From World Champion to Entrepreneur

A qualitative study on how entrepreneurship can be a dual-career path for professional athletes.

ESPEN ALEKSANDER PEDERSEN

ISMAEL NORDLI ELOTMANI

SUPERVISOR
Anders Emil Tobias Otterbring

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University of Agder, 2022
Faculty of Business and Law
Department of Strategy and Management

Abstract

The purpose of this master's thesis has been to find answers on how one can teach entrepreneurship to athletes in light of existing literature on sports entrepreneurship, personality traits, design-thinking working methods and educational frameworks. In this study, we try to answer how professional athletes' ability to learn entrepreneurship could contribute on a route to becoming successful athletes and promising entrepreneurs during, and after their careers.

We build our discussion on teaching entrepreneurship through Valerio et al. (2014) framework for entrepreneurship education, which distinguishes between entrepreneurship education at the college and university level and entrepreneurship training programs. The framework emphasizes different personal challenges for how a person can learn entrepreneurship. We look at how to facilitate a group that does not fall into any category for education, namely athletes, with their unique lifestyle and uncertainty in their careers. With this as a basis, we have interviewed seven professional athletes, some at the top of their careers now and others who have finished their athletic careers. This forms the basis for our qualitative study of professional athletes and their opportunity to become entrepreneurs. Through a holistic approach, we seek to answer the following problem statement:

"What prerequisites do professional athletes have to learn entrepreneurship?"

Our study shows that professional athletes may lack innovativeness due to a rigid training regime. Despite that, the teaching methods of design thinking could contribute to opportunities to learn entrepreneurship. Another result was that professional athletes might be conflicted by the uniqueness of sports, which provides a need for customized teaching methods for this specific group of people. The conclusion is that there should be a tailor-made educational program for professional athletes who want to learn about entrepreneurship. By adapting the working methods of an entrepreneur in their sports performance or when their career is over, athletes can contribute to society with their resources and ideas.

Preface

We want to thank our supervisor, Tobias Otterbring, who supported us during our thesis work. Even though things have looked challenging from our side, you gave constructive feedback, which led us in the right direction. An extra thank you to Stine Øyna and Christina N Larsen and all the other people organizing the Shift Masters program. We are so grateful to have been given this opportunity, and look forward to seeing all the Shifters walking out the doors behind us.

Thank you to our fellow students on Shift Entrepreneurship at UiA in building 15. Had it not been for the cohesion we received in class 1 at Shift, we would not be writing this master's thesis. The wine lottery, the social gatherings, and our regular coffee meeting in the hall are some of the things we will miss dearly.

Thank you to Håvard Bjor and Igloo Innovation, who picked up the phone one time past new years to let two masters students discuss different problem statements. A big thank you to Håkon Ege and Collective Innovation, who took us under their wings and allowed us to participate in the ELCAMP project, and an amazing trip to Cartagena, Spain, before Easter in 2022. As well as giving us free rein to use the project's network to be able to write a master's degree in entrepreneurship and sports entrepreneurship.

Finally, a big thank you to partners, Collective Innovation, family, and friends, who did not stop believing in us and gave us encouraging words throughout the period. It could not have been easy to uplift two students who did not anticipate the contours of a master's thesis.

We end off with some words of wisdom from a sporting great:

"No matter how good you get, you can always get better. That's the exciting part."
- Tiger Woods

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Espen Aleksander Pedersen & Ismael Nordli Elotmani

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1. Introduction

1.1 Introduction

As we move towards a society where sports has become a more significant and influential industry, we see a need for more people inside the sports industry to create jobs and develop new enterprises and help grow the global economy through their sporting endeavors. In addition, several researchers have mapped out the uniqueness of sports entrepreneurship and innovativeness, and why these fields demands further attention (Condello et al., 2019; González-Serrano et al., 2019, 2021; Moustakas et al., 2022; Nauright & Wiggins, 2020a; Pellegrini et al., 2020; Ratten, 2010; Ratten & Jones, 2020; Ratten & Thompson, 2020; Steinbrink et al., 2020; Tjønndal, 2018).

The main factor of sports is the uncertainty of outcome, which the industry has to cope with daily. Furthermore, while many professionals and managers work hard to construct a solid base for success, this can never be entirely certain (Pellegrini et al., 2020). At the same time, we distinguish between participating in sports and using the sporting industry as a business platform. This thesis focuses on participants in sports and addresses how athletes have the potential to become entrepreneurs. Participation in sports can be helpful in numerous ways. However, the main investigators of sports entrepreneurship does not necessarily have to be athletes. It can also be fans, managers, or other stakeholders (Ratten, 2020). Athlete entrepreneurship can also be an essential driver of growth and innovation. However, Moustakas et al. (2022) address that more attention is needed to tailor support to capitalize on these opportunities.

In this thesis, we interviewed seven professional athletes in individual and team sports. We will use their responses to discuss how athletes may take advantage of entrepreneurship as a possible dual-career option. These elite athletes have brought valuable insight into how future sports professionals can pursue an entrepreneurial career path as a possible dual-career option while competing at a professional level. The European Commission highlights the importance of providing dual-career training for young sportsmen and women, and to accommodate

“high level training centers that safeguard their moral, educational and professional interests” (Commission of the European Communities, 2007, p. 6).

Balancing a professional career as an athlete and planning for what comes after is a big challenge for most athletes. Countries and sports federations developed support policies and programmes to respond to the athletes' challenges of pursuing a dual career. Such programmes have focused on connecting athletes with education and employment opportunities, or developing more general life skills. A growing focus on entrepreneurships potential as a dual career pathway has been addressed within support programs (Moustakas et al., 2022). Numbers show growth in policies, programmes and organizations that work to create long-lasting career opportunities for athletes (Moustakas et al., 2022). In many European countries, the inclusion of entrepreneurship is mainly absent, leaving it to individual projects and groups to fill the void (Moustakas et al., 2022). A dual-career program supports athletes when combining their professional careers and realizing personal potential. Investigating how athletes work and respond to challenges throughout their everyday sporting life will hopefully provide answers to how athletes can teach entrepreneurship. There are several benefits for athletes involved in dual-career programmes, according to the European Commision (2012). Such benefits are health related, development of life skills, social impacts such as expanded social networks, better career planning by creating retirement plans and prevention of identity crises. Also, strengthening future employment prospects plays a favorable part in athletes who pay attention to their dual-career paths. Furthermore, educated athletes may also play a positive part in society, making sports more attractive for others and behaving as role models for young people (Condello et al., 2019).

Sport and entrepreneurship share similar characteristics due to the need for innovation to manage change (Ratten & Ferreira, 2017). Therefore, the sports industry triggers entrepreneurship as it necessitates new thinking to increase performance (Ratten, 2020a). This means that a set of objectives needs to be fulfilled for the idea to progress in the marketplace. Due to the necessity to constantly adjust and adapt, sports create a suitable setting for entrepreneurship (Ratten & Jones, 2020). Whilst the sports industry might look different from other industries, the industry stands for a substantial part of the world’s economy. Sports is also a billion dollar industry and growing steadily, with one in every four of the wealthiest Americans being financially invested in sports (Ratten & Ferreira, 2017).

Research has shown similarities between being an entrepreneur and being an athlete (Boyd et al., 2021). This, even more importantly after their professional sports career ends, to make better use of granted capital to develop new concepts in years to come (González-Serrano et al., 2021). However, lack of knowledge on how to teach entrepreneurship to this group of people is something we would like to examine further. A dual-career in this thesis is a way athletes can learn about entrepreneurship while still competing professionally. On the other hand, athletes' dual-career path to becoming entrepreneurs could be after finishing their sporting careers as well.

1.2 The thesis's purpose and problem statement

1.2.1 Collective Innovation & Igloo Innovation

Part of the Inspiration for us to work on the problem statement comes from a larger initiative from Igloo Innovation & Collective Innovation. Igloo Innovation is an innovation and knowledge center located in Lørenskog, Norway, and it was here we first established contact. After discussing sports and innovation opportunities, we were contacted by one of its partners called Collective Innovation, working closely with Igloo Innovation to develop innovation within the sports, and the sports technology industry. A project that was suited for our competences was presented. This project is called "ELCAMP". ELCAMP is a collaborative partnership project funded by the European Commission within the scope of the Erasmus+ sports program (Collective Innovation, 2022).

The ELCAMP project works to develop self-employment career options for athletes through entrepreneurial ventures. An athlete's career is short and may be short of opportunities after finishing their sporting career. One path toward a sustainable future for athletes could be to develop their entrepreneurial skills and shape their future this way (Kenny, 2015).

Collective Innovation and its partners have already researched several topics related to athletes and entrepreneurship. It has been a great help for us to better understand the subject of dual-careers and athletes' competencies. A big step forward for us was being allowed to be a part of a project meeting in Cartagena, Spain, with partners of the ELCAMP-project. Here we met professors from UCAM (Catholic University of Murcia), delegates from Slovenian

Olympic Committee, experts from EAS (European Athlete Student - Dual Career Network), Lithuanian Sports University and professors from Molde University College and discussed the path forward in terms of picking research methods and suggestions for what informants to participate in the thesis research work.

In close collaboration with Collective Innovation, we decided to research what prerequisites athletes have that make them promising entrepreneurs and how to allow athletes a dual-career path through entrepreneurship. To fulfill the athletes' entrepreneurial ventures, we need to determine how their working methods compare to typical entrepreneurial methods.

1.2.2 Problem statement

It can be challenging for athletes to respond to “regular” life outside sports. Pellegrini et al. (2020) address the importance of educating professional athletes and the need for tailored programs to capitalize on the opportunities in entrepreneurship and innovation. At the same time, entrepreneurship is seen as an essential factor for growth in the sports industry (Moustakas et al., 2022). Additionally, the origin of research in sports entrepreneurship was obtained from knowledge inquiries about the use of new segments into the market that improve current conditions, meaning that sports entrepreneurship may also affect other sectors (Ratten & Jones, 2020). The primary objective of this thesis is to look at professional athletes' prerequisites for entrepreneurship and how learning this can be a dual-career path. This study contributes to the existing literature addressing sports entrepreneurship and entrepreneurship education learning. To find out how athletes can be taught entrepreneurship, based on their circumstances and their ability to do so as a dual-career path, we created the following problem statement:

“What prerequisites do professional athletes have to learn entrepreneurship?**”**

To support the problem statement, we will use the following four research questions:

Research question 1:

"How is an athlete's interpretation of becoming an entrepreneur?"

Research question 2:

"How do athletes' and entrepreneurs' personality traits compare?"

Research question 3:

"What prerequisites do athletes have for using design thinking as an entrepreneurial working method?"

Research question 4:

"What educational framework is needed for athletes to have a dual-career?"

We present a figure below to illustrate the chapters in the following theory framework. This figure is created to show a holistic approach to our thesis work in order to answer our problem statement.

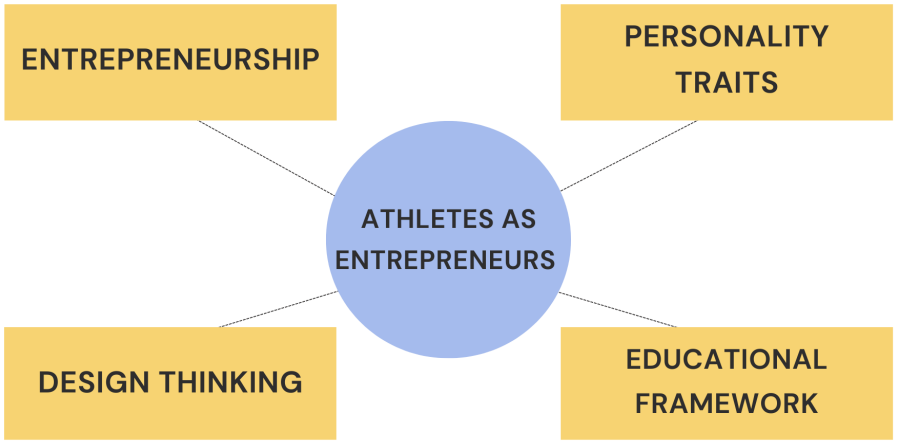


Figure 1: *Visualization of the various theories presented in the theses.*

2.0 Theoretical framework

2.2 Entrepreneurship

When we think about entrepreneurs, we tend to think about the big guys in the game—people like Elon Musk, Jeff Bezos, Mark Zuckerberg, Richard Branson, and Steve Jobs. However, entrepreneurship is so much more than those hugely rich and influential people. An entrepreneur is a person who can create any form of business activity that involves innovation, risk-taking and proactiveness (Jones et al., 2018). While another researcher argues that entrepreneurship is "how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited" (Shane & Venkataraman, 2000, p. 218).

