seen as possible explanations but less generalizable than the quantitative findings.

3.5.2 Strength and weaknesses of data sources

In papers 2 and 3 and the qualitative part of paper 4, I relied on qualitative data sources, and the data were gathered through qualitative interviews with semi-structured open-ended questions. A particular strength of qualitative interviews is that they allow for a rich and deep understanding of the phenomenon as seen through the researcher's eyes. In addition, they can bring unexpected results, since the researcher can follow up on issues and themes that are presented by the participants in the interviews.

In qualitative research it is seen as a strength to have a closeness to the research subjects, which contrasts to quantitative research methods, where the ideal for the researcher is to have a distance to the research subjects, to preserve objectivity (Welch and Piekkari, 2017). My own experience as a student in one similar entrepreneurship program and as a teacher in another program allowed me to bring my contextual experience with me in the data gathering for paper 2. These experiences enabled me to gain a trustworthy relationship with the participants, and to have a deeper understanding of what the students were going through.

For practical reasons, the data for paper 3, which were also used for the qualitative explanation in paper 4, were partly gathered by research assistants under my guidance. This was not optimal, since qualitative research scholars have advised that a researcher should have a close relationship with the data and that narrative interviews should be conducted directly by the researcher (Hytti, 2005; Welch and Piekkari, 2017). To mitigate potential weaknesses, the data was re-transcribed after the students had transferred the recorded interviews. Unclear issues were also checked by open sources (e.g., the LinkedIn-profiles of the participants), or by contacting the participants directly.

One weakness of relying on qualitative data is the risk of confirmation bias, meaning that researchers try to confirm preconceived assumptions or theories. Since I have experience in the field, I should be particularly cautious about this form of bias. In paper 2, all the authors were involved in the analysis, which may have been a way to mitigate confirmation bias. We also mitigated this risk by deliberately looking for counterarguments and findings that was less positive for EE, such as particular challenges that the EE graduates faced when transitioning from EE to working life or shortcomings and aspects of EE that made the transition to working life challenging.

Another weakness with the qualitative data was the risk of retrospective bias. Retrospective bias occurs when participants present themselves in a particular way, an often one that is more positive. In addition, they might highlight certain events that are consistent with a certain narrative and downplay others that ended up as failures and with loose ends (Ibarra and Barbulescu, 2010). In paper 2, the data were gathered longitudinally at two different datapoints, and the interviews involved both retrospective and current accounts. The longitudinal approach mitigated the risk of retrospective bias because some of the data were gathered in the present. It also allowed for crosschecking the transcripts, since some of the data for the same participants overlapped in the two interviews. The accuracy of the career histories was also cross-checked with the interviewees' open LinkedIn profiles. Paper 3 was mainly retrospective, meaning that the students talked about their life stories, including events that had occurred several years previously, even before they had enrolled in EE. To mitigate retrospective bias, their career histories were checked against their open LinkedIn profiles. It should be noted that the focus of such life-story interviews is not necessarily to gain an objective truth but rather to analyse the stories people tell about themselves and how this stories are told (Rae, 2000).

A particular weakness in the quantitative dataset in paper 4 is the risk of selection bias. For practical reasons, A PhD project time frame is limited in terms of the optimal strategy to collect pre- and post-data before and after participants' EE studies. Readers should still be cautious about selection bias when reading paper 4. The quantitative data included data from two EE programmes and four comparison groups from two Norwegian universities. Optimally, more programmes should be included to enhance the validity of the results. Other programmes within other contexts might have yielded different results.

3.5.3 Strengths and weaknesses of the sampling

Participants in the qualitative data gathering were selected through purposeful sampling (Eisenhardt, 1989; Patton, 2002). The goal of this sampling was not necessarily to get a representative sample of the EE student population but rather to select graduates who were likely to highlight the phenomenon and research question of each study (Eisenhardt, 1989).

For paper 2, students selected were thos who chose to pursue a career path other than starting a venture. When finding participants for paper 3, open LinkedIn

profiles of alumni were read through, and individuals who appeared to have made radical career shifts around the time of enrolling into EE were selected, since they are likely to have undergone identity work during EE. The advantage of the sampling strategy is that it provided rich data on the phenomenon under study. One disadvantage with this kind of sampling is that it makes it harder to generalise the findings, and other participants might have yielded different results.

3.6 Ethical considerations

Each participant interviewed in this thesis was required to provide written consent beforehand. The consent forms included information on the purpose of the data collection, how the data would be used, how the data would be handled as well as a timeline for how long their personal data would be stored. In accordance with the General Data Protection Regulation (GDPR), the participants were also informed that they could withdraw from the study at any time and that all their data would in turn be deleted. The written transcripts of the participants were either deleted or anonymised after the relevant papers had been completed. Personal data and any details that could be used to identify an individual were anonymised in the written papers and thesis. The data collection for paper 3 and the qualitative data of paper 4 were collected with assistance from four master's students, and parts of the data were collected as part of two master's theses. The data collected by research assistants was done under the supervision of me. The relevant participants all provided written consent that the data collected could be used in a PhD-project, and the participants were provided the same information as all other participants. The research assistants who assisted in the data collection have been acknowledged in the respective papers and this thesis.

The quantitative data collected for paper 4 did not reveal any personal data but included an identification key that could be used as a safeguard if an individual chose to withdraw from the study. The surveys were sent through the university alumni database, and no e-mails were retrieved for the purpose of data collection.

Some of the ethical considerations made had an impact on the methodological choices of this thesis. Optimally, the quantitative data would have been collected by sending emails directly to the participants, which would have allowed for follow ups, but unfortunately, this was not ethically possible, as they had not given consent for this kind of use.

The co-authorship of the different papers was arranged by the co-authors' levels of contribution to the papers. All the co-authors were in accordance with the Vancouver Recommendations.

4 Summary of papers and findings

The purpose of this section is to give a summary of the papers included in the thesis and the key findings of each paper. Each paper addresses different aspects of the employability of EE graduates (Fugate et al., 2004). Taken together, the thesis provides a nuanced and holistic account of the employability of these individuals.

The papers are presented in the following order: (1) exploring the conceptual links between EE and employability and providing a research agenda that lays the foundation for the thesis (Paper 1); (2) exploring the transition from EE to working life among EE graduates and how the graduates applied their entrepreneurial competencies in this process (Paper 2); (3) studying how EE graduates developed different career identities through EE and how these identities guided their career after they graduated; and (4) exploring the IWB of EE graduates in comparison to other groups (Paper 4).

4.1 Paper 1: Preparing for a future career through entrepreneurship education

The goal of this paper was to explore how competencies developed through EE relate to different career orientations and demonstrate how competencies acquired from EE enable or constrain graduates' entrance, development and transition in the labour market (Killingberg et al., 2021).

The paper applied the categorisation of entrepreneurial competencies from Haase and Leutenschlager (2011) and argued that different types of competencies are relevant for different career orientations. *Know what* competencies enable an individual to solve tasks and demonstrate proficiency within a subject field, and as such, they relate to a traditional career orientation (Rosenbaum, 1979; Super, 1957). *Know how* competencies enable an individual to respond to changes in the labour market, be adaptive and learn new skills, and as such, they relate to a protean career orientation (Briscoe and Hall, 2006; Mirvis and Hall, 1996). Finally, *know why* competencies provide conviction and motivation and guide graduates in their career

choices across different organisations; thus, they relate to a boundaryless career perspective (DeFillippi and Arthur, 1994).

Further, the paper built on the conceptualisation of Hillage and Pollard (1998), conceptualising employability as an ongoing process of entering, developing and transitioning in working life. It then explored how entrepreneurial competencies related to each of these phases. The paper suggested the following seven researchable propositions to explain how EE influences employability (Killingberg et al., 2021):

Proposition 1: EE includes various learning arrangements in which students act as autonomous innovators and entrepreneurs. EE graduates are, therefore, more inclined than others to experience greater role conflicts when transitioning from higher education to working life because they have to perform tasks that are less associated with an entrepreneurial role (p. 717).

Proposition 2: EE includes various arrangements whereby the students interact and work with different actors in the labour market. EE graduates are, therefore, better prepared than others for the transition from higher education to working life (p.718).

Proposition 3: EE graduates are trained in entrepreneurial learning processes and develop entrepreneurial learning competencies, which makes them more adaptable than others when faced with changing work requirements and situations in which they need to reinvent themselves and learn new things (p. 718).

Proposition 4: EE graduates are adept in showing resilience when faced with failures and crises, and they are more inclined than others to learn from and deal with the crises and major changes that occur in the labour market in a productive way (p. 718).

Proposition 5: EE involves arrangements where students interact socially with multiple external stakeholders. These students are, therefore, better than others at developing their professional networks and building interpersonal and networking skills, which ultimately will enhance their resourcefulness in a dynamic labour market (p. 719).

Proposition 6: EE provides students with the ability to recognize and exploit entrepreneurial opportunities, which makes these graduates better prepared than others to act as intrapreneurs or spin-out entrepreneurs within established organizations (p.719)

Proposition 7: Through EE, students develop an entrepreneurial identity, and in compliance with entrepreneurial attitudes like risk taking, EE graduates are more inclined than others to take riskier career choices when manoeuvring their careers (p. 720)

Finally, the paper laid out a research agenda and suggested the following four avenues that researchers of the employability of EE graduates can follow:

Suggestion 1: Longitudinal studies that follow EE graduates as they enter, develop and transition in the labour market (p. 720).

Suggestion 2: Critical incident case studies that explore how EE graduates are dealing with critical events in the labour market (p. 720).

Suggestion 3: Narrative studies that focus on affective and cognitive foundations for career changes (p. 720).

4.2 Paper 2: Exploring the transition to working life of entrepreneurship education graduates – a longitudinal study

The purpose of the study was to explore the transition from EE to working life and how the competencies acquired through EE aid in the transition process. The study was guided by the following two research questions:

RQ1: How do EE competencies aid in the process of transitioning from university into a workplace?
RQ2: How do EE graduates learn to become legitimate members of a workplace community?

To identify how EE competencies aid in the process of transitioning from university to a workplace, we drew on the EE competency taxonomy of Haase and Leutenschlager (2011) to find what role the know-what, know-how and know-why competencies play in the transition. We also applied the concept of LPP (Lave and

Wenger, 1991) in CoP (Wenger, 1998) to discover how the graduates had developed from starting at the periphery of their employer organisations to gaining accepted positions within these organisations. Ten students from EE master's programmes at two Norwegian Universities were purposively selected and interviewed twice. The first interviews were conducted about 3 months after graduation, while the follow-up interviews were conducted between 18 and 24 months after graduation. The study followed a phenomenological design (Berglund, 2007), whereby the focus was on the graduates' experiences during their transitions. The study also followed an abductive approach, whereby the empirical fieldwork, analysis and theoretical framework evolved simultaneously (Dubious and Gadde, 2002), and the LPP concept was applied after the initial analysis of the first interviews.

We identified two distinct learning trajectories that were largely dependent on the work roles in which these graduates were employed—namely, the consultancy group and the innovation manager group. The learning trajectories are illustrated in Figure 4-1.

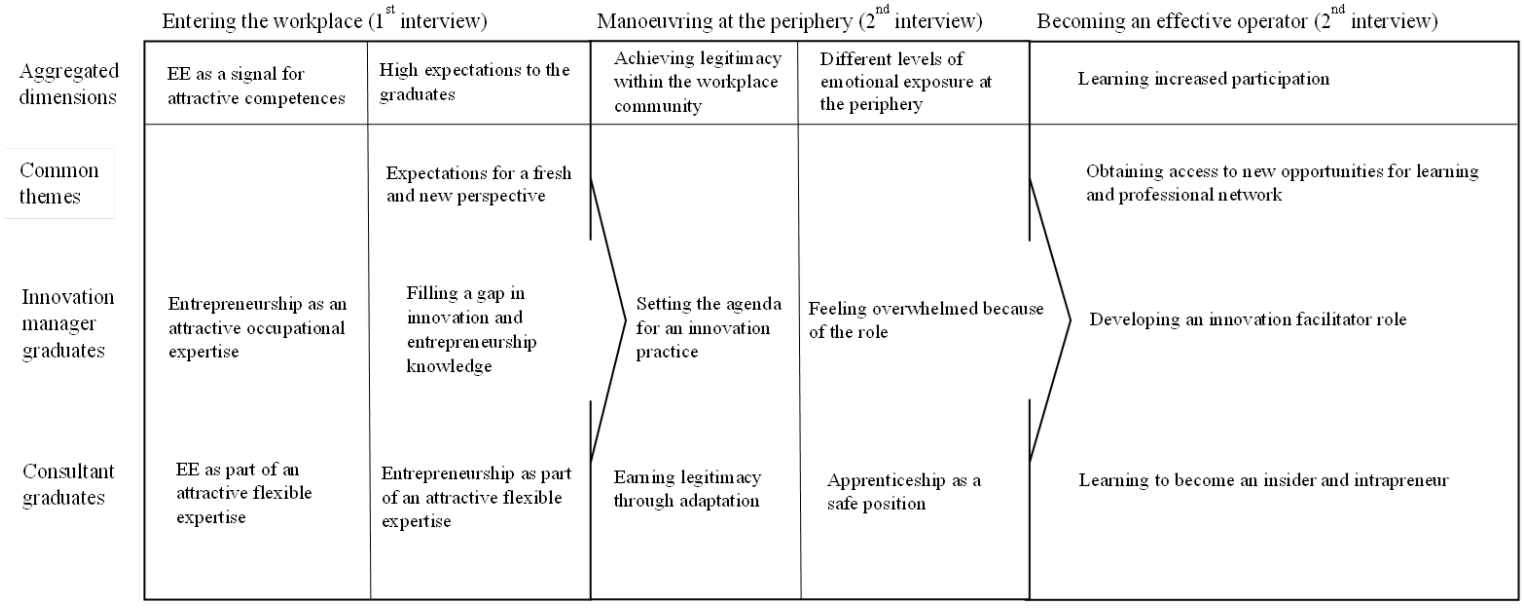

Figure 4-1The Process of Transitioning from EE to Becoming an Effective Operator in the Labour Market for the Two Different Groups of EE Graduates

The two trajectories revealed different challenges and ways in which EE competencies were applied in the transition process.

The innovation manager group had mainly been hired because of their knowledge of and expertise within innovation and entrepreneurship. The employers expected these graduates to fill a gap in innovation knowledge, and because of this, the graduates were legitimised within their workplaces early on. However, quickly gaining trust while at the same time not being familiar with the wider organisation led to feelings of being overwhelmed. To become effective operators, members of the innovation manager group had to familiarise themselves with the wider organisation and build their confidence.

The consultant group of graduates had been hired because of their flexible expertise and ability to bridge different functions within their employer organisations. These graduates followed a more traditional LPP trajectory, starting on the periphery of their employer organisations. In contrast to the innovation manager group, starting on the periphery provided members of consultant group with safe positions with opportunities for learning. As they became more experienced and demonstrated their performance, they moved to more centralised positions, and as they became more accepted members of the workplace community, they were able to utilise their entrepreneurial expertise to act as intrapreneurs and introduce innovations to their workplaces.

4.3 Paper 3: Developing career identities through entrepreneurship education: an analysis of graduates' life stories

The purpose of the study was to investigate the career identities of graduates from EE programmes, what role EE played in shaping their career identities and how these career identities acted as compasses giving directions for the EE graduates careers in the labour market after graduation. The study answered the following research question:

RQ: What characterises the alternative career identities of EE graduates, and what role does EE play in the formation of career identities?

Scholars have claimed that EE can potentially be a powerful 'identity workspace' (Harmeling, 2011), and studies have shown that entrepreneurial identity can be developed through EE (Donnellon et al., 2014). In addition, other studies have focused on broader notions of being an entrepreneur (Hytti and Heinonen, 2013; Kubberød and Pettersen, 2018).

Studies have shown that a large portion of EE graduates do not become entrepreneurs but instead follow more traditional careers in established organisations after graduation (Alsos et al., 2022; Jones et al., 2017). Few studies have investigated EE's impact on the motivations and aspirations of these individuals (Rae and Woodier-Harris, 2013). This study explored this intriguing topic through a 'career identity' lens (Ashforth, 2000; Fugate et al., 2003). Career identity can be conceptualised as a coherent narrative that makes sense of the past and present to give direction to the future (Fugate et al., 2003), since they act as motivational components of employability (Fugate et al., 2003).

Five graduates who appeared to have made radical career shifts because of EE were deliberately selected for this study (Patton, 2002) and interviewed using a life-story approach (Kimn 2015; Rae and Carswell, 2000).

The analysis of these narratives revealed the following three distinct career identity archetypes: 'the change agent', 'the career maker' and 'the maverick specialist'. The paper illustrated how these archetypes developed from initial aspirations into more salient career identities through EE and how they acted as motivational factors for the graduates in their careers after graduation. Interestingly, the different archetypes all followed different processes of identity formation in EE. This was largely dependent on the nature and maturity of the initial aspirations of the graduates when starting EE. The findings are summarised in Table 4-2.Paper 4: The project management trap: a mixed-methods study of the innovative work behaviour of entrepreneurship education graduates

	Change agent	**Career seeker**	**Maverick specialist**
Aspirations to study entrepreneurship	Creating societal change	Reorientating one's career	Being dissatisfied/wanting to change profession
Identity work in EE	Connecting aspirations to realistic career opportunities	Discovering and experimenting with new possible selves in the entrepreneurship space and classroom environment	Achieving positive affirmations in the classroom environment and feeling true to oneself
Related theoretical concept	'EE as an identity workspace' (Harmeling, 2011)	'Experimenting with provisional selves' (Ibarra, 1999)	'Finding a match between claimed identity and socially accepted identity' (Holmes, 2015; Meijers, 1998)
Post-EE identity work	Increasing commitment to working for societal change	Jack of all trades; maintaining an entrepreneurial identity within a generic role	Combination of professional and maverick identities

Figure 4-2 Career identity formation before, during and after EE.

4.4 Paper 4: The project management trap: a mixed-methods study of the innovative work behaviour of entrepreneurship education graduates

The purpose of the research was to examine the IWB of EE graduates in comparison with other, somewhat similar groups and explore the factors that contributed to the differences in IWB. The goal of the paper was therefore to shed light on the following research question:

> How do EE graduates compare with other graduates when it comes to innovative work behaviour in the workplace, and how can the differences in innovative work behaviour be explained?

Previous studies have shown that EE competencies can be relevant for careers beyond starting a business (Jones et al., 2017) and, in particular, for carrying out an intrapreneurial role (Alsos et al., 2023). On the other hand, scholars have pointed out that self-employed and corporate entrepreneurs think differently (Corbett and Hmieleski, 2007; Winborg and Hagg, 2023) and suggested that courses directed towards corporate entrepreneurship should contain specific elements, such as an 'entrepreneurial health audit' (Kuratko and Morris, 2018) or work integratet learning projects in large organisations (Winborg and Hägg, 2023). However, few studies have actually explored whether EE leads to increased IWB. This study aimed to fill this gap in the literature.

A survey was sent out to alumni from two EE master's programmes along with comparrison groups from four master's programmes (software development, mechanical engineering, business and administration, industrial engineering). The survey contained questions on demographic variables and objective and subjective career success along with an IWB scale adapted from Janssen (2000) and Messman and Mulder (2012). The data were analysed using a linear model.

Contrary to our initial assumption, the IWB scores of EE graduates dropped from being higher than those in the control groups in the first years after graduation to becoming surpassed by all the control groups eight years after graduation.

The drop in IWB could not be explained from the quantitative analysis, and we therefore decided to draw on the qualitative data gathered for this thesis, which was from the same population of students, to find possible explanations. Through the

qualitative analysis, we found three possible explanations, which were presented as the following propositions:

Proposition 1: A project management position can in certain instances prevent the innovative behaviour of the employee holding that position.

Proposition 2: Many EE graduates lack subject-specific skills that prevent them from engaging in innovative work behaviour in the labour market.

Proposition 3: There is a mismatch between the organisational bureaucracy of larger organisations and the expectations and knowledge of EE graduates, which might prevent EE graduates from engaging in innovative work behaviours in the workplace.

5 Synthesis and discussion

In the thesis, employability was defined as the 'the capability of being an effective operator in the workplace' (Killingberg et al., 2021), as delineated in paper 1. Eventually, this involves more than merely getting a job and is an ongoing process of entering, developing and transitioning in the labour market (Killingberg et al., 2021, adapted from Hillage and Pollard, 1998). The usefulness of the framework is demonstrated in this paper. Ultimately, looking at employability as a process overcomes some of the shortcomings of the existing frameworks, which are mainly cross-sectional (Römgens, Scoupe and Beausaert, 2020).

In paper 2, the process of transitioning from EE to the labour market was followed longitudinally, with the findings demonstrating the transition from being a student to an effective operator in the labour market to be a complex and highly contextual process that involves legitimising and becoming an accepted member of a workplace community (Lave and Wenger, 1991; Wenger, 1998). This process also involves overcoming internal struggles with being overwhelmed and building confidence in the workplace (Killingberg et al., 2023).

The findings in paper 2 highlighted several ways in which the competencies developed through EE aid in the transition from EE to working life. One group of students had been hired because of their knowledge of and competencies within the entrepreneurship domain, which is somewhat consistent with previous studies suggesting that entrepreneurial competencies are relevant for many different contexts (Alsos et al., 2023; Blenker et al., 2011; Jones et al., 2017; Neck and Corbett, 2018). Another group had been hired because of their broad combination of skills and ability to work together and bridge different parts of the employer company, and not for their competencies. Although this was seen through the eyes of the students, it still suggests that employers value the broad competencies and interdisciplinary capabilities that are developed through EE.

The findings from paper 2 also suggest that the competencies developed through EE made the students more adaptable in the labour market (Fugate et al., 2004). In particular, these competencies were useful for handling the transition process from being a student to becoming an effective operator in the labour market. The innovation manager group of students made use of their networking skills to familiarise themselves with the wider organisation beyond their innovation units. For many graduates, the practical nature and internships that they had been exposed to in EE made the transition from EE to working life feel like a continuation of what they had already been doing. In addition, the findings of both paper 2 and paper 3 suggest that the entrepreneurial competencies provided a frame of reference for further learning, which is consistent with the concept of generative learning (Cope, 2005). Even in instances where the entrepreneurial competencies were less relevant, the graduates found it useful to use these competencies as a 'toolbox' that could be applied to different situations. The fact that EE competencies contributed to the adaptability of the EE graduates is consistent with scholars who have suggested that EE might increase the adaptability of students in a somewhat ambiguous labour market (Cope, 2005; Rae, 2007, 2008). Previous studies that have looked at the relevance of EE competencies for a career mainly focused on their relevance in carrying out specific work functions (Alsos et al., 2023; Jones et al., 2017). These studies therefore did not consider how EE competencies assist between jobs, in securing a position, in adapting to the workplace or in adjusting to changing work conditions. The findings of this thesis contribute to filling this gap.

Paper 3 demonstrated how career identities could be developed through EE. To some extent, the development of these career identities had conceptual similarities with how entrepreneurial identities are developed (Donnellon et al., 2014; Harmeling, 2011; Kubberød and Pettersen, 2018). However, as shown in the paper, the career identities were developed from initial aspirations and identities that the students brought with them to EE, as they were strengthened by receiving positive affirmations or further developed by learning about business and entrepreneurship, which enabled one of the participants to envision their possible self within that domain. In line with career identity theory (Ashforth, 2000; Donnellon et al., 2014;

Fugate et al., 2004; Harmeling, 2011; Kubberød and Pettersen, 2018), the career identity process described in the paper can be understood as a continuum with past aspirations, rather than something that can be entirely attributed to EE. The paper also demonstrated how career identities provide individuals with motivations behind their career choices; as such, the study extends beyond extant research on entrepreneurial identity (Hytti and Heinonen, 2013) and studies investigating how EE influences the career aspirations of graduates (Rae and Woodier-Harris, 2013), since these studies did not include investigations of students after their EE studies.

