



Universiteit Leiden

ICT in Business

Developing Entrepreneurial Spirit and Skills Through Community Building at Universities: Role of Intermediaries

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SUMMARY

Orientation: This research is started in the assumption that entrepreneurship can be learned.

Research purpose: The purpose of this study is to explore how university intermediaries foster the entrepreneurial spirit and support the development of entrepreneurial skills from the opinions of managers and students at these intermediaries.

Motivation for the study: I believe that entrepreneurship is a driving force of economic growth for any society. Therefore, I am curious to learn about how university intermediaries, similar to i4c (www.iforesee.nl), contribute to foster the entrepreneurial spirit and support the development of entrepreneurial skills. My personal interest is seeing if they can be applied in universities in my home country Bolivia, where there is a need for stakeholders, such as training authorities and training providers to understand the influence of entrepreneurship education and role models on entrepreneurial career choice. This paper study also aims at assisting in developing and implementing more effective entrepreneurial education programs.

Research design, approach and method: The study was done by participating in the i4c-launching event in March 2014, and by conducting semi-structured interviews amongst a convenience sample of 21 stakeholders (14 managers and 7 students) from universities in NL, Germany, and the USA. 630 minutes of audio transcribed in 87 pages. The collected data was analyzed with Grounded Theory producing 13 categories and 482 codes.

Main findings: According to managers and students' point of views, interacting with entrepreneurial stakeholders (entrepreneurs, mentors, VC's, etc.), at formal and informal events, which lead in network formation and inspiration, are the main activities to foster the entrepreneurial spirit. Managers believe that skill-building classes, coaching and mentoring are the main activities to support the development of entrepreneurial skills. Similarly, students favor practical education (experiential learning) with flexible and personalized programs. Additionally, theory oriented teaching and lack of practice are found to be detrimental to this purpose. The interviewees also suggested applicable strategies to design and run intermediaries: managers put emphasis on the structure and organization, and students favor accessible activities, and entertaining yet practical programs. In regard to challenges faced by intermediaries, managers and students agree on the lack of resources is the main challenge, with managers putting emphasis on the adaptation and innovation in programs, and students in having personalized programs. We also found motivators that make managers and student join these intermediaries, and identified opportunities provided by intermediaries to stakeholders. The concepts of intrinsic drivers for further engagement of successful student entrepreneurs, fail fast vs. fail intelligently, local role models vs. global role models, and opportunities in belonging and creating own network were also identified as interesting findings to discuss.

Practical/managerial implications: The findings are potentially useful to the i4c community, and similar university organizations, to improve curriculum design, delivery methods and assessment strategies in their efforts to advance entrepreneurship.

Contribution/value-add: The findings of the study suggest that interacting with entrepreneurial stakeholders, moral support, coaching and mentoring, and practical education influence positively in fostering the entrepreneurial spirit and the development of entrepreneurial skills.

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Keywords

Entrepreneur, student, intermediary, spirit, skills, community building, and network formation.

ABSTRACT

This work aims to present findings from a number of interviews and sources looking into the motivations, ways of operations, and challenges faced by university bodies as intermediaries in mobilizing entrepreneurial spirit and skills in students. The findings expect to expose issues and mechanisms used by these organizations to address entrepreneurial fostering in students. Additionally, these issues and mechanisms will help draw relevant recommendations for i4c, the case organization for this work.

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1. INTRODUCCION

1.1 Preface

“Most of what you hear about entrepreneurship is all wrong. It’s not magic; it’s not mysterious; and it has nothing to do with genes. It’s a discipline and, like any discipline, it can be learned” –Peter F. Drucker (Drucker, 1985).

“Entrepreneurship is a normal human capacity, it can be cultivated and developed”
Ludwig von Mises – Human Action

How can students be motivated and learn entrepreneurial skills? This work researches university bodies working as intermediaries in mobilizing entrepreneurial spirit and skills in students.

Literature suggests that universities, particularly in developed countries, have become increasingly entrepreneurial (Rothaermel, Agung, & Jiang, 2007) by adding courses and programs, establishing incubators to nurture ideas, and offering mentoring and other support for those who seek a career in entrepreneurship. It also shows that entrepreneurship is usually identified as an alleviator for economic stagnation, unemployment and industry upgrading (Zhou, Zhao, Katzy, 2012); therefore, university bodies serving as intermediaries play, directly or indirectly, an important role for economic growth. Universities or organizations within a university fostering entrepreneurship are known as intermediaries (Lockett, Jack, & Larty, 2012). Their main motivation is to facilitate an environment of entrepreneurial opportunities; their main challenge is attracting (potential) entrepreneurs (Lockett, Jack, & Larty, 2012, p. 19). I am interested in knowing how students participating in university intermediaries can ‘learn’ entrepreneurship, given that learning takes a complex, cultural and historical system, which has accumulated learning over time. As Wenger (2000) says: ‘Learning is an act of participation in complex social learning systems, known by scholars as communities of practice’.

i4C is a university intermediary, a student community driven by students and for students. Its mission is to engage students into an entrepreneurial thinking by stimulating them to take things in their own hands, facilitating their search for purpose, and building confidence through autonomy. i4c is not an incubator or a startup program by definition, but represents the phase where students participate before entering an incubator or a startup program. It is a community of practice, a collection of people who engage on an ongoing basis in a common endeavor emerging in response to similar interests. It plays an important role in forming their members’ participation¹. i4c was founded at the Centre for Innovation The Hague², the living lab³ of the

¹ Penelope Eckert: Communities of Practice

² The Centre for Innovation provides the physical meeting space <http://www.centre4innovation.org/>

³ Birgitta Bergvall-Kåreborn and Anna Ståhlbröst, page 2: Living Lab - An Open and Citizen-Centric Approach

Leiden university in the Netherlands.

The contribution of this work is to broaden understanding about the formation and operation of intermediaries tied to universities. We want to address the questions: How do they foster the entrepreneurial spirit? How do they support the development of entrepreneurial skills? The findings will be presented from a qualitative study, which considers interviewing representatives from Dutch university intermediaries and others from abroad. The empirical study is based on a set of limited semi-structured interviews that will record the interactions and experiences of intermediaries actively involved in engaging student in entrepreneurial skills. The contribution of this work will be the production of relevant recommendations, as well as valuable insights into the challenges that i4c faces in facilitating the student engagement in entrepreneurial spirit.

1.2 Problem Outline

Universities are usually seen as institutions with focus on academic education while paying little attention to entrepreneurship education. University students receiving formal education with little or no entrepreneurial-oriented education represents a problem because it hinders the formation of entrepreneurs. Society needs entrepreneurial activities. It is well known and documented that entrepreneurs are critical to the long-term health and prosperity of economy and innovation of any society. In order to foster entrepreneurship education in universities, academic education should go hand in hand with practical education and training on entrepreneurship. By doing so, university students can increase their chances of success. Entrepreneurship education seeks to prepare students to be responsible, enterprising individuals who become entrepreneurs or entrepreneurial thinkers by immersing them in real life learning experiences where they can identify opportunities, take risks, manage and learn from the outcomes.

1.3 Research Questions

First off, we need to make clear what we mean with ‘intermediaries’ and ‘university bodies’ for this thesis work. An ‘intermediary’ is an organization within a university that is meant to support the mobilization of entrepreneurial activities. A ‘university body’ is the university itself or an organization within a university that supports an intermediary to mobilize entrepreneurial activities.

Our two main research questions are:

How do intermediaries support the mobilization of entrepreneurial spirit in student communities?

How do intermediaries support the development of entrepreneurial skills in student communities?
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Our sub questions are:

What incentives can university bodies apply to intermediaries to support the mobilization of entrepreneurial spirit and skills?

What support should university bodies provide to the students to support the mobilization of entrepreneurial spirit and skills?

What support should intermediaries provide to the students to support the mobilization of entrepreneurial spirit and skills?

1.4 Scope

This research will focus on how intermediaries at universities, such as centers and student associations, foster the entrepreneurial spirit and teach entrepreneurial skills in students. Therefore non-university based intermediaries are not researched for this work.

2. LITERATURE FRAMEWORK

2.1. Entrepreneurship

There has been a wealth of knowledge on entrepreneurship over the last few decades, as well as investigation on its positive impact in relation to economic growth. But what is entrepreneurship? Most scholars accept the definition introduced by Shane and Venkataraman (2000): “We define the field of entrepreneurship as scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited.” Consequently, the field involves the study of sources of opportunities; the processes of discovery, evaluation, and exploitation of opportunities; and the set of individuals who discover, evaluate, and exploit them (Shane & Venkataraman, 2000). Based on it, some scholars have expanded the definition of entrepreneurship: “We define the act of entrepreneurship as one of discovering and evaluating opportunity as well as creating new opportunities and possibilities.” (York & Venkataraman, 2010).

2.1.1. Entrepreneurial opportunities

Entrepreneurial opportunities are situations in which new goods, services, raw materials, and organizing methods can be introduced and sold at greater than their cost of production (Casson, 1982). Recognition of entrepreneurial opportunities is a very subjective process, the opportunities themselves are not known to all parties at all times. For example, the discovery of the telephone created new opportunities for communication, whether or not people discovered those opportunities.

The Existence of Entrepreneurial Opportunities

Entrepreneurial opportunities come in a variety of forms. Previous researchers have argued that entrepreneurial opportunities exist primarily because different members of society have different beliefs about the relative value of resources given the potential to transform them into a different state. An entrepreneurial discovery occurs when someone makes the conjecture that a set of resources is not put to its "best use" (i.e., the resources are priced "too low," given a belief about the price at which the output from their combination could be sold in another location, at another time, or in another form).

Because entrepreneurial opportunities depend on asymmetries of information and beliefs, eventually, entrepreneurial opportunities become cost inefficient to pursue. First, the opportunity to earn entrepreneurial profit will provide an incentive to many economic actors. As opportunities are exploited, information diffuses to other members of society who can imitate the innovator and appropriate some of the innovator's entrepreneurial profit. Although the entry of imitating entrepreneurs initially may validate the opportunity and increase overall demand,

competition eventually begins to dominate. When the entry of additional entrepreneurs reaches a rate at which the benefits from new entrants exceeds the costs, the incentive for people to pursue the opportunity is reduced, because the entrepreneurial profit becomes divided among more and more actors (Shane & Venkataraman, 2000).

The Discovery of Entrepreneurial Opportunities

An individual can earn an entrepreneurial opportunity for profit only if he or she recognizes that the opportunity exists and has value. The question is: why do some people and not others discover particular entrepreneurial opportunities? Although the null hypothesis is blind luck, research has suggested two broad categories of factors that influence the probability that particular people will discover particular opportunities: (1) the possession of the prior information necessary to identify an opportunity and (2) the cognitive properties necessary to value it.

The information necessary to recognize any given opportunity is not widely distributed across the population because of the specialization of information in society. People specialize in information because specialized information is more useful than general information for most activities. Therefore, no two people share all of the same information at the same time. Rather, information about underutilized resources, new technology, demand, and political and regulatory shifts is distributed according to the idiosyncratic life circumstances of each person in the population. The development of the Internet provides a useful example. Only a subset of the population has had entrepreneurial conjectures in response to the development of this technology. Some people still do not know what the Internet is or that profitable opportunities exist to exploit it (Shane & Venkataraman, 2000).

The Decision to Exploit Entrepreneurial Opportunities

Although the discovery of an opportunity is a necessary condition for entrepreneurship, it is not sufficient. Subsequent to the discovery of an opportunity, a potential entrepreneur must decide to exploit the opportunity. We do not have precise figures on the aborting of discovered opportunities, but we do know that not all discovered opportunities are brought to fruition. Why, when, and how do some people and not others exploit the opportunities that they discover? The answer again appears to be a function of the joint characteristics of the opportunity and the nature of the individual (Venkataraman, 1997).