2.3 What is an athlete?

We distinguish between two different types of athletes. We have the professional athlete on one hand, and we have the amateur athlete on the other. Amateurs are those that participate in sports on a hobby basis, playing sports to stay active, for fun or as a social platform. On the other hand we have the "professional athlete". The professional athlete is engaged in sports due to the competitiveness and fulfillment of winning or becoming a future champion. Professional athletes and the general athletes are separated by their win-at-all-costs competitive mindset (Krumer et al., 2011). To be successful in today's sports market, professionals must be adept in business planning, creating pragmatic outcomes, adjusting management, and improving return on investment and engagement (Ratten & Ferreira, 2017). At the same time, athletes who are leaders in their sports build on their leadership capital, enabling them to connect with innovative ideas that, in the future, lead to a business venture (Ratten, 2015). Which might suggest athletes align with entrepreneurs.

2.4 Innovation in the sports industry

When it comes to taking risk, sports products and services, especially in the technology innovation spectrum, have higher risk due to the uncertainty with how it will operate in the

sports industry. Depending on the sport innovation, some consumers will disregard the risk because of prior experience and knowledge about the sport, also called risk factors of sport innovation (Ratten & Ferreira, 2017). Adventure and adrenaline sports have increased because of the increased risks athletes are prepared to take and the audience who will pay to watch these sports. But, we also see that the risk of some sports has decreased with better safety equipment being invented. This has been made possible by international sporting bodies governing the way sport is played and viewed by society. Although with the increased use of the internet there have been risks from sports betting and use of illegal substances to increase sports performance. Another characteristic associated with sport innovation are the role psychological factors play. For instance, “some of the psychological factors affecting innovation stem from the conditions existing in society based on societal expectation” (Ratten & Ferreira, 2017, p. 28). And, because consumers are stuck in the ways things have always been done, which might lead to an unwillingness to try new things (Ratten & Ferreira, 2017). Examples of psychological innovations in sport are the expansion of women's sports and their participation rates. Another technological innovation which has had a substantial amount of barriers are the goal scoring technology VAR in football. It is worth mentioning that “some athletes and teams will adopt innovations faster when they perceive the performance outcomes outweigh the psychological barriers' ' (Ratten & Ferreira, 2017, p.29). This is again associated positively or negatively depending on the athletes or teams willingness to perform well.

Furthermore, “consumers need to be reassured about making the right decision when investing in an innovation” (Ratten & Ferreira, 2017, p.8). In terms of how an innovation looks and feels, the image it demonstrates for consumers are important. Regarding the competitive nature of the sport industry, the different images of sport perceived by consumers, businesses, and governments have changed. Brands such as Moncler use images to associate their brand with social status, while Nike use highly influential and well known athletes such as Christiano Ronaldo and Roger Federer to create image through reputation. “While many sport brands choose to use image as a way of showcasing innovation, images that are unfavorable are less likely to be adopted by consumers” (Ratten & Ferreira, 2017, p.8). Finally, Ratten & Ferreira (2017) demonstrate that managerial implications plays a part in how some sport innovations may be more accessible in some organizations and then easier to commercialize. This is due to organizations adaptives to formulating and solving problems based on the way they process knowledge. With managers that understand the potential

innovations they have for their sports, athletes and teams could potentially benefit from the time it takes to adopt certain new features, hoping it creates a performance boost. This recognition of benefits might take some time, and at the same time, the innovations need to be adopted to be integrated into existing patterns for people to understand (Ratten & Ferreira, 2017).

2.5 Sport entrepreneurship

In terms of professional sports, the discovery and opportunities with entrepreneurship are of an even more significant presence. Professional sports entrepreneurship is described as a hyper-competitive environment that places persistent pressure on organizations to identify and capitalize on opportunities in order to succeed (Ratten & Jones, 2020). Furthermore, any new ideas or ways to boost performance will be immensely valued by the sports industry. “Sports entrepreneurship can be described as the mindset of people or organizations actively pursuing new opportunities in the sports context” (Pellegrini et al., 2020, p.809). When innovating within the sports industry, managers must take risks to survive. However, by taking risks and introducing innovative thinking through entrepreneurial opportunities, the risks they take might lead to outperformance in the industry (Ratten & Jones, 2020).

One key focus point of sports organizations is to increase their membership base and add more services. A vital part sporting members play in a sports organizational environment is the consumer's role in generating new ideas because they are more emotionally attached to the organization. Many innovations in sport have been developed through consumers or participants due to high involvement in the sport. This differentiates sports from other types of innovation, which are usually developed internally by a research and development team (Ratten & Ferreira, 2017).

One way of thinking innovative in sports is the way of using existing knowledge and services to improve design efficiency (Ratten & Ferreira, 2017). This is done by allocating resources in ways that haven't been done before. “In the context of sport, entrepreneurship is considered necessary for its ongoing competitiveness. Thus, sports entrepreneurship is regarded favorably as it enables the exploitation of market opportunities in a sports arena. This means gaps in the market can be addressed by futuristic and creative thinking” (Ratten, 2020, p.1382).

Sports may engage consumers in different ways. Innovations in the sports context are developed for different purposes, from improving on-field performance to increasing team outcomes. Innovations have also occurred in the salary cap by limiting some sports teams regarding how much they can pay players. These innovations have made sports more equitable and in line with societal trends. In addition, innovations in clothing and footwear, such as quick-dry technology and performance gear, have made it better for athletes, this way of consuming sports is called usage (Ratten & Ferreira, 2017). Ratten and Ferreira (2017) also set a factor called the value incentives in innovations in sports. Which includes how money and time spent on sponsorships and television broadcasts add more value to teams and athletes due to global reach in the televised events. Also benefiting from the global reach of television events are the teams' and players' attractiveness, which helps them sell clothing and merchandise. "This value proposition from sports innovation is also apparent in increased education in schools about the benefits and potential harms from sport" (Ratten & Ferreira, 2017, p.27).

2.6 Characteristics of entrepreneurs

Businesses exist in different dimensions in the entrepreneurial world, from start-ups to more well-established businesses, and distinctive personality traits may vary. In addition, personality traits could be a factor influencing a business's ability to attain success or be destined for failure. Personality traits can be explained through the Big Five model, in which Kerr et al. (2018) defines a "multidimensional approach towards defining personality, through measuring openness, conscientiousness, extraversion, agreeableness, and neuroticism" (p.12). These five traits give an overview of a personality spectrum and can be used within entrepreneurship. The way it has been measured is through managers' positions and entrepreneurs because, in both cases, there is a need to direct employees and manage multiple tasks (Kerr et al. 2018). Comparing these two positions provides a clearer view of precisely what differentiates entrepreneurs from other similar positions. However, there is criticism of the limitations The Big five model brings. Kerr et al., (2018) criticize the "overly general nature of these macro personality traits, such that they cannot easily predict situation-specific behaviors of entrepreneurs" (p.16). Researchers have developed an additional framework for personality traits that incorporates other qualities like self-efficacy, innovativeness, locus of control, and the need for achievement based on limitations (Kerr et al., 2018).

Self-efficacy

It describes a person's belief in one's ability to complete activities and fulfill duties, which is linked to expectations, objectives, and motivation (Kerr et al., 2018). Furthermore, Chen et al. (1998) define domain-specific entrepreneurial self-efficacy as a composite of self-efficacy toward five tasks: innovation, risk-taking, marketing, management and financial control. Therefore, a person's belief in fulfilling these five tasks is related to self-efficacy as an entrepreneurial personality trait (Chen et al., 1998).

Innovativeness

Being innovative is used in many contexts, for example, as a way individuals respond to new things, ideas and practices (Goldsmith & Foxall, 2003). To put it another way, one could concentrate on a single area for innovation. These different areas are global domain-specific innovation or behavioral innovativeness, such as adopting new products by users (Kerr et al., 2018). Within the field of innovativeness-research,it is challenging to define innovativeness out of fear of leaving certain areas out of the definitions, but "scholars likely agree that entrepreneurs need to be able to tolerate some risk and to create or recognize new business opportunities, perhaps also innovating new products and concepts that can be brought to market" (Kerr et al., 2018, p. 18).

Locus of Control

"Persons with an internal locus of control believe that they can influence outcomes through their own ability, effort, or skills, rather than external forces controlling these outcomes" (Kerr et al. 2018, p.20). This personality trait is part of the extended framework for entrepreneurial traits and measures a person's belief if they can control certain aspects of their lives or if they are destined by fate. This trait, alongside risk tolerance and need for achievement, is much more helpful in predicting entrepreneurial performance than the Big Five personality traits (Caliendo et al., 2009).

Need for achievement

"The need for achievement refers to an individual's desire for significant accomplishment, mastering of skills, and attaining challenging goals" (Kerr et al., 2018, p.22). Aiming to accomplish this is part of an entrepreneurship personality trait measurement. “Entrepreneurs

have exhibited a higher achievement motivation than managers, regardless of country or type of instrumentation" (Kerr et al., 2018, p. 22).

2.7 Entrepreneurial working method and abilities

Due to its adjustable nature, design thinking has been more frequently used in sports (Ratten & Jones, 2020). In design thinking, there are three central processes to be found. *Needfinding*, *brainstorming*, and *prototyping (Ratten & Jones, 2020)*. To find satisfying needs, it is essential to assess the current market, this is named *needfinding*. This process is important since it creates insight into why people need a certain thing and how indispensable their need is. Additionally, coming up with ideas is important in the design thinking process. The *brainstorming* process involves thinking about all possible ideas, both related and unrelated to the result. Brainstorming also demands the users to think unconventionally. Furthermore, *prototyping* allows you to measure the result in the marketplace and, if necessary, make iterations. Design thinking refers to using design methods and tools in business settings. It is a strategy that focuses on recognizing problems as opportunities to grow by questioning underlying assumptions (Lattemann et al., 2020). The design thinking approach allows for innovative approaches to solving problems. Thoring & Müller (2011) defines *design thinking* as "a specific method to solve complex (wicked) problems and to generate innovative solutions, based on a user-centered approach with multi-disciplinary teams" (p.1).

Design thinking is presented through the six consecutive steps "Understand", "Observe", "Point of View", "Ideate", "Prototype", and "Test" (Thoring & Müller, 2011). These six steps give insight into how one should work with design thinking but do not necessarily present what one should do to complete the steps. For instance, "ideate" has many possible options for how one should come up with ideas, but the preeminent way, the design way, is not presented clearly.

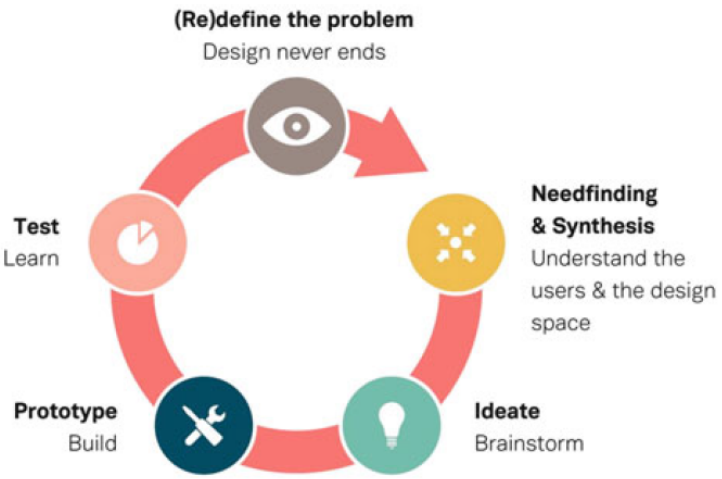


Figure 2: The Design-Thinking-micro process, adapted from Stanford University (Brenner et al., 2016).

Syllabus for design thinking are conservative in their focus on the design process, methods, and mindset on the whey differ in their perspective on technology, design, business, and science, both in theory and in practice (Lattemann et al., 2020). Elaborating on how design thinking is shaped, Brenner et al. (2016) defines design thinking through three different dimensions. One should think of design thinking as a *mindset,* one should think of it as a *process* for how one should work, and lastly, as a *tool* for how it works in a practical sense.

Mindset

These three focus areas of design thinking start with design thinking as a mindset. According to Brenner et al. (2016), the most essential principle for a design thinking mindset is that *innovation is made by humans, for humans*. This user-centered thought process is what differentiates design thinking from other innovation processes (Brenner et al., 2016). User-centeredness is achieved through interaction, emergence, and solving conflicts during the design thinking process. Physical spaces where the innovation process takes place must reflect a different "nature" in their spatial design. Creating this workspace is critical to maximizing the design thinking process in a way that allows innovation by and for humans. "*Divergent* and *convergent* thinking is another dominant principle of a design thinking mindset" (Brenner et al., 2016, p. 8). A design thinker must dare to think unconventionally to develop new problem-solving solutions. While the process of divergent thinking might seem unproductive or lack a proper path to successful ideas, this divergent pathway is what allows the user to explore opportunities and avoid pitfalls further down the road.