Taken together, the thesis demonstrates that the contextual nature of studying individuals in their working lives, the performance of EE graduates and the relevance of their competencies are highly dependent on the employer organisations in which they gain employment. The performance of certain skills is also highly dependent on other skills. In paper 2, members of the consultant group of graduates had to adjust to their employer organisations before they reached a position whereby they could carry out an entrepreneurial function. In addition, the qualitative findings in paper 4 demonstrated that the lack of certain competencies might have prevented the IWB of the EE graduates.

Figure 5.1 illustrates how each of these competencies contributes to the employability of EE graduates and how these competencies relate to each other.

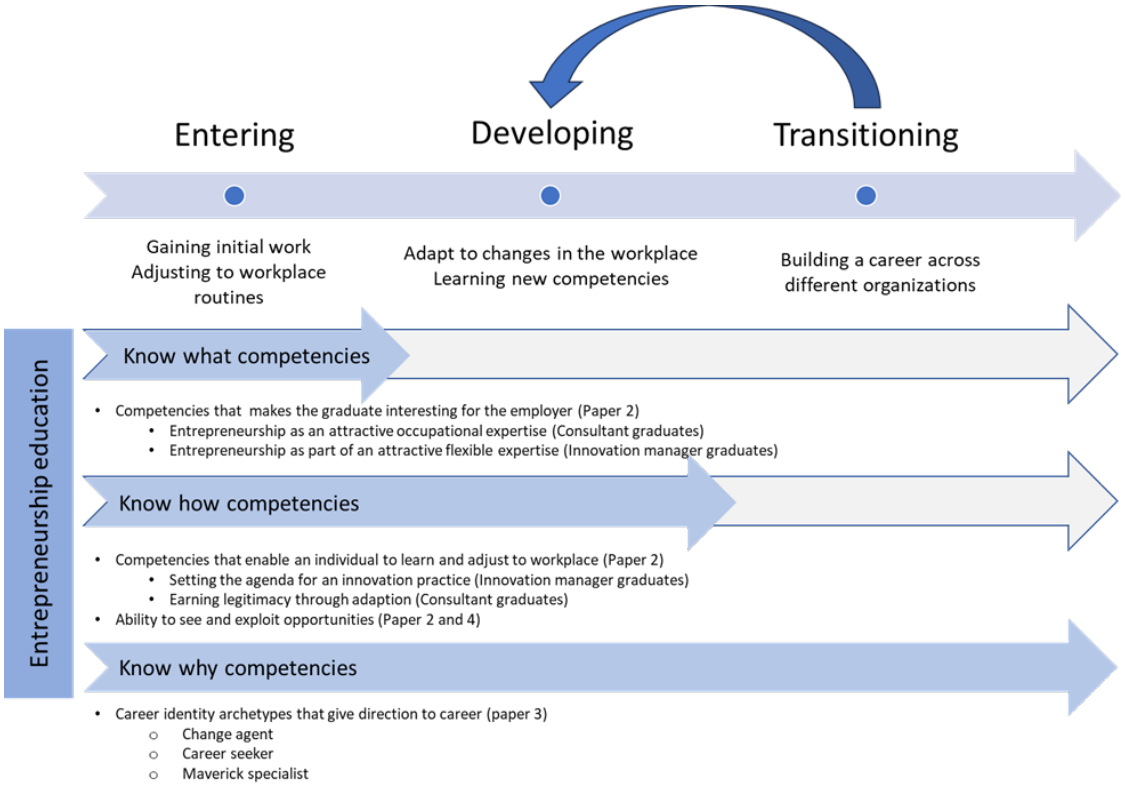

Figure 5-1How the entrepreneurial competencies and different papers relate to the employability process of entering, developing and transitioning in the labour market, as suggested in paper 1

As suggested by Walmsley et al. (2022), there are contradictions between learning entrepreneurship and gaining employment within an established organisation. In paper 1, it was proposed that some students might experience role conflicts in the labour market when taking on roles that are less associated with an entrepreneurial role. This was confirmed empirically in paper 2, where having to start in an apprentice role made the consultant graduates feel impatient. Paper 4 revealed that the innovative work behaviour of EE graduates declined each year they were employed. The quantitative analysis indicated that a lack of subject-specific competencies prevented these individuals from engaging in innovative behaviour. In addition, it revealed that the lack of knowledge of larger organisations might also have prevented their IWB. Contrary to the intuitive understanding that EE can increase the innovativeness and entrepreneurialism in many different contexts (Blenker et al., 2011), the findings suggest that fostering intrapreneurial individuals is more complex and should involve knowledge of the business context as well as subject-specific competencies embedded in the contexts in which these individuals operate.

6 Conclusions and contributions

Aiming to build knowledge of the employability of EE graduates and how entrepreneurial competencies are applied in the labour market after graduation, this thesis contributes with a career perspective to the literature and theory of EE and provides valuable advice for EE educators.

6.1 Contributions to the literature and theory

The conceptual links and empirical evidence revealed several ways in which competencies that are developed through EE are beneficial for graduates in working life. As such, the overall impression is that EE is largely beneficial for enhancing the employability of individuals. Still, by highlighting some of the challenges these graduates face in the labour market and some possible shortcomings in EE, this thesis offers a more nuanced view than earlier attempts that have tried to find links between EE and employability.

The first objective of this thesis was to delineate the theoretical links between EE and employability and introduce a future research agenda. The main contribution of the thesis is therefore a theoretical framework that demonstrates how entrepreneurial competencies developed through EE relate to a processual understanding of careers. The framework introduced in paper 1 (Killingberg et al., 2021) laid the groundwork for the thesis, and was expanded upon in papers 2, 3, and 4. By bringing a career perspective into EE, the thesis has laid the foundation for future studies to explore the broader significance of EE beyond merely looking at the impacts and effects that are directly related to the entrepreneurial process (e.g. entrepreneurial intentions, entrepreneurial performance and entrepreneurial competencies) (Bae et al., 2014; Morris et al., 2013; Nabi et al., 2017). The paper put forward seven researchable propositions that paved the way for this thesis, but which also provide a starting point for other studies.

The second objective of the thesis was to explore the early career trajectories of EE graduates and build knowledge on how EE competencies are utilised in established

organisations. By drawing on the taxonomy of Haase and Lautenschläger (2011), the thesis has demonstrated the role of the *know what*, *know-how* and *know why* competencies and how they are utilised at different stages and for different purposes in the early career trajectories of EE graduates. In paper 2, the transition from EE to becoming an accepted member of a workplace community was explored by looking at this as a process LPP (Lave and Wenger, 1991) in communities of practice (Wenger, 1998). To my knowledge, no existing study has made similar attempts to longitudinally explore the process of transitioning from EE to working life, since most other studies exploring EE competencies in the labour market have largely been cross-sectional and quantitative (Alsos et al., 2023; Bell, 2016; Jones et al., 2017). The thesis therefore offers an in-depth and nuanced understanding of the challenges, opportunities and processes that such graduates go through in their early careers. The paper identified two groups that differed both in the LPP process and in how they applied their entrepreneurial competencies—namely, the innovation manager group and the consultant group. The differences in these groups were largely dependent on the work positions and employer organisations, which suggests that the value and execution of entrepreneurial competencies are highly dependent on contextual differences. In paper 1, it was also suggested that EE graduates are better prepared than others for the transition from higher education to working life, since EE includes various arrangements whereby students interact and work with actors in the labour market (Killingberg et al., 2021). This was also observed in paper 2, where the participants saw the labour market as an extension of what they had been doing in EE. Finally, exploring the transition through the students' eyes also provided new and unexpected findings. While members of the innovation manager group were hired because of their knowledge and skills within the domain of innovation (*know what*), consultant group members were mainly hired for their broad combination of competencies (*know how*). Scholars should consider this a particular strength of EE. An unexpected finding was the fact that gaining trust early on made the innovation managers feel exposed and led to feelings of being overwhelmed, which they needed to overcome to become effective operators. This implies that there is an internal component of becoming an effective operator in the labour market. These findings should be further explored in future studies.

The third objective of the thesis was to explore how career identities are developed through EE and how these identities motivate career choices after graduation. Paper 3 identified three career archetypes—namely, change agent, career seeker and

maverick specialist. It also demonstrated how EE contributes to the development of these archetypes and how they work as a compass for motivating future alternative careers. The findings contribute to understanding what motivates the careers of EE graduates who do not become entrepreneurs. There is a central argument that EE can prepare individuals for an unstable and insecure labour market (Rae, 2008). Lately, technological progress has made many professions more insecure, and some workers are in danger of losing their jobs, or at least have to adapt to changing working conditions. A focus on career identities might be a way for individuals to cope with such changes, since it provides them with meaning and purpose that go beyond a single profession or position. The career identities identified are also consistent with the value dimension of the protean career orientation (Briscoe and Hall, 2006). Ultimately, the paper demonstrated the usefulness of applying a career identity perspective to explore the underlying motivational component of EE graduates (or possibly, graduates from other programmes).

The final objective of the thesis was to explore the IWB of EE graduates and shed light on contextual and educational factors that might foster or prevent IWB. In paper 1, it was suggested that EE develops abilities to recognise and exploit opportunities that better prepare EE graduates to act as intrapreneurs within established organisations (Killingberg et al., 2021). However, in paper 4, the IWB scores of two programmes were compared with four comparison groups and found to decrease each year following graduation from EE. These counterintuitive findings, along with the qualitative findings, contribute to the nuanced view of the usefulness of EE in fostering intrapreneurial behaviours suggested in paper 1. The qualitative findings of paper 4 suggests that IWB is also dependent on 'subject-specific' and 'technical' skills. In addition, one of the career identity archetypes in paper 3, the maverick, has aspirations for driving innovation and change within their subject field, and future studies of IWB should also include measures on such skills (e.g. how well participants know their subject field, years of experience within the field and educational factors). Further, the qualitative findings in paper 4 suggest that there is a mismatch between the organisational bureaucracy of larger organisations and the knowledge and expectations of EE graduates, which has further implications for how intrapreneurship can be fostered through education.

6.2 Contribution to entrepreneurship education

This thesis has pointed out some of the potential pitfalls that might arise when EE graduates find work within an established labour market. Because a large portion of EE graduates find jobs within established organisations, educators should consider broader courses and modules or separate programmes that are more focused on large organisations. This might include some form of entrepreneurial health audit, as suggested by Kuratko and Morris (2018), or integrated learning projects focusing on intrapreneurship (Winborg and Hägg, 2023).

The thesis has shown the disadvantages of not having a subject field in addition to EE. On the other hand, combining EE with a subject field was observed to be a particular strength that benefits graduates in the labour market. Educators should therefore consider combining EE with a specialisation within a subject field. This could be done either by having entrepreneurship as an elective course in other programmes or by allowing students to pursue a specialisation within their own subject field as part of an entrepreneurship programme.

The thesis has also shown that identities are developed in continuum with previous aspirations and identities and that students develop alternative career identities through EE. As such, trying to enforce specific entrepreneurial identities on students can be futile or even harmful. Rather than trying to do so, efforts to develop entrepreneurial or career identities should idiosyncratically be grounded in the students' interests and aspirations (Thrane et al., 2016).

In addition, some of the findings of paper 2 suggest that employers may have an outdated view of innovation and entrepreneurship and that they are unaware of the value of EE. To get the most out of EE graduates in the labour market, universities, educators and scholars should therefore convey the value of EE to established organisations and the labour market as a whole. Such efforts can include case studies of best practice in intrapreneurship projects conducted by EE students; guest lectures or course modules, where established organisations are invited to give lectures or cases or internships; or projects in which students work on innovation projects in established organisations.

Several of the empirical findings suggests ways in which other educators and policymakers can learn from EE when developing courses and assignments that have the goal of enhancing the employability of individuals. Higher education

programmes should include practical components that provide students professionalism and work experience; they should also focus on enhancing students' autonomy and ability to learn and handle uncertainty and ambiguity.

6.3 Weaknesses and further research

Although the current employability research has evolved into looking at employees as autonomous agents in control of their own careers, scholars have lately been criticising career research for becoming overly agentic and ignoring the role of potential employers (Fugate et al., 2021). Optimally, the thesis would have included employers' perspectives to gain a more holistic understanding of EE graduates in the labour market.

Future studies should consider EE graduates' careers over a longer time scale. They might also consider hybrid careers in which graduates work part-time on entrepreneurial ventures or entrepreneurial careers in which they move back and forth between employment and self- employment. Entrepreneurial leaning scholars have, for example, suggested that work experience can influence the entrepreneurial learning of individuals (e.g. Politis, 2005). Future studies could, for example, investigate how learning from being employed fosters self-employment, and vice versa.

One of the central arguments in paper 1 was that EE can potentially equip students with the ability to handle crises and shifts and show resilience in an unpredictable labour market. The research agenda therefore suggested that scholars should conduct case studies that look at how graduates from these programmes handle such crises. None of the participants in this thesis experienced such major crises, apart from a few mentions of the Covid-19 pandemic) Further studies are needed to explore resilience and the ability to handle potential crises and shifts.

Paper 1 suggested that EE students are better at developing professional networks that add to their employability and resourcefulness in a dynamic labour market. Future studies should explore this intriguing topic—for example, by looking at how individuals build their professional networks, the value of professional networks developed in EE and how professional networks are utilised for opportunities in the labour market.

Recent developments in AI have been predicted to have a large impact on most jobs (Van Praag and Versloot, 2007). While writing this thesis, the world witnessed the Covid-19 pandemic, which had an economic impact on businesses and hugely affected the way jobs were carried out. An ageing population is putting pressure on the labour market, and governmental reports and white papers (Helsepersonellkommisjonen, 2023) have shown that Norway will face major challenges in attaining enough manpower to fill central functions in the coming decades. There is therefore a need for individuals with an innovative mindset that can come up with new solutions across all sectors. The trends mentioned above will require individuals that show resilience, adaptability, willingness to learn and the ability to exploit the opportunities that emerge because of these trends—all of which are capabilities that are commonly associated with EE graduates. Hopefully this thesis can contribute to understanding how we can educate individuals who will strive in the future labour market.

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Enclosed papers (1-4)

Paper 1

Preparing for a future career through entrepreneurship education: Towards a research agenda

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Preparing for a future career through entrepreneurship education: Towards a research agenda

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Abstract

Although most students of entrepreneurship education find employment in established organizations after graduation, the employability of entrepreneurship education graduates remains largely overlooked in the education research literature. In this conceptual paper, the authors address this gap to motivate a future research agenda. The paper describes how entrepreneurship education may enable or impede the graduates' entrance, development and transition in the labour market. To develop the theoretical arguments, the authors build on a processual conceptualization of employability. Seven propositions are presented to conceptually explore how competencies that are obtained through entrepreneurship education may influence the employability of graduates in a dynamic labour market. The propositions lay the groundwork for future studies on entrepreneurship education graduates' employability and set a research agenda for how the employability of these graduates could be studied.

Keywords

Career, employability, entrepreneurship education, labour market

Entrepreneurship has long been seen as a vehicle for economic growth and innovation (Matlay, 2008), and is becoming even more important as we move from a stable to a volatile and dynamic labour market. Technological changes, such as advances in computing power, sensor technology, big data analysis and clean technology, are disrupting existing industries and creating new ones (World Economic Forum, 2016). These trends are changing not only industries, markets and firms but also the very nature of work. Some scholars and policymakers have argued that many jobs may be replaced by automated solutions (Frey and Osborne, 2017). Rapid advances in technology also constantly change work routines and labour market demands (World Economic Forum, 2016). Lately, we have witnessed the consequences of the Covid-19 pandemic, which is leading to mass unemployment, businesses becoming bankrupt, major changes in work routines (e.g., remote working, virtual teams, increasing digitalization, etc.) and even more unpredictability. While, on the negative side, these trends lead to less security and more unpredictability for individual employees who no longer have stable employment, on the positive side scholars have looked at how these trends are empowering those individuals who are able to adapt to the changes and entrepreneurially construct their careers across the boundaries of different organizational contexts (Arthur and Rousseau, 2001; Hall, 1996).

Scholars have suggested that entrepreneurship education (EE) can be a promising way of preparing students for such a volatile and dynamic labour market (Rae, 2008). In this respect, universities have increased their focus on developing EE Master's programmes to accommodate this demand (Hoppe et al., 2017; Winkel et al., 2013). Although studies demonstrate that EE has some effect on entrepreneurial activity such as venture creation (Charney and Libecap, 2000; Jones et al., 2017), most EE graduates do not become

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entrepreneurs; instead, they are employed by established organizations. Yet, we do not know much about the employability of these graduates because the topic remains largely underdeveloped. EE and entrepreneurial competencies are generally seen as attractive in the labour market (Rae, 2007). However, Pittaway and Cope (2007a) state that a particular weakness in EE research is the lack of studies that link EE learning outcomes to specific factors relevant for employability. A few studies have investigated the impact of EE on graduates' success in the labour market. For example, Charney and Libecap (2000) found that graduates who included entrepreneurship as part of their education were more likely to be employed on a full-time basis, had higher salaries and were more satisfied with their job opportunities. General higher education studies have indicated that creativity, problem solving, innovation skills, general business knowledge, team working skills, interpersonal skills and learning skills – competencies frequently associated with EE – are valuable to employers (Lowden et al., 2011; Wickramasinghe and Perera, 2010). Bell (2016) also found that graduates with entrepreneurial traits such as a proactive disposition and achievement motivation had an increased likelihood of being employed in a managerial or professional position 6 months after graduation.

Missing from the field, however, are studies of EE graduates in the workplace. Mwasalwiba (2010) explicitly called for more research on the links between EE and the workplace context. The aim of this conceptual paper is to address this gap by exploring theoretical links between EE and employability, and by suggesting a research agenda for future empirical studies. For the purposes of this paper, we define employability as 'the capability of being an effective operator in the labour market', which encompasses far more than securing a first job or achieving objective career success such as a high salary. More specifically, we draw on extant career research (Arthur and Rousseau, 2001; Hall, 1996; Sullivan and Baruch, 2009) and studies that have explored entrepreneurial competencies developed through EE (Haase and Lautenschläger, 2011; Kubberød and Pettersen, 2018b; Lackéus, 2014; Morris et al., 2013) to outline our arguments. We conceptually explore how central learning outcomes from EE relate to different career orientations. We demonstrate how competencies acquired from EE enable or constrain the graduates' entrance, development, and transition in a volatile and dynamic labour market. Through our theorizing, our purpose is to move beyond the trivial question of whether or not EE graduates are successful in the labour market by considering the underlying questions about their competencies and behaviours that might in fact lead to their success, or eventually to possible setbacks. These underlying questions are framed through seven researchable propositions that describe how EE influences graduates' employability.

A career perspective on entrepreneurship education

Traditionally, EE originated from the idea of enabling and inspiring individuals to engage in entrepreneurial activities to stimulate economic growth (Hytti and O'Gorman, 2004). This view suggests that the process of new business formation requires a specific set of skills, usually a combination of hard facts, business school skills, such as accounting, small business management and marketing ('know-what') and soft skills ('know-how') (Haase and Lautenschläger, 2011), such as handling uncertainty and resource constraints (Blenker et al., 2011).

Although EE originated from the rather narrow idea of training students to start ventures (Blenker et al., 2011), today we find programmes with different purposes and pedagogy that are also relevant to innovation and entrepreneurship in established firms, as well as social entrepreneurship and cultural entrepreneurship that focus on other forms of value creation (Blenker et al., 2011; Lackéus, 2014). We also acknowledge that there are different EE offerings at different universities in Europe, ranging from short single courses to full programmes and majors in entrepreneurship (Winkel et al., 2013). In this paper, we focus primarily on graduates from entrepreneurship schools, taking a full programme or Master's degree, oriented towards commercialization and innovation activities where the start-up is the most common organizational artefact for learning. Most importantly, EE emphasizes experiential learning experiences (Kolb, 1984), through which students are exposed to unpredictable entrepreneurial processes. This exposure simulates an entrepreneurial learning process or at least involves aspects of entrepreneurial learning, ideally by engaging the students in real-life projects for external actors or starting a venture (Kyro, 2008; Rasmussen and Sørheim, 2006). As with the entrepreneurial learning processes entrepreneurs go through, this form of education should mirror such experiences and be characterized by uncertainty and ambiguity (Pittaway and Cope, 2007b). This educational form stands in sharp contrast to traditional classroom learning, and emphasizes the importance of students stepping out of their comfort zones, involving themselves in trial and error learning, and reflecting on mistakes (Pittaway and Cope, 2007b) – which often lead to transformational new insights that are of high value to themselves and others (Kubberød and Pettersen, 2017; Lackéus, 2014).

Eventually, the entrepreneurial learning processes that students go through in EE leads to the development and demonstration of entrepreneurial competencies (Kubberød and Pettersen, 2018b; Lackéus, 2014; Morris et al., 2013). Entrepreneurial competencies have been defined as 'knowledge, skills and attitudes that affect the willingness and ability to perform the entrepreneurial job of new value creation' (Lackéus, 2014: 377). However, the underlying

assumption is that the entrepreneurial competencies developed through EE practices can be useful not only in the creation of new ventures but also in many different walks of life for solving a broad range of societal problems (Blenker et al., 2011; Gibb, 2002).

Haase and Lautenschläger (2011) categorize the learning outcomes of EE into three types of competencies: 'know-what', 'know-how' and 'know-why' competencies. Building on this categorization, we discuss how these learning outcomes are made relevant in different aspects of an EE graduate's career by building on three prevailing career orientations that co-exist in the career literature: 'the traditional understanding of careers' (Levinson, 1978; Rosenbaum, 1979; Super, 1957), 'the boundaryless career' (Arthur and Rousseau, 2001) and 'the protean career' (Hall, 1996). As we will demonstrate, the different career orientations have quite different implications with regard to which competencies the labour market requires.

Traditionally, career research has focused on the individual's relationship with a single employer, and how the individual ascended the organizational hierarchy (Rosenbaum, 1979). Such careers are typically characterized by stable organizational structures and usually see the career as consisting of subsequent stages (Levinson, 1978; Super, 1957). According to Super's (1957) career development theory, a university graduate typically first needs to secure his or her place in an organization by adapting to organizational requirements and demonstrating proficiency in certain subject-specific tasks to become acknowledged as a well-performing and successful employee. This requires 'know-what' competencies within a field. For an EE graduate, 'know-what' competencies encompass hard facts about business management and functional skills needed for entrepreneurs, such as general knowledge about entrepreneurship, commercialization and innovation (Lee et al., 2005) and business planning (Premand et al., 2016), as well as other business school subjects, such as marketing (Lackéus, 2014) and finance and accounting skills (Haase and Lautenschläger, 2011). Haase and Lautenschläger (2011) refer to these as the 'old school of entrepreneurship'. Nevertheless, hard facts in subjects such as business planning and marketing will enable a graduate to demonstrate proficiency within a subject field and perform related functional tasks.

As a response to the decreased stability and increased uncertainty of working life, Hall (1996) introduced the concept of the 'protean career'. The protean careerists can repackage their skills to fit a changing work environment and remain relevant and employable, as well as adapting to different roles and positions in the labour market. Protean careerists are highly flexible, value freedom and strive for continuous learning. This view corresponds well with the 'know-how' competencies developed in EE. 'Know-how' competencies encompass the soft/transferable competencies of entrepreneurship (Haase and Lautenschläger, 2011), including competencies such as learning from experience (Rae, 2000; Rae and Carswell, 2000), applying established knowledge to new problems (Pittaway and Cope, 2007b), the ability to acquire knowledge and change behaviour based on experience (Gartner, 1988; Pittaway et al., 2011), coping with uncertainty and ambiguity (Kubberød and Pettersen, 2017; Lackéus, 2014; Pittaway and Cope, 2007b), learning from failure (Cope, 2003, 2011; Pittaway and cope, 2007b; Pittaway et al., 2011; Shepherd, 2004), opportunity recognition (Kubberød and Pettersen, 2018b; Morris et al., 2013; Muñoz et al., 2011) and creativity (Gundry et al., 2014). In the rest of the paper, we refer to these competencies as 'entrepreneurial learning competencies'. These competencies can be learned and practised (Neck and Greene, 2011) and enable an individual to become a better learner in the labour market.