The characteristics of opportunities themselves influence the willingness of people to exploit them. Entrepreneurial opportunities vary on several dimensions, which influences their expected value. Not all potential entrepreneurs will exploit opportunities with the same expected value. The decision to exploit an opportunity involves weighing the value of the opportunity against the costs to generate that value and the costs to generate value in other ways. People consider the

opportunity cost of pursuing alternative activities in making the decision whether or not to exploit opportunities and pursue opportunities when their opportunity cost is lower. The decision to exploit entrepreneurial opportunities is also influenced by individual differences in optimism. People who exploit opportunities typically perceive their chances of success as much higher than they really are and much higher than those of others in their industry. Other individual differences may be important in explaining the willingness to exploit opportunities. Researchers have argued that people with greater self-efficacy and more internal locus of control are more likely to exploit opportunities, because exploitation requires people to act in the face of skepticism of others (Shane & Venkataraman, 2000).

2.1.2. Entrepreneurial Process

For a few years, researchers in entrepreneurship have suggested the idea that setting up a business can be understood as a process. This vision of entrepreneurship as a process is important because it allows research in entrepreneurship to go ahead of a dual conception of entrepreneurship: on the one hand there is the functional approach of economists where the entrepreneur is described as an innovator, an organizer and a risk-taker; on the other side there is the psychological approach where the entrepreneur is defined by his or her personality, motivations and behaviors, looking for an entrepreneurial personality type (Verzat & Bachelet, 2006).

Tounès (2003) suggests a representation of the entrepreneurial process in five stages.

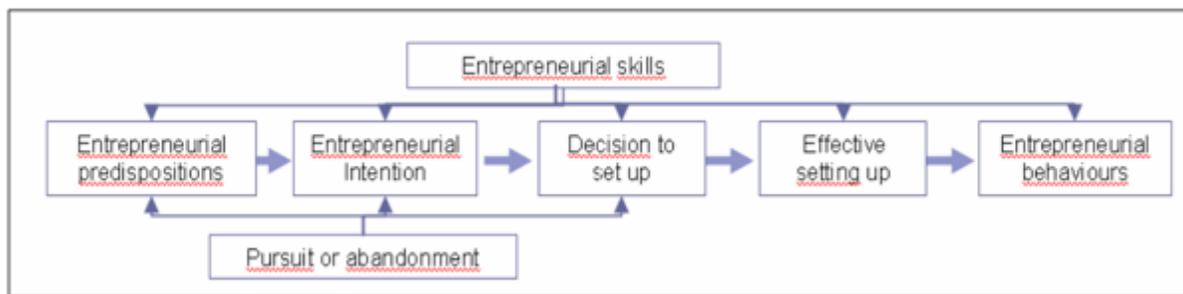


Figure 1 Entrepreneurial Process (TOUNÉS, 2003)

2.2. Being an entrepreneur

Schumpeter introduced the term “entrepreneur spirit” to describe the agent who drives the “creative destruction”, or, the changes in the environment or economic development which arise from the destruction of old economies (Zhou, 2011). Schumpeter also said that the function of entrepreneurs is to reform or revolutionize the pattern of production by exploiting an invention or, more generally, an untried technological possibility for producing a new commodity or producing an old one in a new way, by opening up a new source of supply of materials or a new outlet for products, by reorganizing an industry and so on (Schumpeter J. , 2003).

It has long been the conventional wisdom that some people are born entrepreneurs and will succeed with or without education, while no amount of education can provide business success for those who lack the ‘entrepreneurial spirit’. Experience demonstrates that people are entering (business) schools to learn about entrepreneurship, and there is a growing acceptance that elements of entrepreneurship can be taught and learned (Gottlieb & Ross, 1997, pp. 41-45).

2.2.1. Entrepreneurship Education

What is entrepreneurial education? It is the process of providing individuals with the ability to recognize commercial opportunities or concepts, marshal resources in the face of risk, and initiate a business venture. It also includes instruction in traditional business disciplines such as management, marketing, information systems and finance (Jones & English, 2004). Scholars come up with frameworks to understand this entrepreneurial learning. For example David Rae (2006) proposes a conceptual framework of entrepreneurial learning as a triadic model, including major themes of personal and social emergence, contextual learning, the negotiated enterprise, and a group of 11 related sub-themes. See Figure 2.

Diamanto Politis (2005)’ framework identifies three main components in the process of entrepreneurial learning: entrepreneurs’ career experience, the transformation process, and entrepreneurial knowledge in terms of effectiveness in recognizing and acting on entrepreneurial opportunities and coping with the liabilities of newness.

On the same path, Zhou (2011) proposes a framework of entrepreneurship as a social design process. First, vision or belief creates a solution or product, which finally motivates entrepreneurs to engage into entrepreneurship. Second, a process framework allows modeling initial input as vague, simple and incomplete idea, in comparison to detailed business plans. Third, upon identification of the initial idea, the entrepreneur engages in a deliberate conceptualization process of many iterative interactions with external stakeholders in order to test, develop and evaluate the idea. Fourth, feedback not only makes the ideas explicit but also serves as the basis for the entrepreneurs’ growing confidence. Fifth, adaption actions sustain the entrepreneurship process. Adaptions occur in the developmental processes of new ventures as “abandoning idea components”, as a result of an internal or external misfit, and “sensing new idea components”

2.2.1.1. Conceptual Framework for Entrepreneurial Learning by Rae

The conceptual framework for entrepreneurial learning was developed from the themes identified through discourse analysis. This comprises three major themes of personal and social

emergence of the entrepreneur, contextual learning and the negotiated enterprise. Together these three related concepts constitute the triadic model of entrepreneurial learning that is shown diagrammatically in Figure 2.

Rae (2006) proposes that entrepreneurial learning occurs and can be interpreted by reference to these themes. Within each of these major themes, a number of subsidiary themes, in total 11, were identified and are described in the following section.



Figure 2 Entrepreneurial learning framework by Rae (Rae, 2006)

Personal and Social Emergence

The first concept is the personal and social emergence of entrepreneurial identity. The development of entrepreneurial identity is the outcome of a process of personal and social emergence, which generally includes the narrative construction of identity; identity as practice; the entrepreneur's role in relation to family; and tension between current and future identity. As people become entrepreneurs, their identity of how they see themselves and how others see them changes through a process of personal learning and emergence, including the sense of self and of future aspirations. Simply acquiring entrepreneurial skills and knowledge is not sufficient; the person who begins to act as an entrepreneur is assuming the identity of an entrepreneur. The development of entrepreneurial identity can be expressed through the narrative life story, including early life and family experiences, education and career formation, and social relationships. In becoming recognized as an enterprising person, people renegotiate their personal and social identity.

Narrative Construction of Identity: People construct their entrepreneurial identity through autobiographical stories in which they are the protagonist, as well as narrator and author. Change and development occurs over time as learning experiences shape their personal and social identity. This identity is socially negotiated: as they develop an entrepreneurial identity they are

renegotiating or ‘re-inventing’ themselves in their self-perceptions and the eyes of others through their stories.

Role of the Family: The family environment shapes attitudes and expectations towards entrepreneurship, and can encourage or constrain these by shaping identities and actions. Entrepreneurial stories are constructed with reference to personal relationships with spouses, parents and children. In turn, the relationship with the family members is changed through entrepreneurship, especially within the ‘family business’.

Identity as Practice: Identity as practice is developed from the activities and roles that people develop in social interactions. People discover from experience their natural talents and abilities and learn how these can be of value and be applied, finding out the interface between their abilities and negotiated applications within networks of social relationships. Practice is developed by discovery and experience, from education, hobbies or interests, and from developing and gaining confidence in abilities in early employment. Identity based on practice is both personal and social, often situated within social or industry contexts. The abilities, skills and know-how are often applied in the core activity of the new enterprise which practitioners form.

Tension between Current and Future Identity: In terms of identity, the entrepreneurial act is creating ‘what could be’ and translating imagined possibilities into enacted reality, taking responsibility for shaping future events. It is a move from assuming an identity defined by others, such as through work and family roles, into creating, changing and renegotiating a new identity. This can involve experiencing emotional uncertainties, which require resources of self-belief and personal confidence to accomplish the shift from being an employee to becoming an entrepreneur.

Contextual Learning

The second concept is contextual learning. The recognition of opportunities in specialized situations is an outcome of a process of contextual learning, which includes learning through immersion within an industry, opportunity recognition and innovation through participation, and the formation of practical theories of entrepreneurial action. There is strong support for the view that entrepreneurial learning is formed through the social, environmental and economic context in which it takes place, and that context governs what is learned as people become entrepreneurs, how this learning takes place and how it is used. Contextual learning includes social participation in community, industry and other networks through which individual experiences are related, compared and shared meaning is constructed. Through situated experience and social relationships people learn intuitively and may develop the ability to recognize opportunities. Such learning connects personal emergence with the negotiation of the enterprise; people are in process of learning in their social context ‘who they can become’ and ‘how to work with others to achieve their ends’ as well as the realism of ‘what can and cannot be’.

Learning through Immersion within the Industry: Contextual learning includes the development of skills, expert knowledge and social contacts from employment, experience and know-how in industry. This learning is social and relational, gained from interpersonal participation. Much of the learning is functional, technical and problem-solving, finding out by discovery and experiential learning how things are done, and establishing routines and practices that work in given situations. It occurs through intuitive practice, often providing the skills and insights people use in creating their own businesses. The influence of contextual career experience on entrepreneurial formation is often profound.

Opportunity Recognition and Innovation through Social Participation: Opportunity recognition arose from fear of loss of business combined with curiosity about technical innovation. Opportunities are apparent to those who learn to recognize them, using knowledge, cognition and behavior. By being active within industry and social networks, people can recognize future possibilities, identify and act on an opportunity to create a new venture by drawing on their deep knowledge of an industry context. Creative imagination, or prospective sense making, is necessary to envisage the future and imagine how the venture can be created, before all the necessary knowledge, circumstances or conditions exist. This is a creative process of associative learning and innovation, of putting ideas, opportunities, technologies and resources together in new ways, and acting at a time when the market opportunity and the other extrinsic factors such as regulation and the absence of competition provide advantage. It involves converging resources (people and their expertise, finance, technology) to develop the business idea into reality.

Practical Theories of Entrepreneurial Action: Entrepreneurs, through their experience and contextual learning within the industry, develop routines and ways of working that they find are effective. The knowledge, gained from experience, intuition and sense-making of ‘what works’, why, how and with whom, constitute practical theories that enable people to reduce risk through using prior experience because they ‘know what they are doing’. Practitioners produce practical theories in their own words from their own experience, observation and social exchanges with other practitioners. These theories, developed from experience, remain tacit and intuitive unless they are verbalized and shared.

The Negotiated Enterprise

The third concept is the negotiated enterprise. The enaction and growth of a business venture is an outcome of negotiated enterprise, which includes processes of participation and joint enterprise; negotiated meaning, structures and practices; changing roles over time; and engagement in networks of external relationships. The notion of the negotiated enterprise is that a business venture is not enacted by one person alone, but is dependent on the outcome of negotiated relationships with other parties.

Participation and Joint Enterprise: The actors involved in creating the enterprise are joint participants, in which the founder(s) could not achieve the outcome of creating the venture unaided. A vital aspect of the learning process of entrepreneurship is the ability to engage others constructively towards creating the venture. It is necessary for the entrepreneur to convey a shared belief in the new reality of the venture, and for this to become a means of realizing personal dreams and aspirations through collective action.

Negotiated Meaning, Structures and Practices: This sub theme considers the emergence of a distinctive culture within the business. As described, people develop practical theories. In the joint enterprise, these theories, practices and routines become a shared repertoire of ‘what works’ within the business; as in a community of practice, what is learned does not belong to any single person, but rather is dispersed among the community.

The enterprise is dependent on these negotiated ways of working that reflect both the founders’ style, language, ambitions and ways of working, and those of the employees. The founders of a business, who hold formal power and ownership of the business, must recognize lives, interests and aspirations of people within the business. Conflict and disagreement are from time to time inevitable and should be seen as an integral aspect of this negotiation.