Another principle is *failing often and early*. Experimentation is key to attempt early on in the process to have the option of starting over if one should fail. *Building prototypes that can be experienced* is of high importance. According to Brenner et al. (2016), prototypes allow great insight into development by testing customer experience. In close relation to this, *testing early with customers* shows if an idea is sustainable. *The design never ends* is also a part of the design thinking mindset. Once an idea has been tested, it will bring more questions on whether it is the right solution. Further development is then possible by continuously improving the solution through questions and solutions they bring. Lastly, *design thinking needs a special place*. Having a workspace that allows creativity and exploration of ideas is relevant to taking full advantage of design thinking mindsets (Brenner et al., 2016).

Process

Brenner et al. (2016) developed a two-stepped process model consisting of micro and macro processes. The micro-process model (*figure 2*) starts with *defining the problem*. Here one should find a problem to solve, focusing on narrowness and leaving the problem wide enough to allow an innovative workspace. After defining the problem comes *needfinding & synthesis*. It works in two ways, revealing end customers' needs that are obvious but also the needs that are hidden. The design thinker should work extensively with interviews, literature and web searching to help reach the knowledge level needed to have a fruitful talk with customers (Brenner et al., 2016). The third step of the micro-process model is *Ideate*. Coming up with solution ideas that align with the customers' needs is vital for design thinking innovation. After this comes the *prototype step* in the process model. It does not have to be a finished product. The idea should be to have something that allows one to test it. This leads to the next step, the *Test*-phase of the micro-process model. Here a design thinker should test the prototypes to see if it aligns with customers' needs and provide solutions for the original problem. Learning from the experience here is vital to find out the path forward. If the testing-phase shows innovative solutions that work with customers' needs, then the work continues. If it does not, one should learn from what was missing and redefine based on the new insights (Brenner et al., 2016).

In addition, a macro-process model further explains the structure of design thinking. It is divided into seven steps and is prototype-oriented. The prototype-oriented work method

increases the depth of design thinking projects, and it consists of a divergent phase and a convergent phase. First up is *Design space exploration.* Here the design thinker must gather their own experience of the problem. It is wise to use literature, search the internet, and interview to understand the design space one has at hand. Brenner et al. (2016) suggest going as far as even filing a complaint with a car company if one is researching rental car businesses to understand how the company operates. The next step is *the Critical function prototype* which consists of developing a prototype with the critical functions found in the previous step. After this comes *the Darkhorse prototype,* which means the innovation process starts again. This allows extreme creativity and exploration spaces since the previous steps are disregarded.

The last prototype phase of the diverging stage is *the Funky prototype.* In this step all the previous prototype steps develop into one prototype, leading to the final prototype of the macro-process model through all worked on insights. It still requires working through prototypes in the converging phase to get to the final idea solution. The step *functional prototype* provides a more detailed view of the prototype and its fulfillment towards customer needs. More realism provides better testing for the consumers. The next step is *X-is-finished prototype* which serves to detect one key functionality ("X") and what effort is required to realize the final prototype (Brenner et al., 2016). This is the second last step of the whole macro-process model leading to the final prototype. It is here that everything that will not be part of the final product prototype is disregarded. Only key "x" functions remain. In the *Final prototype,* all the necessary functions are included. It shows a level of detail that creates a complete idea of how one's solution should look. This is the final prototype of the whole design thinking process a team has worked on (Brenner et al., 2016).

Toolbox

Following the mindset and the process, there are specific tools design thinkers can utilize to maximize the innovation benefits of design thinking. These different tools exist in many shapes such as tools to measure personality traits, methods for workspace guidelines and 3D printing as a tool for developing different prototypes. Taking advantage of these different tools could benefit the design thinking as a working method and increase the likelihood of good design work (Brenner et al., 2016).

2.7.1 Design thinking teams & education

A design thinking team benefits the most from a heterogeneous group (Brenner et al., 2016). This diversity could increase arguments and conflicts due to different viewpoints. But it is vital for developing successful design thinking projects due to the variations in background, creating a broader spectrum of opinions.

Measuring design thinking in education can be difficult. However, Lattemann et al. (2020) hopes to answer how one should conduct design thinking education. The research project focuses on teaching non-design students design thinking and consists of two main factors for research. Design thinking through *internalizing teaching approaches*, and design thinking through *socializing teaching approaches*. Along with student reflections, they concluded that the internalization course is crucial for imparting design thinking. Furthermore, a socialization approach allows non-design students to adopt the design thinking mindset when working closely with mentors and students (Lattemann et al., 2020). This is a central factor when shaping design thinking education for non-designers.

2.7.2 Prototype & MVP Creation

Houde & Hill (1997) indicate that prototypes are commonly developed by multiple members of a team, and that their definition of a prototype is rather subjective. It is not a matter of how "media or tools were used to create them, but how they are used by a designer to explore and demonstrate some aspect of the future artifact" (Hill & Houde, 1997, p. 368). This focus on the demonstration and exploration rather than on how complete a prototype is or how capable it is, allows a different view on what can be defined as a prototype. Houde & Hill's (1997) definition of prototype can create fewer misunderstandings about its uses. While, an minimum viable product (MVP) has been defined as "a version of a new product that allows a team to collect the maximum amount of validated learning about customers with the least effort" (Lenarduzzi & Taibi, 2016, p. 112). As one can see, there are differences between a prototype and an MVP. However, both terms are used in the literature regarding entrepreneurship and design thinking methodologies when explaining processes, methods, and tools. Based on this, we interpret it is fitting to use both terms when talking about entrepreneurship and design thinking throughout the thesis. When working with a design

thinking methodology, creating an MVP or a prototype is essential to gaining customer feedback.

2.8 Different teaching methods of entrepreneurship

Traditionally, entrepreneurship education programs have focused on delivering knowledge on developing certain personal skills (Fayolle et al., 2006). Therefore, it is not exclusively focused on skills to start and manage a company (Fayolle et al., 2006). Moreover, arguments have proven that people in entrepreneurship classes do not like it because they have to follow a specific path of an entrepreneurial process (Daniel, 2016). The path in the first semester of studies is to develop a business idea. Then spend the semester trying to convince them that the idea is economically viable. Then they are graded on the output of the entrepreneurial process, following a linear process. However, the entrepreneurial process is far from linear (Daniel, 2016).

Hindle (2007) argues that "we can teach it; we can teach about it, and we can teach it in lots of different ways and places" (p.110) Still, "entrepreneurship may be difficult to teach" (Hindle, 2007, p. 110). Shane & Venkataraman (2000) uses the following definition of entrepreneurship education: "The transfer of knowledge about how, by whom and with what effects opportunities to create future goods and services are discovered, evaluated and exploited" (p.218). According to Daniel (2016), a "typical" way to teach entrepreneurship consists of six stages. First, students learn about entrepreneurial awareness through *empathy* and *interpretation.* Entrepreneurial skills are added to the curriculum through *ideation* and *prototyping*. Then students learn hands-on entrepreneurial skills such as *testing* and *implementation*. The figure below shows how (Daniel, 2016) interprets an entrepreneurship one-semester module strategy.

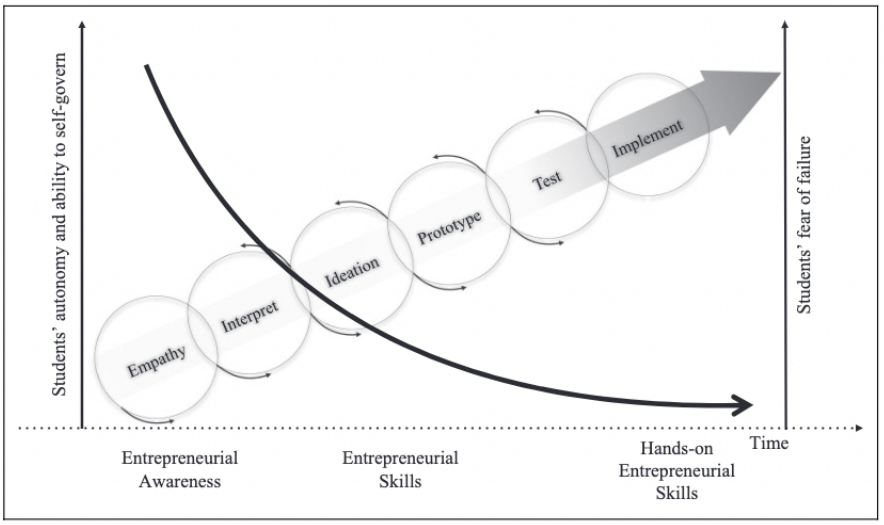


Figure 3: Entrepreneurship one-semester module (Daniel, 2016).

Hahn et al. (2020) suggest that learning about entrepreneurial abilities among young individuals is influenced both by university and home environments. Two social environments in which students are socially established. Critical elements of entrepreneurship education teaching methods such as case studies, group discussions, business/computer game simulations, role models, business plan development, or guest speakers are more likely to inspire students to engage in entrepreneurial activities (Daniel, 2016). Even though the teaching methods mentioned have proven essential, there are some practical issues. Such things can be time-consuming and might not be aligned with the conventional university system.

2.8.1 Teaching entrepreneurship to athletes

Sports and innovation are too complex concepts (Tjønndal, 2018). Because of variations on innovations that exist, such as whether they are radical or incremental, social or technological, or a combination. Adding to this, professional sport versus amateur sport contributes to a different way of looking at sports innovation (Ratten & Ferreira, 2017). The discovery and deployment of entrepreneurial opportunities are essential in all forms of sport, as it opens as an agent to influential opportunities (Ratten, 2020). Furthermore, entrepreneurship is an important competitive driver for success in a sports system (Jones et al., 2018). Generating value in sports could enable economic development in the sporting environment. However, not all development has to have a financial objective (Ratten, 2020).

There are significant challenges in teaching entrepreneurship to athletes. First and foremost, it needs to fit into their full, demanding schedules (Moustakas et al., 2022), and, “transitioning to the world of labor and business is a moment where athletes most need support—such training and mentorship schemes can help pave the way forward.” (Moustakas et al., 2022, p.84) Adding to this, Moustakas et al. (2022) suggest a need for tailored guidance and mentorship to promote successful sports entrepreneurship. Pallarés et al. (2011) explain that in elite sports, there are four career models. The linear model, in which athletes devote themselves entirely to their sporting careers. The convergent model, in which athletes focus primarily on their sporting careers but also participate in extracurricular activities as long as they do not interfere with their sporting careers, and the divergent model, in which athletes focus primarily on their sporting careers but also participate in extracurricular activities as long as they do not interfere with their sporting careers. Lastly, the parallel model, in which an athlete navigates sports careers while keeping the same degree of interest and involvement in another career path. Understanding these different models can be a rich new avenue of inquiry (Moustakas et al., 2022). Additionally, finding the right fit for teaching entrepreneurs might seem daunting. But, eventually, "once the right philosophy is adopted, good questions and good research are bound to follow" (Hindle, 2007, p. 124).

2.8.2 Entrepreneurship education framework

Valerio et al. (2014) distinguish between entrepreneurship education and entrepreneurship training programs. Entrepreneurship education is viewed as traditional education, such as secondary and higher education, and entrepreneurship training programs are divided into potential and practicing entrepreneurs. The framework of Valerio et al. (2014) will be important in regards to understanding the design of entrepreneurship teaching. *Figure 4* illustrates the two different approaches to teaching entrepreneurship. In the discussion, this model will again be important to understand the prerequisites athletes have for becoming entrepreneurs through education. The model will be used in a way to understand potential training programs for professional athletes.