Introduced by Arthur and Rousseau (2001), the concept of the 'boundaryless career' concerns careers that unfold across the borders of a single organization. Unlike the traditional organizational career focus (Levinson, 1978; Rosenbaum, 1979; Super, 1957), the 'boundaryless career' involves movement across the institutional boundaries of an organization or other boundaries (Arthur and Rosseau, 2001). In this perspective, careers are built by individuals in a wide range of different jobs within different organizations. This might also involve voluntary work and self-employment. When an individual creates careers across a vast array of different organizations, personal values, identities and self-beliefs work as a guide for his or her career (DeFillippi and Arthur, 1994; Fugate et al., 2004). The 'know-why' competencies become paramount. For an EE graduate, 'know-why' competencies include entrepreneurial identity (Donnellon et al., 2014; Harmeling, 2011; Kubberød and Pettersen, 2018a), self-efficacy (Karlsson and Moberg, 2013; Kubberød and Pettersen, 2017; Lackéus, 2014) and entrepreneurial attitudes (Bolton and Lane, 2012; Murnieks and Mosakowski, 2007). Eventually these competencies will help guide individuals through the labour market by giving direction to their careers and acting as a compass when they select and evaluate opportunities for work. Table 1 summarizes the most relevant learning outcomes that can be linked to the corresponding career orientations.

A processual view of employability

Employability has been studied from both organizational and individual perspectives, and scholars have made several attempts to theorize on the meaning of the concept (Finch et al., 2016; Fugate et al., 2004, Tomlinson, 2017, Van Der Heijde and Van Der Heijden, 2006). Here, we focus on the individual perspective, which focuses on the characteristics and behaviours that enable an individual to thrive in the labour market (Fugate et al., 2004; Van Der Heijde and Van Der Heijden, 2006).

Table 1. Entrepreneurship education learning outcomes and corresponding career orientations.

Type of learning	EE learning outcome	Description	Corresponding career orientation
Know-what competencies (hard facts)	Knowledge about entrepreneurship (Lee et al., 2005). Business planning (Premand et al., 2016). Marketing skills (Lackéus, 2014).	Professional skills: skills to solve isolated tasks in functional ways.	Traditional: the individual is a task-performing employee. Graduates need to demonstrate proficiency and perform certain tasks within a subject field in order to advance their career.
Know-how competencies (soft skills) entrepreneurial learning competencies	Ability to learn from experience (Pittaway et al., 2011; Rae and Carswell, 2000). Applying established knowledge to new contexts (Pittaway and Cope, 2007b). Coping with uncertainty and ambiguity (Kubberød and Pettersen, 2018b; Pittaway and Cope, 2007b). Learning from critical events, mistakes and failures (Cope, 2003; Pittaway and Cope, 2007; Pittaway et al., 2011; Shepherd, 2004). Opportunity recognition (Kubberød and Pettersen, 2018b; Morris et al., 2013; Munoz et al., 2011).	Soft skills that enable individuals to learn, adapt, reinvent and develop themselves.	Protean career: the individual as an employee responding to changes in the work context – developing new knowledge and skills, i.e. learning to learn for continuous adaptation.
Know-why competencies (conviction)	Entrepreneurial identity ('I am') (Donnellon et al., 2014; Harmeling, 2011) ('I want to be') (Kubberød and Pettersen, 2018a; Markus and Nurius, 1986). Entrepreneurial self-efficacy ('I can') (Karlsson and Moberg, 2013; Kubberød and Pettersen, 2017; Lackéus, 2014). Entrepreneurial attitudes (risk taking, proactiveness, innovativeness) (Bolton and Lane, 2012; Murnieks and Mosakowski, 2007).	Role identity, personal motivations, beliefs and values give individuals direction in their careers	Boundaryless career: the individual constructs the career across the borders of a single organization.

More precisely, employability has traditionally been conceptualized as a set of individual competencies, knowledge and personal attributes that make it more likely that individuals will find employment and succeed in their chosen profession (Hillage and Pollard, 1998; Moreau and Leathwood, 2006; Yorke, 2006). Yorke (2006: 8) defines graduate employability as students acquiring:

> the skills, understandings and personal attributes that make them more likely to secure employment and be successful in their chosen occupations to the benefit of themselves, the workforce, the community and the economy.

This view of employability has been criticized by several authors, in particular by Rae (2007: 607) who argued that it is overly simplistic, stating that:

> a person, such as a graduate, is not simply a carrier of skills, knowledge and personal attributes. Their own unique identity, personality, and motivation, going beyond, personal attributes, which often change markedly during the HE experiences, are also likely to be factors. Also, the wider context of the university and the degree subject, in relation to demand from employers, and in the prevailing economic climate, may be significant.

Others have criticized the concept of employability for being too static, proposing that employability should be viewed as a continuous process of learning rather than a product (Harvey, 2003). For the purpose of our theorizing, we adopt the perspective of Oliver (2015: 59) and Stephenson (1998). We thus define individual-level employability as 'the capability of being an effective operator in the labour market'. This definition is far more encompassing as it involves every aspect of preparing for, adapting to and performing in the labour market. Furthermore, in line with Hillage and Pollard (1998), we understand employability as an ongoing process consisting of three phases: entering, developing and transitioning in the labour market (Hillage and Pollard, 1998).

The entering phase of employability concerns the ability to enter the labour market by gaining initial employment. To enter the labour market, candidates need to convince the employer that there is a good fit between the competencies needed and the competencies held by the individual

(Lowden et al., 2011). In addition, the entering phase of employability also includes overcoming initial challenges and socializing in the workplace (Wendlandt and Rochlen, 2008).

The developing phase of employability concerns maintaining relevancy and employability by constantly developing oneself (Kanter, 1990). Individuals need to grow their skills and accomplishments to maintain their relevance and to stay attractive to their current and potential employers. In addition, individuals need to adapt to changes beyond their control (Van Der Heijde and Van Der Heijden, 2006), as well as proactively planning for optimal career outcomes (Bridgstock, 2009; Van Der Heijde and Van Der Heijden, 2006).

Finally, the transitioning phase of employability concerns the ability to obtain new employment, which might be required because of shifting work conditions and downsizing, but also encompasses individuals' ability to create their own careers and transition between positions to achieve optimal career outcomes. In such circumstances, the careers should be individually constructed and guided by individuals' preferences, identities and self-beliefs, rather than being determined by organizational career paths (DeFillippi and Arthur, 1994; Fugate et al., 2004).

Integrating entrepreneurship education with employability

As we have shown in the previous section, achieving and maintaining employability have different implications for the individual, depending on which phase he or she is in. Furthermore, in this section, we show that different career orientations will come into play at different stages of an individual's career, which again will demand different competencies, and we theorize on how EE prepares students for each of these phases.

The discussion is structured around the three different phases of entering, developing and transitioning in the labour market, as they have different dynamics and require specific competencies. As a result of the discussion, we propose seven propositions that elaborate on ways in which EE outcomes influence the employability of graduates.

Entering the labour market

The 'entering the labour market' phase concerns securing an initial position in the labour market (Hillage and Pollard, 1998; Super, 1957), overcoming initial challenges in the labour market (Wendlandt and Rochlen, 2008) and integrating into the workplace to become a full participating member (Lave and Wenger, 1991). Although it has been argued that the traditional linear view of careers is less relevant today (Arthur and Rousseau, 2001; Hall, 1996; Sullivan and Baruch, 2009), when making a processual model of employability, we cannot ignore it completely. While the other two phases of developing and transitioning in the labour market are ongoing processes that individuals follow throughout the course of their career, entering the labour market as fresh graduates with limited work experience happens only once. Also, while the other two phases of employability are about striving for optimal career outcomes and maintaining employability, the entering phase of employability is more like an admission ticket to a place where individuals can access learning and labour market opportunities that will allow them to develop and optimize their careers. The entering phase of employability should, therefore, be linked to a more traditional career orientation in which the individual first demonstrates professional expertise to gain initial employment and secure his or her place in the organization (Super, 1957).

Employers are particularly alert to and look for specific professional skills when hiring (Lowden et al., 2011; Van Der Heijde and Van Der Heijden, 2006). According to the concept of 'Legitimate Peripheral Participation' (Lave and Wenger, 1991), newcomers to a community of practice, such as a workplace, usually work in the periphery where they are given low-risk tasks that typically require them to solve problems in a functional way, which requires 'know-what' competencies (Brown and Duguid, 1991; Fuller et al., 2005; Gardiner, 2016; Lave and Wenger, 1991). To advance to more centralized positions in the organization, newcomers need to demonstrate their proficiency in these tasks. As it is likely that most of these graduates will have developed strong autonomy through EE and view themselves as innovators or entrepreneurs (Donnellon et al., 2014), there may be conflicts between the employer's need for an isolated demonstration of solving basic tasks and EE graduates' need for autonomy, and aspirations to become involved in high-risk and complex innovation roles initially in an employment relationship. To gain access to greater responsibilities and relevant tasks, the EE graduate must be patient and demonstrate a basic level of proficiency in 'know-what' competencies and be willing to perform basic tasks that may not initially be directly related to an entrepreneurial role. 'Know-what' competencies are, therefore, important for being an efficient operator in the entering phase of employability but may not correspond well with the entrepreneurship graduates' wishes or need for autonomy, leading us to suggest the following proposition.

> *Proposition 1:* EE includes various learning arrangements in which students act as autonomous innovators and entrepreneurs. EE graduates are, therefore, more inclined than others to experience greater role conflicts when transitioning from higher education to working life because they have to perform tasks that are less associated with an entrepreneurial role.

Transitioning from higher education to working life has been found to involve overcoming particular challenges, such as inflated expectations, the gap between competencies developed in higher education and competencies required in the labour market, and differences between academia and working life (Wendlandt and Rochlen, 2008). As EE includes several arrangements in which the students interact with potential customers, collaborators and industry actors via internships and start-up activities, EE graduates may have more realistic expectations of the demands of employers (Blenker et al., 2011; Kubberød and Pettersen, 2017; Pittaway and Cope, 2007b; Rasmussen and Sørheim, 2006) and may have developed professionalism and work readiness while performing as students. Thus, even though the initial tasks in their employment may be less stimulating from an entrepreneurial point of view, the students may have developed professionalism in dealing with various tasks during their education. This leads us to put forward the second proposition.

> *Proposition 2:* EE includes various arrangements whereby the students interact and work with different actors in the labour market. EE graduates are, therefore, better prepared than others for the transition from higher education to working life.

Developing in the labour market

The developing phase of employability revolves around learning and adapting to maintain relevance (Kanter, 1990). As new technologies and work routines are implemented at an increasing pace, and individuals need to adapt constantly, repackage their skills to fit new settings and learn new things to remain updated (Kanter, 1990), the best learners become the best performers. Individuals relying on established practices and old skills will soon become outdated, while those who rapidly manage to learn new skills, repackage old ones and adapt to changing work conditions will excel. As such, this phase should be linked to a protean career orientation (Hall, 1996). For several reasons, the entrepreneurial 'know-how' competencies are therefore especially important in the developing phase of employability – in particular, the ability to adapt to changing work conditions by repackaging old competencies and learning new ones. The entrepreneurial learning competencies developed through EE might be especially well suited for preparing students to constantly learn and adapt to new situations. Several scholars have suggested that EE increases the student's ability to learn (Gibb, 1993; Hytti and O'Gorman, 2004; Pittaway and Cope, 2007b). Entrepreneurial learning is about acquiring tacit knowledge (Rae, 2000; Rae and Carswell, 2000), changing behaviour (Gartner, 1988), and developing competencies (Kubberød and Pettersen, 2018b; Lackéus, 2014; Morris et al., 2013) through experience. As with learning to initiate or develop a new venture, the 'entrepreneurial learning' competencies developed through EE can also be useful for graduates when facing changing work requirements and demands from disruptions in the work context. Furthermore, when operating and navigating in a shifting and unpredictable labour market, many of the same factors facing entrepreneurs in the entrepreneurial process come into play, including high uncertainty, ambiguity, social engagement and opportunity focus, and having to deal with critical events such as failure and crises (Kubberød and Pettersen, 2018b; Pittaway and Cope, 2007b; Pittaway et al., 2011; Rae, 2008). Graduates who have developed entrepreneurial learning competencies through higher education are, therefore, well suited to constantly adapt and learn in such an environment.

> *Proposition 3:* EE graduates are trained in entrepreneurial learning processes and develop entrepreneurial learning competencies, which makes them more adaptable than others when faced with changing work requirements and situations in which they need to reinvent themselves and learn new things.

The entrepreneurial learning processes that take place in EE are imbued with challenges in which learners must cope with critical events, failures and crises (Cope, 2003, 2011; Shepherd, 2004). Like the critical events that take place in a start-up, those that occur in the labour market during the course of a career (e.g., losing a job, experiencing bankruptcy, downsizing, reorganizing or industry disruption) may have emotional impacts on employees, who might experience these events as crises or failures. As rapid technological development and other macro trends change the labour market, these critical events are happening more rapidly (Frey and Osbourne, 2017; World Economic Forum, 2016). Being able to deal with such events in a productive way is, therefore, a crucial competence in the dynamic labour market. EE graduates are trained in showing resilience and learning from such critical events, and this training can be utilized when they face similar events as employees in the labour market (Pittaway and Cope, 2007b; Pittaway et al., 2011; Shepherd, 2004). For EE graduates, dealing with such events involves dealing with the emotional impact they have on the individual and maximizing the learning outcomes (Shepherd, 2004). Ultimately, entrepreneurial learners view these critical events as learning opportunities, which in turn can lead to transformative, higher-order learning (Cope, 2003, 2011).

> *Proposition 4:* EE graduates are adept in showing resilience when faced with failures and crises, and they are more inclined than others to learn from and deal with the crises and major changes that occur in the labour market in a productive way.

Scholars have suggested that employability also require 'career building skills' in order to achieve optimal career outcomes (Bridgstock, 2009). Central to career building skills is the ability to identify and choose labour market opportunities. We, however, propose that these labour market opportunities are not only fixed but are also constructed and socially negotiated between graduates and potential employers. There are at least two ways in which EE graduates have an advantage when it comes to 'career building skills': social capital and social negotiation skills, and opportunity skills.

A crucial part of 'career building skills' is the ability to create social capital (Bridgstock, 2009). By creating strategic and personal ties with different stakeholders in the labour market, individuals obtain access to resources and opportunities for work (Bridgstock, 2009). EE puts students in situations in which they learn to interact and work with external stakeholders (Lackéus, 2014; Pittaway and Cope, 2007b; Rasmussen and Sørheim, 2006). As such, the students are trained in building professional networks during their education and through this process have developed their social skills. Eventually, this will give them an edge over other students, as they can benefit from employing these skills further when building their careers, which leads us to suggest the following proposition.

Proposition 5: EE involves arrangements where students interact socially with multiple external stakeholders. These students are, therefore, better than others at developing their professional networks and building interpersonal and networking skills, which ultimately will enhance their resourcefulness in a dynamic labour market.

Finally, EE students might benefit from opportunity skills when building their careers. Scholars have suggested that entrepreneurial opportunities may emerge from changes in technologies, industries or markets (Drucker, 2014; Kirzner, 1997; Schumpeter, 1934; Shane and Venkataraman, 2000). EE graduates with the ability to recognize and exploit opportunities may harness changes in technology and the business landscape to exploit entrepreneurial opportunities and become entrepreneurs (Kubberød and Pettersen, 2018b; Morris et al., 2013). These opportunities might *also* be harnessed within established organizations: when an individual chooses to act on an opportunity while employed in an established organization, the new business opportunity will naturally benefit the organization but it can also benefit the individual, who may be rewarded for the initiative. In addition, acting on such opportunities might provide the individual with additional opportunities for work in a new business area or with new technology.

Proposition 6: EE provides students with the ability to recognize and exploit entrepreneurial opportunities, which makes these graduates better prepared than others to act as intrapreneurs or spin-out entrepreneurs within established organizations.[1]

Transitioning in the labour market

Finally, the transitioning phase of employability concerns larger voluntary and involuntary movement across different positions, organizations and other boundaries to achieve optimal career outcomes.

As individual careers are no longer limited by organizational boundaries (Arthur and Rousseau, 2001), and individuals can reinvent themselves to meet changing work requirements (Hall, 1996), there are essentially no limits to the different directions a career can take (Fugate et al., 2004). In addition, the changing nature of the dynamic labour market means that there are fewer career templates and role models to give direction to the individual when shaping his or her career (Fugate et al., 2004; Meijers, 1998). This might be especially true for EE graduates. EE is not a vocational education that focuses on preparing for a specific profession. It is a relatively young form of education and there are no typical career paths. The career development of EE graduates appears to be idiosyncratic and open, as graduates from EE find work in a vast array of different professions and organizations (Charney and Libecap, 2000; Jones et al., 2017; Rae and Woodier-Harris, 2013).

Scholars have, therefore, become interested in how personal 'career identities' give direction to individual careers (Ashforth, 2000; Fugate et al., 2004). Career identities involve making sense of past and present experiences to give direction to the future (Fugate et al., 2004) and imagine 'possible selves' in the labour market (Markus and Nurius, 1986). Career identities, thus, give individuals the "cognitive and affective foundation of employability" (Fugate et al., 2004: 20). By asking 'Who do I want to be in the workspace?', individuals imagine different possible selves in the labour market. Ultimately, these possible selves will affect the career choices of graduates and other actors in the workplace (Fugate et al., 2004).

Accordingly, for EE graduates, 'know-why' competencies will give direction to their careers. Several scholars have explored how the entrepreneurial identity is fostered through EE (Donnellon et al., 2014; Harmeling, 2011; Kubberød and Pettersen, 2018a). This is done through a process of identity matching (Ibarra, 1999; Kubberød and Pettersen, 2018a), in which students experiment with their possible selves (Markus and Nurius, 1986) through experiential and action-based learning (Harmeling, 2011). Experimentation with different possible selves in EE will have an impact on the direction the career of EE graduates will take, as they will likely gravitate towards roles and career paths that are consistent with an entrepreneurial

identity (Donnellon et al., 2014; Harmeling, 2011; Kubberød and Pettersen, 2018a).

Like the identity matching process that takes place in EE, the different roles and positions a graduate considers when transitioning in the labour market are also subject to an identity matching process (Ibarra, 1999). The self-efficacy that is developed through EE (Karlsson and Moberg, 2013; Kubberød and Pettersen, 2017; Lackéus, 2014) is an important component when the graduate evaluates the feasibility of different positions and what he or she can manage ('can do'). Finally, the different roles will be evaluated, based on whether they are consistent with the personal attitudes and values of the individuals. As such, underlying entrepreneurial attitudes, such as innovativeness, autonomy, proactiveness and attitudes towards risk, come into play (Bolton and Lane, 2012; Murnieks and Mosakowski, 2007). It is, therefore, plausible that an EE graduate who has developed a higher propensity towards, for example, risk-taking, is more proactive when new career opportunities appear, and may take larger chances and career leaps when evaluating different career opportunities. In accordance with such entrepreneurial thinking and reasoning, this may offer both new and lucrative career opportunities and sometimes setbacks associated with taking higher career risks, leading us to put forward the last proposition.

Proposition 7: Through EE, students develop an entrepreneurial identity, and in compliance with entrepreneurial attitudes like risk taking, EE graduates are more inclined than others to take riskier career choices when manoeuvring their careers.

The employability of EE graduates – Towards a new research agenda

In the previous section, we suggest seven propositions that describe ways in which EE might influence the employability of graduates at different stages of their careers. These propositions should be empirically elaborated, adjusted and eventually tested. Below, we suggest how such studies might be designed, with research questions based on our previous propositions.

Suggestion 1: Longitudinal studies that follow EE graduates as they enter, develop and transition in the labour market. As we are heading towards a more dynamic and less predictable labour market, employability is an ongoing process of entering, developing and transitioning in the labour market. To explore how EE graduates utilize entrepreneurial competencies to navigate and perform in the labour market, future studies should be longitudinal and should follow individuals as they enter, develop in and transition in the labour market. The processual model of employability proposed in this paper serves as a foundation for such studies. The entering phase from higher education to working life is of special interest as it is reasonable to think that this is where EE has the largest impact on the competencies and behaviours of these graduates (Propositions 1 and 2). This paper also suggests that the entrepreneurial 'know-what' competencies are of particular importance in this early phase of the graduate's career. Possible research questions might be:

- How do EE graduates transition from EE to the workplace?
- What particular challenges do EE graduates have when entering the workplace and how do they overcome these challenges?
- How do EE graduates legitimize themselves in the workplace?

Suggestion 2: Critical incident case studies that explore how EE graduates are dealing with critical events in the labour market. As the labour market becomes more dynamic, employees need to be flexible and adapt to changes beyond their control (Hall, 1996). Scholars have suggested that EE might be particularly effective in enhancing the employability prospects of individuals in such a context (Rae, 2008). In Propositions 3, 4, 5 and 6, we propose that entrepreneurial learning competencies enable individuals to reinvent themselves, learn new things and adapt to new situations, as well as to enter intrapreneurial roles. Especially important is the ability to deal with and learn from critical events. To empirically investigate this, critical incident case studies are useful (Cope, 2003; Flanagan, 1954). These should focus on how EE graduates deal with issues such as losing their jobs, downsizing, the introduction of new technology into the workspace and the reorganization of the workspace. Possible research questions might be:

- How do EE graduates deal with and learn from critical events in the workplace?
- What strategies do EE graduates follow to proactively adapt for optimal career outcomes?

Suggestion 3: Narrative studies that focus on affective and cognitive foundations for career changes. In this paper we suggest that entrepreneurial identity (Harmeling, 2011), entrepreneurial self-efficacy (Karlsson and Moberg, 2013; Kubberød and Pettersen, 2017; Lackéus, 2014) and entrepreneurial attitudes and values (Bolton and Lane, 2012; Murnieks and Mosakowski, 2007) give direction to EE graduates' careers. Ultimately, we suggest that these competencies have an impact on EE graduates' career progressions and might, therefore, be characterized by riskier career changes (Proposition 7). In addition, the identity of these graduates must be matched and adapted to the requirements of the labour market (Ibarra, 1999). As discussed in Proposition 1, this might be a particular challenge

for EE graduates as there may be a conflict between the entrepreneurial identity of these graduates and the requirements of the labour market. Researchers should apply a narrative life-story approach that focuses on career changes and progressions to understand the affective and cognitive foundations of the EE graduates' career transitions. Possible research questions might be:

- How does entrepreneurial identity impact the career choices of EE graduates?
- How are the entrepreneurial identities of EE graduates matched and adapted to the requirements of the labour market?

Conclusion

Although most EE graduates become employed in established organizations, studies focusing on the employability of entrepreneurial graduates are still largely missing from the EE literature. Although some studies indicate that these graduates perform better than others in the labour market, what makes these graduates more employable remains relatively unexplored.

The goal of this paper has been, therefore, to explore theoretical links between EE and the seemingly unrelated field of employability, and to suggest different research avenues for further investigating these links. We have suggested an understanding of employability as a process of entering, developing and transitioning in the labour market, and that achieving and maintaining employability means different things in different phases of an individual's career. Furthermore, we have built on the notion that competencies developed in EE might be categorized under the three headings of 'know-what', 'know-how' and 'know-why' competencies, and we have shown how each category is especially prevalent during different phases of employability.

The paper builds on the notion that the labour market is moving towards a more dynamic and unpredictable state, and we have shown how and where EE can prepare university graduates for this disrupted labour market. The theoretical links between some of the concepts, such as the ability to learn and to deal with and learn from critical events, are quite alluring. The propositions should be further empirically elaborated, adjusted and eventually tested. In turn, these propositions can inspire educators to design education that prepares students for both entrepreneurship and a more dynamic and unpredictable labour market.