In a successful enterprise, there is an emotional, affective engagement between the people and the business, in which its distinctive culture is expressed through the style, language, behaviors, and feeling between people. Terms such as ‘passion’, ‘buzz’, ‘excitement’ and ‘fun’ are used to describe the emotional life and energy of the enterprise that goes beyond rationality, for people are expressing themselves, their identities and their abilities, in the production of the business

Changing Roles over Time: This sub-theme is a process of ongoing learning and negotiation while the business evolves and, if successful, grows, becoming larger and more complex in operation and structure, and employing more people. There is a transition or series of transitions from informal to formal roles of the founder(s) and management team, their relationships and structures that accompany this process, as in ‘staged’ theories of business growth. Significant changes in the founder’s and other roles are inevitable over time for the business to develop. Growth can be seen in terms of human and social behavior and as the outcome of productive interpersonal negotiations around the enterprise, rather than simply as an economic process.

Engagement in Networks of External Relationships: The enterprise exists reflexively within its environment, and relationships must be developed and maintained with networks of people, through whom resources can be accessed, including customers, suppliers, investors, lenders, and others such as technology experts and opinion formers. Entrepreneurs seek to influence certain groups while choosing not to participate in other groups. This selectivity in developing the social network and perceptions around the business is an integral aspect of entrepreneurial learning.

2.2.1.2. Conceptual Framework for Entrepreneurial Learning by Politis (2005)

The framework in Figure 3 illustrates that we, in addition to investigating the direct link between entrepreneur's career experiences and the development of entrepreneurial knowledge (A), also need a better understanding of how the entrepreneurs' predominant mode of transforming an experience into knowledge influences the specific type of knowledge developed (B), and, additionally, also the factors that influence the entrepreneurs' predominant mode of transforming and experience into knowledge (C) (Politis, 2005).

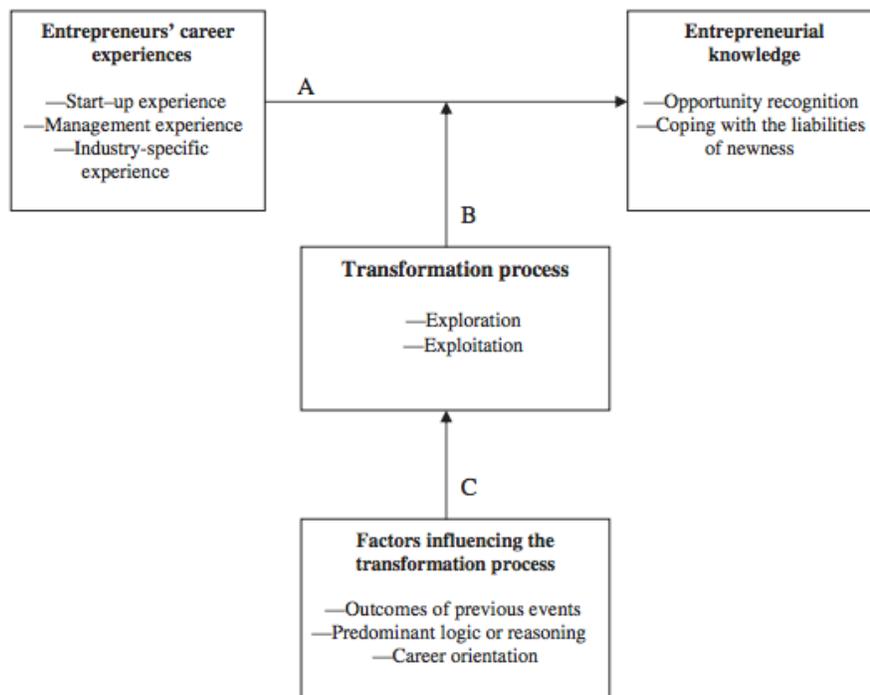


Figure 3 Entrepreneurial learning framework by Politis (2005)

2.2.2. Why study Entrepreneurship?

Scholars ask, either implicitly or explicitly, why people should study entrepreneurship. Data are difficult to obtain, theory is still underdeveloped, and many findings to date are the same as those obtained in other areas of business. In response, Shane and Venkataraman (2000) offer three reasons for studying the topic. First, much technical information is ultimately embodied in products and services, and entrepreneurship is a mechanism by which society converts technical information into these products and services. Second, entrepreneurship is a mechanism through which temporal and spatial inefficiencies in an economy are discovered and mitigate. Finally, of the different sources of change in a capitalist society, Schumpeter (1934) isolated entrepreneurially driven innovation in products and processes as the crucial engine driving the change process. Therefore, the absence of entrepreneurship from our collective theories of markets, organizations, etc. makes our understanding of the business landscape incomplete.

2.3. Community of entrepreneurs

A Community of Entrepreneurs is open to people interested in entrepreneurship, a place where each of the participants is provided with a supportive environment that encourages creativity and innovation. The community of entrepreneurs' definition falls under what scholars call Communities of Practice, which are the basic building blocks of a social learning system because they are 'social containers' (Wenger E. , 2000, p. 6), groups of people informally bound together by shared expertise and passion for a joint enterprise. These members share their experiences and knowledge in free-flowing, creative ways that foster new approaches to problems (Wenger & Snyder, 2006).

Etienne Wenger (2000) identifies three modes of belonging through which future entrepreneurs can participate in these communities: a) engagement, b) imagination, and c) alignment. 'Engagement' and 'alignment' refer to small communities of people; whereas 'imagination' refers to a broader group.

a) *Engagement*. Engagement is 'doing things together (e.g. helping a colleague with a problem, or participating in a meeting), talking, and producing artifacts'. The ways in which we engage with each other and with the world profoundly shape our experience of who we are. We learn what we can do.

b) *Imagination*. The construction of an image of ourselves, of our communities, and of the world, in order to orient ourselves, to reflect on our situation, and to explore possibilities (e.g. drawing maps, telling a story, or building a set of possible scenarios to understand one's options). I use imagination here in the sense proposed by Benedict Anderson (1983) to describe nations as communities: it does not connote fantasy as opposed to factuality. Knowing that the earth is round and in orbit around the sun, for instance, is not a fantasy. Yet it does require a serious act of imagination. It requires constructing an image of the universe in which it makes sense to think of our standing on the ground as being these little stick figures on a ball flying through the skies. Similarly, thinking of ourselves as a member of a community such as a nation requires an act of imagination because we cannot engage with all our fellow citizens. These images of the world are essential to our sense of self and to our interpretation of our participation in the social world.

c) *Alignment*. Alignment is making sure that local activities are sufficiently aligned with other processes so that they can be effective, beyond engagement (e.g. doing a scientific experiment by the book, convincing a colleague to join a cause, or negotiating a division of labor and a work plan for a project). The concept of alignment as used here does not connote a one-way process of submitting to external authority, but a mutual process of coordinating perspectives, interpretations, and actions so they realize higher goals (Wenger E. , 2000). Undoubtedly, some specific challenges can be found within these communities. For example, novices need to engage in the existing practice, but at the same time, they will want to establish their own identity; as a

result, power conflicts may happen (Fox, 2000).

2.4. Role of intermediaries

Intermediaries allocate resources to creating an environment that they believe will facilitate knowledge exchange (Lockett, Jack, & Larty, 2012). For the purpose and scope of this study, we refer to university organizations fostering entrepreneurship as intermediaries. Literature suggests that universities, particularly in developed countries, have become increasingly entrepreneurial (Rothaermel, Agung, & Jiang, 2007). Universities are adding courses and programs, establishing incubators to nurture ideas and offering mentoring and other support for those who see a career in entrepreneurship. Their motivation is to facilitate an environment of entrepreneurial opportunities; their challenge is attracting (potential) entrepreneurs (Lockett, Jack, & Larty, 2012, p. 19).

The intermediaries tend to believe that creating networking groups would lead to the creation of opportunities, yet the entrepreneurs had to explore how the environment that the intermediaries had created may provide opportunities for them. While the expectation of potential opportunities creates a symbiotic relationship between intermediaries and entrepreneurs, in that one party can create opportunities for the other, the *modus operandi* seems to be toleration of a lack of knowledge about what each others' needs are (Lockett, Jack, & Larty, 2012).

2.4.1. Innovation intermediaries

Margaret Dalziel (2010) defines innovation intermediaries as organizations or groups within organizations that work to enable innovation, either directly by enabling the innovativeness of one or more firms, or indirectly by enhancing the innovative capacity of regions, nations, or sectors. In her proposed definition she intends for innovativeness to be understood in the broadest possible sense, such that other words such as success, growth, competitiveness, adaptation, or even survival could be substituted. In particular, innovation intermediaries may or may not be involved in technological innovation. This broad interpretation of innovation is consistent with Schumpeter's definition of an innovation as a new or improved good, a new method of production or distribution, the opening of a new market, the use of new supplies or engagement of new suppliers, or a new mode of industrial organization (Schumpeter, 1934).

Professional societies and unions are not be classified as innovation intermediaries because their purpose is enable the development of individuals and because, in the case of the latter, they seek to balance the interests of firms against the interests of individuals. University technology transfer offices are a hybrid case. Their primary mandate is to serve their host universities by facilitating research and educational activities, protecting intellectual property, and generating revenues. But part of their mandate may involve promoting economic development by engaging with, and thereby enabling, the firms in their region or nation (Dalziel, 2010).

2.4.2. Activities of Innovation intermediaries

Researchers have described the activities of specific intermediaries or types of intermediaries. They classified these activities into three categories: a) inter-organizational networking activities, b) technology development and related activities, and c) other activities (Dalziel, 2010).

2.4.2.1. Inter-Organizational networking activities

As illustrated in Figure 4, below, the inter-organizational networking activities of intermediaries can be understood on the basis of their impact on the firms involved. In the provision of information or advice, the intermediary supports the inward flow of knowledge or perspectives from a range of sources, possibly including the intermediary itself, to the focal firm. Such activities involve scanning and information processing, transferring specialized knowledge, and diffusing information and best practice techniques (Dalziel, 2010).

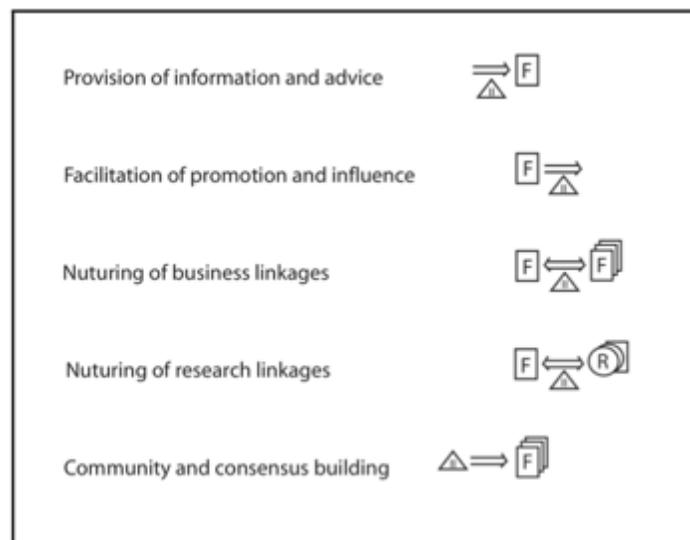


Figure 4 Inter-organizational networking activities of intermediaries (Dalziel, 2010)

2.4.2.2. Technology development and related activities

A smaller number of intermediaries conduct technology development and related activities. These include the large, well-known research institutes such as Fraunhofer Society in Germany. Sometimes such intermediaries engage with multiple firms simultaneously, but as noted by, sometimes the relationships are bilateral. An intermediary may even undertake independent technology development activities when there is no commercial partner but the intermediary believes it is worthwhile to invest in the technology.

The technology development and related activities include the provision of access to expertise and equipment, standards development and support for systems development, testing and validation of new technologies and equipment, adapting technologies for alternate applications, and intellectual property management and other activities associated with the commercial exploitation of the inventions of university and other public sector researchers. Some intermediaries do not undertake technology development activities themselves but instead provide funding for such activities. Examples include government programs such as the

Advanced Technology Program (renamed the Technology Innovation Program in 2009) and the Small Business Innovation Research Program in the US, and the ESPRIT and EUREKA and other programs of the European Commission (Dalziel, 2010)

2.4.2.3. Other activities

Finally, some innovation intermediaries also conduct other activities that are complementary to their networking or technology development activities, and make it possible for them to provide their members or clients with more complete offerings. Science parks and business incubators provide physical space, some intermediaries undertake training activities, and others provide advice related to sales and marketing activities (Dalziel, 2010).