Figure O.1 Classifying Entrepreneurship Education and Training Programs

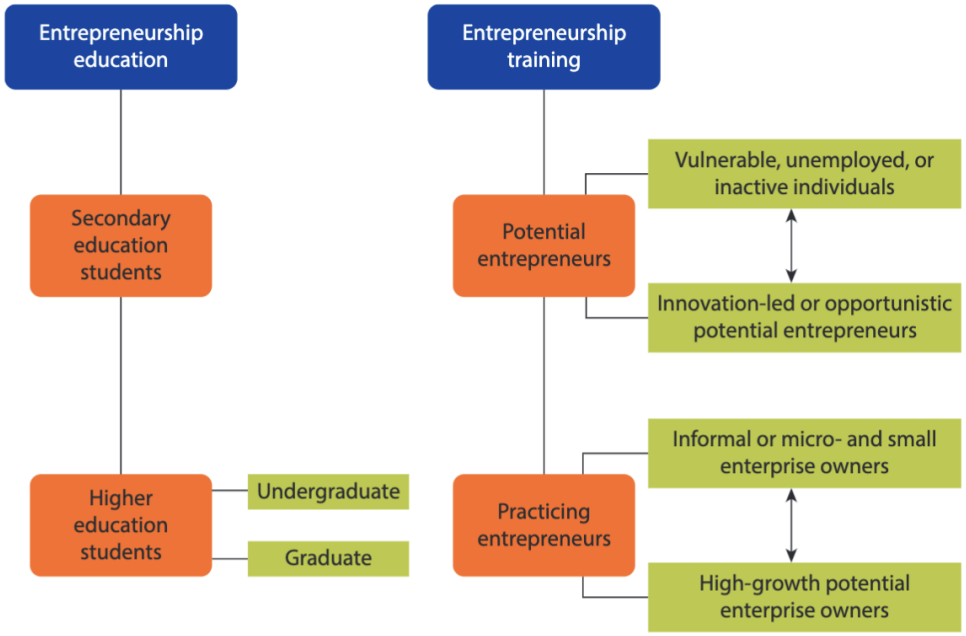


Figure 4: Classifying Entrepreneurship Education and Training Programs (Valerio et al., 2014, p. 3).

3. Methodology

This thesis uses a qualitative methodology to gather data. It is vital for this research that individuals present their own opinions and understanding in order to conduct a proper analysis in relation to the problem statement: "What prerequisites do professional athletes have for entrepreneurship?". The approach used is a semi-structured interview method. A semi-structured interview does not control the informants to the same degree as a structured interview. Instead, the researcher is allowed more freedom regarding the order the questions are presented, how they are formulated and the opportunity to ask follow-up questions that were not planned at the beginning (Brottveit, 2018). The interview guide contains questions that allow adjustments in order to formulate them properly for our informants (attachment A). The informants consist of athletes competing in sports either now or in the past. Furthermore, to ask the questions in the best possible way, we need to be able to adjust certain aspects of the questions to each informant and ask follow-up questions to dig deeper into their answers to make sure we understand their answers firmly. This helps us analyze our findings with more accuracy. In the methodological work we have decided to use the definitions of

entrepreneurship and sport entrepreneurship as a way to shape questions and analyze our findings.

3.1 Informants

We have selected certain criteria for informants to get opinions from the correct demographics in relation to our problem statement. Having a strategic selection for choosing interview informants is to get information from the right selection. Brottveit (2018) writes: "It is important to recruit informants with information that can contribute to the phenomenon being researched. The idea behind qualitative research is to gain new insights and knowledge that can have a transferable value and be useful in other contexts. When it comes to strategic selection it means recruiting informants that can contribute to meaningful data about the subject being studied" (p.86). For the interviews, we then decided to go with the following criteria:

- Athletes competing for a minimum of one year.
- Age within 18-35 years old
- Little to no formal entrepreneurship education.
- Little to no experience with starting their own business.
- Dual-Career (sports + a form of education) at some point under their professional sports career.

Participants were seven elite level athletes in the fields of football, skates, diving, dance and long-distance running. Of the seven athletes, two were women, and five were men. Two informants were in their post careers, and five were still competing as professionals in international tournaments. Five of the participants have had at least one year of international experience at the highest level of competition, meaning they have competed in world games, world cups or the Olympics. Their age ranged from 24-32, (Mean=26,7 & Sample Standard Deviation=2.4). Among the participants, one had a high school education, one had a professional degree, two had undergraduate degrees, and three had postgraduate degrees.

Locating the informants for the chosen research study we used a contact network within the ELCamp project, our own network consisting of current business contacts, and contacts from close relations. In the early process, past working environments in the handball community

were also used, but here the timing was not in our favor due to the handball players reaching finals in competitions which made them unavailable for interviews. Some of the interviews were conducted digitally, and here the athletes had the opportunity to book meetings at their own preferred time through an online booking page, which allowed athletes themselves to decide on whether they wanted to participate in the research work or not.

In regards to the amount of informants we had for our study, we experienced that our seven participants created a saturation for the study conducted. Hennink and Kasier (2022) found in their research on sample sizes that saturation can be reached relatively early if those participating in it had a relatively homogeneous study population and narrowly defined objectives. In this study of professional athletes with little to no formal entrepreneurial experience and little experience with starting their own business, we experienced reaching a point of no new additional information quite early, which made us take the decision to focus on these seven informants. We believe the participants' answers in the interview responded well within the range of information needed for analysis.

3.2 Validity

Validity has to do with whether the research conducted and its observations truly represents the themes or subjects you are researching (Kvale & Brinkmann, 2015).
In order to increase validity for our thesis work we decided to go with a semi-structured interview and pick our informants out from certain criterias. Seeing as we are measuring athletes' prerequisites for entrepreneurship, it was important that the informants were athletes first and foremost, but also that they had little to no experience with entrepreneurship or business start-up. This criteria is chosen in order to ensure that our findings stem from athletes experiences and not something obtained through entrepreneurship education or starting businesses. Setting these criterias is vital for strengthening the validity of the research project. Validity is further defined with two different aspects, this related to internal and external validity. Internal validity in qualitative research refers to how accurately the researchers approach the findings in order to reflect the study's purpose and its reality (Johannessen et al., 2021). Representing the reality of the informant's answers is the most important part of creating validity for our project. Asking questions the right way and

transcribing clear and correct answers from the interview subjects is vital to strengthen the analysis.

Throughout our theoretical work we have gotten a broad understanding of entrepreneurship and education which has made us able to differentiate between relevant and irrelevant information towards our methodological work. This understanding has contributed to the internal validity related to the technique of *persistent observation (Johannessen et al., 2021)*. Furthermore there is the external validity. The external validity has to do with transferability. When conducting a research project, the data might have value beyond the project at hand. There is a degree of generality in the research (Johannessen et al., 2021). Conducting this research project on athletes and prerequisites for entrepreneurship, could give insight into several other areas such as developing athletes opportunities in other dual-career paths, entrepreneurial education for other target groups, or general insight into better structured learning. If the data gathered has generality for other phenomena it could help provide external validity for out research work.

3.3 Interview guide

We have structured an interview guide beforehand that will help us gather the necessary data for our research (attachment A). The interview guide comes as an important stage, as the credibility of the research depends on the quality of the data collected (Kritskaya, 2015)**.** Additionally, the interview guide must meet the research objectives with relevance and accuracy. In order to build respondents' knowledge and willingness to share knowledge throughout the interview, an effective interview guide ensures that all questions are simple and objectively formulated (Kritskaya, 2015). For our interview guide it was important to have adaptability due to athletes limited knowledge on entrepreneurship.

The questions in the interview guide are built up in a way to help increase comfort for the interview subjects by placing the more lighthearted questions first. These introduction questions gather information on sports background and life experiences. From our experience this contributed to the atmosphere for the rest of the interview and allowed the athletes to speak without restraint. Following the introduction section, we have divided the interview guide into three sections: *Entrepreneurship, education & teaching* and finally

problem solving. These sections provide us with information that contribute to answering our four research questions.

3.4 Confidentiality & Ethics

Before each of the interviews were conducted we sent out a consent form and got a signature from the informants accepting the terms for participating in this research project (attachment B). The consent form is created from a template from NSD (Norwegian center for research data) and includes various information about what the data will be used for, how long it will be stored, and who will have access to the informant's answers. Informed consent means the research participants are informed about the goal of the research and its main themes, as well as possible risks and benefits of participating (Kvale & Brinkmann, 2015). It is important to inform the participants about the research goal and main theme, but it also has to be done in a way that does not influence the informant's answers. (Kvale & Brinkmann, 2015) suggest one should think about how and when information is presented in order to avoid misleading participants. In addition to getting their spontaneous opinions on the subject, one might want to keep the interview's purpose a secret from the participants in order to avoid leading them to certain responses (Kvale & Brinkmann, 2015). In the last few months and prior to the interviews, we have researched a great deal about entrepreneurs and athletes, which gave us great insight into these themes. For our research work it was therefore important that we do not express all of this as it could cloud informants honest and reflected opinions. This aspect has to do with ethics, as we try to avoid leading our informants into certain answers.

3.5 Research data analysis & Transcribing

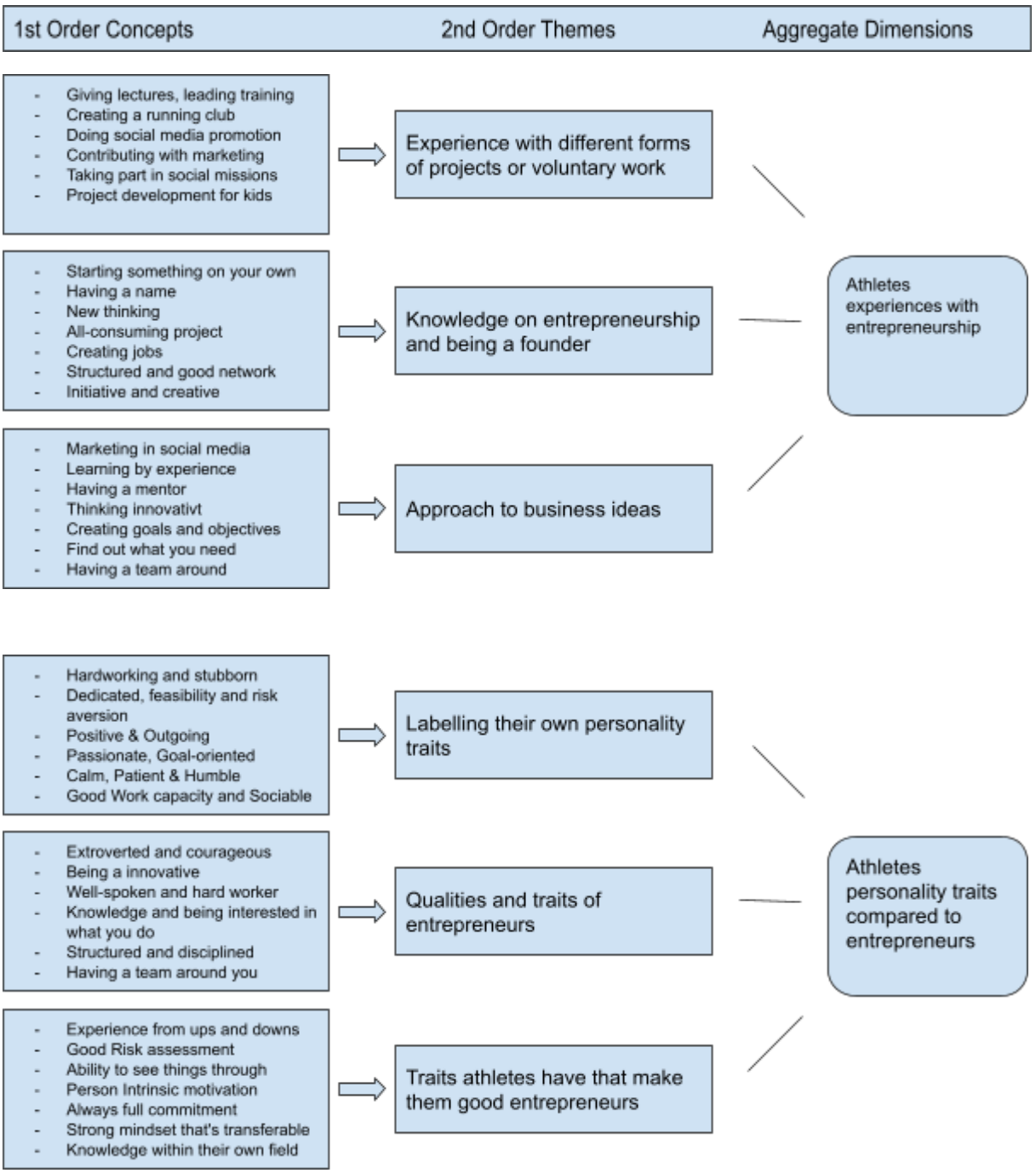
During the interviews one worked as the interviewer, asking the questions and following the interview guide. Simultaneously the other worked as an observer, whose objective was to take notes, check on recording devices and contribute to follow-up questions. These two roles were also switched from time to time. The interviews were conducted face-to-face or digitally through a Zoom conference call with only the informant and the two of us present. The interviews were recorded with a physical recorder handed out by the library at the university and with NSDs' consent on how to archive research data. In regards to our digital interviews

we were aware of possible challenges we could face with interpreting body language and eye contact, and this is something we took into consideration during our interviews.