We acknowledge that there may be other links between EE and employability that are not discussed in this paper. Future studies should also consider the potential negative aspects of EE. A core argument of this paper has been that EE has a positive impact, and as such we have proposed ways in which EE might enhance the employability of graduates. However, there may also be ways in which EE is harmful or hinders the employability of graduates, and studies should be sensitive to potentially harmful effects of EE. For example, as described in Proposition 1, there may be a conflict between an EE graduate's need for autonomy and aspirations to work with entrepreneurship and innovation projects, and the employer's need to solve functional tasks that typically require 'know-what' competencies. In line with this thinking, Proposition 7 also suggests that the risk-taking propensity of EE graduates may in some circumstances lead candidates to take chances that might not be optimal in terms of their career.

We invite our fellow scholars to join in the academic discussion and empirical scrutiny to explore this intriguing research field in the future. Hopefully, this will inspire a new debate on the relevance of entrepreneurship education for established organizations and in the development of the future labour market.

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Note

1. Our definition of employability sets the boundary condition for leaving out conditions of entering into self-employment or independent entrepreneurship, as these are roles outside the boundaries of the established labour market.

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Paper 2

Exploring the Transition to Working Life of Entrepreneurship Education Graduates: A Longitudinal Study

Nils Magne Killingberg, Elin Kubberød and Inger Beate Pettersen

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Exploring the Transition to Working Life of Entrepreneurship Education Graduates: A Longitudinal Study

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Abstract

In this research, we explore the transition of entrepreneurship education (EE) graduates to working life. Even though many EE graduates find employment in established organisations rather than starting a new venture, few studies have empirically investigated the relevance of EE in this context. This paper addresses this gap by providing an in-depth longitudinal analysis of graduates' transition from EE to working life, from entering the labour market to becoming an effective operator. In the study we interview 10 graduates from three master's programmes directly after their graduation and then follow up with an interview 2 years into their careers. It explores how these graduates learn to become legitimate members of their workplace and how they apply their entrepreneurial competencies in this process. This study contributes to the broader debate on the relevance of EE for employability by demonstrating how entrepreneurial competencies foster the transition from EE to working life.

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Keywords
entrepreneurship education, employability, graduate employability, situated learning, entrepreneurial competencies

Introduction

This paper sheds light on entrepreneurship education (EE) graduates' transition to working life, a hitherto under-investigated area in EE research. Studies have shown that many EE graduates do not immediately grow into entrepreneurs but instead become employed in established organisations (Charney & Libecap, 2000; Jones et al., 2017). Still, few empirical studies have attempted to understand how EE prepares students for working life or how they use their competencies within established organisations. The lack of research in this area can be explained by the fact that most researchers are trying to establish a link between EE and entrepreneurial activity by looking at relevant impact measures of new venture creation. Scholars have therefore called for more studies exploring the link between EE and employability. As early as 2007, Pittaway and Cope (2007a) identified that the EE literature lacked studies relating EE competencies to specific factors relevant for employability. Later, Mwasalwiba (2010) explicitly requested research on graduates in the workplace. Longva and Foss (2018) also called for more studies on how EE impacted the employability of graduates. In response, Killingberg et al. (2021), suggested a research agenda to explore this issue more in depth. This paper sets out to explore this missing link in the EE literature.

The few empirical studies exploring how EE prepares students for working life within established organisations can be divided into three streams of literature. The first one aims, through quantitative measures, to demonstrate that EE graduates are more employable than others (Bell, 2016; Charney & Libecap, 2000).

The second stream explores whether EE students develop competencies relevant for working life as seen from the employer's perspective, such as teamwork skills, interpersonal skills, project management, and communication skills (Huq & Gilbert, 2013; Lowden et al., 2011; Yorke, 2006). Scholars have also found that EE fosters skills enabling students to engage in entrepreneurial activities, such as corporate entrepreneurship (Winborg & Hägg, 2022). Moreover, de Villiers Scheepers et al. (2018) showed that EE graduates had developed a professional identity, social capital, and agency. However, several scholars dispute the idea that universities should enhance the employability of individuals by teaching them skills generally desired by employers (Orsmond et al., 2021; Rae, 2007). They question if such skills can be objectively measured and how they may relate to performance "which is always context specific and involves complex interactions with others or with artefacts" (Orsmond et al., 2021, p. 3).

The last stream of literature is concerned about how alumni see the relevancy of EE in their careers (Galloway et al., 2015; Jones et al., 2017). In this respect, Jones et al. (2017) called for more qualitative research to explore how EE competencies are utilised

through the early career trajectory. This paper aims to address this call from the perspective of EE graduates.

Through a longitudinal and qualitative phenomenological study, we explore the process of transitioning from EE to working life of 10 EE graduates. To understand this transition, we draw on situated learning theory (Lave & Wenger, 1991). The relevance of the situated learning theory became clear through our initial analyses. Situated learning rests on the assumptions that learning is contextually situated in practice (Lave & Wenger, 1991; Wenger, 1998) and that people learn by engaging in and negotiating meaning within a community of practice (CoP) (Wenger, 1998). Lave and Wenger (1991) introduced the term "legitimate peripheral participation (LPP)" to describe the process of how newcomers enter a CoP at the periphery and move towards becoming full members by learning and legitimising themselves. The concepts of CoP and LPP have previously been used to explore how newcomers in varied sectors learn to participate and build professional identity (Gardiner, 2016; Gherardi & Nicolini, 2002; Orsmond et al., 2021). CoPs can also occur within workplaces (Orsmond et al., 2021; Wenger, 2009). Orsmond et al. (2021) argue for viewing the transition from higher education to a workplace through a situated learning lens. They contend that the process of transitioning from higher education, such as EE, is "not simply a matter of having the relevant skills and knowledge, but of 'ways of being and relating in professional contexts'" (Goldie, 2012, p. 641, as cited in Orsmond et al., 2021, p. 3).

Through a situated learning lens, we capture the EE graduates' reflections on their participation and process of becoming an accepted work member as this unfolds in time. We particularly explore how they make use of their EE competencies (Haase & Lautenschläger, 2011) to legitimise themselves through different forms of participation in a workplace community.

This paper contributes to the EE literature in three ways. Primarily, it adds to the discussion about the relevancy of EE for employability by demonstrating how the competencies developed through EE are applied in the transition to working life. Secondly, it provides an in-depth longitudinal study of the transition to working life and the early careers of EE graduates and explores the potential challenges these students face in this transition. Finally, our analysis reveals two different trajectories of transitioning from EE to working life and highlights how contextual factors might influence these transitions.

Theory

Fostering Employability Through Entrepreneurship Education

Employability often refers to the set of individual competencies, knowledge, and personal attributes that make it likely that individuals will find employment and succeed in their chosen professions (Hillage & Pollard, 1998; Tomlinson, 2012; Williams et al., 2016; Yorke, 2006). However, some scholars view employability more as a continuous process of learning, rather than as a product (Harvey et al., 2002; Holmes, 2013;

Tomlinson, 2012). This implies treating employability more from a processual point of view, that is, as an ongoing process of learning and adaptation (Holmes, 2013; Tomlinson, 2012). We define employability as "the capability of being an effective operator in the labour market" (Killingberg et al., 2021, p. 714, adapted from Oliver, 2015), more precisely an effective member of a workplace community.

In this paper we focus on the transition from EE to working life and the early careers of graduates which first concerns the ability to gain initial employment. To achieve this, the candidate needs to convince the employer that there is a fit between the competencies sought and the individual (Lowden et al., 2011). In addition, graduates' early careers include overcoming personal challenges, such as learning to put their skills into new contexts, socialising with new colleagues, and familiarising themselves with routines (Herbert et al., 2020; Van Maanen & Schein, 1977; Wendlandt & Rochlen, 2008) in the process of becoming accepted members of the workplace.

Haase and Lautenschläger (2011) categorized the learning outcomes of EE into three categories of entrepreneurial competencies: "know what," "know how," and "know why." "Know what" competencies refer to the business management and functional skills needed by entrepreneurs and innovators, such as general knowledge about entrepreneurship and innovation processes, commercialisation (Lee et al., 2005), business planning and its methods (Premand et al., 2016), and other relevant business subjects, such as marketing (Lackéus, 2014), finance, and accounting skills (Haase & Lautenschläger, 2011). These are skills that enable a graduate to demonstrate proficiency within innovation and entrepreneurship as a specific professional field. "Know how" competencies include the more flexible and transferable competencies from the learning process of entrepreneurship (Haase & Lautenschläger, 2011; Killingberg et al., 2021), such as learning from experience and reflection (Cope & Watts, 2000; Gibb, 1993; Rae & Carswell, 2000). Moreover, they include applying established knowledge to new problems (Cope, 2005; Gibb, 1997; Pittaway & Cope, 2007b), coping with uncertainty and ambiguity (Kubberød & Pettersen, 2017; Lackéus, 2014; Pittaway & Cope, 2007b), learning from failure (Cope, 2011; Shepherd, 2004), networking skills, and learning from peers (Gibb, 1993, 1997). In addition, the know how competencies include the ability to create and exploit entrepreneurial opportunities (Kubberød & Pettersen, 2018a; Pittaway & Cope, 2007b). "Know why" competencies relate to conviction and confidence, and they include entrepreneurial identity (Donnellon et al., 2014; Hytti & Heinonen, 2013; Kubberød & Pettersen, 2018b), self-efficacy (Karlsson & Moberg, 2013; Kubberød & Pettersen, 2017; Lackéus, 2014), and entrepreneurial attitudes (Bolton & Lane, 2012; Murnieks & Mosakowski, 2007). In an employability context, "know why" competencies might translate to the new graduates' conviction, motivation, and drive in their search for meaningful new opportunities in the workplace (Killingberg et al., 2021).

Building on this categorisation, we explore how these competencies are relevant when transitioning from EE to the workplace. EE graduates in practice-based programmes are trained to cope with uncertainty and ambiguity by working on fuzzy and ill-defined problems situated in unpredictable learning contexts (Kubberød & Pettersen,

2017; Pittaway & Cope, 2007b). One might therefore infer that EE fosters the development of graduates' emotional robustness in dealing with contextual uncertainty and ambiguity when entering and manoeuvring in their first jobs (Killingberg et al., 2021).

With all this in mind, we are interested in investigating how EE competencies are utilised in the process of entering a workplace, which leads to the first research question:

RQ1: How do EE competencies aid in the process of transitioning from university into a workplace?

Becoming a Workplace Community Member Through a Process of Legitimate Peripheral Participation

The entering phase of employability involves a period in which graduates learn the appropriate work routines, culture, and skills and how to adapt their competencies to fit the particular workplace (Herbert et al., 2020; Lave & Wenger, 1991; Van Maanen & Schein, 1977; Wenger, 1998). When studying the transition from higher education to the workplace, it is therefore necessary to consider it as a learning process that these graduates go through.

LPP conceptualises this as a process of learning to become a participant in a CoP and an effective operator in a workplace as one gradually advances from being a newcomer working at the periphery to becoming an experienced participant and accepted member (Lave & Wenger, 1991). This learning is not focused on "objective individual learning" but rather on learning how to function as an active participant in a community (Brown & Duguid, 1991).

In the process of LPP, newcomers usually start out at the periphery, working on tasks with limited complexity and responsibility while still being relevant and meaningful as a future active participant (Lave & Wenger, 1991). Through the LPP process, the newcomer learns the CoP's language and routines, as well as the necessary knowledge and skills that allow them to communicate, exchange knowledge and information, and solve daily tasks (Lave & Wenger, 1991). It is also important that the newcomer achieves the legitimacy that allows them to access new learning opportunities (Lave & Wenger, 1991).

The concept of LPP explains both how people learn to become a member of a CoP and how the CoP eventually can be transformed in the process (Hodge et al., 2011). The learning process is therefore referred to as "both absorbing and being absorbed in the culture of the community of practice" (Hodge et al., 2011, p. 171). Consequently, it is important to consider the competencies, identities, and experiences newcomers bring that might influence both the process of LPP and the CoP itself. However, prior CoP literature has largely neglected the competencies that newcomers bring into these communities, treating them as "tabula rasa" (Lave & Wenger, 1991; Wenger, 1998). On the other hand, several studies have demonstrated that newcomers' experiences, identities, and competencies (including EE competencies) can either aid or impede in

the LPP process (Campbell et al., 2009; Fuller et al., 2005; Gardiner, 2016; Kubberød & Pettersen, 2018a) and that old-timers can also learn from newcomers (Fuller et al., 2005).

The concepts of LPP and CoP have also been widely criticised for not sufficiently considering the power dynamics and hierarchical structures within CoPs (Fuller et al., 2005; Pyrko et al., 2019; Roberts, 2006; Wenger, 2010). Several studies have, however, investigated how power relations may affect the process of LPP. For example, Fuller et al. (2005) emphasised how those in power can either create or remove barriers that allow newcomers access to learning opportunities and thereby control their participation. Carlile (2004) pointed out how old-timers might feel threatened by newcomers, which might, in turn, constrain newcomers' participation. Scholars have also explored the ways in which newcomers have coped with a lack of participation due to the constraints set by their superiors (Bharatan et al., 2022). For instance, Orr's (1996) classical study found that directives imposed by managers impeded photocopier technicians' learning opportunities, forcing them to engage in more informal arenas to learn about the equipment.

Considering these shortcomings of and expansions to LPP, we argue that it provides a suitable framework for studying the learning process that takes place when graduates enter a workplace community. According to Killingberg et al. (2021), the process of LPP is a vital part of the process of employability because increased participation can lead to augmented responsibility and more rewarding and relevant tasks. Becoming an efficient operator in a workplace community therefore requires full participation from a CoP point of view. In this paper, we are particularly interested in how the process of LPP unfolds for EE graduates in the workplace. With this in mind, we put forward the following research question:

RQ2: How do EE graduates learn to become legitimate members of a workplace community, and how does this process differ in different work contexts?

Method

We adopted a phenomenological approach in the research. Berglund (2007) suggests that "the goal of phenomenological methods is to study the meanings of phenomena and human experiences in specific situations and try to capture and communicate these meanings in empathetic and lucid ways" (p. 76). In this paper, we aim to capture the experiences of EE graduates as they transition from EE to working life and go through their first year of employment.

We also adopted an abductive research process, like the systematic combining process proposed by Dubois and Gadde (2002). In this process, "the theoretical framework, empirical fieldwork and analysis evolve simultaneously" (Dubois & Gadde, 2002, p. 554). This involves going back and forth between the fieldwork, theory, and conceptual framework (Dubois & Gadde, 2002). It allowed us to consider "surprises" and "active data" that we did not expect initially (Dubois & Gadde, 2002).

The study rests on a descriptive longitudinal research design, which is the appropriate design to explore how a phenomenon changes over time (Ployhart & Vandenberg, 2010). More specifically, we explored the graduates' transition to working life over a period of ca. 24 months, where we foresaw a change during this period reflecting a complex interrelationship between the graduates' EE competencies and the workplace environment. The data collection is organised in two rounds of interviews; the first took place within six months after graduation and the second between 18 and 24 months after graduation. Longitudinal designs are especially appropriate when exploring theories and constructs that inherently incorporate change, such as graduates' transition into a workplace, illuminated by the theory of CoPs. The longitudinal design provided real-time data at two time points regarding the participants 'employment status, role and position, and legitimacy within the workplace community. Moreover, the design allowed us to analyse the change within the period, capturing the dynamic nature of the variables and their interrelationships, hence revealing individual growth patterns and trajectories (Ployhart & Vandenberg, 2010).

Further, the longitudinal design enabled us to make redirections in our theoretical framework as we aimed to achieve a good fit between data and theory. This corresponds to an abductive research process (Dubois & Gadde, 2002). We started (first round) with an understanding of this transition by drawing on the employability theory (Van Der Heijde & Van Der Heijden, 2006), but due to its static character, we expanded to the more dynamic CoP framework and LPP process (Lave & Wenger, 1991), which allowed us to understand the learning process and the individual trajectories that facilitated this transition. The second round enabled us to further explore these concepts and related questions, and to validate the matching of theory and data.

Description of the Entrepreneurship Education Programmes

The graduates were enrolled in three different master's programmes in entrepreneurship in Norway. The programmes included students with different educational backgrounds: (1) students with bachelor's degrees from varied educational backgrounds, (2) students with bachelor's degrees in economics and administration, and (3) students with bachelor's degrees in engineering and STEM subjects. All programmes emphasise experiential learning wherein students learn through a mix of theory, practice, and reflection (Kolb, 1984). The curricula include topics related to innovation and entrepreneurship, finance, marketing, management, methods, and research. The students gained practical experience through working on tasks and assignments provided by external stakeholders, as well as their own entrepreneurship projects and internships in start-ups (Kubberød & Pettersen, 2017). Most of the students also travelled to the United States to participate in the Norwegian School of Entrepreneurship, combining work placements in start-ups and lectures at Rice University (Kubberød & Pettersen, 2017).

Sample of Students and Data Gathering

The graduates were recruited following a theoretical sampling procedure (Eisenhardt, 1989). We selected the graduates in accordance with three criteria: (1) The participants all graduated in the same year, 2018; (2) With one exception, the participants had no or limited relevant work experience prior to starting their master's programmes. Individuals with substantial work experience were excluded, as we assumed they would have developed professional experience and identities influencing their transition from EE to working life; (3) All participants were employed or were seeking employment in established organisations. A total of 10 graduates satisfying the criteria were recruited: six women and four men. All names are fictive. An overview of the participants and their employment status at the time of the interviews is shown in Table 1.

We used semi-structured interviews. The first round of interviews took place between October 2018 and January 2019. The interviews were inspired by the critical incident technique (Flanagan, 1954) and focused on critical learning events in the interviewees' education, as well as critical events in the transition from EE to working life. Most of the interviews were face to face. The second round of interviews occurred between February and June 2020 and involved themes related to their status in the workplace and their learning to become full members of the workplace communities. In this round, we mainly used interviews through Skype due to Covid-19 restrictions. All interviews were fully transcribed. The questions in the two interview guides are summarised in Table 2.

Data Analysis

The data were analysed using the NVIVO 12 software suite. The analysis procedure was iterative, in line with the abductive method (Dubois & Gadde, 2002). The initial data analysis mainly followed an open coding procedure (Eisenhardt, 1989; Glaser & Strauss, 1967). Through initial coding and development of preliminary themes, we learned the relevance of the situated learning analytical framework in terms of grasping our data. Next (second round), the data was coded through a six-step process. First, we read the transcripts to make sense of the whole corpus. Second, the transcripts were divided into units of meaning and then coded, following a combination of open and thematic coding. The coding was informed by the analytical framework, while also being open to other interpretations and themes. Third, we followed an axial coding process whereby the different codes were grouped together to form themes. Fourth, the themes were compared across the graduates to analyse differences and similarities across the different graduates (Eisenhardt, 1989). In the fifth step of the process, we interpreted aggregated dimensions by grouping together themes from the two groups and common themes that related to the same overarching dimension. The codes, themes, and aggregated dimensions resulting from the analysis process are summarised in Figure 1.

Table 1. Overview of Participants with Employment Status at Interviews 1 and 2.

Name	Gender	Programme	Other educational experience	Employment status interview 1	Employment status interview 2
Tor	Male	1	Mechanical engineering	Consultant in large private consultancy firm	Consultant at the same consultancy firm
Martin	Male	2	Business and administration	Unemployed/part-time irrelevant work	Consultant in small IT-firm
Frank	Male	3	Civil engineer	Temporary project manager at a university	Consultant in large private consultancy firm
Jens	Male	2	Human resource management	Consultant at large private consultancy firm	Consultant at the same consultancy firm, on his way to a new position in small company
Anne	Female	1	Business and administration	Consultant in large private consultancy firm	Consultant at the same consultancy firm
Hanne[a]	Female	3	Oil and gas engineer	Sales engineer in major upstream oil and gas company	Contract manager in medium-sized manufacturing company
Lilly	Female	1	Business and administration	Temporary part-time position in the innovation ecosystem	Community manager in co-working space
Siri	Female	1	Journalism	Business developer in a technology transfer office	Business developer in the same technology transfer office
Berit	Female	1	Business and administration	Temporary irrelevant position	Trainee in several different companies, currently working in an innovation unit of a larger electric utility company in Norway
Ellen	Female	2	Human resource management	Trainee in public sector	Project manager in same part of public sector

[a]Unlike the others, Hanne was employed when starting the master's programme.

Table 2. Themes and Keywords Describing the Different Interviews.

Interview 1	Interview 2
• **Content and earning outcomes from EE** Difference with earlier educational experience Knowledge and skills developed Situation that was integral for your learning Situation where you got to apply what you learned • **How the participant got his job** Steps taken How did you present yourself to employers? Challenges in the application process Motivations for the current job Why did you get the job? • **Talk about the first period in the job** Describe the position, tasks, and responsibilities Relevance for your background Incidents where you got to apply competencies from EE Challenges in the transition process	• **Talk about the time between the first interview and now** What has worked well/what has been difficult? (examples) Changes in the workplace (downsizing/reorganizing/digitalization) Personal changes (change job/applied for a new job/planning to apply for a new job) • **Personal development and development in status** How did it feel being new, how do you feel now? Do you feel like a full member? has there been any development? What have been done to become accepted? What have the employer done to include you? Tasks and responsibilities, changes in tasks and responsibilities How do you learn and approach new tasks? Relationship with co-workers What kind of feedback do you receive/how do others look at you and your competencies? Do you have autonomy to solve the tasks as you like, explain? Relevance to EE, examples of incidents where you have applied competencies from EE

In the final step of the data analysis, we organised the themes chronologically into a three-step learning process: entering the workplace, manoeuvring at the periphery of the workplace, and becoming an effective operator in the workplace. This process is illustrated in Figure 2, which illuminates the themes and learning trajectories of the two groups, along with the round of interviews in which the themes emerged.

Findings

We found two groups that differed both in their LPP process and regarding how they applied their EE competencies. One group of graduates had occupations as business developers, mainly as co-workers within innovation units and one as a co-ordinator in an innovation co-working space. We refer to these graduates as the "innovation manager group." Other graduates had occupations as engineers, advisers, consultants, and management consultants, and we refer to them as the "consultant group." The two groups of graduates (the innovation manager group and the consultant group) differed

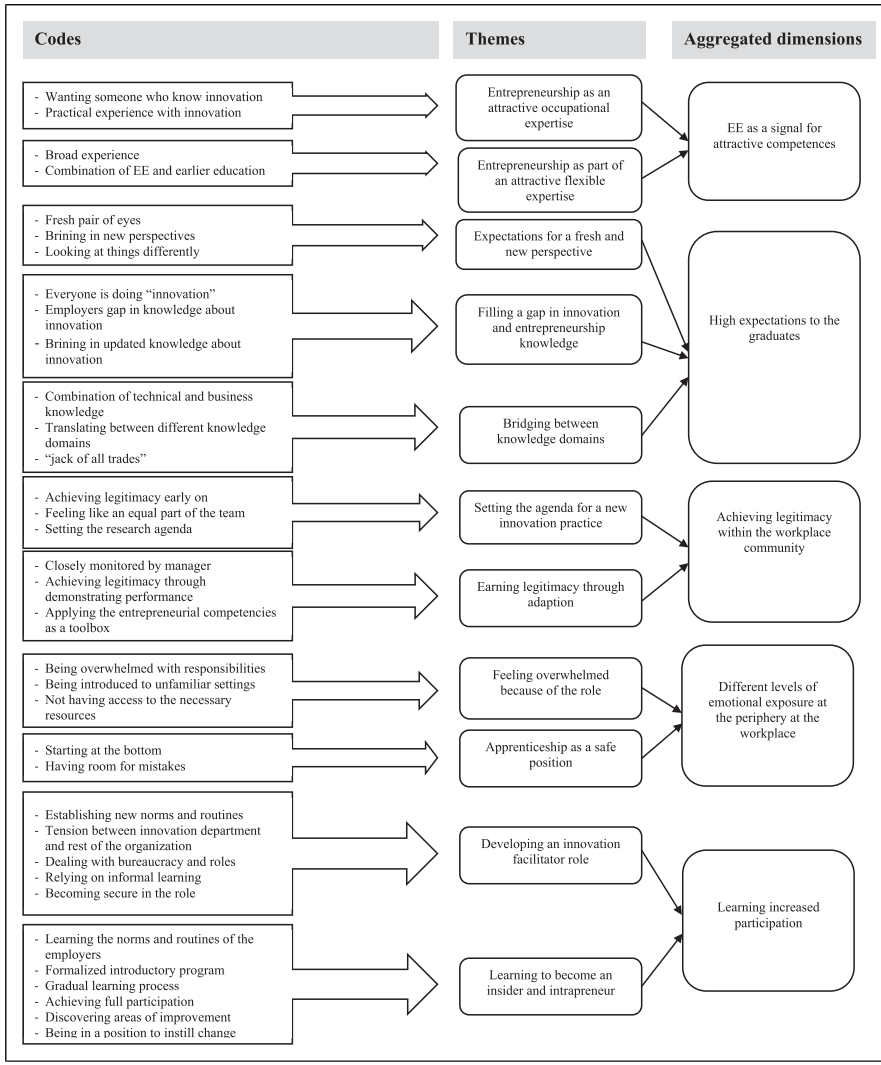

Figure 1. Codes, themes and aggregated dimensions.

along several dimensions in terms of how their EE competencies facilitated the entering and co-participation process in the workplace.