2.4.3. Communities of Practice

Wenger (2000, p. 8) in his work ‘Communities of Practice and Social Learning Systems’ lists a number of elements when designing a community of practice. These elements can be applicable to intermediaries when attracting potential student entrepreneurs:

a) *Events*. Public events bring the community together. Obviously, these may or may not be attended, but if they are well tuned to the community’s sense of its purpose, they will help it develop an identity. A community will have to decide the type of activities it needs: formal or informal meetings, problem-solving sessions, or guest speakers. It will also have to consider the rhythm of these events given other responsibilities members have: too often and people just stop coming, too rare and the community does not gain momentum. This rhythm may also have to change over time or go through cycles.

b) *Leadership*. Communities of practice depend on internal leadership, and enabling the leaders to play their role is a way to help the community develop. The role of ‘community coordinator’ who takes care of the day- to-day work is crucial, but a community needs multiple forms of leadership: thought leaders, networkers, people who document the practice, pioneers, etc. These forms of leadership may be concentrated on one or two members or widely distributed, and this will change over time.

c) *Connectivity*. Building a community is not just a matter of organizing community events but also of enabling a rich fabric of connectivity among people. This could involve brokering relationships between people who need to talk or between people who need help and people who can offer help. It is also important to make it possible for people to communicate and interact in multiple media.

d) *Membership*. A community’s members must have critical mass so that there is interest, but it should not become so wide that the focus of the community is diffuse and participation does not grab people’s identities. Including those who are missing can be very helpful in consolidating

the legitimacy of the community to itself and in the wider organization. Conversely, realizing that the membership is overextended allows the community to split up into subgroups. Finally, devising processes by which newcomers can become full members helps ensure access for newcomers without diluting the community's focus.

e) *Learning projects*. Communities of practice deepen their mutual commitment when they take responsibility for a learning agenda, which pushes their practice further. Activities toward this goal include exploring the knowledge domain, finding gaps in the community practice, and defining projects to close these gaps. Such learning projects could involve, for instance, assessing some tools, building a generic design, doing a literature search, creating a connection with a university doing research in the area, or simply interviewing some experts to create a beginner's guide.

e) *Artifacts*. All communities of practice produce their own set of artifacts: documents, tools, stories, symbols, websites, etc. A community has to consider what artifacts it needs and who has the energy to produce and maintain them so they will remain useful as the community evolves.

2.5. Network formation and Community Building

How does the network activity between intermediaries and entrepreneurs form? Network formation seeks to model how a network evolves by identifying which factors affect its structure and how these mechanisms operate. An extensive body of knowledge exists on network outcomes and on how network structures may contribute to the creation of outcomes at different levels. E.g. A regional technology cluster is a source of economic development (Casper, 2007), or that innovation networks are of high relevance in the automobile sector (Dilk, Gleich, Wald, & Motwani, 2008). Moreover, studies of incubator firms, spin-offs and startups invariably show that locational proximity is crucial to nurturing the early stage of a new innovative network. It may be that most external factors that reinforce and help maintain networks (of innovators) come from the region (DeBresson & Amesse, 1991). Nevertheless, less attention has been paid to understanding how and why network formations emerge, evolve, and change (Ahuja, Soda, & Zaheer, 2012) (Tsai, 2000). Some authors find the answer in the development and nurturing of social capital (Walker, Kogut, & Shan, 1997) (Tsai, 2000). Other authors say that initial conditions matter to formation processes, and that there may be no 'one best path' of formation process (Doz, Olk, & Ring, 2000).

Both intermediaries and entrepreneurs focus on hard-and-fast indicators and quick results. However, the networks that all parties involved are looking to build are reliant on developing social relations over time, and it seems that this is critical for developing and realizing opportunities (Lockett, Jack, & Larty, 2012). In order to understand network formation more fully, it seems that more consideration need to be given to the motivations of both intermediaries and entrepreneurs in participating in the formation of networking groups, and the challenges that

the formal mechanisms of networking group formation create for those actively involved. By looking at the experiences of those who engage with network work formation, more knowledge and understanding can be generated and used to support their practice. In addition, by looking at these issues, a broader understanding about what occurs within emerging networks might be gained (Hite & Hesterly, 2001) (Uzzi, 1997) (Lockett, Jack, & Larty, 2012)

2.6. Entrepreneurial Spirit

The Oxford English Dictionary defines Spirit as ‘a particular character, disposition, or temper existing in, pervading, or animating, a person or set of persons; a special attitude or bent of mind characterizing men individually or collectively.’⁴ “Spirit comes from the Latin word *Spiritus* meaning ‘breath’. It is defined as ‘the vital principle or animating force traditionally believed to be within living beings’” (Frugier, Verzat, Bachelet, & Hannachi, 2003). What elements define this vital force? According to an interview and questionnaire study of human resource and line executives, the most important thing that gives people meaning and purpose is ‘the ability to realize their full potential as a person’ (Miltroff & Denton, 1999).

How should enterprising spirit or entrepreneurial spirit be defined? Although this notion has been largely used, it still is to be properly defined. According to Albert et Marion (1997): “the enterprising spirit consists – for business as well as for all human activities – in identifying opportunities, in gathering resources of various natures, in order to create a wealth that meets a solvable demand”. Other authors define the enterprising spirit as a set of positive attitudes as regards the notion of “enterprise” or of “starting a business”, or as regards the entrepreneurial spirit which involves taking initiatives and action (Léger-Jarniou, 2001).

So there is no clear consensus as to the definition of an Entrepreneurial Spirit, and the definitions that can be found in the literature seem to be closer to the consequences of an Entrepreneurial Spirit than to the concept itself (Verzat & Bachelet, 2006).

2.6.1. Components of an entrepreneurial spirit

The figure 5 is an exploratory model that points out the different elements that interact in the building up of the Entrepreneurial Spirit (Verzat & Bachelet, 2006).

⁴ <http://www.oed.com/>

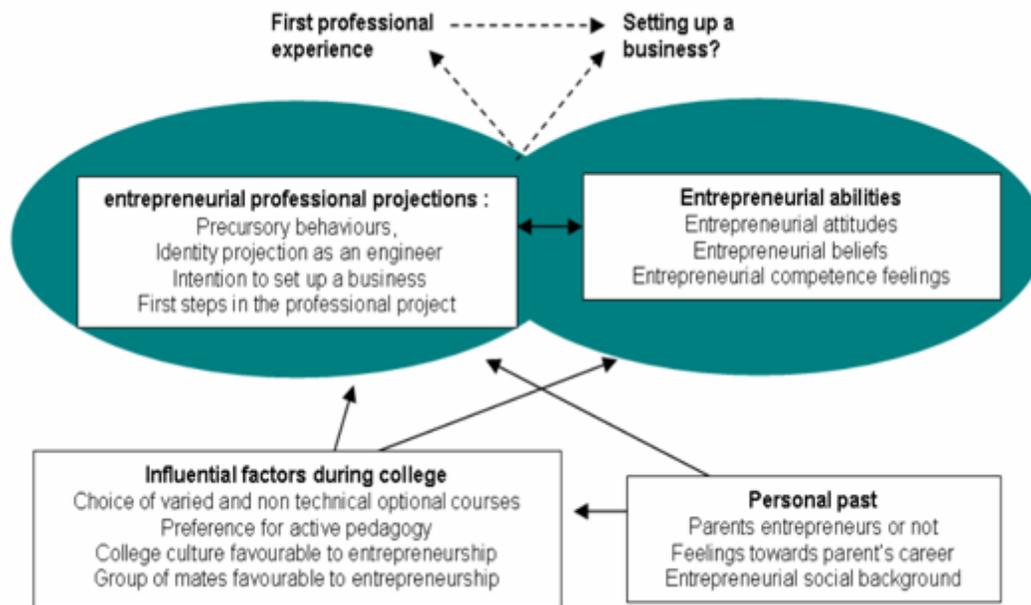


Figure 5 Components of entrepreneurial spirit (Verzat & Bachelet, 2006)

2.7. Entrepreneurial Skills

The Oxford English Dictionary defines Skill as the ‘capability of accomplishing something with precision and certainty; practical knowledge in combination with ability; cleverness, expertness’.⁵

Education and training can play a key role in its development. In a traditional understanding, entrepreneurship was strongly associated with the creation of a business and therefore it was argued that the skills required to achieve this outcome could be developed through training. More recently entrepreneurship is being viewed as a way of thinking and behaving that is relevant to all parts of society and the economy, and such an understanding of entrepreneurship now requires a different approach to training. The educational methodology needed in today’s world is one which helps to develop an individual’s mindset, behavior, skills and capabilities and can be applied to create value in a range of contexts and environments from the public sector, charities, universities and social enterprises to corporate organizations and new venture start-ups (Cooney, 2012).

When considering all of the literature that has been published regarding the skill-sets required to be an entrepreneur, Figure 6 captures much of the essence of what many researchers have presented as key requirements. These skill-sets can be broken down into three groups: Entrepreneurship Skills, Technical Skills and Management Skills (Cooney, 2012).

⁵ <http://www.oed.com/>

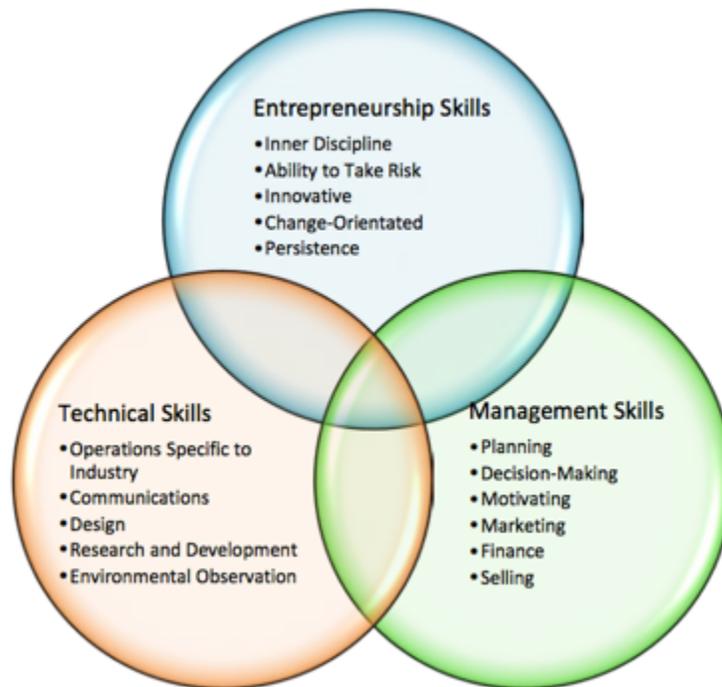


Figure 6 Entrepreneurial skill-sets (Cooney, 2012)

Kutzhanova et Al (2009) examined an Entrepreneurial Development System located in the Appalachian region of USA and identified four main dimensions of skill:

- **Technical Skills** - which are those skills necessary to produce the business's product or service;
- **Managerial Skills**, which are essential to the day-to-day management and administration of the company;
- **Entrepreneurial Skills** - which involve recognizing economic opportunities and acting effectively on them;
- **Personal Maturity Skills** - which include self-awareness, accountability, emotional skills, and creative skills.

Charnes et Al (1996) provide and attempt at outlining a fairly general framework of factors supporting expertise/skill acquisition, which is shown in figure 7.