After completing the semi-structured interviews, it was necessary to gather the data, group them and analyze the findings. For this project, we decided to go with the Gioia method (Gioia et al., 2013). The groundwork for developing this method is a process that supports the framing of research findings in a way that reveals the relationship between data, forming concepts, and the resulting grounded theory, along with guiding the conduct of the study itself in a way that imposes qualitative precision (Gioia et al., 2013). Seeing as qualitative research is answered through informants' own understanding and experience, it can be challenging to make conclusive findings. Based on this, the qualitative methodology must use a method with solid groundwork to present the findings clearly and objectively. Gioia et al. (2013) explain the Gioia method as "an approach that allowed for a systematic presentation of both a "1st-order" analysis (i.e, an analysis using informant-centric terms and codes) and a "2nd-order" analysis (i.e, an analysis using research-centric concepts, themes, and dimensions for the inspiration for the 1st-and 2ndd-order labeling)" (p.18). The Gioia analysis is presented in *figure 5*, and consist of our athletes answers in 1st order codes, 2nd ord themes and finally aggregate dimensions to lead up to our discussion chapters.

4. Analysis and findings

The analysis will present findings from the seven informants we interviewed. As mentioned, we used the Gioia-approach in our methodologic work and it will be used here as a way to present findings in a systematic way. The findings will be analyzed into different 2nd order themes leading up to four aggregate dimensions summarizing our main findings from the methodological work. The different dimensions do not have a clear distinction as they all lead up to answering the overarching problem statement:


1st Order Concepts
2nd Order Themes
Aggregate Dimensions
- Giving lectures, leading training
- Creating a running club
- Doing social media promotion
- Contributing with marketing
- Taking part in social missions
- Project development for kids
Experience with different forms of projects or voluntary work
- Starting something on your own
- Having a name
- New thinking
- All-consuming project
- Creating jobs
- Structured and good network
- Initiative and creative
Knowledge on entrepreneurship and being a founder
Athletes experiences with entrepreneurship
- Marketing in social media
- Learning by experience
- Having a mentor
- Thinking innovativt
- Creating goals and objectives
- Find out what you need
- Having a team around
Approach to business ideas
- Hardworking and stubborn
- Dedicated, feasibility and risk aversion
- Positive & Outgoing
- Passionate, Goal-oriented
- Calm, Patient & Humble
- Good Work capacity and Sociable
Labelling their own personality traits
- Extroverted and courageous
- Being a innovative
- Well-spoken and hard worker
- Knowledge and being interested in what you do
- Structured and disciplined
- Having a team around you
Qualities and traits of entrepreneurs
Athletes personality traits compared to entrepreneurs
- Experience from ups and downs
- Good Risk assessment
- Ability to see things through
- Person Intrinsic motivation
- Always full commitment
- Strong mindset that's transferable
- Knowledge within their own field
Traits athletes have that make them good entrepreneurs

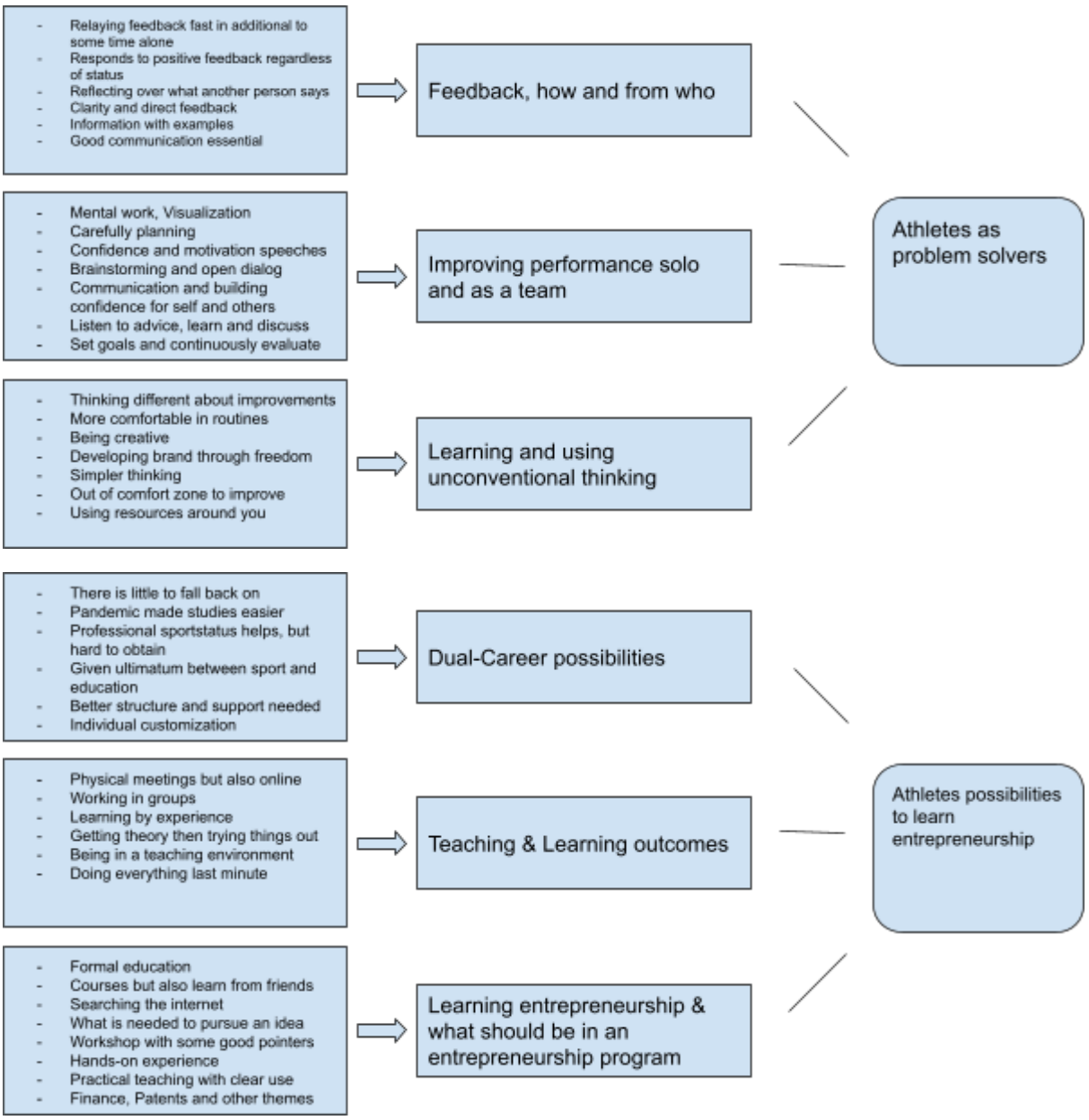


Figure 5: Data Structure and themes through Gioia methodology

4.1 Athletes' experience with entrepreneurship

In the section about *entrepreneurship* we asked our informants questions about their own possible entrepreneurial ventures, what their general knowledge on entrepreneurship is and how they would go about creating a business. Earlier on in our theoretical work we defined entrepreneurship as “any form of business activity that involves innovation, risk-taking and proactiveness” (Ratten, 2020).

4.1.1 Experience with different forms of projects or voluntary work

Various informants have been participating or helping out as trainers, doing voluntary work, camps or different forms of marketing. We have found the different professional athletes to have participated in projects, paid or unpaid, either through their own sports organization or as individuals outside sports.

One example is informant 2. Informant 2 is a marathon runner athlete competing in marathons, gaining medals and acknowledgements at a professional level. Informant 2 has no experience with start-ups or any other formal entrepreneurial ventures, yet has done different work and projects related to his runner career:

> "*My coach started a club for runners back in 2013 and I've been sitting in the board for the club, and also taking responsibilities for trainings when he hasn't been there*" - Informant 2

The athletes have all participated in different projects throughout their career and potentially given them valuable experience both within their field or knowledge that can be used elsewhere. Aside from creating a sporting career they have invested time and energy into their field which is something we interpret as their passion for their careers, but also for the sporting industry.

> "*I worked as a junior-marketing manager for a firm developing VR-technology for football players, doing marketing and creating their website"* - Informant 4

The way we look at these findings is that athletes have experience in different forms of projects or voluntary work, and while some of these experiences are not created through the sporting career itself, it is related to either their own career, the sporting industry or through the organization they are a part of, and that is a value in itself.

4.1.2 Knowledge on entrepreneurship

Based on our criterias for selecting informants we knew the athletes had little experience with starting businesses or being an entrepreneur, but still we wanted to analyze what their general knowledge is on the subject. Several informants state that it is about "starting something on

your own" or "doing something that has never been done before". In addition they mention necessities that might have to be in place in order to be an entrepreneur, such as having a network or possessing a brand name. One informant mentions the following:

> "*It sounds like fun being an entrepreneur, starting something on your own, having ownership. It's very cool with people who does that, and with an athlete career you do have a name you can take advantage of"* - Informant 1

From our findings it assumes that athletes have a general understanding of what starting a business is, and being a founder is. Apart from that there are no mentions of themes, subjects or theories within entrepreneurship.

4.1.3 Approaches to business ideas

We asked our informants how they would go on about creating their own business, either through their own idea or a fictional one. There were many different answers here, whereas some informants focused on the aspect of creating goals, and aiming to reach them, others focused on learning by experience. Informants also looked to engage with mentors or figure out what they would need in order to establish the business through acquaintance.

> *"I would look through my network, see if I have any friends that have any experience. We recently started a podcast and then went out and talked to people we know, that have done something similar"* - Informant 4

The athletes were quite reflective on the way they would approach a business on their own. Thinking innovatively on what business they would create is something that was mentioned by one of our informants that had no prior business idea, and potentially give an edge within their own field of expertise when creating a business. The overall consensus was however that they had not given much thought on how to formally proceed with such a process.

4.1.4 Summary

Through the analysis, we find athletes to have little formal knowledge of what is required to proceed with a business idea or go on an entrepreneurial venture. They are, however, reflective on how they would go about learning about entrepreneurship. In addition, we see

several experiences athletes have had within training, voluntary work or other projects that could be influential in their prerequisites for entrepreneurship.

4.2 Athletes' personality traits compared to entrepreneurs

In the section *education & teaching* in our interviews, we researched informants' own views of their personality traits, the traits they believe entrepreneurs have, and lastly, what traits they believe athletes have that would make them good entrepreneurs. The findings are presented below.

4.2.1 Labeling their own personality traits

From informants' answers, there was a clear consensus that they labeled themselves as hard-working and goal-oriented. There were also a number of different traits, such as positive, stubborn, feasible, calm and patient.

> *"I am very passionate. I do what I do because I feel like I'm on earth to do what I'm supposed to do, with equality and female representation in the sport"* -Informant 4

The quote above is from a football athlete who is currently working within the field of football. Seeing as we interviewed athletes in quite different sports, we also saw traits such as sociable and analytical. This came from an athlete competing in professional diving who mentioned these personality traits due to him competing in quite a straightforward sport. From the analysis, we also observed that the athletes mostly associated themselves with traits through their sporting profession and not other environmental factors.

4.2.2 Qualities and traits of Entrepreneurs

In short, athletes described entrepreneurs as hard-working, creative, innovative, structured, extroverted, or well-spoken. Moving on, athletes described entrepreneurs as people with a desire to start something of their own and as people having an edge through either competence within the field or having a brand name.

> *“I think you really need to know what you are doing." “You need some form of edge and interest for just that, then you can build a team that compliments your abilities, so everything goes well.”* - Informant 5

From our interpretation, the team aspect of entrepreneurship was something that was visible often throughout informants' understanding and experience with entrepreneurship.

4.2.3 Traits athletes have that make them good entrepreneurs.

Following up from our previous questions, we wanted to know how athletes experience their own traits and how they benefited them as entrepreneurs. Athletes look at the ability to see things through and commit fully, as a very positive trait that is transferable to entrepreneurship. Informant 1 mentioned the following:

> “*We have a lot of experience with ups and downs. We are dedicated and structured and know what is needed to get to the top. I think athletes are one of the best people you can put on an assignment. ”* -Informant 1

Personal intrinsic motivation was also mentioned by the informants. An ability to transfer this from their sporting career over to entrepreneurship. Alongside knowledge within their field and great risk assessment, were other traits and abilities they viewed as useful for entrepreneurship.

4.2.4 Summary

Athletes have several traits they believe have transferable value to entrepreneurship. First, we analyze their strong sense of commitment and hard work as indications of entrepreneurial traits. In addition, the strong sense of intrinsic motivation athletes have within their career could have transferred value into entrepreneurship.

4.3 Athletes' as problem solvers

Through the *problem solving* section, we asked informants questions about how they respond to receiving and giving feedback, their experience with unconventional thinking, and how they work to improve their performance as individuals and in teams. The findings are presented below.

4.3.1 Feedback, how and from who

The athletes had different experiences with how they preferred to receive feedback, ranging from strictly positive feedback to more constructive feedback. What athletes had in common was that all informants desired the feedback to be formulated clearly and communicated well, preferably with examples. In addition, we interpret that the status of the one giving feedback was largely irrelevant. The deciding factor had much more to do with how it was articulated.