Six overarching aggregated dimensions revealed interesting themes that showed the nuances and differences between the two groups along the learning trajectory from student to employee. Below we elaborate on these two groups' trajectories, showing the

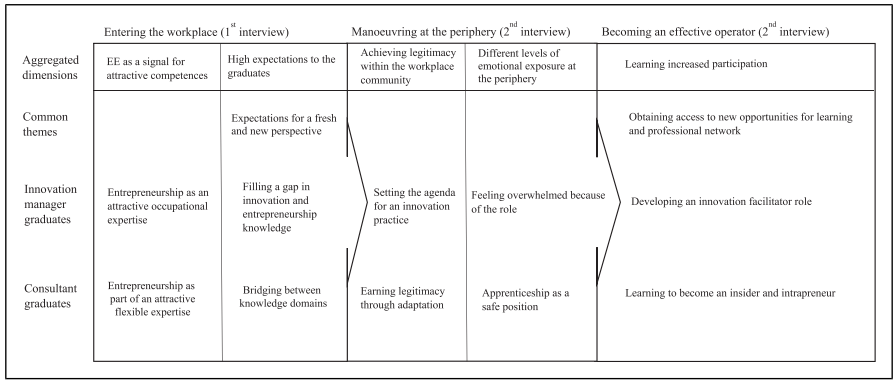

Figure 2. The process of transitioning from EE to becoming an effective operator in the labour market for the two different groups of EE graduates.

process from entering the workplace, manoeuvring at the periphery, to becoming an effective operator.

Belove, we elaborate on the different phases, themes, and aggregated dimensions for both groups.

Entering the Workplace—Attractive Competence and High Expectations

Most of the graduates considered that they had relevant competencies for the labour market and obtained relevant positions. Both groups experienced being attractive to employers and employers had high expectations of them. Below we elaborate on the nuances between the two groups in terms of the aggregated dimensions: Entrepreneuship education as a signal for attractive competences and *high expectations to the graduates.*

Entrepreneurship education as a signal for attractive competences. The two groups experienced being attractive to employers in the process of applying for jobs, but for slightly different reasons, according to the following underlying themes: *Entrepreneurship as an attractive occupational expertise* for the innovation manager group and *Entrepreneurship as part of an attractive flexible expertise* for the consultant group.

Entrepreneurship as an attractive occupational expertise—innovation manager group. The "know what" competencies developed through EE made the graduates in the innovation manager group attractive to employers:

> They wanted someone who knew design thinking, someone who could be innovative, the fact that you had tried it out in practice (Ellen, interview 2).

Hence, the employer wanted someone who had design thinking and innovation as their core expertise. Ellen had gained practical experience and competence through EE using design thinking methods in real-life innovation projects, which aided her in securing the job. From the analysis, it appears that those in the innovation manager group were mainly hired because of their expertise within the "hard fact" domain of innovation and entrepreneurship (Haase & Lautenschläger, 2011). We may therefore infer that experience with innovation methods were highly valued from the employers' perspective.

Entrepreneurship as part of an attractive flexible expertise—consultant group. The consultant group of graduates attracted employers who were interested in the broad combination of competencies and varied experience developed through EE:

> You have done lots of different things, you have some economics, some engineering, you have a master's, that is great! (Frank, interview 1).

The consultant group of graduates was attractive because of their broad set of different competencies across domains and disciplines, often with EE in combination with other areas of professional expertise (e.g., engineering and nursing). They offered a unique combination of professional expertise within a specific domain and a master's degree in EE. For Anne, the combination of a bachelor's degree in nursing and EE made her an attractive candidate:

> The impression that I got through the interview process was that it was the combination of several things. That I had studied entrepreneurship and innovation and had chosen to combine it with a bachelor's in nursing. … That was what they found interesting (Anne, interview 1).

We can therefore infer that these graduates were attractive to employers because of their flexible expertise, combining EE with other backgrounds. EE is here a complementary expertise that legitimises the individuals' former professional backgrounds for new positions, rendering them more attractive and unique for employers, as well as adaptable in terms of different tasks and responsibilities.

High expectations to the graduates. The graduates experienced that the employers had high expectations of them. From the analysis, it is evident that EE by nature brings the expectation of a fresh and new perspective which contributes to the renewal of the workplace:

> They have said that they needed a fresh pair of eyes to come in and look at things differently. And that might have something to do, or a lot of things to do, with my master's. Someone who dares to question how things have been done (Jens, interview 1).

Interestingly, the graduates experienced that the employers had high expectations of their contributions to the workplace for slightly different reasons across the two groups. From our analysis, we identified two different themes that describe the employers' expectations for the two groups: *filling a gap in innovation and entrepreneurship knowledge* (innovation manager group) and *bridging between knowledge domains* (consultant group).

Filling a gap in innovation and entrepreneurship knowledge—innovation manager group. We found that the innovation manager group of graduates were expected to fill the employer's gap in innovation and entrepreneurship knowledge, either alone (Lilly) or as part of a team (Berit and Ellen):

> Many are not up to date on the new way of thinking and doing innovation and are very concerned about getting updated. In many ways, they have leaned on me, and that I am going to teach everyone, and the "fantastic entrepreneurship programme" and what I did there (Lilly, interview 2).

Lilly is employed as a coordinator in a co-working space. She explains that the organisation has an outdated view of innovation and entrepreneurship and that the employers are aware of these shortcomings. By entering the organisation as an EE graduate, she brings updated knowledge and competencies in innovation, and thereby fills the organisation's knowledge gap.

Bridging between knowledge domains—consultant group. The perceived expectations for the consultant group were to engage in *bridging between knowledge domains*. Here, the employers expected the graduates to communicate and act as translators and brokers between different knowledge domains and professions, employing their entrepreneurial competencies more indirectly in this process:

> They say we work at the intersection between technology and business … we have some people in the company that are very technology oriented and some that are very business oriented. I would say that I am somewhat in between. … I do not think anyone sees me as being at the extreme of either technology or business. I am an all-rounder who can be used both for technical and business issues (Tor, interview 2).

This shows the value of combining an EE master's degree with an engineering background. When Tor started his work as an IT consultant, he found himself in a workplace where his co-workers were specialised either in business or in a technical domain, and his colleagues expected him to be an all-rounder with general knowledge in both domains. This grants Tor the initial legitimacy as a bridging agent between co-workers from different specialised fields.

Manoeuvring at the Periphery of the Workplace—Legitimacy and Emotions

Most of the graduates experienced a relatively smooth transition from EE, and many felt working life was a continuation of what they had been doing in the EE programme:

> I don't recall any specific challenges. It is the same principle; you must deliver whether it is a task you get at school or a project at work. You must handle people and learn as you go. So, I would say it is much of the same (Tor, interview 1).

Some of the graduates explained that the practical nature of the EE programme, including the internships, had prepared them for working life:

> I felt like it gave us a unique experience relevant to working life, in terms of knowing that you have understood the assignment, daring to ask follow-up questions, and daring to make demands (Ellen, interview 1).

We interpret this as the practical nature of EE attributing to the work-readiness and employability of the EE graduates, which is consistent with the view of Killingberg et al. (2021) proposing that the practical nature of EE enables individuals to overcome some of the early challenges faced when transitioning from higher education to working life (Wendlandt & Rochlen, 2008).

Below, we elaborate on the nuances between the two groups in terms of the aggregated dimensions: *achieving legitimacy within the workplace community* and *different levels of emotional exposure at the periphery of the workplace.*

Achieving legitimacy within the workplace community. Being newly employed and situated at the boundary of the work practice, the two groups differed in terms of legitimacy and consequently in the practice of their EE competencies. Through our analysis, two subthemes emerged: *setting the agenda for a new innovation practice* (innovation managers) and *earning legitimacy through adaptation (*consultant group).

Setting the agenda for a new innovation practice—innovation manager group. We found that the innovation manager group experienced that their roles as innovation managers, and the fact that they were filling the employer's gap in knowledge of innovation and entrepreneurship gave them legitimacy. Because of this, they quickly became "accepted" as co-workers and experienced newcomers within their work units (Gardiner, 2016), where they were expected to "set the agenda for a new innovation practice."

> I have, from the very beginning, gained the trust of my manager and have all the time felt that I have been an employee in line with the rest of the team (Berit, interview 2).

The graduates in the innovation manager group were generally working with establishing new innovation practices and units in their workplace: advising, teaching, or

facilitating innovation and entrepreneurship activities, using their "know what" competencies within innovation and entrepreneurship. The fact that these graduates were given legitimacy immediately through their roles as innovation managers allowed them to set the premises for how innovation was understood and practised in the organisation:

> They [colleagues] think it is very good because they feel that I can put some understanding to these buzzwords that they hear all the time. I can help them to see that this is what they are doing, they know how to do it, they just don't use these fancy words (Ellen, interview 2).

As such, Ellen obtained even more legitimacy by helping her co-workers become familiar with these concepts, and hence she was treated as an "experienced newcomer" (Gardiner, 2016). She acted as a guide and teacher who offered an understanding of innovation that was accessible to others in the workplace.

Earning legitimacy through adaptation – consultant group. On the other hand, we found that the consultant graduates had "to start at the bottom" as apprentices (Lave & Wenger, 1991), meaning that they were initially placed at the periphery to solve less complicated, entry-level tasks and treated more as novice newcomers (Lave & Wenger, 1991):

> The first 6 months …, my boss asked me to copy him on every email that I sent. … In the beginning, I got to solve small tasks, including working on the app that my boss had made. He was also integrally involved in the tasks that I solved, and I discussed everything with him (Martin, interview 2).

These graduates needed to demonstrate their performance with different tasks and responsibilities in order to *earn legitimacy through adaptation*. For most of those in the consultant group, this was a process of gradually learning the tasks they were assigned, adapting their competencies in the process, and thus demonstrating increased preparedness. Eventually, by demonstrating acceptable performance, they were assigned more complex tasks and responsibilities:

> Over the period, I have delivered what is expected of me and then some. And then I have gradually gotten more responsibilities (Anne, interview 2).

The consultant jobs involved a variety of tasks and responsibilities. The graduates needed to be flexible as they had to constantly adapt to new situations and clients. The competencies they had developed through EE were therefore brought forward, adapted, and used in new contexts and situations. Hence, the EE competencies served as a toolbox to be applied in different situations:

> It becomes a sort of a toolbox, where I have been involved in many different things. So, I get to use a little bit here and a little bit there (Tor, interview 1).

It thus appears that their exposure to varied situations and the development of a broad variety of competencies enabled these graduates to accommodate the workplace demands of the consultant roles, and thereby earn legitimacy. As these graduates were given tasks that differed from their experiences in EE, their ability to apply their competencies to new situations and contexts was essential for them to accommodate the workplace demands (Cope, 2005).

Different levels of emotional exposure at the periphery of the workplace. The initial differences in the level of legitimacy, trust, and co-participation led to different levels of emotional exposure across the groups. Through our analysis, two underlying themes emerged: *feeling overwhelmed because of the role* (innovation manager group) and *apprenticeship as a safe position* (consultant group).

Feeling overwhelmed because of the role—innovation manager group. The high level of co-participation and trust experienced by the innovation manager group early on led to high emotional exposure, as the following quote from Siri illustrates:

> It was tough in the beginning, mostly because you were thrown into many different things. I got a lot of trust and responsibilities early on. And then it was hard to know who to contact to get more information or what strings to pull (Siri, interview 2).

Siri here feels overwhelmed because she was assigned these tasks before she was properly socialised in the organisation and therefore was not able to utilise the available organisational resources to solve them. The innovation manager group were generally working in small flat-structured departments where they were quickly accepted as mutual co-workers. However, when addressing the larger organisational landscape, they experienced that they lacked legitimacy, which interfered with their agency and further added to their emotional exposure. In addition, the employer organisations of the innovation manager group took little responsibility for training and educating these graduates. Rather than following a natural progression whereby newcomers are gradually assigned more complex tasks and responsibilities as they learn and perform, these graduates quickly experienced high levels of co-participation, trust, and autonomy within their units. As a result, they needed to cope with feeling overwhelmed and the fear of failure. For these graduates, the central challenge to becoming an effective operator in the workplace was not necessarily to achieve a more centralised status within the CoP, but rather to cope with and overcome the feelings of being overwhelmed because of the role demands.

Apprenticeship as a safe position—consultant group. In general, the consultant group "started at the bottom" and had to demonstrate performance in the workplace. Their

workplaces were rather hierarchical. This group's experiences correspond to the process of LPP (Lave & Wenger, 1991) in a CoP. These graduates started with less complicated tasks and limited responsibility, which provided an opportunity to demonstrate their abilities and be awarded increased participation. Yet, it also allowed them to gradually familiarise with the tasks and the organisation, thus limiting their negative emotions. Jens describes being new and undergoing training as a window of opportunity:

> You are undergoing training, and you learn to utilise it in new settings. You just say, I am new, so I might not know all this particularly well, and then it creates a window of opportunity, because you get more acceptance and room to make mistakes (Jens, interview 2).

It appears that the consultant group of graduates were comfortable with starting at the bottom, as they experienced low emotional exposure and were able to utilise their apprentice status as a window of opportunity to learn and become more experienced in the workplace.

However, even if the status of apprentice felt comfortable and safe, some of the consultant graduates were a bit impatient, as illustrated by the following quote:

> To go from being a person who has a lot to contribute to become someone who has very little to contribute is a challenge, and something one must learn to cope with (Frank, interview 2).

This finding corresponds with Killingberg et al.'s (2021) argument that EE graduates are less motivated to work with non-entrepreneurial tasks in transitioning to working life.

Becoming an Effective Operator in the Workplace—Learning and Opportunities

For both groups, moving towards full participation, and hence becoming an efficient operator, required learning the workplace employer's language, norms, routines, and practices, as well as the competencies necessary to effectively meet the workplace tasks and responsibilities.

From our analysis, we found that EE provided the students with both a frame of reference and an ability to merge themselves quickly into new situations and organisational dynamics in the workplace. As the graduates became effective operators, they experienced new opportunities for more rewarding work, networking, and professional development, thereby increasing their employability. Below, we elaborate on the nuances between the two groups in terms of the aggregated dimension *learning increased participation in the workplace.*

Learning increased participation in the workplace. The nature of the different roles to which the groups were assigned made their learning trajectories quite different. Two underlying themes emerged from our analysis: *Developing an innovation facilitator role* (innovation managers) and *Becoming an insider and intrapreneur* (consultant group).

Developing an innovation facilitator role—innovation manager group. Most of the graduates in the innovation manager group (Lilly, Ellen, and Berit) were tasked with establishing new innovation units, or functions, in which no routines or norms had been established. They therefore had to co-participate to establish the new routines, norms, and practices within these units.

Simultaneously they needed to learn how to manoeuvre in the organisational landscape. Although these graduates relatively easily achieved and experienced high levels of co-participation within their units, they did not initially have the same legitimacy and trust when addressing the rest of the organisation. The learning process they went through was therefore complex and ambiguous concerning the making of a role and negotiating it with the rest of the organisation. They also experienced tensions as they tried to establish the innovation practice in the workplace, which relied on acceptance and commitment from organisational members in several departments and at different levels.

> We have three different business areas; everyone wants to work with innovation and have ideas on new concepts within their business areas. And then we come in with knowledge, skills, and methods that we can use to scale it up, but then they have different goals than us. So, it is hard to find out how the innovation unit is going to be organised to reach our goals, but at the same time get the business areas on board. Because we need their expertise (Berit, interview 2).

The graduates therefore needed to cope with new responsibilities in making their role, while simultaneously learning to legitimise this role and manoeuvre the organisational landscape characterised by complexity and bureaucracy (barriers and rules). Furthermore, they learned to utilise the opportunity to engage in informal arenas in order to socialise and learn about the more hidden dimensions of the workplace:

> The coffee machine is a nice place to meet more people. When you are standing there and making your coffee, you get to talk to people you haven't worked with. It starts with, "hello, how are you," and then you get to know their frustrations and other things, and you get a lot of information (Ellen, interview 2).

Through this type of informal learning, the graduates familiarised themselves with the rest of the organisation while at the same time acquiring important information. In this process, their "know how" competencies, such as networking skills and learning from peers (Gibb, 1993, 1997), became apparent.

To handle the emotional exposure early on, the innovation manager group also needed to become confident in their roles in order to become effective operators. As these graduates gradually managed to execute their roles more efficiently, their confidence increased, and they experienced personal growth.

> I would say I have come a long way and have had huge personal development, not only in the technical aspects but also in becoming more secure in my own role (Siri, interview 2).

In the process of developing to performing a role, the graduates utilised "know why" competencies from EE, such as self-efficacy and conviction, in filling their role. As they became more confident, they also enhanced their ability to handle their emotional exposure and fear of failure in the workplace.

Becoming an insider and intrapreneur—consultant group. In accordance with the LPP process described by Lave and Wenger (1991), we found that as the consultant group learned the specific language, norms, and routines of their employer organisation, their co-participation increased accordingly. Thus, the learning that the consultant group went through focused on *learning to become an insider:*

> You are all new and must get to know the people and learn how the organisation functions. … You must familiarise yourself. And as soon as you have managed to map the organisational culture and the company's values and knowledge, it becomes easier to talk to your colleagues, both on the same level as you and higher (Anne, interview 2).

Most of the graduates within this group (Frank, Anne, Jens, and Tor) went through a formalised introductory training programme designed to introduce them to the employer's organisation, systems, and work routines in order to acquire the skills and knowledge necessary for them to become operational:

> New hires get a two-week boot camp, where we get trained in all the tools that we use, … a lot of different courses, and then you are put on a project … (Tor, interview 2).

From our analysis, it seems that the "apprentice" status allowed for a more gradual learning process of participation in which graduates initially underwent training as part of becoming an insider:

> I was focusing on learning the software, really immersing myself in it. I didn't experience any pressure that I had to deliver results. That made me feel like I had the time to really immerse myself in it (Martin, interview 2).

Most of the graduates experienced increased co-participation (Martin, Frank, and Anne), while some (Lene and Tor) described themselves in a way that suggested they had achieved "full participation" (Lave & Wenger, 1991) in the workplace community:

> We got another person coming into our team, and then it was all about welcoming him into the project in the best way possible, and helping him to become involved in the project, so that he could start contributing. I acted as a bit of a leader for him (Tor, interview 2).

We interpret the task of onboarding another newcomer as a sign of legitimacy as a trustworthy full member of the workplace.

Several of the graduates in the consultant group demonstrated intrapreneurial behaviour as they approached full participation (Åmo, 2010) in their workplace. These graduates came up with new ideas, usually related to improvements in working practices:

> I have been responsible for following up our offerings. After having done this process a couple of times, I saw that we could do this in a much better way. So, I made a new template and procedure on how to do it. And today one of my colleagues tested this, and I got very good feedback (Frank, interview 2).

Moving from the periphery towards a more centralised position, Frank could take initiative and improve practices in the workplace. In this process, the "know why," "know how," and "know what" competencies are utilised. The "know why" competencies depended on achieved confidence and self-efficacy among the graduates, which motivated them to develop and exploit opportunities. The "know how" competencies enabled them to creatively see areas of improvement. Finally, the "know what" competencies give them the tools and resources that enabled them to carry out these improvements, thus leading to innovations in the workplace.

Discussion and Conclusions

This research aimed to enhance understanding of the relevancy of EE in the transitioning process from university to working life, and thereby answer the call for more studies exploring this issue (Galloway et al., 2015; Jones et al., 2017). Our inquiry accords with Orsmond et al. (2021), who view the performance of certain skills in the workplace as context specific and highly dependent on the type of work role. Our study materialised two learning trajectories in the transitioning process explored in this study.

The consultant group followed a transition process similar to the LPP process described by Lave and Wenger (1991). The main challenge for these graduates was to learn the language, norms, and culture of the workplace, as well as to adapt their competencies and learn new ones to achieve full participation, thus holding back and waiting for the "right opportunity" to be entrepreneurial. The innovation manager group, on the other hand, quickly became legitimised within the innovation units they aided in establishing and could act more entrepreneurial from the beginning. The challenge of the innovation manager group came more from handling the complexity and ambiguity when negotiating these units and roles with the wider organisation.

The two different trajectories demonstrate how contextual factors affect different roles and how power relations within a CoP can influence access to learning opportunities (Fuller et al., 2005). For some of the consultant graduates, being at the periphery as an inexperienced newcomer provided an opportunity for learning, a finding which is consistent with several scholars who see the periphery as an empowering learning position (Kubberød & Pettersen, 2018a; Lave & Wenger, 1991). The innovation manager graduates, on the other hand, faced uncertainty and ambiguity and lacked the necessary legitimacy when addressing the wider organisation. The findings demonstrate the challenge of applying CoP to complex organisational structures, which exemplifies Pyrko et al.'s (2019) concept of "triple legitimation" (pp. 495–496). Thus, the legitimation process of the innovation manager graduates was multileveled, as they first needed to build legitimacy within their departments through developing their roles, and then through exposing themselves as representatives from the innovation units to the rest of the organisation, eventually achieving legitimacy at multiple organisational levels. We therefore provide a richer and more nuanced understanding of the early career trajectories of EE graduates than extant studies.

Our research sheds light on how entrepreneurial competencies, exemplified through the "know what," "know how," and "know why" competencies, are utilised in the process of transitioning from EE to working life (Haase & Lautenschläger, 2011; Killingberg et al., 2021). For both groups, parts of the transition process resemble an entrepreneurial process, and the students therefore benefited from having relevant competencies and exposure to similar processes in EE. For the innovation manager group, the process of starting an innovation unit required dealing with uncertainty and ambiguity (Pittaway & Cope, 2007b), as well as learning from different stakeholders in the wider organisation in order to successfully construct the role and manoeuvre in the organisational landscape (Gibb, 1997). As the consultant graduates moved closer to full participation, they were also able to spot areas of improvement as entrepreneurial opportunities (Pittaway & Cope, 2007b), utilising the entrepreneurial competencies more as intrapreneurs.