Factors Supporting Expertise/Skill Acquisition

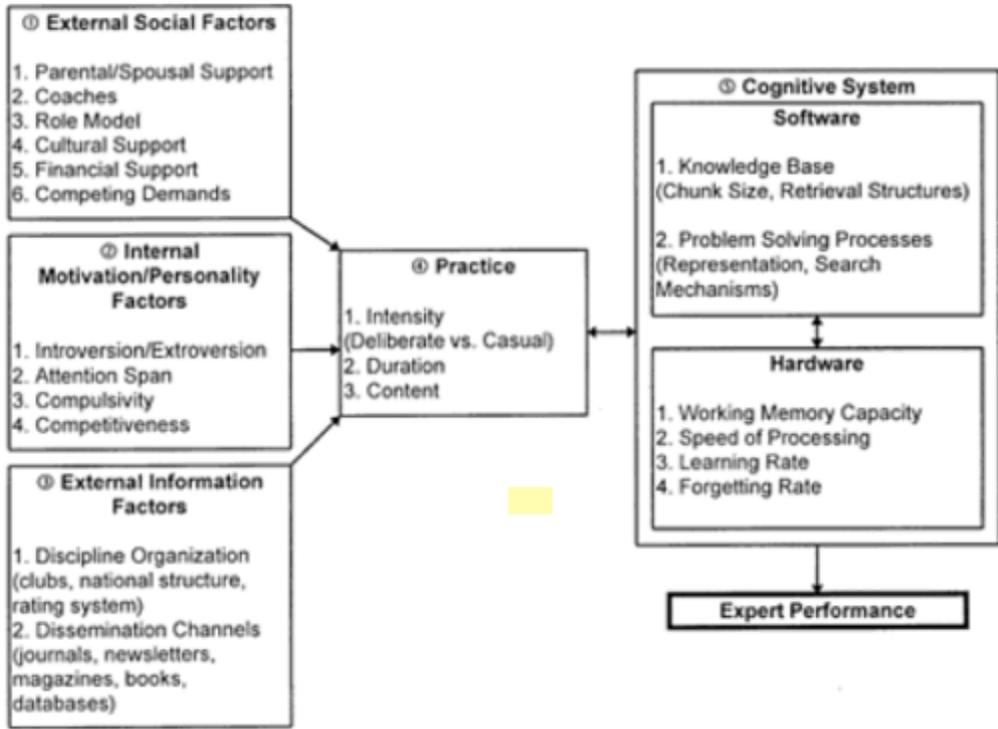


Figure 7 Factors supporting the entrepreneurial skill acquisition (Charness, Krampe, & Mayr, 1996)

3. RESEARCH METHODOLOGY

In this research we aim to gain knowledge on how university bodies foster entrepreneurial spirit and support development of entrepreneurial skill. Therefore, we must know their current practices, actions, activities and even challenges. To learn that, we have to get in contact with the people who started, run and/or manage such organizations. We will also approach students who are participants in such organizations to learn from the experience.

Our research will be of exploratory nature (Yin, 2008). By doing exploratory research we aim to collect perceptions and opinions from the actors involved.

3.1 Research design

We have employed two methods for our case study research: 1) we conducted a survey at the i4c Launch event in March 2014 at the Center for Innovation in The Hague, the Netherlands, and 2) we conducted semi-structured interviews.

We took the opportunity to participate at the i4c Launch with some of the questions from the interview guide before conducting our real interviews. This step helped us refine our questions later. During our literature research we constructed a list of questions that were later used to assemble our interview guide to provide structure to the interviews.

3.1.1. Data Collection

The i4c Launch event was hosted by the Center For Innovation on March 19th, 2014. The Center for Innovation is part of Leiden University, located in The Hague, the Netherlands. The purpose of the event was to promote the i4c community among university students, inspire attendees, and recruit new members. The information gained from this event would give us some practical insight into what students think of entrepreneurship and help prepare or add better questions to the interview guide. We planned to present questions on posters on which we collected the participants' thoughts by using post-it note, as well as a survey on paper with open questions.

These two activities, the post-in note and survey, would help us form the final interview guide that we will use to interview managers and students during the semi structured interview process. Semi-structured interviews are used to gather qualitative information. Interviews of this type are suited to working with small samples and are useful for studying specific situations or for supplementing and validating information derived from other sources. In addition, since they provide access to perceptions and opinions, they are effective for gaining insight into topics that are not immediately perceptible.

3.1.2 Data Analysis

To analyze the data from the interviews, we applied some elements from Grounded Theory, which is a systematic qualitative research method.

The Grounded theory was developed by Glaser and Strauss (Glaser & Strauss, 1967). It provides us with a method that allows us to rigorously analyze our data from our interviews and to systematically generate theory. It is especially suitable for areas of research that have not been studied in great detail before, and it allows researchers to study social interactions and human behavior. This is very much applicable to our research, since research literature on how university intermediaries foster the entrepreneurial spirit and support the development of entrepreneurial skills are scarce.

The process of Grounded Theory encompasses an acknowledgment of the researchers' bias, the selection of a data collection site, the data collection process, the process of coding and analysis, and the compilation of results. Coding and analysis includes three stages: open coding, selective coding, and theoretical coding. Open coding employs constant comparison and memoing and results in themes, sub-categories, and core categories. These results guide the subsequent sampling of participants through theoretical sampling. The next stage of coding – selective coding – also employs constant comparison and memoing. This stage results in dense, saturated core categories. The core categories are then sorted, written, theorized, and cross-referenced with literature, during theoretical coding. The results of this last stage of coding are a basic social process and a theoretical model. This is the final product of Grounded Theory research. This research process is summarized in Figure 8.

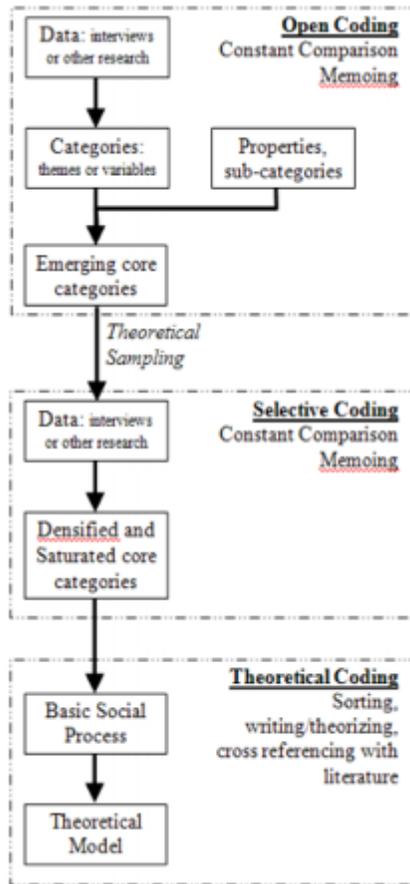


Figure 8 Grounded Theory (Glaser & Strauss, 1967)

All interviews were transcribed line by line. After that we analyzed and explored the meaning in the data by using a technique called ‘open coding’. We used a tool for qualitative analysis called Saturateapp⁶, which is a web-based qualitative analysis tool for researchers to code and memo text data (e.g. interview transcripts and webpage content). The main analytic activities supported by Saturate are:

- a) *Memoing*. In qualitative analysis, memos are the “theorizing write-up of ideas” that emerge during data collection and analysis or “the researcher’s record of analysis, thoughts, interpretations, questions, and directions for further data collection”.
- b) *Coding*: Although coding may refer to a range of activities depending on the qualitative methodology being used, generally the term refers to the process of assigning named concepts (or labels) to bits of qualitative data. The process can be used to organize qualitative data and is generally the basis for further analytic activities, such as theme generation.

To take the analysis further, Saturate let users categorize their codes into any number of categories (i.e., a code can be in multiple categories). The coding conducted can be shared

⁶ <http://www.saturateapp.com/>

amongst a group of collaborators and everyone in the group can participate in categorizing codes.

Both activities, memoing and coding, are carried out asynchronously by the researcher or by the group of researchers. (Sillito, 2010)

3.2 Research Process

Figure 9 describes de research approach we took. It consists of four phases.

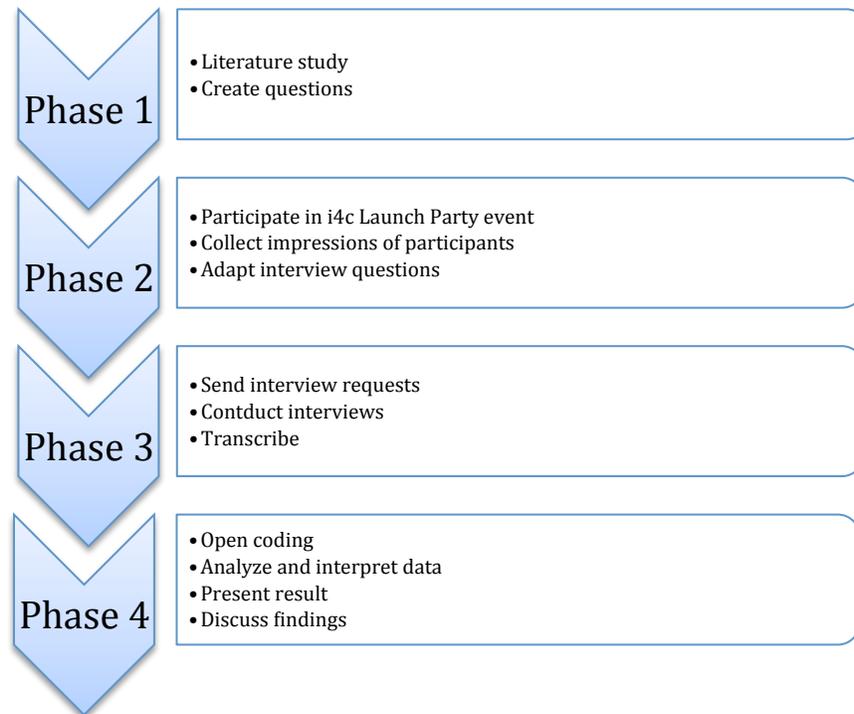


Figure 9 Research process

4. RESULTS

In this section the results from the i4c Launch event and the interviews are shown. First we give an overview of the main topics that came up during the event and how that helped us modify the questions for the interview. Then, we give a detailed look at the results from the semi-structured interviews.

4.1. i4c Launch event

The i4c Launch event was a way to obtain relevant data for our research from multiple people in a very short time. Since it was conducted before any of the semi-structured interviews, it proved to be an effective way to get a preliminary pool of information to define final questions. We surveyed 13 people.

The i4c launch event was hosted at the Center For Innovation The Hague on March 19th, 2014. The Center for Innovation The Hague is part of Leiden University, located in the city of The Hague, the Netherlands. The purpose of the event was to promote the i4c community to university students, inspire attendees, and recruit new members. The information gained from this event gave us some practical insight into what students think of entrepreneurship. This helped in preparing or adding better questions to the interview guide. We planned to present questions on posters on which we collected the participants' thoughts by using post-it note, as well as a survey on paper with open questions. These two activities, the post-in note and survey, helped later form the interview guide. Approximately 100 people attended the event, most of them Leiden university students.

We sat at the entrance of the event, explained what the event was about, handed in the surveys to attendees and direct them to participate in the post-in note questions. During the event we were explaining the purpose of the research and providing a short background about the subject.



Figure 10 i4c Launch event

4.2. Semi-structured interviews

We conducted 21 semi-structured face-to-face and Skype interviews with different intermediaries from different countries. The interviews took place between April and September 2014. We interviewed participants of a variety of roles (managers and regular members mainly) to ensure that we collected different perspectives on fostering entrepreneurial spirit and supporting the development of entrepreneurial skills.

The interviews had an approximate duration of 35 minutes on average, and they took place at the participants' workplace for the interviews in the Netherlands; the rest of the interviewees were located in cities in USA and Germany and were carried out via Skype. Before each interview, we asked the participant for permission to record the interview by sending them a consent form, which basically indicated that all data collected during the interview would be recorded and later anonymized in the thesis and in any possible future publications. Even though not many of them signed the consent form, every time we started an interview, we told them it would be recorded and later anonymized. We used a smart phone as a recorder device.

The list of the participants is given in Table 1. In order to preserve their confidentiality, we assigned a code to participants. The interviews were recorded and then transcribed. Table 2 shows the length of the recorded audio and the number of pages transcribed. We identified 13 categories and 482 codes. Table 3 shows a summary, and all the categories and codes can be found in appendix F.