> *"There are things I cannot do by myself in dancing, but I can teach the theory and everything. I see that even if the person speaking to me is the worst or not as good a dancer, they can have an opinion, and if I agree with that, and mostly even if I don't agree, I think about it a lot.*" -Informant 3

From the analysis, it seems athletes are reflective on how feedback can be communicated and from whom. In sports, feedback is something that happens very often for athletes to improve themselves. Based on their experience, athletes should have a good interpretation on which feedback methods work best for them.

4.3.2 Improving athletic performance

Athletes seemed to be mostly focused on improving their mental fortitude and other factors such as communication and planning. Based on several responses, the consensus was that their physical ability and skills within their sporting industry developed naturally through repetition. Conversely, the part that needed improvement was to improve mentally for competitions and training through brainstorming, communication, planning, and visualization.

> "*It's about using mental pictures. In a way, visualize how you are going to complete the dive you are going to do and mentally prepare for that. "* -Informant 7

4.3.3 Learning and using unconventional thinking

From our questions, it seemed that athletes themselves believe they have little experience in thinking unconventionally. In addition, we analyzed how they would go about gaining more

experience. Several athletes seemed to focus on taking advantage of the resources around them to be more creative or to create freedom around them to develop their own brand.

> "*You see athletes who are celebrities now developing their own brand, having a social role as well. Take Hector Bellerin, for instance, who is a football player, now fronting sustainability and also being a fashion icon. I notice now that the position I am in gives me more freedom to develop my ideas. "* -Informant *4*

Informant 4 is currently working within the sports industry and sees more opportunities to use unconventional thinking and be creative when there is more freedom within her work. The informant adds that sport is not something hindering creativity, it is simply done in a different way through brand development.

4.3.4 Summary

Athletes convey the impression to be quite familiar with feedback, both by handing it out and receiving. In general, athletes were unfamiliar with unconventional thinking but reflective of how they would get better. As for the way athletes improved their performances, they worked a lot with mental improvements through visual images and improving confidence. Our analysis also shows athletes being good team players and working well with brainstorming in groups.

4.4 Athletes' possibilities to learn entrepreneurship

In the section of *teaching & education* we asked several questions within the category of teaching possibilities and learning outcomes. In what way do athletes get the best learning outcomes? How do they feel about the current dual-career possibilities? What would an entrepreneurship program look like, and what themes should be included in it?

4.4.1 Dual Career possibilities

In general, athletes were quite unhappy with the current opportunities of having dual-careers. Their experiences included a lack of information on how one should balance and structure such a weekday, lack of individual customization, and ultimatums given by either the school

or sports organization to pick one career path. In addition, several athletes voiced their opinion on how much easier it was to fit school and sports into their schedule during the corona pandemic.

> "*It was great during the pandemic because one could attend everything online. It's more difficult now because it requires physical presence. It's a lot of traveling with the sporting team, so it's difficult to be present in class."* -Informant 1

For the athletes, they also had something called professional sports status which helped a bit in rescheduling exams and other mandatory practices, but it was hard to obtain due to it being issued based on certain factors given from their universities and not something just anyone competing could get. From the athletes themselves, it was a desire to let this sports status be obtained a bit easier, so dual-career possibilities could be easier available.

4.4.2 Teaching and learning outcomes

The way learning outcomes are achieved for athletes, seems to be related to a mix of some theoretical groundwork, and then more practical education and learning by doing. Education is also best achieved through some physical meetings in groups but also with individually customized online learning.

> *"I work best when pulling all-nighters and doing everything last minute. Working with fellow students and helping each other deliver is important."* -Informant 7

This quote reflects on our interpretation that individual customization is desired among athletes for better adaptability and learning outcomes.

4.4.3 Learning entrepreneurship & what should be in an entrepreneurship program

Athletes themselves had various suggestions on how they should proceed to learn about entrepreneurship. They had suggestions from formal entrepreneurship education, online courses, talking to friends or simply browsing the internet. When it comes to what should be included there were suggestions like marketing, patents and finance, but little clarity in exactly what themes it should consist of. What was clearly formulated however was the need

for hands-on experience and step by step pointers on how to create a business. In addition it was a desire to work in groups to learn.

> "*I think what's needed is how to proceed, what resources you need, if the idea is achievable. For us It's also important with a practical use, since our time is limited we need to feel that we get something out of it if we are to use time to learn" -* Informant 4

4.4.4 Summary

We interpret that athletes are not satisfied with the opportunities for having a dual-career due to a lack of individual customization with education programs. Athletes had their best learning outcomes through practical work conducted in teams. As for entrepreneurship education, there was a need for a clearer and more practical value incentive.

5. Discussion

The purpose of this study has been to investigate the self-employment career options for athletes through entrepreneurial ventures. This thesis has been constructed and followed by the problem statement, *"What prerequisites do professional athletes have to learn entrepreneurship?"* In the chapter that follows, we reflect on this problem statement by using our four research questions.

The figure below presents the four categories forming the discussion chapters of the thesis, leading up to answering our problem statement.

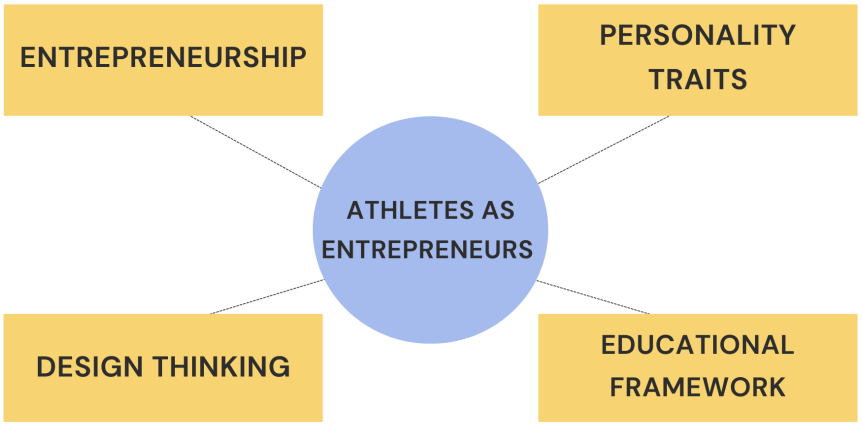


Figure 1: Visual presentation of the discussion chapters.

5.1 Athletes' possessing valuable experiences

We use athletes' interpretation of entrepreneurship and sports entrepreneurship to discuss their prerequisites for entrepreneurial processes and mindset as a tool in their future career path. In the following chapter we us the research question 1:

"How is an athlete's interpretation of becoming an entrepreneur?"

Entrepreneurs and innovators in the sports business industry have been underrepresented in the literature, despite their influence on the growth of the global sports and sports markets (Nauright & Wiggins, 2020b). Therefore, this thesis purpose has been to investigate how entrepreneurship can be taught to professional athletes and how athletes can use entrepreneurship education methods during and after a professional sports career. In the research of Ratten (2015) it is emphasized how athletes' ability to succeed as entrepreneurs is influenced by their human capital and personal characteristics. Furthermore, Ratten (2015) also found that "athletes, due to their experience in the sports industry, have developed physical and emotional coping skills that help when managing a business enterprise" (p.450). On the other hand, several of the athletes we interviewed showed prior experiences within the scope of entrepreneurship. The athletes taking part in social work, projects or marketing could give them valuable prerequisites for becoming entrepreneurs themselves. In the reflection of our analysis one could argue that athletes have little theoretical knowledge on entrepreneurship. Although, athletes hold valuable experience in making the transition from

athlete to entrepreneur a smoother process due to their project experience, voluntary work or marketing.

The experiences with projects and with entrepreneurship are linked and there exist transferable learning between the practices (Kuura et al., 2014). The findings further indicate that athletes themselves lack understanding of entrepreneurship by implying themselves that they know little about entrepreneurship, while holding on to these experiences with value towards entrepreneurship.

To summarize, athletes have limited knowledge of the theoretical aspect of entrepreneurship, but hold experiences from their sporting profession which could be transferable over to entrepreneurship endeavors. This foundation could help us understand more about professional athletes' prerequisites for becoming promising entrepreneurs and how education or training programs towards entrepreneurship should be facilitated for athletes themselves.

5.2 Athletes characteristics towards entrepreneurship

Following our analysis, we found several traits in athletes indications of typical entrepreneurial personality traits as presented in our theoretical framework. We reflect on these traits through research question 2:

“How do athletes' and entrepreneurs' personality traits compare?”

In regards to the personality traits, we saw high confidence from athletes to define themselves as people who fulfill tasks they set their mind to. This both relates to their personality traits, as well as within how they go about improving their athletic performance. Athletes mentioned their athletic performance improvements as careful & structured planning, while simultaneously setting goals and evaluating. Arguably, this may lie within the scope of showing a high level of *self-efficacy* from athletes, as they show a belief in fulfilling tasks. However, in regards to the *five domain-specific self-efficacy* mentioned by Chen et al. (1998), it needs to be said that athletes' careful planning towards improving athletic performance might show a lack of risk-taking willingness within the scope of self-efficacy theory. Chen et al. (1998) go on to explain that “self-efficacy in innovation and risk-taking are more likely to be developed through real-world experience“ (p.311). This could be relevant for athletes as

entrepreneurs, and could indicate experience needed within entrepreneurship in order to show more risk-willingness. This might also help understand the lack of experience with *innovativeness* from athletes throughout our analysis. Athletes need more direct real-world experience connected to entrepreneurship in order to improve innovativeness within entrepreneurship.

The athletes mentioned varying elements of what motivated them, but they were all quite clear in their *need for achievements* within their professional careers or personal lives and were driven mostly by intrinsic motivation. This desire for achievement intrinsically shows a connection to achievement-related motivation, which "refers to those personality factors, social variables, and/or cognitions that come into play when a person undertakes a task at which he or she is evaluated, enters into a competition with others, or attempts to attain some standard of excellence" (Roberts, 1982, p. 237). Rather than extrinsic factors being a motivator for our informants, self-realization and success seemed to be more important. Athletes showing signs of a high desire for achievement could then indicate possibilities of success in entrepreneurial ventures. Furthermore, there seems to be a significant correlation between entrepreneurial success and achievement motivation (Staniewski & Awruk, 2019).

We interpret that athletes label themselves as task fulfillers, careful and structured planners.Athletes show signs of self-efficacy presence but with certain limitations towards risk-taking aspects. In relation to this, they also show little experience with innovativeness, which is something athletes have to learn through real-world experiences. In the area of achievement needs, athletes hold a strong sense of personal intrinsic motivation, which holds value for entrepreneurship.

5.3 Athletes foundation for design thinking

Our analysis reveals certain elements that show prerequisites for taking advantage of design thinking as a working method. In the following chapter we discuss research question 3:

"What prerequisites do athletes have for using design thinking as an entrepreneurial working method?"

Looking at athletes' experience with how, and by who feedback should be relayed, we can reflect on *needfinding* as part of a method work for design thinking, seeing as needfinding is "gaining an improved understanding of how and why people need certain things" (Ratten & Jones, 2020, p. 976). Feedback is a remarkable part of the athlete's sporting careers, and it was a necessity to be formulated clearly and communicated well from our athletes' perspective. In addition, the informants seemed to have an open mind on who they were willing to receive feedback from, as long as certain factors were fulfilled, such as articulation. One of the three main methods of design thinking, needfinding, requires people to immerse oneself in the experience of a person having a certain need because it can contribute to better innovative developments (Ratten & Jones, 2020). Athletes' experience with feedback might help contribute to immersing oneself into a person's needs. As *brainstorming* involves working with ideas, we looked at how athletes work in teams and as individuals, and we researched the way they use and develop unconventional thinking, as design thinking "process enables people to think outside the box as a way to derive new sports solutions" (Ratten & Jones, 2020, p. 976).

Our initial findings seem to indicate that athletes have little experience with thinking unconventionally. Several athletes seem to mention structure and rigid training schedules, which could be an indicator as to why they are less familiar with thinking unconventionally. From our findings we also looked at how athletes would go about using more unconventional thinking. Factors such as taking advantage of resources around them to be more creative and stepping out of their comfort zone to improve. Ratten (2020) explains that "design thinking incorporates reflexive practice as it provides a way for individuals to think in a creative manner" (p.976). Following this we see indications of design thinking possibly working as an entrepreneurial working method for athletes to learn how to take more advantage of unconventional brainstorming.