The "know what" competencies enabled the graduates to demonstrate their proficiency with various tasks. The innovation manager group were generally hired because of their knowledge of innovation, thus meeting the employers' needs to fill their gaps in knowledge, which provided initial legitimacy. The consultant graduates were mainly hired because of their combinations of competencies, which gave them a unique value. For some of the graduates the employer saw the combination of EE with a particular subject domain, such as engineering particularly valuable. As this further added to the students' uniqueness. This further underlines the problematic aspects of aiming to instil certain transferable skills to increase graduates' employability (Lowden et al., 2011; Orsmond et al., 2021). According to our findings, the EE graduates were not employed based on transferable skills, but rather because of their uniqueness and the additional value they contributed to the workplace with flexible combinations in their backgrounds.

The "know how" competencies enabled the graduates to learn and adapt to their organisations, as well as to co-create roles and manoeuvre in the organisational landscape. By engaging in different learning situations through EE, both groups had developed a "cognitive stock of knowledge" (Cope, 2005; Minniti & Bygrave, 2001) that they were able to bring forward and adapt to new situations and roles in the workplace.

Finally, the "know why" competencies gave the graduates confidence and determination in the transition process. For many of them, working life felt like a continuation of what they had experienced in EE. We can infer that the practical nature of the EE programmes and the opportunities to engage in practical tasks resembling working life had given the students self-efficacy (Karlsson & Moberg, 2013) and confidence that contributed to the overall work-readiness of the graduates. For the innovation manager group, self-efficacy contributed to overcoming negative feelings during their transition. Although the innovation manager group experienced feeling overwhelmed, they effortlessly overcame these feelings and developed efficacy in their roles. For the consultant group, the self-efficacy they had acquired provided the confidence to initiate change and carry out intrapreneurial behaviour (Åmo, 2010).

This longitudinal study contributes with a fine-grained understanding of the dynamic nature inherent in the work life transition of EE graduates, showing the complex interrelationships of the factors influencing the transition and thereby representing originality.

Implications for Entrepreneurship Education

Our research findings have several implications for EE. Since many students find jobs in established organisations, the curriculum and experiential practice should include intrapreneurship and how to operate and innovate in larger organisations to better prepare the students for future employment. Educators should also focus on preparing students for employment in established organisations through casework and internships.

Limitations and Implications for Future Studies

This study has some limitations. With a longer time frame, we ideally could have followed students from the start of their EE course to the second or third year of their career. Moreover, although we were interested in studying the transition to working life from the EE graduates' point of view, adding data from others' perspectives, such as managers and colleagues in the workplaces, could enhance research validity, as well as enrich research on graduates' transition process.

Future studies should be conducted on innovative behaviours among these graduates (corporate entrepreneurship and intrapreneurship) and on how motivational factors and "know why" competencies relate to career choices beyond starting a business. There is also a potential of conducting future studies on a larger scale, including a larger number of graduates within different work contexts. Additional studies could potentially uncover alternative trajectories, enriching our understanding on work life transition of

entrepreneurship education graduates. Future studies could also include observations of the graduates in their workplaces. Finally, future studies could include similar groups, such as graduates from business administration or management, to explore the similarities and differences in the transition process.

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Paper 3

Developing career identities through entrepreneurship education – an analysis of graduates' life stories

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Developing career identities through entrepreneurship education – an analysis of graduates' life stories

Abstract

Purpose

The purpose of this research is to investigate the career identities of graduates from entrepreneurship education (EE) programmes and the role that EE plays in shaping these career identities. Impact studies have shown that most EE graduates do not become entrepreneurs but rather find jobs in established organisations. As there are limited role models and career templates for these individuals, they need to construct their own career identities to guide their career choices in the labour market. The paper explores this intriguing topic.

Design/methodology/approach

The study employed a qualitative design. Five individuals from two EE programmes in Norway were purposefully selected based on their career histories. These individuals were interviewed following a life-story approach. Finally, the transcripts were coded and analysed, applying a combination of open and narrative coding.

Findings

The study reveals three career identity archetypes in EE: 'change agent', 'career seeker' and 'maverick specialist'. In addition, the study shows several ways that the career identity is developed through EE: by connecting previous aspirations to realistic career alternatives, by providing a place where individuals can experiment with provisional selves and by gaining social acceptance and affirmations for a claimed identity.

Originality

The study has important implications regarding the broader impact of EE on the employability and careers of graduates. The paper also demonstrates how EE can be a powerful identity workspace for a wide range of career identities, which gives important implications for EE educators.

Introduction

While entrepreneurship has been recognised as a strong engine driving economic growth anddevelopment, universities have increasingly focused on delivering entrepreneurship education (EE) programmes (Hoppe *et al*., 2017; Vanevenhoven and Drago, 2015). Some authors suggest that the main goal of EE is to inspire and enable individuals to engage in entrepreneurial activities (Blenker *et al*., 2011; Jones *et al*., 2012). Research has aimed to determine the extent to which EE fulfils this goal, focusing on issues like how EE impacts students' intentions to start a new business directly after their studies (Bae *et al*., 2014; Martin *et al*., 2013; Nabi *et al*., 2017). Scholars have therefore focused on the formation of a clear entrepreneurial identity in EE, tied to an entrepreneurial function (Donnellon *et al*., 2014; Frederiksen and Berglund, 2020; Duening and Metzger, 2017). Studies have also suggested

that some students might feel alienated by the stereotypical entrepreneurial identity (Raible and Williams-Middleton, 2021) and thus explore broader notions of being an entrepreneur (Hytti and Heinonen, 2013; Frederiksen and Berglund, 2020; Kubberød and Pettersen, 2018).

Recent studies have also shown that a large portion of EE graduates do not become entrepreneurs upon graduation but instead pursue alternative career paths in various organisations (Alsos *et al*., 2022; Charney and Libecap, 2000; Jones *et al*., 2017). Therefore, scholars have moved away from the traditional view of entrepreneurship, where the entrepreneurial function is bound to starting a business, towards the view that learning entrepreneurial competencies can benefit students in various work contexts. (Blenker *et al*., 2011; Jones *et al*., 2012; Neck and Corbett; 2018, Killingberg *et al*., 2021).

Alternative careers of EE graduates has received limited attention in the research literature (Killingberg *et al*., 2021). A few studies have examined how EE influences students' career aspirations. Rae and Woodier-Harris (2013) found that students' increased self-awareness of their entrepreneurial abilities enabled them to focus on a specific career goal and envisage how to achieve it. In addition, the students became aware of more career options. Longva *et al*. (2020) found that in addition to being a place where students might commit to entrepreneurship as a career, EE also provides an opportunity for career reflection, where entrepreneurship as a career might be reconsidered and students may commit to alternative career paths. Despite these attempts, less is known about how EE shapes the alternative career identities of EE graduates directly after their studies and in early working life. Longva *et al*. (2020) suggested that career identity theory might provide novel insights into the impact of EE. Accordingly, this research aims to explore the career identities of EE graduates.

Harmeling (2011) considered EE a '*potentially powerful identity workspace, namely a place where individuals construct, revise and reconstruct their narrative identities*' (p. 741), as it is '*unique in that it directly connects the individual with his or her particular interests, knowledge, experience and social networks, with the marketplace in which he or she seeks to gain acceptance, implement plans, perform commercial transactions, interact with stakeholders, and develop a project, business or organization*' (p. 741). In this paper, we follow this notion and suggest that EE is a powerful identity workspace, not only for an entrepreneurial function but also for exploration of alternative aspirations and career opportunities.

Career identity has been defined as an '*individual's self-definitions in the career context*' (Fugate *et al*., 2004, p. 17). Career identities are usually formulated as coherent narratives that make sense of the past and present to give direction to the future (Fugate *et al*., 2004). Therefore, career identities serve as cognitive compasses that give directions to one's career path (Ashforth, 2000). Career identities have therefore been referred to as the motivational component of employability (Fugate *et al*., 2004). In this paper, the literature on career identities is applied to study individuals' narratives of the career trajectories before, during and after graduation (Ashforth, 2000; Ibarra, 1999; Ibarra and Barbulescu, 2010). The research is driven by the following open question:

RQ1: *What characterises the alternative career identities of EE graduates, and what role does EE play in the formation of career identities?*

The paper makes three distinct contributions. Primarily, it contributes to knowledge on employability of EE graduates and the broader relevance of EE. By identifying three different identity archetypes and showing how they are developed through EE, the paper demonstrates

that EE can be an effective identity workspace that is also relevant for a wider repertoire of career identities. Therefore, the paper answers recent calls for more research on the relevance of EE to career development (Killingberg *et al*., 2022; Longva *et al*., 2020). Second, the paper contributes to the theory of career identity and knowledge about how salient career identities are developed from an initial aspiration by showing that the development and scope of these identities are impacted by the maturity of the aspiration. Finally, the paper presents implications for EE practitioners, suggesting that EE should involve a wide scope of identities and that EE measures supporting the development of an identity should be based on previous aspirations.

The career identity process of entrepreneurship education graduates

EE is not a vocational education, and there is no single professional identity or career path for EE graduates in the labour market (Alsos *et al*., 2022; Jones et al., 2017; Killingberg *et al*., 2022). As there are no clear identity markers, it is up to EE graduates to construct their own career identities.

This paper follows up on the claims of Harmeling (2011) to explore how aspirations and motivations for studying EE are developed and strengthened, and eventually, how these sometimes-vague aspirations are developed into more salient career identities through EE.

Career identities concern questions like 'who am I?' or 'who do I want to be in the workplace?' (Fugate et al., 2004). By addressing such questions, individuals envision possibilities, goals and aspirations for themselves in the workplace, what Markus (1983) refer to as 'possible selves' (Fugate *et al*., 2004; Markus, 1983; Markus and Nurius, 1986). Markus (1983) describes possible selves as 'the cognitive representations of the (un)desired states for the self, as well as specific ideas about how to realize [and sustain] or avoid these states' (p. 544). For example, a person who wants to become a business developer might enrol in an entrepreneurship course to gain the competencies necessary to successfully obtain and carry out such a position. Further, he or she might subsequently apply for positions where he or she can work as a business developer or that put her on the path to becoming a business developer (Fugate *et al*., 2004; Holmes, 2015). In this way, the possible selves direct personal choices in the workplace (Ashforth, 2000). Eventually, career identify development also involves or achieving a balance between the claimed identity and accepted social roles (Holmes, 2015; Meijers, 1998). As careers are increasingly unattached to organisations and more agentic, career identities are an important asset for individuals to strive in the labour market. (Briscoe and Hall, 2006; DeFillippi and Arthur, 1994).

Career identities are usually articulated through self-narratives (Ashforth, 2000; Ricoeur, 1992). In these self-narratives, individuals make sense of past and present experiences and events, attempting to fit them into a single, coherent story (Polkinghorne, 1988). The self-narratives are also shaped by the individual's possible selves (Fugate *et al*., 2004), and individuals tend to highlight events and experiences that are favourable and downplay missteps and themes that are inconsistent with their possible selves (Fugate *et al*., 2004).

While conceptualised as an anchoring concept that gives direction to an individual's career, development of a career identity is also an ongoing process (Sugiyama *et al*., 2022). The evolution of the career identity involves 'identity work', which usually refers to various thought processes that individuals undergo to adapt or maintain their identities in changing contexts (Ashforth and Kreiner, 1999; Ibarra, 1999). Introduced by Ibarra and Barbulescu (2010),

narrative identity work refers to ‘social efforts to craft self-narratives that meet a person's identity aims’ (p. 137). In this paper, identity work is understood as the efforts individuals make to fit new work roles and learning events into the self-narrative. Ibarra and Barbulescu (2010) theorised that narrative identity work is especially prevalent in work role changes, and the ‘more radical, noninstitutionalized or socially undesirable’ (p.139) such role transitions are, the more prevalent the narrative identity work will be. For example, if someone who is successful in a corporate job decides to enrol in an EE programme to follow a new career within social entrepreneurship, this role transition will require substantially more narrative identity work than if the person had switched to a similar job or continued up the corporate ladder.

Ibarra (1999) suggested that role transitions involve experimenting with provisional selves in professional settings by imitating the behaviour of role models and internally and externally evaluating the outcomes. However, scholars have recently suggested that changing a career identity might be a gradual process that involves contending with tensions between the identity and the work context and is not necessarily tied to role transitions (Sugiyama *et al*., 2022).

Research methodology

This research employed a qualitative research design based on retrospective in-depth interviews to explore how EE graduates make sense of their careers. In accordance with Fugate et al. (2004) and Ashforth (2000), career identities are usually articulated through personal narratives. Consequently, the interviews followed a life story approach (Kim, 2015; Rae and Carswell, 2000). Prior to each interview, a map of the interviewees’ career trajectories was made based on their open LinkedIn profiles. At the beginning of each interview, the participants were asked, starting from before enrolling in EE, to share their stories about how they ended up in their current positions. They were then asked about specific positions and career changes and what motivated these changes. Finally, they were asked about their studies in EE, their motivations for studying EE, and how EE helped them shape their career aspirations and identities. Four of the interviews were carried out between February and April 2020, while one of the participants (Nina) was first interviewed in the fall of 2018, with a follow-up in spring 2020.

Sample

Four of the participants of the study were selected from a larger sample of former students of a master’s programme in a Norwegian university, and another was from another university (Nina). A purposeful sampling method was utilised (Patton, 2002; Suri, 2011). The sampling process started with a list of students who graduated between 2012 and 2018. The open LinkedIn profiles of the individuals were then assessed and mapped to get a glimpse of their careers both prior to and after graduating from EE. The goal was to find individuals who had made radical career changes and were thus likely to have done related identity work (Ibarra and Barbulescu, 2010). Individuals were selected who had radically redirected their careers during EE. It can be assumed that either their career identities were altered during the EE programme or that they enrolled in the programme because they wanted to redirect their careers. The final sample consisted of five alumni, with three females and two males (Table 1).

	Gender	Year of graduation from EE	Educational background before enrolling in EE	Career background before enrolling in EE	Early career after graduation
Nina	Female	2018	Bachelors in engineering (subsea, upstream oil and gas)	Engineering (security systems for oil and gas)	Sales engineer
Oda	Female	2015	Bachelor of business and administration	Finance/banking	Various project manager positions within entrepreneurial ecosystem/venture capital
Veronica	Female	2018	Bachelors in professional therapy	Various position within health care (part-time)	Lecturer in higher education
Arne	Male	2017	Bachelor of business and administration	Printing worker/truck driver	Project manager/account manager in ICT industry
Oskar	Male	2015	Bachelors in agriculture	Fossil fuels industry	Various positions within sustainability/consulting

Table I. Overview of graduates including their educational and career backgrounds. All names are fictitious.

Data analysis

Each interview was transcribed, and the data analysis involved a four-step process combining open (Strauss and Corbin, 1998) and narrative coding (Kim, 2015). In the first step of the process, the transcripts were read to get a sense of the whole interview. In step two, the transcripts divided into units of meaning and coded. It was particularly important to look for three things: 1) transformational events and emotions and feelings surrounding these events, 2) reflections about themselves, their identities, and their personal aspirations and 3) words and language used in the interviews. In step three, an axial coding process was used to search for underlying meaning in the narratives and determine how they could be grouped and abstracted into career identity archetypes. In the last part of the process, the career identity archetypes were arranged along a three-step timeline to track the identity process from 1) aspirations to study entrepreneurship (before), 2) entrepreneurship education as a career identity workspace (during) and 3) post-EE graduation identity work (after).

Findings

Three career identity archetypes emerged from the analysis of the EE graduates' narratives: '*the change agent'*, '*the career seeker*' and '*the maverick specialist*'. The following section describes the graduates' efforts to develop these career identity archetypes.

Aspirations to study entrepreneurship

The graduates all had different aspirations to study entrepreneurship. These aspirations served as starting points to further develop their career identities in EE. Overall, there were three different aspirations that were further developed through EE and that gave rise to the

archetypes: studying entrepreneurship to create societal change (change agent), studying entrepreneurship to reorient one's career (career seeker) and studying entrepreneurship because of frustrations with and aspirations to contribute to change in one's subject profession (maverick specialist).

Studying entrepreneurship to create societal change (Change agent)

Oskar's narrative illustrates the change agent archetype. He explained that he started higher education at a mature age, after working in the fossil fuels industry. His main motivation in starting higher education was to solve 'big problems', such as climate change and food security, and to make a sustainable impact. Progressing from the fossil fuels industry towards climate action and sustainable development represented a radical career shift (Ibarra and Burbolesco, 2010). Oskar described the epiphany that made him reassess his career and eventually leave the fossils fuels industry:

> At one stage I worked in the [fossils fuels industry] and realised that the climate problem is so real, it is like a train that is coming towards us in high speed (…) Around the years 2007–2008 I realised that the problem is so massive that it might threaten our existence. (Oskar)

Oskar first started a degree in agriculture with the goal of working with the worlds "food supply system'. However, he soon found that the agricultural field did not necessarily offer the best way of achieving sustainable impact:

> I observed that there was a lot of opportunities in the research but little focus on commercialising of the research. I couldn't understand why they didn't put these great solutions to use. So, I thought, with a master in entrepreneurship and innovation that I had the opportunity to contribute to this transition. (Oskar)

This quote demonstrates some of the frustrations Oskar encountered when studying agriculture. It seems that Oskar's personal motivations were relatively stable when shifting from agriculture to entrepreneurship, but some of the shortcomings that he encountered during his studies made him realise that the entrepreneurship field offered him more potential to achieve his goal of contributing towards sustainability. Rather than having a personal motivation to become an entrepreneur, Oskar viewed entrepreneurship as a vehicle for societal change contributing to sustainable development.

Studying entrepreneurship to reorient one's career (Career seeker)

The career seeker archetype was exemplified by the narratives of Oda and Arne, the motivation to study entrepreneurship came from their frustration with their career and an aspiration to find an alternative career path.

With a bachelor's in business and administration Oda worked in finance before deciding to study entrepreneurship. Her motivation for studying entrepreneurship came largely from frustration with her professional domain:

> (…) The corporate life with the 'this is how we do it here mentality' wasn't a good match for me. Of course, this was an entry level position, but it was really not my type of culture. (Oda)

This quote reveals tension between the taken-for-granted assumptions and norms within the professional domain and Oda's personal identity. Eventually, she decided to study entrepreneurship, which she felt matched her personal identity better.

Like Oda, Arne's main motivation for enrolling in higher education and eventually EE was that he felt his job lacked challenging tasks and personal development opportunities:

> My motivation was to get a more exciting job – a future-oriented, exciting job with opportunities for personal development. A job that cannot be automatically digitalised or replaced by artificial intelligence. (Arne)

Contrasting it to his earlier positions, Arne explained that he wanted a more future-oriented job that could not be automated. This suggests he was influenced by his prior work experience and believed his previous positions were at risk of automation. At the same time, he expected that that EE would give him skills and abilities that are not threatened by this development.

Studying entrepreneurship because of frustrations with and aspirations to contribute to change in one's subject profession (maverick specialist)

Veronica and Nina exemplified the maverick specialist archetype. A maverick specialist can be described as someone with a certain amount of expertise within a subject field (specialist) as well as a non-conformist attitude and a habit of thinking outside the box and challenging norms (maverick).

Veronica decided to apply for a master's in EE because she was dissatisfied with occupational therapy training. Like Oda, she explained that she was particularly dissatisfied with the assumptions and norms she encountered in occupational therapy education:

> I started to think, I don't fit in as a A4 professional therapist, even if the subject has a certain amount of flexibility. It was not enough because I am one of those people that thinks if something is wrong, I must fix it. I just cannot let it be, especially if it is something that I care about. And there was no room for that. So, then I thought that I have to find something else to do. (Veronica)

Veronica explicitly noted that she identifies as a person who 'has to fix it' if she sees something that she thinks is wrong, implying that she has 'change agent' identity. However, in contrast to Oskar, Veronica's motivation for change is based on frustration with more mundane aspects within her profession and not a greater purpose.

Nina's aspiration to study EE was related to her desire to be a part of the change she observed within her subject domain:

> Intrapreneurship is something that I found exciting (…) My experience within my field has made me realise that many companies are heading into a phase of transition, especially within the oil and gas industry where I work.

Like Arne, Nina recognised that the industry that she is working in experiencing disruption, but rather than changing profession, she saw an opportunity to become part of the impending changes.

Entrepreneurship education as a career identity workspace

During EE, each of the different archetypes were developed from initial aspirations into more salient career identities. EE played different roles in the development of the different archetypes.

Connecting aspirations to realistic career opportunities (Change agent)

For Oskar, the aspiration to contribute to social change remained stable throughout his studies. However, as he progressed through EE and developed knowledge and skills related to entrepreneurship, innovation and business, he was also able to connect his aspirations with realistic career opportunities within these domains (Harmeling, 2011). Oskar explained that EE opened his eyes to more opportunities in the labour market:

> It gave me insight into a world that I did not know much about before. (…) It does something with your ambitions. If you understand how the business sector works, you get more ambitions and see opportunities there. But at the same time, it might reduce some of the ambitions as you get a more realistic view of it. (Oskar)

In this way, Oskar's initial aspiration of contributing to sustainable development was concretised into possible selves and realistic measures that he could implement, bringing him closer to achieving his initial aspiration.

Discovering new sides to oneself (career seeker)

For the career seeker group, EE offered an opportunity to explore different possible selves (Markus and Nurius, 1986) in different contexts. It appears that this was done by observing role models to envision provisional selves. Arne stated that being introduced to different entrepreneurs inspired him:

> The first six months we went on different field trips. We went to this small town and met one entrepreneur. He was quite impressive. It really helped (…) In addition we got a visit from an entrepreneur from a solar company, he told us that he was worth a billion kroner, and that was quite impressive. It was many experiences like that, not just theory and on paper. (Arne)

From the analysis, it appears that the students became inspired by being introduced to different actors in the start-up ecosystem, which allowed them to envision possible selves in that ecosystem (Ibarra, 1999). Oda mentioned an event that opened her eyes to future career opportunities:

> We had that day where we went to meet [start-up incubator] and the companies there, and I became really fascinated and thought that this is where I am going to apply for a job when I have five years of experience and lots of courage. It was a magical place. (Oda)

The master's programme also offered opportunities for experimenting with different provisional selves through practical projects and internships. The experiences were then evaluated and adopted by the students as part of their career identities when the outcomes were positive. Arne highlighted the experience of pitch training:

> There was a lot of presentations. Pitching for one minute, being a salesman and owning the room. (…) I would say that I'm an extrovert person, and I might have become even more extrovert. I have learned to understand people and put myself out there (…) People claimed that I should work in sales because of my personality. (Arne)

For Arne, this experience felt authentic given his view of himself as an extroverted person. Thus, this view was strengthened. In addition, he received positive affirmations from his peers, which strengthened his view of himself as a salesman.

Confirming the personal identity and broadening the career identity (maverick specialist)

Through EE, maverick specialists received positive affirmations for their maverick behaviour, which strengthened that part of their identity. In addition, EE provided an opportunity to broaden their career identities. For Veronica, the international internship exchange programme was especially important:

> It was when we came to Houston that I first felt that we were challenged and learned a lot. It became more real than learning theory and just testing it. Now we were going to work and do it for real. So, me and the other intern were placed with a surgent, and he was in so busy that we had to partly act as CEOs. It was very cool. We got to present to investors and everything. (Veronica)

For Veronica, the 'openness' of the classroom environment was important for creating a space in which students could experiment with different provisional selves. In contrast to earlier experiences from education and work, where she was supposed to fit specific norms and rules (e.g. in a profession) and where new perspectives and views that felt intuitive to Veronica were discouraged, EE offered an environment in which different perspectives were encouraged and supported:

> I have gotten confirmation that what I am doing is not completely ridiculous. Because I have always known that I don't want to be like the norm, like what the society expects from you. (Veronica)

For Nina, EE offered an opportunity to broaden her career identity:

> You start this master's, and then you learn more about how things fit together, you see the bigger picture in the labour market, you learn more about different things that you apply in working life, that you might not have known about with just a bachelor's degree. (Nina)

Nina explained that while she learned about various natural sciences and technical subjects, it was just bits and pieces of knowledge, and her master's in entrepreneurship offered her the opportunity to see how these things fit together as a whole, which allowed her to broaden her scope to more career opportunities. Thus, EE was an extension or broadening of her engineering identity.