Participant	Occupation	Role	Type of Organization	Date of Foundation	People involved	Country
P1	Associate Professor of Entrepreneurship & Department Chair	Manager	Center	-	-	USA
P2	Managing Director	Manager	Center	1990's	-	NL
P3	Secretary	Manager	Center	-	-	NL
P4	Vice Dean	Manager	Center	1970's	1650	Germany
P5	Executive Director	Manager	Center	-	76	USA
P6	Financial	Manager	Student Association	-	-	NL
P7	Student	Manager	Student Association	2013	-	NL

P8	Student	Manager	Student Association	-	15 (300 in mail-list)	USA
P9	Communication	Manager	Student Association	-	40	Germany
P10	Center manager	Manager	Center	-	-	USA
P11	Director	Manager	Center	-	-	USA
P12	Managing Director	Manager	Center	-	-	USA
P13	President	Manager	Student Association	-	80	USA
P14	Managing Director	Manager	Center	1990's	-	USA
P15	Student	Student	Center	-	400	USA
P16	Entrepreneur	Student	Center	-	-	NL
P17	Board member	Student	Student Association	2013	-	NL
P18	Entrepreneur	Student	Student Association	-	-	USA
P19	Student	Student	Student Association	-	85	USA
P20	Student	Student	Student Association	-	85	USA
P21	Student	Student	Student Association	-	320	USA

Table 1 Participants

	Total	Description
Audio	630 minutes	Each interview lasted, on average, 30 minutes.
Pages	87 pages	-

Table 2 Length of audio and transcribed pages

	Managers	Students	Total
Categories	7: enablers, disablers, and applicable strategies, challenges, motivators, opportunities, and alumni	6: enablers, disablers, applicable strategies, challenges, motivators, and opportunities	13
Codes	371	111	482

Table 3 Number of codes and categories identified

4.2.1. Managers' Perception on Mobilizing Entrepreneurial Spirit and Skills

This section provides the results from the semi-structured interviews with managers regarding their view on how intermediaries foster entrepreneurial spirit and support the development of entrepreneurial skills. Figure 11 shows the result. We interviewed 14 managers, such as presidents or directors.

The codes from the interviews were sorted into categories and subcategories. There are three main categories for both Spirit and Skills: Enablers, Disablers and Applicable Strategies. The number of codes identified in total is 218 (116 codes for Spirit, 102 for Skills). All the codes can be found in appendix D. The explanation of the results is given per category with focus on the main subcategory.

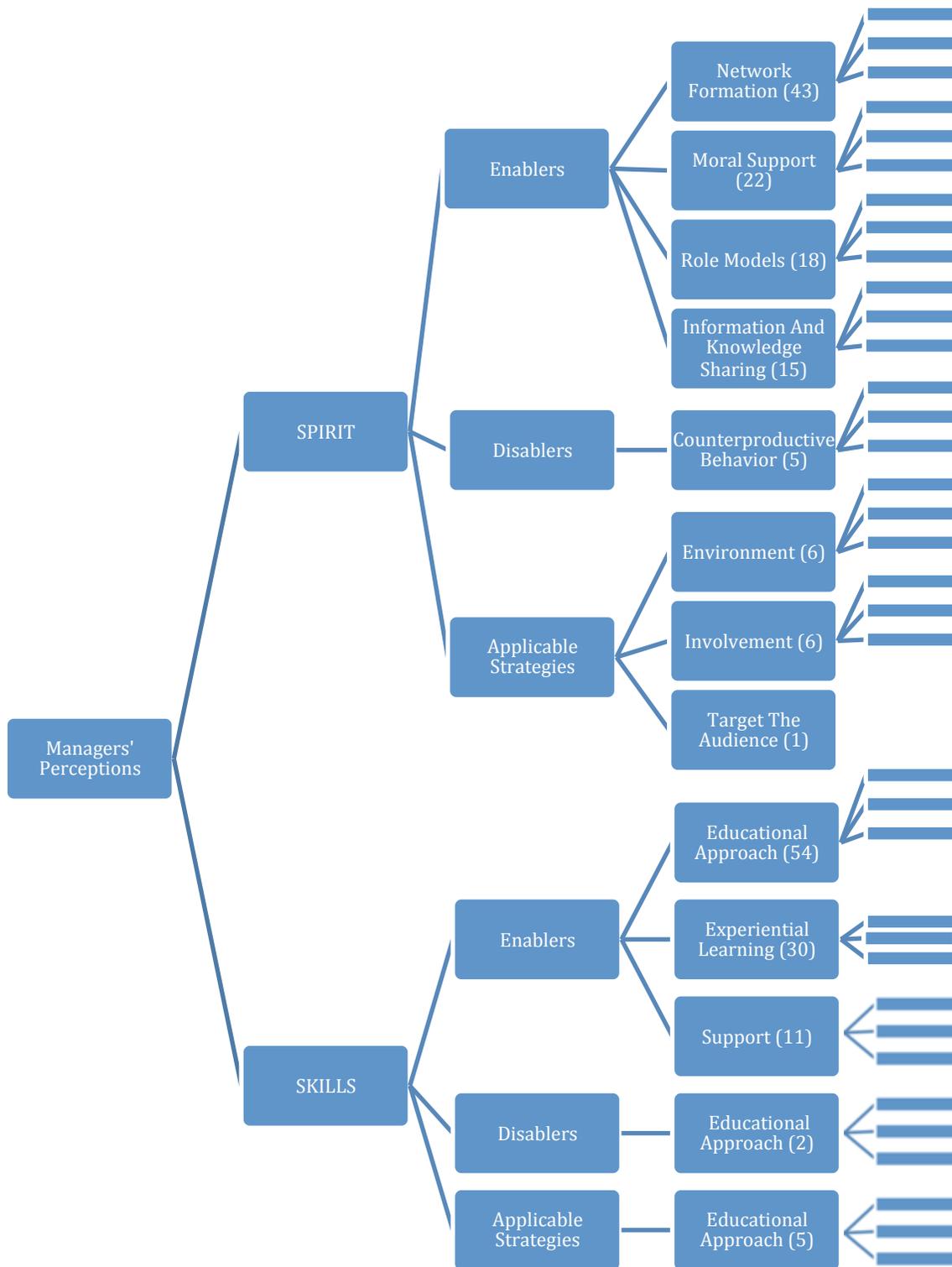


Figure 11 Managers' Perceptions on mobilizing entrepreneurial spirit and skills

4.2.1.1. Entrepreneurial Spirit

This section shows what managers consider as enablers, disablers and applicable strategies to foster the entrepreneurial spirit in students.

4.2.1.1.1. Enablers

Figure 12 shows the managers’ perceptions on what the enablers can be to mobilize the entrepreneurial spirit in students.

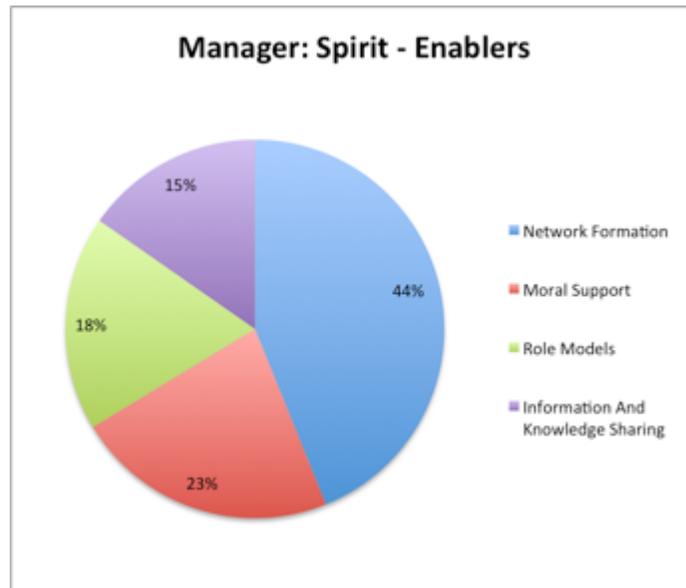


Figure 12 Enablers to mobilize the entrepreneurial spirit according to managers.

The category Enablers has 4 subcategories: Network formation, Moral Support, Role Models, and Information and Knowledge Sharing.

Table 4 shows codes and quotations for each subcategory.

Occurrence	Example code(s)	Example quote(s)
	<i>Network Formation</i>	
10	Interacting With The Entrepreneurial Ecosystem Inside And Outside University	P12: ‘we believe that that diverse ecosystem is a huge differentiation for our students.’
9	Holding Formal Events (Business Pitches, Conferences, Competitions, Forums, events To Find Jobs/Internship/Funding)	P4: ‘We do [activities] that foster entrepreneurship, we have an entrepreneurship forum’.

	<i>Moral Support</i>	
7	Encouraging To Take A Leadership Role (E.G.By Taking Initiatives)	P4: ‘Of course the main thing is to educate managers, leaders for business’
1	Embracing Failure	P12: ‘The idea of being able to see failure as just additional data and not [as something to be ashamed of].’
	<i>Role Models</i>	
10	Sharing Success Stories	P12: ‘Having heard from someone who successfully made it back [...] someone who comes back and tells you what the trail looks like, or the terrain is like.’
8	Entrepreneurs As Role Models	P9: ‘They tell students their practical experience, what they have done, how they formed the company, what problems occurred, etc.’
	<i>Information And Knowledge Sharing</i>	
4	Communicating Opportunities (Events, Internships, Competitions, Conferences Etc)	P13: ‘We identify opportunities for students who might want to attend different conferences or networking events to meet other social entrepreneurs.’
3	Orientation To Find Resources To Start Business	P10: ‘Once they can talk about their business idea, we know what their idea is and what they need, we can start to direct them to various resources both in campus and our community.’

Table 4 Examples of codes and quotes for Enablers of Entrepreneurial spirit

4.2.1.1.2. Disablers

The category Disablers has 1 subcategory: Counterproductive Behavior. Table 5 shows 3 codes for this subcategory.

Occurrence	Example code(s)	Example quotes
	<i>Counterproductive Behavior</i>	
2	Activities With No Developmental Feedback	P12: ‘So we believe in an appreciation for an iterative process. In contrast, a process that does not provide for iteration or learning from new information as you go along, we do not think it is a good approach’.

2	Managerial Behavior With Students Instead Of Leadership	P5: 'I think that when we tell students what to do or not to do. That does not work well when fostering the (entrepreneurial) spirit. When we make the decisions for the entrepreneurs we are not fostering the entrepreneurial spirit'.
1	Pessimistic Behavioral Approach	P1: 'I think that being very negative in general, so just providing negative feedback, this is what's wrong with people's ideas or wrong with people's plan doesn't help'.

Table 5 Counterproductive Behavior codes for Disablers of Entrepreneurial spirit

4.2.1.1.3. Applicable Strategies

The category Applicable Strategies has 3 subcategories: Environment (6), Involvement (6), and Target the Audience (1). Table 6 shows codes and quotes for this category.

Occurrence	Example code(s)	Example quote(s)
	<i>Environment</i>	
6	Designing A Motivating Environment	P11: 'A space where a business student can go and hang out with an engineering student, nursing student, art student... I think that would create a more entrepreneurial environment'.
	<i>Involvement</i>	
3	Getting Students Involved	P10: 'I think the programs that we talked about are a good way for students and others to get involved.'
	<i>Target the audience</i>	
1	Gathering Highly Motivated Students	P8: 'I think it is necessary to encourage students to motivate themselves, [...] work on their own, [...] to help them elaborate on their ideas.'

Table 6 Environment codes for Applicable Strategies of Entrepreneurial spirit

4.2.1.2. Entrepreneurial Skills

This section shows the enablers, disablers and applicable strategies, according to managers, when it comes to foster the development of entrepreneurial skills in students.

4.2.1.2.1. Enablers

Figure 13 shows the managers' perceptions on what the enablers to support the development of entrepreneurial skills can be.