From the analysis of how athletes improve performance, we see certain elements of *prototyping* prerequisites within athletes. Our informants worked creatively within their way to improve performance, with several athletes mentioning working methods like visualization during practice. Creating prototypes is challenging, and one way to do that is through visualization. "Prototypes are created in the form of tangible physical objects or drawings that invite users and team members to test them, give feedback, and refine the solutions"

(Kernbach & Nabergoj, 2018, p. 362). Furthermore, visualization helps with communicating ideas and creates a common understanding of prototypes (Kernbach & Nabergoj, 2018). While athletes' experience with visualization is more related to visual thinking and mental images and not physical artistic drawings, it does show relations to visualization within prototyping. As part of visualization within design challenges, visual thinking is presented as a part of creative thinking applications (Lewrick et al., 2018). Athletes having experience with visual thinking makes the prerequisites for visualization within prototypes more feasible.

Athletes are individuals facing feedback relatively often, they have a reflective view on feedback, such as how it should be relayed and from whom, which is good insight into a vital part of design thinking about consumer feedback. Athletes are quite unfamiliar with unconventional thinking, which means design thinking could give them opportunities to take advantage of. Such as brainstorming as proposed by Ratten & Jones (2020). This could potentially be done outside athletes' structured routines. Finally, athletes' visual imaging experience could provide a foundation for design thinking as an entrepreneurial working method.

5.4 Athletes and a need for customizable teaching

In regards to educational frameworks for athletes we looked at several factors which could impact entrepreneurial teaching. In the following chapter we discuss research question 4:

"What educational framework is needed for athletes to have a dual-career?"

The theoretical framework highlights that entrepreneurship education traditionally has focused on delivering knowledge on developing certain personal skills (Fayolle et al., 2006). Therefore, it is not exclusively focused on skills to start and manage a company (Fayolle et al., 2006). Furthermore, this method has followed a linear path to learning entrepreneurship (Daniel, 2016). Similarly, Hindle (2007) expresses that entrepreneurship might be difficult to teach, just as important as a way to transfer knowledge to create future opportunities.

There are suggestions that people in traditional entrepreneurship classes do not like it because they must follow a specific path (Daniel, 2016). The learning process for entrepreneurship as a straightforward path might not give future entrepreneurs the understanding of what it means

to start a business. Our athletes indicated the importance of practical value and real world experience for achieving good learning outcomes. Many of our informants argue that they work mostly with their mindset and confidence to succeed better as an athlete, which is mostly done through visual imaging and other forms of mental work. Finding a way to teach the methods used in entrepreneurship to enrich athletes' potential to become even better and succeed more in sports could very well be within the realm of design thinking.

When given our informants a chance to talk about their club/organization's facilitation, many informants argued that it was not up to their club to facilitate a dual-career but rather the education system. Furthermore, the respondents mentioned getting help from the right people, online accessibility and needs for individual tailored programs as important factors for allowing dual-career possibilities. As athletes are individuals running on tight schedules, it is necessary to maximize their time, this is both for athletes to be in shape and perform, but also for their transition from athlete to starting another career (Macquet & Skalej, 2015). This shows a need for customization within education in order to let athletes focus on their sporting career alongside education or other forms of self-employment. For example, suppose football and handball teams triumph in a tournament or their national league. In that case, a potential European match will happen shortly, possibly changing their planned study schedule. Awareness of the uncertainty of outcome can be important when understanding how professional athletes arrange their schedules.

Moreover, learning has to be available to athletes at their preferred time and place. Creating an environment where learning is not adjusted to individuals creates a more challenging learning environment for athletes due to their necessary time management. This is however, very difficult, but more available with online based learning. This aligns with athletes' opinions on the need for adjustability in education with regards to time and place.

Teaching through what Valerio et al. (2014) refer to as suggestions for either entrepreneurship education or entrepreneurship training program does not look to fit the unpredictability of a professional athlete's schedule. With high potential for uncertainty in everyday life, both with injuries and potential longer seasons. The need for other opportunities has to be proposed. Valerio et al. (2014) presents a model for entrepreneurship education and training reflecting on delivery of entrepreneurship within both training and education, and in neither of the brackets online entrepreneurship teachings are presented as a potential design option

(attachment C). However, our analysis shows that there is a need for online teaching to be considered for athletes on a professional level as their availability is limited due to the win at all cost mentality.

Customized individual learning seems to be of importance to athletes, but there was also a strong need for practical real world experience. There are several ways to teach entrepreneurship, like any other subject at school. When teaching athletes, meeting their full-time schedule, understanding which specific teaching pedagogy to implement is beneficial. Teaching entrepreneurship to athletes demands further attention "because the learning experience must be relevant to life and career aspirations" (Kenny, 2015, p. 191). Nevertheless, all sports individuals have different needs, which creates challenges for facilitators of educational programs addressing professional athletes (Subijana et al., 2015). In regards to the six-step one-semester module presented by Daniel (2016) earlier, explaining entrepreneurship teaching, we see certain elements which could be helpful for athletes to attain good learning outcomes within entrepreneurship. This teaching module holds value for professional athletes as it starts with entrepreneurial awareness through empathy and interpretation, allowing athletes to engage even with limited entrepreneurship knowledge.

In short, athletes face difficult schedules and limitations, which requires dual-career opportunities to be adaptable and customized. Teaching entrepreneurship to athletes might require consideration for online learning for good teaching outcomes. This alongside focus on entrepreneurial teaching subjects as real-world experiences with practical knowledge, but also for athletes to attain an entrepreneurial mindset due to limitation of formal knowledge.

5.5 Limitations & future research

In terms of limitations we are aware of restrictions towards certain elements within research on personality traits. The amount of informants we had were sufficient to analyze and reflect on our problem statement as new informants would not give us additional information. However, in terms of personality traits, we investigated athletes' own opinions on their prerequisites for entrepreneurship, which limited us in terms of researching to what degree athletes possessed these traits, and how it compared to other populations. This decision is something which could contribute to athletes' own understanding of entrepreneurship, but in

terms of concluding the level of each personality trait athletes hold, one would require an additional sample group to compare with athletes. For the informant selection we decided to research athletes as a singular research group. For further research we recommend looking into differences in sporting professions such as team or individual sports. In addition, measuring risk-willingness in athletes, could be a trait seen more positively in athletes competing in more extreme sports such as boxing and alpine skiing. In further research we would therefore recommend to study differences in sports professions and its relation to risk-willingness.

6. Conclusion

The ELCAMP-project works to develop self-employment career options for athletes through entrepreneurial ventures. Similarly, we have looked at self-employment options through entrepreneurship for professional athletes. Following our problem statement *"What prerequisites do professional athletes have for entrepreneurship*?" and its following research questions, we interpret athletes' experiences with projects or voluntary work as valuable experiences which may impact their transition into entrepreneurship. Furthermore, we found that athletes opinionated themselves with typical entrepreneurial traits such as self-efficacy and achievement motivation. These findings might help us understand athletes' possibilities of transitioning into entrepreneurship and making them succeed. On the other hand, our informants seemed to be quite unfamiliar with working innovatively, which we relate to athletes' rigid training schedules and careful planning. This trait might require training to develop, in order for athletes to step out of their routines and think more unconventionally, thus becoming more innovative.

Design thinking is a process suited to non-designer students, and we see professional athletes as a suitable target group to take advantage of it. Their sporting profession, consisting of constant feedback, gives athletes an edge in the design thinking aspect related to *needfinding*. In addition, athletes work in tune with visual imaging to improve their performance, which is the first step for prototyping in design thinking methodology. While working methods contribute to athletes' prerequisites, we interpret a strong need for practical teaching within entrepreneurship as these individuals face a constant need for time managing.Referencing Valerio et al. (2014) framework, we see difficulties placing athletes within the spectrum of

entrepreneurship education or training programs as it does not involve entrepreneurship teaching online. This is worth reflecting on further as athletes do not possess the time to partake in physical education on a regular basis. As such, individual customization for teaching entrepreneurship might be required for athletes, in order for them to learn entrepreneurship and receive the best learning outcomes.

7. References

Boyd, D. E., Harrison, C. K. & McInerny, H. (2021). Transitioning from athlete to entrepreneur: An entrepreneurial identity perspective. *Journal of Business Research*, *136*, 479–487. https://doi.org/10.*1016*/j.jbusres.2021.07.010

Brenner, W., Uebernickel, F. & Abrell, T. (2016). *Design thinking for innovation, research and practice*. 3–21. https://doi.org/10.1007/978-3-319-26100-3_1

Brottveit, G. (2018). *Vitenskapsteori og kvalitative forskningsmetoder : om å arbeide forskningsrelatert* (L. D. Busso, Ed.). Gyldendal akademiske.

Caliendo, M., Fossen, F. M. & Kritikos, A. S. (2009). Risk attitudes of nascent entrepreneurs–new evidence from an experimentally validated survey. *Small Business Economics*, *32*(2), 153–167. https://doi.org/10.1007/s11187-007-9078-6

Chen, C. C., Greene, P. G. & Crick, A. (1998). Does entrepreneurial self-efficacy distinguish entrepreneurs from managers? *Journal of Business Venturing*, *13*(4), 295–316. https://doi.org/10.1016/s0883-9026(97)00029-3

Collective Innovation. (2022). *Bootcamp for athletes*. Bootcamp for Athletes. https://www.bootcampforathletes.com/

Commission of the European Communities. (2007). *White paper on sport*: *Recommended Policy Actions in Support of Dual Careers in High-Performance Sport*. Commission Of The European Communities.

Condello, G., Capranica, L., Doupona, M., Varga, K. & Burk, V. (2019). Dual-career through the elite university student-athletes' lenses: The international FISU-EAS survey. *PLoS ONE*, *14*(10), e0223278. https://doi.org/10.1371/journal.pone.0223278

Daniel, A. D. (2016). Fostering an entrepreneurial mindset by using a design thinking approach in entrepreneurship education. *Industry and Higher Education*, *30*(3), 215–223. https://doi.org/10.1177/0950422216653195

European Commission. (2012). *EU Guidelines on Dual Careers of Athletes*. Publications Office of the European Union. doi: 10.2766/52683

Fayolle, A., Gailly, B. & Lassas‐Clerc, N. (2006). Assessing the impact of entrepreneurship education programmes: a new methodology. *Journal of European Industrial Training*, *30*(9), 701–720. https://doi.org/10.1108/03090590610715022

Gioia, D. A., Corley, K. G. & Hamilton, A. L. (2013). Seeking Qualitative Rigor in Inductive Research. *Organizational Research Methods*, *16*(1), 15–31. https://doi.org/10.1177/1094428112452151

Goldsmith, R. E. & Foxall, G. R. (2003). The Measurement of Innovativeness. *The International Handbook on Innovation*. Elsevier Science Ltd.

González-Serrano, M. H., Crespo-Hervás, J., Pérez-Campos, C. & Calabuig, F. (2021). Entrepreneurial ecosystems for developing the sports industry in European Union countries. *Journal of Business Research*, 136, 667–677. https://doi.org/10.1016/j.jbusres.2021.07.060

González-Serrano, M. H., Jones, P. & Llanos-Contrera, O. (2019). An overview of sport entrepreneurship field: a bibliometric analysis of the articles published in the Web of Science. *Sport in Society*, *23*(2), 1–18. https://doi.org/10.1080/17430437.2019.1607307

Hahn, D., Minola, T., Bosio, G. & Cassia, L. (2020). The impact of entrepreneurship education on university students' entrepreneurial skills: a family embeddedness perspective. Small Business Economics, *55*(1), 257–282. https://doi.org/10.1007/s11187-019-00143-y

Hennink, M. & Kaiser, B. N. (2022). Sample sizes for saturation in qualitative research: A systematic review of empirical tests. *Social Science & Medicine*, *292*, 114523. https://doi.org/10.1016/j.socscimed.2021.114523

Hill, C. & Houde, S. (1997). What do prototypes prototype? *Handbook of Human-Computer Interaction*.

Hindle, K. (2007). Teaching entrepreneurship at university: from the wrong building to the right philosophy. In *Handbook of research in entrepreneurship education* (Vol. 1, pp. 104–126). Edward Elgar Publishing.

Johannessen, A., Christoffersen, L. & Tufte, P. A. (2021). *Introduksjon til samfunnsvitenskapelig metode (6.ed)*. Abstrakt forlag.

Jones, P., Klapper, R., Ratten, V. & Fayolle, A. (2018). Emerging themes in entrepreneurial behaviours, identities and contexts. *The International Journal of Entrepreneurship and Innovation*, *19*(4), 233–236. https://doi.org/10.1177/1465750318772811

Kenny, B. (2015). Meeting the entrepreneurial learning needs of professional athletes in career transition. *International Journal of Entrepreneurial Behavior & Research*, *21*(2), 175–196. https://doi.org/10.1108/ijebr-07-2013-0113

Kernbach, S. & Nabergoj, A. S. (2018). Visual Design Thinking: Understanding the Role of Knowledge Visualization in the Design Thinking Process. *2018 22nd International Conference Information Visualisation (IV)*, 362–367. https://doi.org/10.1109/iv.2018.00068

Kerr, S. P., Kerr, W. R. & Xu, T. (2018). Personality Traits of Entrepreneurs: A Review of Recent Literature. *Foundations and Trends® in Entrepreneurship*, *14*(3), 279–356. https://doi.org/10.1561/0300000080

Kritskaya, L. (2015). *Effect of Entrepreneurship Education on Students' Entrepreneurial Intentions Educators' Perspectives at Universities in Norway and Russia.*

Krumer, A., Rosenboim, M. & Shavit, T. (2011). Why do professional athletes have different time preferences than non- athletes? *Judgment and Decision Making*.