Post-graduation identity work

Consistent with Fugate *et al*. (2004) and Ashforth and Fugate (2001), the career identities that were developed in EE served as compasses that directed the graduates' career choices and directions. Working life also provided more opportunities for identity work, which in turn had an impact on their career identities. The post-graduation identity work for the different archetypes is elaborated in the following section.

Increasing commitment for societal change (Change agent)

For Oskar, the aspiration to contribute to sustainable change remained stable throughout EE and continued to be the major motivation behind his career choice. The analysis revealed that Oskar experienced *increasing commitment* as his career progressed. All the positions Oskar has held after graduating from EE have revolved around his commitment to sustainable development, food security and cutting CO_2 emissions. He mentioned this as his main career ambitions:

> My ambition is really to have impact. (…). It can be about getting two people to meet, where we have made the pre-project, and then they move on, and the project is realised. So, my ambition is really to cut emissions. I do not care how it happens. (Oskar)

This quote suggests that Oskar's commitment to sustainable development, food security and climate action has been the main motivational factor in his career. As long as he achieves his ambition of cutting CO_2 emissions, he does not care how it happens. Rather than attempting to optimise his career to achieve the best possible career outcomes in terms of status or salary, Oskar's main concern is obtaining positions where he can achieve the most 'impact'.

Optimising the career and maintaining the identity (Career seeker)

Following graduation, individuals with the career seeker archetype were more career oriented, gravitating towards positions they found more interesting and which offered more personal development and learning.

Based on the analysis, these graduates view themselves as '*jacks of all trades*'. It appears that the graduates are confident that they have developed entrepreneurial knowledge and skills that they perceive as valuable in the labour market and that allow them to handle any situation:

> I am confident that whatever I encounter, I have the tools to figure it out. One thing is to figure out what to do, another is to go through with it, and then lay out the necessary plan and method to go through with it (…) This is what the master's does. It prepares you to both handle and execute. (Oda)

When talking about the career events or projects she was working on, Oda used words and expressions from the entrepreneurship domain. She mentioned achieving a 'product–market fit' after succeeding in making a festival. She also explained that she sees herself as an '*entrepreneur*' as someone who '*sees a problem in the market and has the urge to fix it*'. Clearly, she grasps the entrepreneurial identity as a core part of a more generalist role, and thus she maintains the entrepreneurial identity although the tasks she performs in this position are different than when starting a business.

Changing the professional field from within (maverick specialist)

After completing EE, graduates with the maverick specialist archetype pursued a career within the subject domain in which they were employed before enrolling in EE, but they actively sought positions in which they could contribute to change and development within that domain.

After graduating, Veronica started working at the faculty where she studied professional therapy and was given a mandate to make changes to the programme:

> Now I had the chance to make real impact (…) Because I remember when I was a student and how little I actually learned through the education, because there were very one-sided teaching methods. (Veronica)

Although she was frustrated with the field of professional therapy before starting EE, EE gave her the tools and abilities needed to change the field, along with self-efficacy and validation that made her secure in her identity. She was also given a mandate to implement the changes she saw necessary, which provided her with external validation.

Nina was also actively seeking positions in which she could be part of developing and changing her profession. Unlike Veronica, who was motivated by contributing to the changes that she deems necessary, Nina sought these positions for opportunistic reasons:

> I get to be a part of driving change. It is kind of the reason why I wanted this job. I get to be part of developing these concepts, working behind the scenes. This job gives some other opportunities. (Nina)

It appears that Nina gravitates towards these positions because she finds them interesting and because it gives her opportunities. Thus, Nina and Veronica have different reasons for wanting to work with change and development within their subject domains. However, they are both grounded in their domains and are somewhat specialised in their fields. Based on the analysis, it appears that the maverick specialist identity is an extension of the professional identities they had when enrolling in EE.

Discussion

This study demonstrates the usefulness of EE as an arena for career reflection (Longva *et al*., 2022) and as an identity workspace (Harmeling, 2011). The study explored how three distinct archetypes evolved from initial aspirations to becoming more salient career identity archetypes that served as compasses for career choices at a later stage and the role of EE in this process. The three archetypes all followed different identity development processes throughout EE relating to different theoretical contributions. Therefore, this study offers a more nuanced view on how EE influences the development of career aspirations than previous studies that have considered, for example, intentions (Longva *et al*., 2020). The findings are summarised in Table 2.

	Change agent	***Career Seeker***	***Maverick Specialist***
Aspirations to study entrepreneurship	Create societal change	Reorient one's career	Dissatisfaction/wanting to change the subject profession
Identity work in EE	Connecting aspirations to realistic career opportunities.	Discovering and experimenting with new possible selves in the entrepreneurship space and classroom environment	Achieving positive affirmations in the classroom environment and feeling true to oneself.
Related theoretical concept	'EE as an identity workspace' (Harmeling. 2011)	"Experimenting with provisional selves". (Ibarra. 1999)	"Finding a match between claimed identity and socially accepted identity". (Meijers, 1998; Holmes, 2015)
Post EE identity work	Increasing commitment to working for societal change	Jack of all trades Maintaining an entrepreneurial identity within a generic role	Combination of professional and maverick identities

Table II. Career identity formation before, during and after EE.

Students with the change agent archetype already had clear aspirations going into EE that stayed somewhat stable throughout, but they lacked the knowledge and skills needed to envision possible selves within the labour market. For this archetype, the central challenge was to connect initial aspirations with realistic possibilities in the marketplace. This is consistent with the view of Harmeling (2011), who proposed that EE is unique in that it connects individuals' interests with possibilities in the marketplace, and Rae and Woodier Harris (2013), who found that students become aware of more career alternatives through EE.

Those with the career seeker archetype came into EE without clear aspirations, besides the fact that they wanted to move away from their current careers. The identity development process of this archetype therefore involved observing role models and peers to construct provisional selves and then experimenting with the provisional selves in the classroom, resembling Ibarra's (1999) notion of professional adaptation.

Meanwhile, students with the maverick specialist archetype developed career identities that were partly anchored in their previous professional identities. Their aspirations for enrolling in EE were related to their need/desire to contribute to changing their professional domains. As with the change agent archetype, the maverick specialists' aspirations stayed consistent throughout EE, but the challenge for these individuals was to gain social acceptance for their

claimed identities. For these individuals, EE offered a space where their claimed identities was accepted and encouraged (Holmes, 2015; Meijers, 1998).

The nature and maturity of the aspirations impacted the individuals' identity processes. Of the three different archetypes that were identified, the change agent and specialist maverick archetypes had more clear ambitions, which impacted the scope of their career identities. Ultimately, they developed possible selves tied to specific missions (change agent) or within specific professional domains (maverick specialist). The career identities of career seekers appeared to be more malleable and open to new possible selves within a wide variety of professional domains compared to the other archetypes.

Based on the analysis, it also seems that being true to oneself (Ibarra, 1999) is a major driver of career identity development, as all the individuals experienced situations that felt both authentic and inauthentic to their views of themselves. This aligns with the findings of Hytti and Heinonen (2013), who suggested that some views of entrepreneurs might oppose their personal views of themselves. Therefore, EE should include broader notions of being an entrepreneur. The current findings further suggest that trying to enforce specific identities on individuals might be futile and that EE could serve many different purposes for individuals, depending on their initial aspirations.

Consistent with Fugate *et al*. (2004), the career identities of the EE graduates acted as compasses for their career choices following EE. This was especially evident for individuals with the change agent archetype, who seemed to make career decisions solely based on the aspiration to contribute to social change. Another interesting finding was the efforts that were made to maintain the entrepreneurial identity. Despite working in jobs unrelated to entrepreneurship, the entrepreneurial identity was preserved through 'entrepreneurial language' (Donnellon *et al*., 2014).

Conclusions and implications for future research

This research explored the alternative career identities of EE graduates and how EE influenced the formation of these identities. The study identified three different career identity archetypes of EE graduates and showed how these archetypes evolve from initial aspirations towards career identities, which are further developed in the early working life following EE. The study answers Longa *et al's.* (2020) call for studies applying career identity theory to study EE graduates. The results extend previous studies on the backgrounds of EE students (Sá and Holt, 2019), showing how students' backgrounds and aspirations influence the identity development process within EE.

Consistent with the view of Fugate *et al*. (2004), who viewed career identities as the motivational component of employability, this study also contributes to the discussion on entrepreneurship education and employability (Killingberg *et al*., 2021; Rae, 2007; Walmsley *et al*., 2022).

This study also had some weaknesses. Optimally, a longitudinal design would have been beneficial for exploring career identity dynamics over time. Additional participants could also reveal alternative aspirations, identities and identity development processes in EE. More quantitative follow-up research is needed to confirm some of the tendencies discovered through this research.

Implications for entrepreneurship education practices

This study indicates that the aspirations that people have when enrolling in EE remain somewhat consistent throughout EE, and they may influence the process of developing a career identity in EE. Further, the findings indicate that efforts to lead students to adopt a certain identity (e.g. 'starting a business' entrepreneurial identity) might be challenging or even harmful. This finding suggests a need to consider a wider variety of identities that might be developed through EE (Hytti and Heinonen, 2013) and pedagogies that are tailored towards individual preferences (Thrane *et al*., 2016).

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Paper 4

The project management trap: A mixed-methods study of the innovative work behaviour of entrepreneurship education graduates

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Working paper

The project management trap: A mixed-methods study of the innovative work behaviour of entrepreneurship education graduates

Introduction

Entrepreneurship education (EE) originates from the objective to inspire and equip individuals to engage in entrepreneurial activity (Blenker et al., 2011, Killingberg, Kubberød and Pettersen, 2022). As such, most research assessing the impact of EE has focused on measures instrumental to an entrepreneurial function (Martin, McNally and Kay, 2013, Nabi et al., 2017) such as the number of students starting up a business (Kolvereid and Moen, 1997, Matlay, 2008) or their intentions to start a business (Bae et al., 2014).

Studies show, however, that most EE graduates take up jobs in established companies, rather than starting their own business (Alsos et al., 2023, Charney and Libecap, 2000, Jones et al., 2017). Scholars argue that EE might be relevant for more than just starting a business (Neck and Corbett, 2018, Neck and Greene, 2011), for example in terms of general employability (Bell, 2016, Killingberg, Kubberød and Blenker, 2021, Killingberg, Kubberød and Pettersen, 2023, Rae, 2007) and in the context of intrapreneurship and corporate entrepreneurship (Winborg and Hägg, 2023, Kuratko and Morris, 2018). Some researchers have also explored which competencies EE graduates are using in their post-EE career and how they are using them (Alsos et al., 2023, Jones et al., 2017, Killingberg, Kubberød and Pettersen, 2023).

Currently missing from the research field is research that assesses the impact of EE relative to other education programmes. The lack of control groups in studies of labour market outcomes has been pointed out as a particular weakness in the EE literature (Martin, McNally and Kay, 2013). In this study we shed light on how EE influences the innovative work behaviour of graduates, and whether EE graduates are more innovative in their working life than other graduates. We use the innovative work behaviour (IWB) concept (Janssen, 2000) as a measurement approach. The objective of the study is therefore to explore the IWB of EE graduates, and shed light on educational and contextual factors that might have an impact on the IWB of EE graduates.

The study follows a mixed methods approach and includes quantitative data from two EE programmes and four other educational programmes, along with qualitative data. The quantitative data are analysed to compare the innovative work behaviour of EE graduates with graduates from related programmes, including business administration, industrial engineering, mechanical engineering, and software engineering. The qualitative data are then analysed to explain and enrich the quantitative findings.

The research makes several contributions to the EE field. Primarily, this is to our knowledge, the first attempt to compare the innovative work behaviour of EE graduates to other graduates. Our findings show that EE graduates are not necessarily more innovative than other graduates. As such, this study nuances to the somewhat naïve view that EE educates

graduates would act entrepreneurially in any context. Secondly, the study shows different contextual reasons that taken together leads to EE graduates ending up in a position that we refer to as “the project management trap”, which is a state that prevents innovative behaviour and career development. This study has strong implications for the design of EE, and how organisational factors might foster or hinder innovative work behaviour among employees. Finally, the study demonstrates the usefulness of the IWB concept for comparing innovative outputs across different groups of graduates.

Literature review

Although studies have compared EE to other studies in terms of objective career measures such as salary and position (Charney and Libecap, 2000), it is more challenging to measure the impact of EE programmes when it comes to behaviour and professional routines, such as innovative behaviour. To compare EE graduates with graduates of other programmes in a valid manner, and instrument is needed that is applicable to the different fields and workplaces.

A promising instrument is innovative work behaviour (IWB) (Janssen, 2000). IWB is defined as “the intentional creation, introduction, and application of new ideas within a work role, group or organisation, in order to benefit the role performance, the group, or the organisation” (Janssen, 2000, p. 288). IWB has been used in different sectors and types of organisation, and does not necessary follow task requirements (Janssen, 2000). It is also frequently applied across different sectors and industries (AlEssa and Durugbo, 2022), and therefore suitable for measuring the innovative work behaviour across different groups.

IWB builds on (Kanter, 1988) conceptualisation of the innovation process. IWB is a complex behavioural construct that consist of three behavioural task areas that correspond to the different stages of the innovation process: idea generation, idea promotion and idea realisation (De Jong and Den Hartog, 2010, Janssen, 2000, Scott and Bruce, 1994). Researchers have expanded IWB to include factors such as idea exploration and reflection (Messmann and Mulder, 2012). IWB has been used in different sectors such as the food industry (Janssen, 2000), public health (Janssen, 2004) knowledge services (De Jong and Den Hartog, 2010) and defence (Caniëls and Veld, 2019), just to mention a few.

Several factors in the workplace context have been argued to influence the innovative work behaviour of employees (Hayton, 2005, Kanter, 1988, Rigtering and Weitzel, 2013). Factors such as resources available (Menzel, Aaltio and Ulijn, 2007, Rigtering and Weitzel, 2013) and managerial style (De Jong and Den Hartog, 2010) have been found to influence the innovative work behaviour of individuals. Scholars have also argued that fostering a culture where innovative and entrepreneurial behaviour is encouraged, failure is tolerated and where the organisation is optimised to achieve innovative outcomes will foster innovative behaviours and outcomes (Ireland, Covin and Kuratko, 2009, Lynch, Kamovich and Steinert, 2019, Shepherd, Patzelt and Haynie, 2010).

Several studies have investigated how educational factors influence innovative behaviour in the workplace. (Janssen, 2000) found that the level of education impacted the IWB of the employees, and that the higher the education the higher the IWB. Several researchers have found that technical degree or education are associated with higher innovation output after graduation (Bjornali and Støren, 2012, Vila, Pérez and Coll-Serrano, 2014).

Studies have also found correlations between IWB and certain other competencies such as entrepreneurial competencies and creativity (AlEssa and Durugbo, 2022). Vila, Pérez and Coll-Serrano (2014) found that specific competences were related to the propensity of the

individuals to innovate: alertness to new opportunities, mobilising the capacities of others, and coming up with new ideas and new solutions. All of these are frequently found among the key learning outputs from EE (Haase and Lautenschläger, 2011, Killingberg, Kubberød and Blenker, 2021, Lackéus, 2014).

Although researchers have investigated the link between various "soft skill"-type competencies and IWB, there is a lack of studies investigating the link between "hard skill"-type professional competencies (e.g., the degree of expertise within the actual subject domain) and IWB. Except for Messmann, Mulder and Gruber (2010), who found correlations between the occupational knowledge and IWB, hard skills seem to be more overlooked in the IWB literature (AlEssa and Durugbo, 2022).

Killingberg, Kubberød and Blenker (2021) suggests that the ability to discover and exploit entrepreneurial opportunities make EE students more prepared than others to act as intrapreneurs in established organization. However, to our knowledge, no studies have specifically looked at the IWB output of EE graduates. Studies have also found that EE might increase the preferences towards intrapreneurship as a career choice (Longva, Strand and Pasquine, 2020), suggesting that EE might increase the students' intrapreneurial intentions. Bjornali and Støren (2012) also found that graduates from study programmes that had a good basis of creating entrepreneurial competencies (according to self-reports) were more likely to engage in innovation in the workplace.

Although these studies (Longva, Strand and Pasquine, 2020, Bjornali and Støren, 2012) show promise in empirically establishing a link between EE and IWB, scholars have pointed at differences between entrepreneurs and corporate entrepreneurs (Winborg and Hägg, 2023). The corporate context of established organisations is different than the context of startups (Garrett and Holland, 2015). Some scholars have therefore argued that in preparing individuals for corporate entrepreneurship should involve separate courses and modules, such as entrepreneurial health audits (Kuratko and Morris, 2018) or work-integrated learning projects that are related to corporate entrepreneurship (Winborg and Hägg, 2023). Corbett and Hmieleski (2007) also suggest that the difference in contexts makes corporate entrepreneurs think differently than startup entrepreneurs. While corporate entrepreneurs have more access to resources, networks and capabilities in their employer organization, people considering independent ventures are more likely to take action and persist in their ventures than their counterparts within larger organisations. In addition, intentions to engage in corporate entrepreneurship are different than intentions to engage in startup entrepreneurship in terms of antecedents such as risk-taking propensity and attitude toward independence (Douglas and Fitzsimmons, 2013).

Despite these objections, we start with a notion that the ability to discover and exploit entrepreneurial opportunities will make the students more innovative (Killingberg, Kubberød and Blenker, 2021), and ask the following research question.

1. How do EE graduates compare to other graduates when it comes to innovative work behaviour in the workplace, and how can the differences in innovative work behaviour be explained?

In the next section, the methods applied to answer this research question is presented.

Method

In this study, we adopt a mixed-method explanatory design (Creswell and Creswell, 2003, Ivankova and Creswell, 2009). The explanatory design is a two-phase research design where the analysis of the quantitative data is followed by a qualitative phase where the goal

is to explain the quantitative findings (Ivankova and Creswell, 2009). The qualitative phase usually involves gathering data following the quantitative phase, where the researcher launches a qualitative study (usually a case study; Yin (2009), and through purposeful sampling try to find cases which might explain or highlight the findings from the quantitative phase (Eisenhardt, 1989, Ivankova and Creswell, 2009). However, in our study we draw on a large sample of qualitative data that was collected from the same population as the quantitative study, that were collected simultaneously.

Empirical setting: The Norwegian labour market

The study was carried out in Norway. The Norwegian labour market is characterised by a stable low unemployment rate (3,4% as of 2022)[1], strong labour unions and strong employee rights. About a third of Norwegian employees work in public sector. The health and welfare sector is the largest sector and employs about a fifth of the employees[2], while the Oil and Gas sector is by far the most profitable[3]. The Norwegian business community is dominated by small and medium-sized companies, with only a few large actors. Only a small fraction (0,6%) of Norway's total businesses employs more than 100 people[4].

Sample and measures– quantitative data

The data were gathered from graduates of six different master programmes at two universities in Norway: entrepreneurship and innovation, industrial engineering, business administration, mechanical engineering, and master's in software engineering (ICT). A survey was sent to former students in these programmes who had graduated between 2012 and 2019. A total of 1263 surveys were sent. A reminder was sent to all of the graduates one month after the initial inquiry. 335 responses were received, adding up to a response rate of 27%.

The survey contained questions about the demographic factors (gender, age, year since graduation), employment status (description of the employer organisation, description of the tasks and responsibilities), objective career success (salary, title, project management responsibility, permission to delegate work), subjective career success (Greenhaus, Parasuraman and Wormley, 1990), innovative work behaviour (Janssen, 2000, Messmann and Mulder, 2012).

All programme and subject descriptions for the different programs were assessed in order to check for changes in the programmes that might have changed the educational outcomes.

Innovative work behaviour

Innovative work behaviour was measured using the Janssen (2000) scale, along with items from Messmann and Mulder (2012). The graduates were asked to indicate how frequently they were performing different behaviours. The questionnaire consisted of the following nine items from Janssen (2000): (1) creating new ideas for difficult issues (2) searching out new working methods, techniques, or instruments (idea generation); (3) generating original solutions for problems (idea generation); (4) mobilising support for innovative ideas (idea promotion); (5) acquiring approval for innovative ideas (idea promotion); (6) making important organisational members enthusiastic for innovative ideas (idea promotion); (7) Transforming innovative ideas into useful applications (idea realisation); (8) introducing innovative ideas into the work environment in a systematic way (idea realisation); (9)

[1] Arbeidskraftundersøkelsen (ssb.no)
[2] Hvor mange jobber er det i Norge? (ssb.no)
[3] Norsk næringsliv (ssb.no)
[4] Virksomheter (ssb.no)

evaluating the utility of innovative ideas (idea realisation). In addition, the following four measures of opportunity exploration were adapted from Messmann and Mulder (2012) and added to the survey: (1) I keep myself informed about the organisation's structures and processes, (2) I keep myself informed about the latest developments within the organisation, (3) I keep myself informed about new concepts/insights within my professional field, (4) I keep myself informed about new developments in other organisations.

Sample and data gathering – qualitative data.

The qualitative data were collected between spring 2018 and spring 2020. The complete sample consisted of 26 informants who had graduated from the master programme in entrepreneurship and innovation between 2014 and 2019. The informants were selected through purposeful sampling (Eisenhardt, 1989, Patton, 2002), and informants were selected because of their career characteristics. We selected graduates who pursued careers in established organisations. Graduates were selected in cooperation with the programme manager.

The interviews followed a semi-structured interview guide and lasted between 30 and 90 minutes. The informants were asked questions about their backgrounds and motivations to study entrepreneurship, experiences, seminal events and learning outcomes from EE, and motivations, seminal events, behaviour, and further learning in the labour market after graduation.

Five of the informants were also participated in a follow-up interview 18 months after the first interview. This allowed us to follow up their progress in terms of employment status, adaption to the workplace, and changes to their motivations.

Analysis of quantitative data

The IWB altogether 13 IWB items (Janssen, 2000, Messmann and Mulder, 2012) were corrected for common method bias using the procedure by Lindell and Whitney (2001). As marker items for common method bias, we had included the questions "how often do you watch football on TV" and "how often do you read football news in print or online newspapers" in the questionnaire. Multivariate analysis of variance, with the mean of the 13 IWB items as the target variable and the two common method bias markers as predictors, indicated the presence of significant bias (Wilks' lambda = .84, $F[24,618] = 2.40$, $p < .001$). The 13 residuals from this analysis were saved and averaged. The average was then standardised to zero mean and unit standard deviation. The reliability was satisfactory (Cronbach's alpha = .92). This corrected IWB score will be used as a measure in the analyses below.

Analysis of qualitative data

The qualitative data were analysed using open coding (Glaser and Strauss, 1967, Strauss and Corbin, 1997). As the main goal of the qualitative analysis was to explain the findings from the quantitative analysis, we were actively looking for themes that might explain these findings. The coding was done in three steps: (1) the transcripts were read and reread in order to get a sense of the whole, from this initial step, some of the themes started emerging, (2) the transcripts were then coded with the initial themes, while also being open to other themes or interpretations, and (3) in the final step of the process, the themes were compared across transcripts (Eisenhardt, 1989).

The themes were not entirely consistent across every transcript. The careers of the EE graduates can be quite idiosyncratic since EE is a relatively young educational discipline with no clear career path (Killingberg, Kubberød and Blenker, 2021, Killingberg, Kubberød

and Pettersen, 2023). It is therefore challenging to find themes that are consistent across every EE graduate's career. The qualitative data were also gathered simultaneously as the quantitative data, i.e. we did not know the results of the quantitative analysis when we conducted the qualitative interviews. There is a chance that the frequency of these themes across the different transcripts would have been larger if the interviews were more focused asking follow up questions to give explanations to the quantitative findings. On the other hand, the risk of confirmation bias might have been larger if the qualitative data gathering was done after gathering the quantitative analysis. Despite of these challenges the themes presented were consistent for a considerable number of the transcripts, which we take as a sign of validity. The themes are presented as propositions that should be further studied and to check their validity.