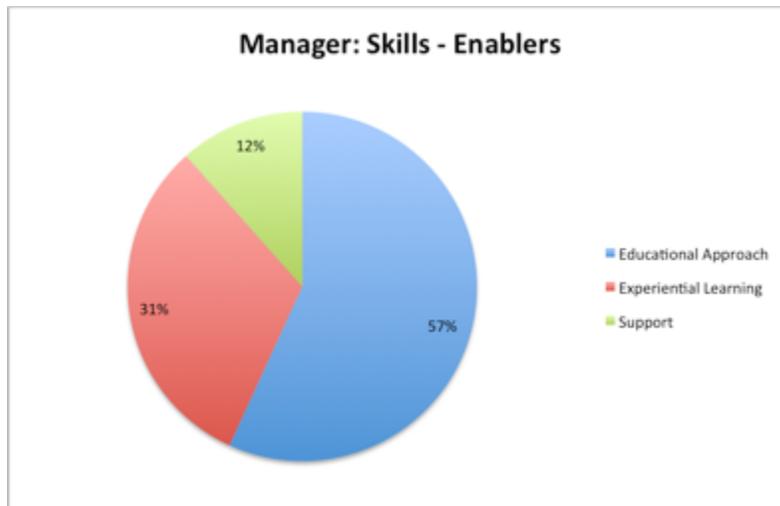


Figure 13 Skills - Enablers

The category Enablers has 3 subcategories: Educational Approach, Experiential learning, and Support.

Table 7 shows examples of codes and quotes for each subcategory.

Occurrence	Example code(s)	Sample quote(s)
	<i>Educational Approach</i>	
11	Skill-Building Classes (Eg. Accounting, Marketing, Etc)	P13: ‘universities can do is the nuts and bolts of starting a new social enterprise, the legal considerations, how you create an initial budget, how you go around hiring personnel... you can do a workshop like that’.
10	Coaching And Mentoring for skill-building	P3: ‘coaching them [students] in which direction they should go, how they should get their funds done, how they should plan their future etc.’.
	<i>Experiential Learning</i>	
12	Skill-Building events (Workshops Bootcamps, Training Courses)	P9: ‘For technical skills we have workshops’
4	Teamwork To Develop A Student Company	P2: ‘In this way they learn all the necessary skills to be an entrepreneur, like working in a team’
	<i>Support</i>	
6	Providing Students Financial And Material Support (Eg. To Attend Competitons/Conferences)	P1: ‘I think through a competition we can also provide financial support.’
4	Facilities (E.G. Incubator, office of	P10: ‘students have some financial support

	technology, etc)	and a physical space where they can work on these ideas.’
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Table 7 Example of codes and quotes for Skills -Enablers

4.2.1.2.2. Disablers

The category Disablers has 1 subcategory: Educational Approach (2). Table 8 shows the two codes for this subcategory.

Occurrence	Example code(s)	Example quote(s)
	<i>Educational Approach</i>	
1	Excessive Focus On Specific topics while neglecting others	P12: ‘I would also say that being overly concerned about markets and losing track of building products or services that really do something special or unique, could be dangerous too’.
1	Theory Oriented Teaching	P2: ‘Just teaching theory. If you are doing an entrepreneurship course and you have a book about it, it could be interesting [but] it is not practical, it won’t work’.

Table 8 Codes and quotes for Disablers of Entrepreneurial Skills

4.2.1.2.3. Applicable Strategies

The category Applicable Strategies has 1 subcategory: Educational Approach (5). Table 9 shows 3 codes for this subcategory.

Occurrence	Example code(s)	Example quote(s)
	<i>Educational Approach</i>	
3	Facilitating Entrepreneurial Courses	P2: ‘I think that for our university, in our center is important to offer these programs, to provide students the opportunity to follow the courses. In the end is up to the student whether or not to follow the courses’.
1	Designing Activities With Interdisciplinary Approach	P11: ‘Having professors and academic units from across campus, engaged with entrepreneurship professors, with faculty and our center so that students see us as with an interdisciplinary approach, not a silo approach’.

1	Fostering Learning By Doing	P9: ‘They should get it from theory to practice to be more output-oriented’.
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Table 9 Environment codes for Applicable Strategies of Entrepreneurial spirit

4.2.1.3. Role of Intermediary according to Managers

In this section we identify the managers’ perceptions about intermediaries. We wanted to learn how managers feel about the intermediaries they work for. We asked them how they would improve their intermediaries performance, what challenges they face, why they –managers- joined these intermediaries, what the opportunities are for the managers, the students and the intermediary itself, and how they keep in touch with leaving members, the alumni. Figure 14 shows the result. We identified 153 codes for this part.

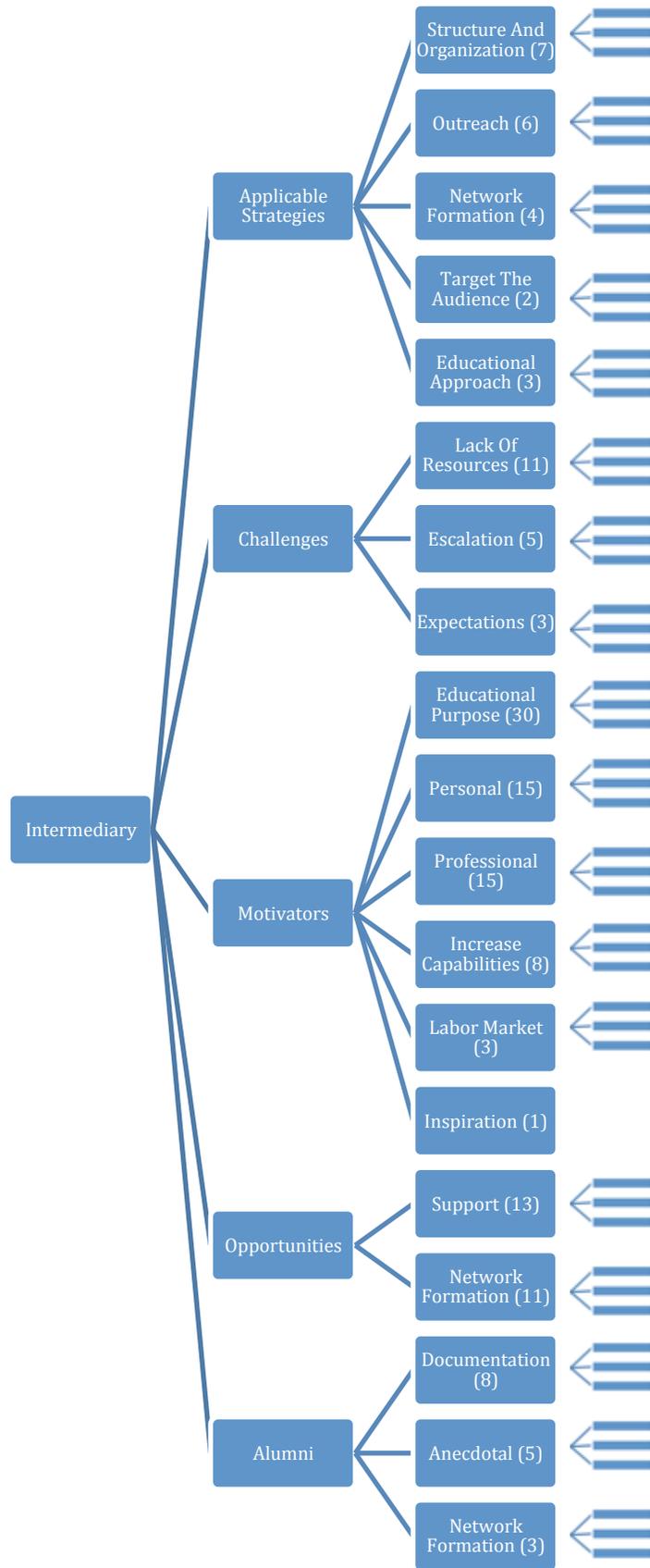


Figure 14 Managers' Perceptions on intermediaries

4.2.1.3.1. Applicable Strategies

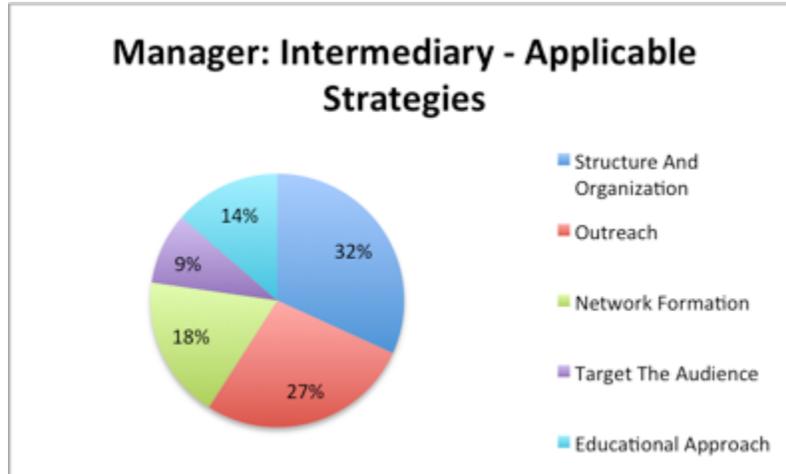


Figure 15 Applicable Strategies

As we see in figure 15, the category Applicable Strategies has 5 subcategories: Structure And Organization, Outreach, Network Formation, Target The Audience, and Educational Approach.

Table 10 shows examples of codes and quotes for each subcategory.

Occurrence	Example code(s)	Example quote(s)
	<i>Structure And Organization</i>	
1	Design Organization Considering Local Environment	P12: “we are frequently asked ‘how to recreate Silicon Valley’. It sounds like a great idea, great question but the truth is for to try in a particular environment, it needs to take into account that environment”.
	<i>Outreach</i>	
4	Reaching Larger Audience	P2: ‘We can do much better in reaching to more students, and offer our activities so that more students know what kind of activities are offered to them here.’
	<i>Network formation</i>	
2	Investing In Creating A Solid Network (e.g. a Joint Venture)	P3: ‘I think it is very important that your network is good, up-to-date... invest in your network because especially with entrepreneurship, it is important if [they] think you are worth’
	<i>Target the audience</i>	
1	Being Selective When Admitting	P13: ‘they [university] need to see what

	New Students	type of students they are admitting to these programs and if students have interest in that area.’
	<i>Educational approach</i>	
1	Hiring Specialized Faculties On Entrepreneurship	P13: ‘You can hire faculty members that have a track of founding social enterprises that then they could be the ones to teach students the skills.’

Table 10 Environment codes for Applicable Strategies of Entrepreneurial spirit

4.2.1.3.2. Challenges

Managers also described some challenges faced by their intermediaries. Figure 16 shows the main groups of challenges identified.

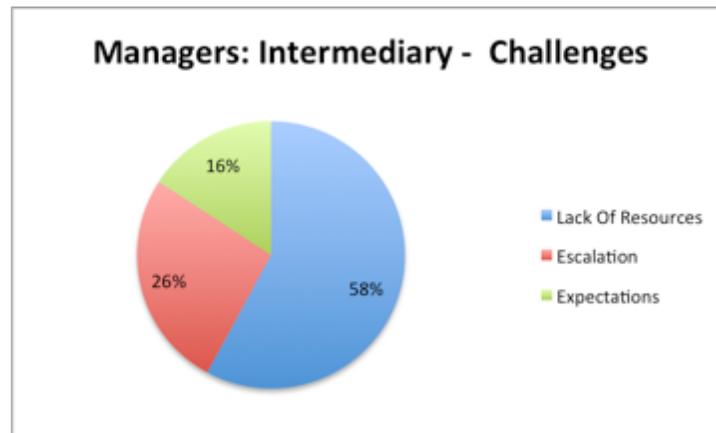


Figure 16 Challenges

The category Challenges has 3 subcategories: Lack Of Resources (11), Escalation (5), and Expectations (3). Table 11 shows example codes and quotes for each subcategory.

Occurrences	Example code(s)	Example quote(s)
	<i>Lack of resources</i>	
1	Creating Self-Sustaining Programs	P7: ‘each program has its own funding or sponsorship. So this is the main problem, it has to be self-sustaining’.
8	Finding Financial Resources	P11: ‘We have to find our own funding’.
	<i>Escalation</i>	
1	Adapting Programs To Larger Audiences	P12: ‘I would say one of the biggest challenges is how we can scale a lot of our programming to more students here at the university.’

	<i>Expectations</i>	
1	Lacking Of Understanding Students' Expectations Towards Future	P1: 'one of the biggest issues that a lot of universities face is better understanding what the students want in terms of their [future] companies.'