Kuura, A., Blackburn, R. A. & Lundin, R. A. (2014). Entrepreneurship and projects—Linking segregated communities. *Scandinavian Journal of Management*, *30*(2), 214–230. https://doi.org/10.1016/j.scaman.2013.10.002

Kvale, S. & Brinkmann, S. (2015). *Det kvalitative forskningsintervju (3.ed)*. Gyldendal akademiske.

Lattemann, C., Arntsen, E., Flaten, B., Fürst, N. & Hølen, J. (2020). Is There a Proper Way to Teach Design Thinking? *Journal of Design Thinking*.

Lenarduzzi, V. & Taibi, D. (2016). MVP Explained: A Systematic Mapping Study on the Definitions of Minimal Viable Product. *2016 42th Euromicro Conference on Software Engineering and Advanced Applications (SEAA)*, 112–119. https://doi.org/10.1109/seaa.2016.56

Lewrick, M., Link, P. & Leifer, L. J. (2018). *The design thinking playbook : mindful digital transformation of teams, products, services, businesses and ecosystems*. John Wiley & Sons, Inc.

Macquet, A.-C. & Skalej, V. (2015). Time management in elite sports: How do elite athletes manage time under fatigue and stress conditions. *Journal of Occupational and Organizational Psychology*, *88*, 341–363.

Moustakas, L., Kalina, L., Sánchez-Pato, A., Conde, E. & Ege, H. (2022). Strategic Innovation, Research Perspectives on Entrepreneurship and Resilience. *Contributions to Management Science*, 77–88. https://doi.org/10.1007/978-3-030-87112-3_6SportsWorld.

Pallarés, S., Azócar, F., Torregrosa, M., Selva, C. & Ramis, Y. (2011). Modelos de trayectoria deportiva en waterpolo y su implicación en la transición hacia una carrera profesional alternativa. [Athletic Career Models in Water Polo and their Involvement in the Transition to an Alternative Career]. *Cultura Ciencia Deporte*, *6*(17), 93–103. https://doi.org/10.12800/ccd.v6i17.36

Pellegrini, M. M., Rialti, R., Marzi, G. & Caputo, A. (2020). Sport entrepreneurship: A synthesis of existing literature and future perspectives. *International Entrepreneurship and Management Journal*, *16*(3), 795–8*26*. https://doi.org/10.1007/s11365-020-00650-5

Ratten, V. (2010). Developing a theory of sport-based entrepreneurship. *Journal of Management & Organization*, *16*(4), 557–565. https://doi.org/10.1017/s1833367200001930

Ratten, V. (2015). Athletes as entrepreneurs: the role of social capital and leadership ability. *International Journal of Entrepreneurship and Small Business*, *25*(4), 442. https://doi.org/10.1504/ijesb.2015.070217

Ratten, V. (2020). Coronavirus disease (COVID-19) and sport entrepreneurship. International Journal of Entrepreneurial Behavior & Research, 26(6), 1379–1388. https://doi.org/10.1108/ijebr-06-2020-0387

Ratten, V. & Ferreira, J. J. (2017). *Sport Entrepreneurship and Innovation*. Routlegde. https://doi.org/10.4324/9781315393384

Ratten, V. & Jones, P. (2020). New challenges in sport entrepreneurship for value creation. International Entrepreneurship and Management Journal, 16(3), 961–980. https://doi.org/10.1007/s11365-020-00664-z

Ratten, V. & Thompson, A. (2020). Digital sport entrepreneurial ecosystems. *Thunderbird International Business Review*, *62*(5), 565–578. https://doi.org/10.1002/tie.22160

Roberts, G. (1982). Achievement motivation in sports. *Exercise and Sport Sciences Reviews: January 1982*, *10*(1), 236–269.

Shane, S. & Venkataraman, S. (2000). The Promise of Entrepreneurship as a Field of Research. *Academy of Management Review*, *25*(1), 217–226. https://doi.org/10.5465/amr.2000.2791611

Staniewski, M. W. & Awruk, K. (2019). Entrepreneurial success and achievement motivation – A preliminary report on a validation study of the questionnaire of entrepreneurial success. Journal of Business Research, 101, 433–440. https://doi.org/10.1016/j.jbusres.2019.01.073

Steinbrink, K. M., Berger, E. S. C. & Kuckertz, A. (2020). Top athletes' psychological characteristics and their potential for entrepreneurship. International Entrepreneurship and Management Journal, 16(3), 859–878. https://doi.org/10.1007/s11365-019-00612-6

Subijana, C. L. de, Barriopedro, M. & Conde, E. (2015). Supporting dual career in Spain: Elite athletes' barriers to study. *Psychology of Sport and Exercise*, *21*, 57–64. https://doi.org/10.1016/j.psychsport.2015.04.012

Thoring, K., & Müller, R. M. (2011). Understanding design thinking: A process model based on method engineering. In *DS 69: Proceedings of E&PDE 2011, the 13th International Conference on Engineering and Product Design Education, London, UK, 08.-09.09. 2011* (pp. 493-498).

Tjønndal, A. (2018). Sport innovation: developing a typology. *European Journal for Sport and Society*, *14*(4), 1–17. https://doi.org/10.1080/16138171.2017.1421504

Valerio, A., Parton, B. & Robb, A. (2014). *Entrepreneurship Education and Training Programs around the World: Dimensions for Success*. 33–56. https://doi.org/10.1596/978-1-4648-0202-7_ch3

8. Appendix

8.1 Appendix A - Interview guide

Introduction questions

- What is your age?
- What sport(s) do you participate in?
- At what level do you compete? Or have you been competing?
- What educational background do you have? Any current?
- Can you tell us a bit about your own sporting career?
- If sports were not your thing, what would you do?

Entrepreneurship

1. Do you take part in anything besides being an athlete? (Jobs, volunteer jobs, work as a trainer?)
2. Have you ever started something on your own? A tournament? A camp for kids? Other things?
3. If yes, could you describe how this process was?
4. If not, do you know anyone who has done it? - What is your impression of this?
5. What is your knowledge of entrepreneurship? And what do you put into being an entrepreneur?
6. What qualities or abilities do you think are necessary to be a good entrepreneur?
7. What qualities and abilities does an athlete have that make him/her a good entrepreneur?
8. If you had a business idea you wanted to bring to life, how would you proceed?
9. What resources do you lack if you were to start for yourself today?

Education and learning

1. How could someone facilitate a dual-career for you besides being a professional athlete?

2. When do you feel you have the best learning outcomes? What factors play in? (team, individual learning, digital, seminars, physical attendance?)
3. If you were to learn more about entrepreneurship, how would you proceed?
4. What do you wish was in a program about entrepreneurship?
5. How does your club/organization help you maintain a dual-career? (Have you taken any action to get help yourself?)

Problem solving (Design thinking and prototyping)

1. How do you prefer to get feedback about your own sporting performance? - And by whom do you prefer to get that from/not to get it from?
2. How do you individually work to perform better at your sports?
3. How do you work together with others to perform better?
4. How would you describe your own personality? (Creative or analytical?)
5. What is your experience with thinking untraditionally/ "outside the box"? — When it comes to your own sports performance?
6. There is a problem with your equipment just before a competition, how do you handle this situation? (Give a concrete example from that sport)

- Follow up: What happens inside your head when this is going on?

7. What motivates you? (external or inner factors?)

Wrap up

- Is there any subject we have been through that you felt was of extra importance?
- Are there any other things you wish we touched up? Then we have not?

Then we would like to thank you so much for participating today!!

If there is anything unclear after today, could we contact you again? How do you wish to be contacted?

8.2 Appendix B - Declaration of consent

Do you want to participate in the research project?

"From Olympic Gold to Entrepreneur"

This is a question for you to participate in a research project where the purpose is to gather information about athletes and their prerequisites for becoming good entrepreneurs. In this letter, we give you information about the goals of the project and what participation will mean for you.

Purpose:

The project wants to gather information from athletes about their prerequisites for becoming good entrepreneurs. The project explores entrepreneurship, education, teaching and entrepreneurship, and how this can help us under athletes possibilities of becoming a good entrepreneur. Various questions about entrepreneurship and athletic experiences will be asked during the interview. This is information that will be processed in connection with a master's thesis that will be completed by the summer of 2022.

Who is responsible for the research project?

The University of Agder is the institution from which the master's thesis is developed. The work is carried out by Espen Pedersen and Ismael Elotmani, master students at Entrepreneurship and Innovation at the university. The supervisor for this project is Tobias Otterbring, professor at the university.

Why are you asked to participate?

The sample is selected from different networks within these areas with some specific criteria as mentioned below:

- Between 18 and 35 years
- Athletes in physical training and at an internationally competitive level, either individually or team sports
- Little to no experience from formal entrepreneurship education
- Little to no experience with business start-up
- Dual-Career (sports + a form of education) at some point under their professional sports career.

The contact information is obtained through our network, where they have knowledge of informants who fit the criteria. Our network does not get access to who we actually choose to participate in the

interviews, nor does it get access to the informants' answers. The network is only used as a link for suggestions for possible informants.

What does it mean for you to participate?

The method used is a personal interview. There will be interviews between people where names, sports careers and nationality will be discussed. The information is registered through audio recordings in order to contribute to correct information and good processing.

8.3 Appendix C - Summary of Entrepreneurship Education Programs (Valerio et al., 2014, p. 127)

Program dimensions				Entrepreneurship education		Entrepreneurship training	
				Secondary education students	Higher education students	Potential entrepreneurs	Practicing entrepreneurs
Outcome domains	Mindsets		Socio-emotional skills	■	■		
			Entrepreneurial awareness	■	■	■	
	Capabilities		Management skills	■	■	■	■
			Vocational skills		■	■	■
	Status		Enterprise formation		■	■	
			Employability		■	■	
			Income and savings		■	■	■
			Network formation		■	■	■
	Performance		Profits and sales			■	■
			Job creation			■	■
			Expansion			■	■
			Productivity				■
			Formalization				■
			Reinvestment			■	■
			Implementation of innovation				■
			Products and services				■
Program characteristics	Program design	Design	Local partnerships	■	■	■	■
			Selection process		■	■	■
		Finance	Source of funding				
			Unit cost (program and participant)				
	Trainers and delivery	Trainers	Teacher/educator	■	■		
			Practitioner		■	■	■
			Consultant			■	■
		Delivery	Face to face	■	■	■	■
			Online				
			Experiential		■	■	■
		Class size	10 or less			■	■
			10 to 30	■	■		
			30 to 60		■		
			60 to 100			■	■
			More than 100			■	
		Intensity	Daily	■			
			Weekly/bi-weekly	■	■	■	■
			Monthly			■	■
		Duration	One-off	■	■	■	■
			Less than 2 weeks	■	■	■	■
			2 weeks to 3 months			■	■
			3 to 6 months	■	■		■
			6 months to 1 year	■	■	■	
			More than 1 year		■		
	Content and curriculum	Content	Financial literacy/accounting	■	■	■	■
			Marketing sales	■	■	■	■
			General business/management	■	■	■	■
			Vocational		■	■	■
			Leadership and teamwork	■	■		
			Strategic planning		■	■	■
			Socio-emotional skills	■	■	■	
		Curricula	Mixed methods		■		
			Tests/assessments	■	■	■	
			Presentations/competitions		■	■	
	Wrap-around services	Individual	Mentoring and coaching	■	■	■	■
			Networking		■	■	■
			Job counseling		■	■	
		Firm	Access to finance			■	■
			Technical assistance		■	■	■
Moderating factors	Participants	Profile	Gender	■		■	■
			Age			■	■
			Personality and traits	■	■	■	
			Family background	■	■		
		Education	Education level			■	■
			Literacy and numeracy			■	■
		Experience	Work experience			■	■
			Entrepreneurship experience				■
		Interest and intentions	Interest in entrepreneurship	■	■	■	■
			Intention to start/grow a business		■	■	■
		Behavior	Uptake				
			Attrition				
	Context	Economic	Conditions			■	■
			Infrastructure			■	■
		Political	Stability		■	■	■
			Entrepreneurship promotion				
		Cultural	Entrepreneurship enabling	■	■		
			Entrepreneurship constraining			■	