Results

Innovative work behaviour and labour market performance

A linear model was estimated with the corrected IWB score as the target variable. The design included the main effects and the interaction of master programme (either entrepreneurship and innovation, business administration, industrial engineering, mechanical engineering or software engineering) and years since graduation (measured at the time the survey was completed). The interaction of master programme and years since graduation was significant (F[4,313] = 3.00, p < .05) whereas the main effects of master programme (F[4,313] = 2.05, p = .09) and years since graduation (F[1,313] = 1.86, p = .17) were not. The expanded parameter estimates are shown in Table 1. For some of the master programmes, the effect of years since graduation was not completely linear. In Figure Y1, the effects are visualised using a local linear kernel smoother.

Table 1. Effects of master programme and years since graduation on innovative work behaviour (target variable: corrected IWB score; expanded parameter estimates)

Term	*b*	*S.E.*	*t*	*p*
Intercept	-.16	.12	-1.28	.200
Master programme: Entrepreneurship and innovation	.19	.12	1.59	.114
Master programme: Business administration	-.05	.10	-.45	.654
Master programme: Mechanical engineering	-.05	.14	-.36	.719
Master programme: Software engineering	.20	.23	.85	.395
Master programme: Industrial engineering	-.29	.12	-2.33	.021
Years since graduation	.04	.03	1.36	.174
Years since graduation × Master programme: Entrepreneurship and innovation	-.17	.05	-3.29	.001
Years since graduation × Master programme: Business administration	.00	.04	.04	.970
Years since graduation × Master programme: Mechanical engineering	.04	.07	.62	.538
Years since graduation × Master programme: Software engineering	.05	.09	.53	.595
Years since graduation × Master programme: Industrial engineering	.08	.06	1.27	.203
R^2	.06			

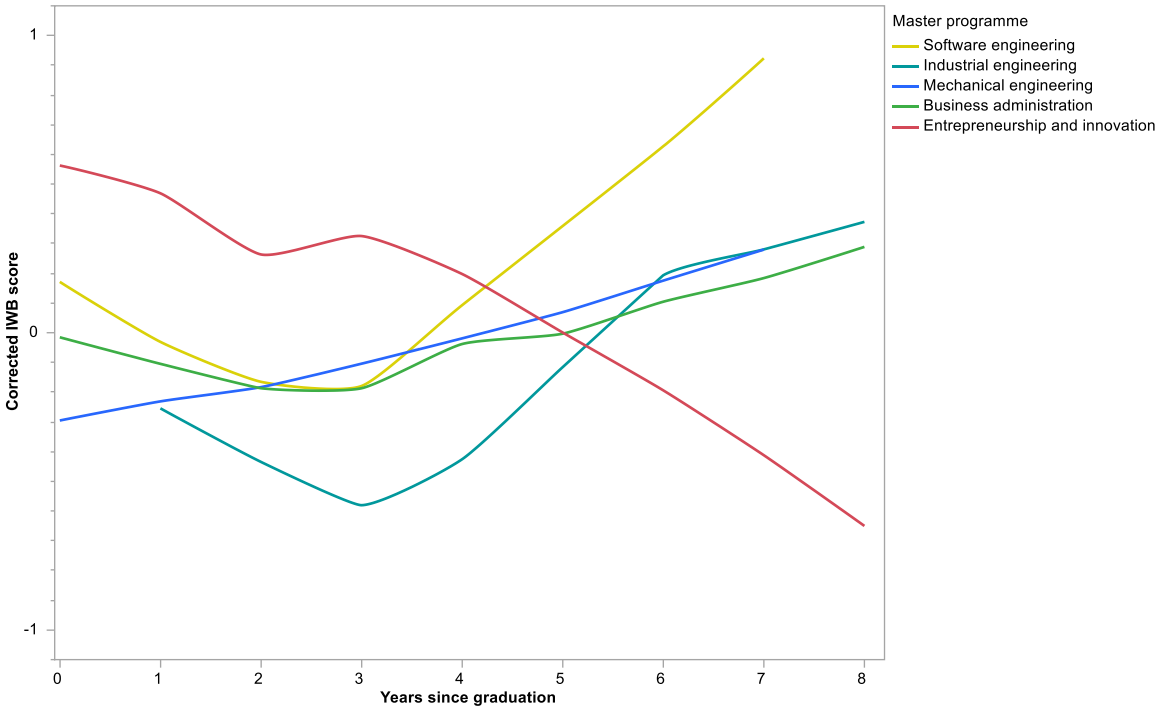

Figure 1. Innovative work behaviour as a function of master programme and years since graduation (local linear kernel smoother with local width = 1)

A second model was estimated. It had the same design as before, but gross annual salary (in NOK; 2020 prices) as the target variable. The main effect of years since graduation was highly significant ($F[1,317] = 63.81$, $p < .001$). The main effect of master programme ($F[4,317] = 2.33$, $p = .05$) was marginally significant, the interaction of master programme and years since graduation was not significant ($F[4,317] = .77$, $p = .55$). Expanded parameter estimates are shown in Table 2. Again, there were some slight non-linearities; the effects are visualised in Figure 2.

Table 2. Effects of master programme and years since graduation on gross annual salary (target variable: gross annual salary in NOK; expanded parameter estimates)

Term	*b*	*S.E.*	*t*	*p*
Intercept	511149	16294	31.37	.000
Master programme: Entrepreneurship and innovation	-34780	15571	-2.23	.026
Master programme: Business administration	2028	13454	.15	.880
Master programme: Mechanical engineering	-8458	18362	-.46	.645
Master programme: Software engineering	6987	30683	.23	.820
Master programme: Industrial engineering	34223	16488	2.08	.039
Years since graduation	34373	4303	7.99	.000
Years since graduation × Master programme: Entrepreneurship and innovation	-5153	6733	-.77	.445
Years since graduation × Master programme: Business administration	-585	5870	-.10	.921
Years since graduation × Master programme: Mechanical engineering	-11803	8888	-1.33	.185
Years since graduation × Master programme: Software engineering	10168	12182	.83	.405
Years since graduation × Master programme: Industrial engineering	7374	7946	.93	.354
R^2	.29			

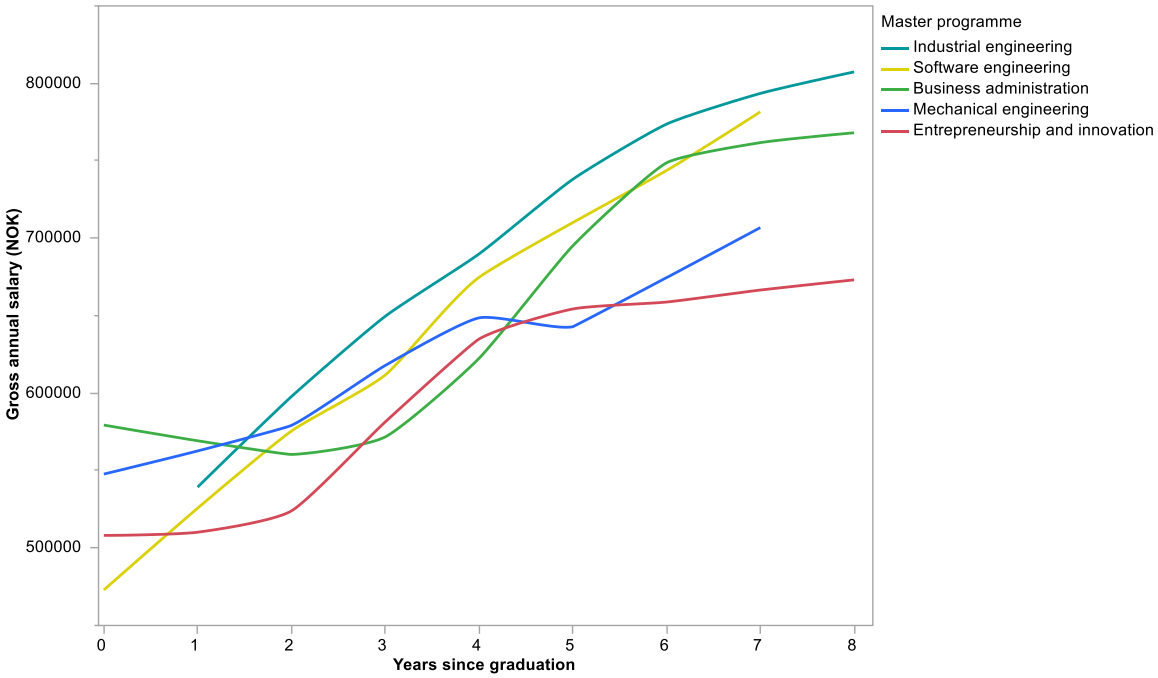

Figure 2. Gross annual salary as a function of master programme and years since graduation (local linear kernel smoother with local width = .7)

The IWB scores of the different cohorts are presented in Figure 1. For the newly graduated individuals that graduated in 2019, the IWB scores are higher for the EE programmes, while the industrial engineering graduates has the lowest scores of IWB). However, for the EE programmes, the IWB scores decline for each cohort, and the cohort that graduated in 2013 and 2012 have significantly lower IWB scores than the control groups. The industrial engineering and software engineering graduates appear to have an opposite development,

for these graduates the IWB scores increase for each year passing since graduating, and for the cohort graduating in 2012, the IWB scores are of these groups are higher than the other groups. Finally, the mechanical engineering and business and administration had a slight increase for each year since graduation.

In terms of salary the entrepreneurship and innovation programs stand out from the rest as it has a relatively flat progression in salary, and the cohort graduating in 2012 only earns on average approximately 150 000 more than the one graduating in 2019. The control groups (with the exception of mechanical engineering) all had relatively sharp increase in terms of salary, and the cohort graduating in 2012 earned on average approximately 250 000 more than the cohort graduating in 2019. A comparison of the salary levels between different groups and cohorts is presented Figure 2.

The project management trap

In the rest of the chapter, we provide a possible explanation to why EE graduates appear to be less innovative than other graduates, and that the fact that the IWB-scores seem to decrease with time. Our qualitative analysis suggests that many of the EE graduates face unfortunate circumstances in the labour market such as the lack of subject specific skills and dealing with bureaucracy/internal resistance. We suggest that despite being given project management responsibilities in the labour market as shown in table 3, that the project management positions combined with these unfortunate circumstances put the students in a position where innovative behaviour and career development are prevented. We refer to this state as the project management trap.

Proposition 1: A project management position can in certain instances prevent the innovative behaviour of the employee holding that position.

Table 3. Proportion with project management responsibilities (by master programme)

Master programme	Project management responsibilities
Entrepreneurship and innovation	65%
Mechanical engineering	57%
Industrial engineering	55%
Business administration	48%
Software engineering	19%

Lack of subject specific skills

One factor that appear to prevent the innovative work behaviour of EE graduates is the lack of discipline specific skills. In contrast with the control groups, where the master programme either is integrated or continue to build a specialist expertise within a certain subject domain. The master programmes in entrepreneurship are essentially building another expertise on top of the subject domain that the students have been studying in their bachelor programmes. One of the master programmes in entrepreneurship allows applicants from any master program, while the other programme allows applicants from only STEM subjects. Through our analysis we found three subthemes concerning the lack of discipline specific skills: Lack of necessary industry knowledge, lacking technological skills, and Generalist positions.

Table 4: Lack of subject specific skills	
Subtheme	Example quotes
Lacking industry knowledge	"It is them who have the information that we don't have. Because no one in our team have education or competencies within energy. It is a balance, that we get them to invest their time and energy from their department, without them consuming us." (Wenche, 2018) «I work most in team, because we are depending on the subject specific knowledge, and that is something that I don't have, I don't know everything about the product. It's getting better, but still it's quite minimal compared to the others." (Trine, 2018)
Lacking technological skills	«There is a very specific division of roles because I have no subject specific competences to bring to these projects. If I am working with a hydro power plant, I am not the one who will design the solution. My role will never be to say something about the solution, my role will always be to make sure the right people are working with the solution. So, I am not making anything, and I have absolutely no opinion on the solutions. Because that's not something that I am able to do." (Hilde, 2016) "Eh, I have some technical expertise which make me able to become a link between a technical employee and a non-technical employee, but I don't know how to execute these things, I just know what they involve" (Peter, 2018) "So, I could have wished that me might have had the opportunity to choose a direction, and either choose more technical subject, or had some coding or other tech subjects, or more a financial direction, and gotten more financial subjects in addition with the other stuff. That is something that I could have used." (Trine, 2018)
Generalist positions (jack of all trades)	"I feel like I am a jack of all trades. I know enough about UX design, that I can sit and talk to our UX designer, I am not that good at coding, so, I can't keep up. But I am more of a web editor, kind of like a jak of all trades. Maybe that's what I am, almost like a director that make sure everything gets delivered." (Kristin, 2014) "I don't have any economic responsibility, and I am not quite a project manager either. But kind of a mix between a business developer and a project manager." (Caroline, 2018)

Many of the graduates expressed challenges because of their lack of subject specific skills, which influenced their work positions, and ability to execute innovative behaviour. Many graduates experience lack of industry knowledge, that prevent them from spotting opportunities and areas for improvement within the industries where they operate. For a minority of the students being able to combine industry specific knowledge from previous education and work, with competencies developed through EE was a strength that enable them to stand out:

> "I know this industry, and I think that's an advantage. I've worked in the industry, I know the mindset of health professionals, I know their needs (…). This was a huge advantage for me when I started working in this company, that no one of my other colleagues had. (Sophie, 2015)

On the other hand, this was not the case for most of the graduates in our qualitative sample, which had no or only limited industry knowledge.

In addition, the graduates experienced a lack of technical skills relevant for the industries where they were employed. The lack of technical skills prevents the students from being part of the creation of the innovation beyond the idea stage, but also prevent them from seeing what is technically feasible.

Many of the students reported being organised within separate innovation units, where they were supposed to give innovation services to the rest of the organisation. However, this also

might prevent them from building subject specific skills with time. Instead, may EE graduates end up being generalists that coordinates, and facilitate that other people innovate.

Eventually this leaves us with proposition 2:

Proposition 2: Many EE graduates lack subject specific skills that prevent them from engaging in innovative wok behaviour in the labour market.

Lack of knowledge about larger organisations

Another factor that appears to prevent the innovative work behaviour of the graduates is being faced with bureaucracy and resistance form co-workers. Examples of this is summarised in table 4. Eventually this is consistent with other scholars that have argued that an entrepreneurial culture is an important prerequisite for innovative behaviour.

Table 5: Dealing with bureaucracy/internal resistance

Subtheme	Example quotes
Bureaucracy preventing innovation	"It has something to do with administrative stuff. When it comes down to the execution, it all becomes very complicated. It must go through the board, and there are many administrative obstacles that prevents it from happening." (Ellinor, 2018) At the Norwegian office, we have kind of an innovative mindset (…) while our main office is holding us back. They might be more bureaucratic than we are in Norway. For me this is a challenge. (Sophie, 2015)
Facing resistance from co-workers	«I think there is a will there, but if you are going to do something, you notice the brakes you see everywhere. It's like, we should give this a second thought, or is this really something we should be focused on right now. So, I think they want to be innovative, but they just don't quite get it yet". (Kristin, 2014) «If I were to do this exactly how I was told to do it, I would achieve anything at all. Because this is an operating organisation, which purpose is to make decisions, and everyone has a little too much to do. And then I am going to come in on the top of everything and say, hey, can't you guys spend some time to come up with something new. So, you have sort of a maximum saturation on how much innovation it is possible to get into an office like this." (Trygve, 2015)

The bureaucratic work culture and internal resistance for innovation seem to clash with the expectations of the EE graduates. Throughout their studies at EE, the focus has been on Start-ups. As such, manoeuvring larger organisations and dealing with organisational bureaucracy is missing from the curricula, which might stall the IWB of EE graduates:

> "I miss a focus on politics, organisational structures, and innovation in larger organisations. Now I work in a larger organisation, and this is something that is missing. There is a lot of focus on start-ups". (Trine, 2018)

It appears that many of the students must adjust their expectations to the labour market. Killingberg, Kubberød and Blenker (2021) suggest that EE graduates might face higher role conflicts than other when put on tasks that are less associated with an entrepreneurial role. It appears that some of the graduates had to adjust their expectations to the labour market after coming into the labour market with high expectations to what they are going to achieve and how they are going to apply their competencies:

> "I felt like a high-flying bird when I started at this place. And then I was pushed back the first months, I started feeling smaller. I just had to adjust to these old guys, and then I started feeling smaller" (Ellinor, 2018)

This leaves us with proposition 3:

Proposition 3: There is a mismatch between the organizational bureaucracy of larger organizations and the expectations and knowledge of EE graduates, which might prevent EE graduates from engaging in innovative work behaviours in the workplace.

Discussion

Based on these findings we suggest the concept of "the project management trap" which is illustrated in figure 3. The project management trap happens when an individual is working on a project management position but doesn't have the necessary subject specific skills to engage directly in innovation activities, and in addition lack knowledge and skills about larger organisations and bureaucracy, which makes it challenging to champion and implement ideas from the innovation team.

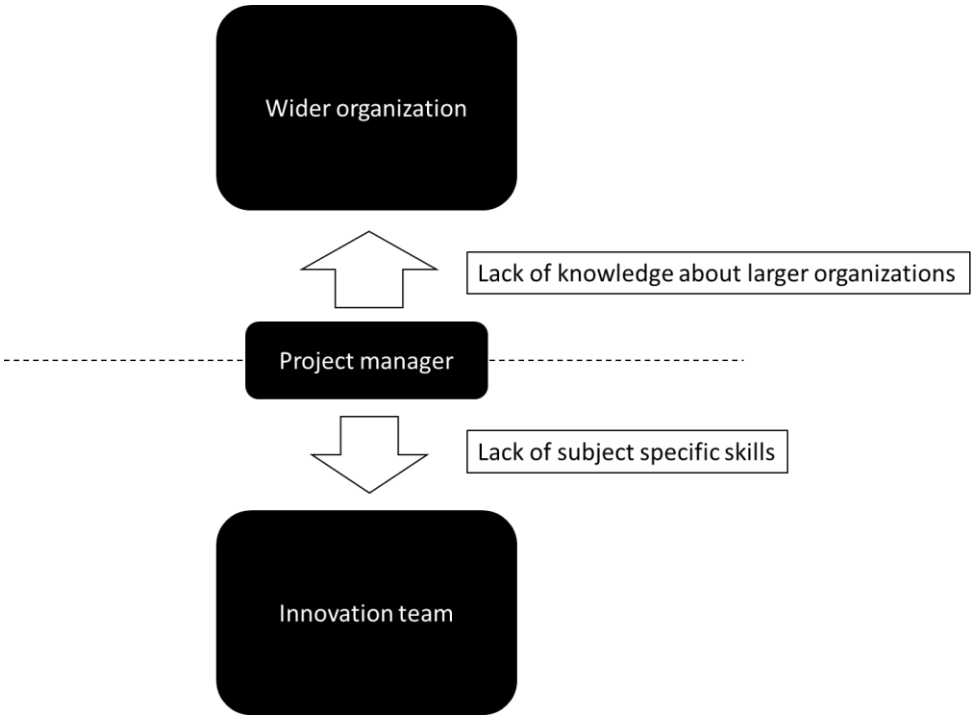

Figure 3 The project management trap

The study give nuance to the view that EE competencies can be useful within a lot of different context and role (Blenker et al., 2011), and show that the execution of such competencies and innovation performance are highly dependent on context (Ireland, Covin and Kuratko, 2009, Lynch, Kamovich and Steinert, 2019). Previous studies on the link between EE and intrapreneurship has largely focused on how relevant competencies (Winborg and Hägg, 2023) or intentions (Longva, Strand and Pasquine, 2020) can be developed, and this study is to our knowledge the first attempts explore the IWB of EE graduates in comparison with other graduates.

The qualitative findings suggests that the IWB of the EE graduates might have been prevented by corporate bureaucracy and internal resistance within the employer organizations. Consistent with the findings of (Killingberg, Kubberød and Pettersen, 2023) the graduates need to adapt to their employer organizations. One explanation of the decline in IWB might be that the students have an entrepreneurial drive when they graduate from EE, but that they develop a more realistic view of the employer organizations and become a part of the same bureaucratic environment as they adapt to the employer organizations.

Although the EE students lacked knowledge about larger organizations, they had project manager positions. Eventually, this might have made them vulnerable as they might not have been prepared to manoeuvre the larger organizations, which might have been expected of them. This is also consistent with the finding of (Killingberg, Kubberød and Pettersen, 2023), who found that graduates who got innovation manager positions became overwhelmed when given a lot of trust, without the necessary knowledge and familiarity with the larger organizations.

Conclusion and implications

This research started with the assumption that EE graduates would be more innovative in working life than other graduates (Killingberg, Kubberød and Blenker, 2021). Much to our surprise we found that apart from the very first years in their careers, EE graduates reported lower scores of IWB than all the control groups. The study contributes to the literature on broader impacts of EE, and nuance the view that entrepreneurial competencies can be carried various contexts (Blenker et al., 2011). The study contributes to the EE literature through demonstrating that the IWB measure might be a useful tool for exploring the effectiveness of EE in preparing students for carrying out innovation in larger organizations.

Through the qualitative analysis we found that the lack of subject specific and technical skills might have prevented the graduates from engaging in IWB. The paper thus also contributes to the literature of IWB by showing the importance of subject specific skills and technical skills for IWB. Researchers should include measures of subject specific and technical skills when measuring IWB.

Although students develop the ability to discover and exploit ideas which might be relevant for carrying out innovation in larger organizations, the qualitative findings suggest that not provide them with the adequate knowledge and skills about larger organisations, which might have prevented them from engaging in IWB. Eventually, this shows that championing and implementing ideas in larger organizations require a separate skill set.

Implications for practitioners.

Regardless of how the programme is designed, a large portion of EE graduates will seek employment in established organisations upon graduates. Eventually, this is not necessarily a bad thing, but EE educators should reflect on what this means for the design of the course.

Our findings show that EE graduates are less innovative than the control groups after the initial years and propose that this is because they lack subject specific and technical skills, and because there is a mismatch between the corporate context and the expectations and knowledge of the EE graduates. This gives several implications:

1. The universal learning through starting a business EE might not be the best way to approach EE. Instead, EE could be more personalised and focused on what the students want to get out of EE. For EE students that aspire to become intrapreneurs, working in established organisations, there should be separate programmes or specialisations, and course modules (Kuratko and Morris, 2018, Winborg and Hägg, 2023).
2. EE graduates should have the opportunity to build subject specific competencies in addition to entrepreneurial competencies. This favours programmes that build on other bachelor's degrees, or programmes that combine EE with other disciplines.
3. Educators and students should be cautious about only studying entrepreneurship. E.g., if someone studies entrepreneurship both for their bachelor and master.

Limitations.

This study contains several limitations. Optimally, this research should have been done longitudinally. The selection bias can therefore not be ruled out for the quantitative parts of these findings. However, we also think that if there were a self-selection effect, the study should have yielded different results (E.g. the IWB should be higher for EE graduates, if there was a selection bias effect).

There might be other explanations to the findings observed in the quantitative parts of this study, e.g., changes in the educational programs. We have however reviewed the course descriptions for all these programmes and there doesn't seem to be a change in programmes.

The study should also include a larger number of study programmes, especially EE programmes. Similar studies on graduates from other EE programs might have yielded different results. The qualitative findings are not generalisable and should be followed with more studies.

The nature of the different positions might also be part of the explanation being the difference in IWB scores. E.g., for a software developer, much of the job will revolve around developing new software, which might have yielded high scores of IWB in comparison to other graduates that actively need to seek out intrapreneurship projects in order to engage in IWB. Future studies should be more cautious about work functions, when measuring IWB across different groups.

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