Table 11 Codes for Lack of resources

4.2.1.3.3. Motivators

The motivators are the reasons identified by the managers to have joined or work at these intermediaries. The main groups of motivators identified are shown in figure 17.

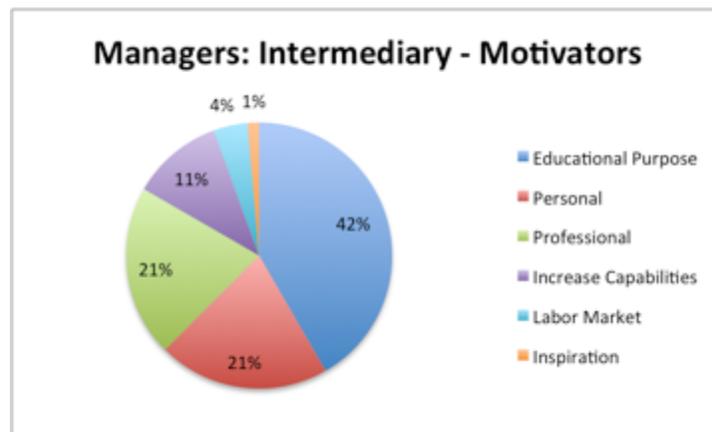


Figure 17 Motivators

The category Motivators has 6 subcategories: Educational Purpose, Personal, Professional, Increase Capabilities, Labor Market, and Inspiration. Table 12 shows example codes and quotes for each subcategory.

Occurrence	Example code(s)	Example quote(s)
	<i>Educational Purpose</i>	
2	Empowering Students	P12: 'If they are interested in getting involved in entrepreneurship because it empowers their students, we definitely believe they should [get involved]'.
	<i>Personal</i>	
7	Meeting Like Minded People (MFM)	P4: 'We also have a network [...], a platform that brings startup together, to try to create new corporations between people having similar ideas.'
	<i>Professional</i>	
4	Developing Entrepreneurial And Managerial Skills	P8: 'I think there has been a lot of personal growth in terms of learning how to talk to

		people, that's pretty valuable.'
	<i>Increase Capabilities</i>	
1	Working With Government And Companies	P3: 'also by trying to get the government and other big companies or big organizations interested in entrepreneurship'
	<i>Labor Market</i>	
2	Labor Market Will Change And Require Entrepreneurial Skills	P2: 'our labor market, the career path of our students will change dramatically in the coming 20 to 30 years, and this means almost everybody will have to be an entrepreneur or develop entrepreneurial skills.'
	<i>Inspiration</i>	
1	Entrepreneurial Activities In Silicon Valley	P12: 'we realized -based out of the historical context of our university and our school of engineering, as well of large initiatives in Silicon Valley.'

Table 12 Codes for Educational Purpose

4.2.1.3.4. Opportunities

Figure 18 shows the type of opportunities for both the managers and intermediaries.



Figure 18 Opportunities

The category Opportunities has 2 subcategories: Support (13), and Network Formation (11).

Table 13 shows codes and quotes for each subcategory.

Occurrence	Example code(s)	Example quote(s)
	<i>Support</i>	

7	Financial Resources	P6: ‘we get discounts to social programs they can use to build their business’
	<i>Network formation</i>	
2	Access To Alumni Network	P9: ‘the alumni network is very helpful, to [find] some practitioners in the university is very helpful’.
2	Connection To Other Institutions Within University	P13: ‘our university provides connections to other institutes to leave us in a broader entrepreneurial ecosystem’.

Table 13 Codes for Network formation

4.2.1.3.5. Alumni

Figure 19 shows how intermediaries keep in touch with leaving members.

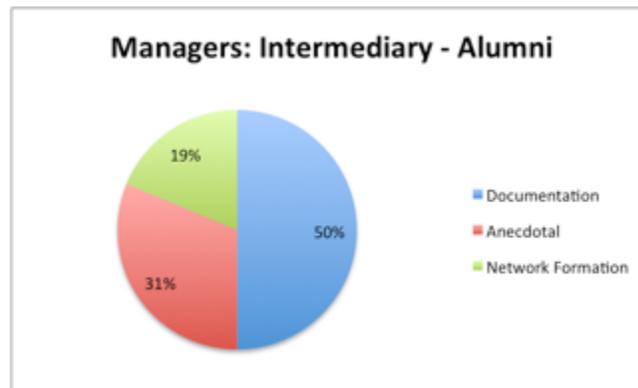


Figure 19 Alumni

The category Alumni has 3 subcategories: Documentation (8), Anecdotal (5), and Network Formation (3). Table 14 shows the main codes and quotes for each subcategory.

Occurrence	Example code(s)	Example quote(s)
	<i>Documentation</i>	
3	Alumni File	P4: ‘we contact them after one or two years, [there is a survey]. This survey is to get an idea where they work etc. etc.’
3	Magazines And Newsletter To Keep Engagement	P1: ‘[a publication] tries to connect with some of the recent alumni, and understanding what they ended up doing with their entrepreneur career after they graduated’.
	<i>Anecdotal</i>	

1	Social Media	P6: ‘We also have a Facebook page [...] with more than a thousand likes, and every time there is an event we post it’
	<i>Network Formation</i>	
3	Annual Event For Alumni	P6: ‘We have an alumni program. Once a year we have a big event for all these alumni.’

Table 14 Codes for Documentation

4.2.2. Students’ Perception on Mobilizing Entrepreneurial Spirit and Skills

This section provides the results from the semi-structured interviews with students regarding their view on how intermediaries foster entrepreneurial spirit and support the development of entrepreneurial skills. Figure 24 shows the result. We interviewed 7 students.

The codes from the interviews were sorted into categories and subcategories. The main categories for Spirit and Skills are: Enablers, Disablers and Applicable Strategies. The number of codes identified is 51 (37 for Spirit, 14 for Skills). All the codes can be found in appendix D. The explanation of the results is given per category and subcategory.

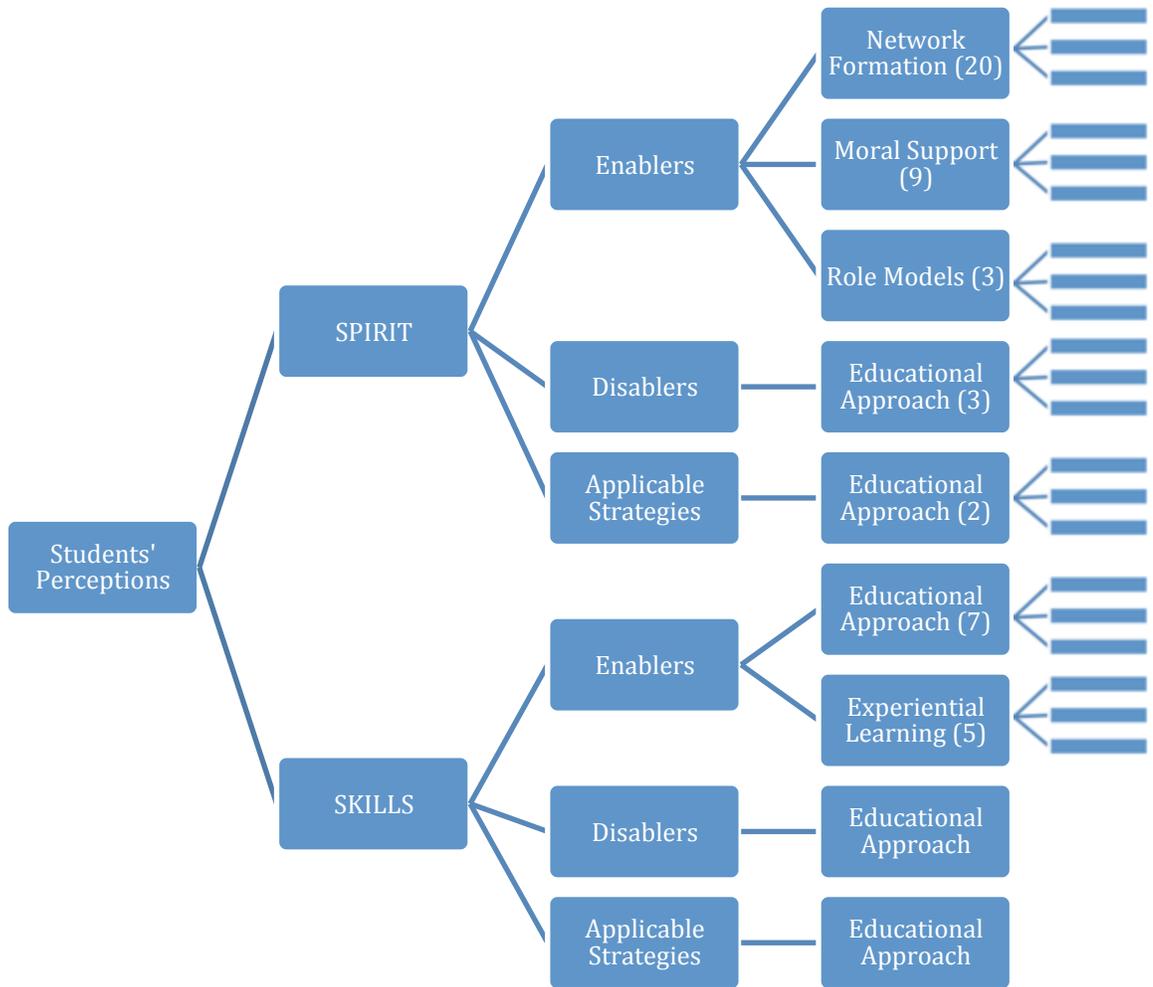


Figure 20 Students' Perception on Mobilizing Entrepreneurial Spirit and Skills

4.2.2.1. Entrepreneurial Spirit

4.2.2.1.1. Enablers

Figure 21 shows, according to students, the enablers identified to mobilize the entrepreneurial spirit.

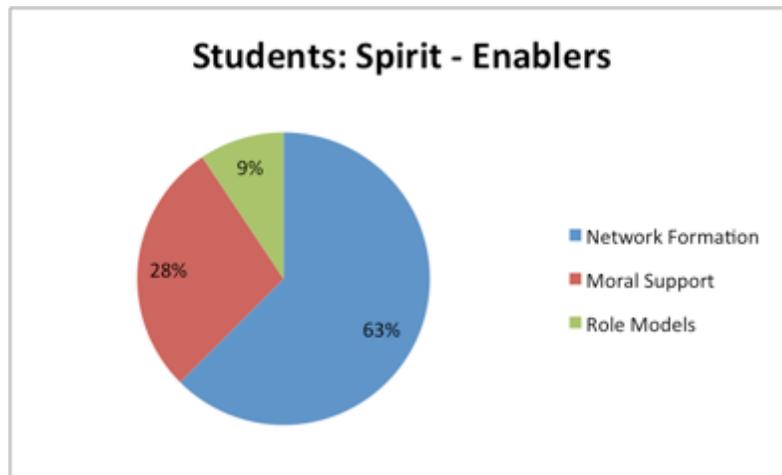


Figure 21 Spirit - Enablers

The category Enablers has 3 subcategories: Network Formation (20), Moral Support (9), and Role Models (3).

Table 15 shows main codes and quotes for this category and its subcategories.

Occurrence	Example code(s)	Example quote(s)
	<i>Network formation</i>	
5	Formal Events (Regular Business Events, Competitions, Pitching)	P16: 'one thing that I do notice is that once every two months they have like a business event'.
7	Informal Events (Social Drinks, Bbq'S)	P17: 'we mainly have social drinks, [...], some free drinks are provided and everyone is here, everyone is really into communicating and talking about startup-related topics'
	<i>Moral support</i>	
5	Supportive community	P15: 'I sensed it was a supportive community and by engaging more in the community I would receive a lot of support, I would gain friends, advisors, and mentors.'
	<i>Role models</i>	
1	Success Stories Of Entrepreneurs	P20: 'bringing in successful entrepreneurs, especially if they are young, to talk about their experience ... kind of give us hope'

Table 15 Codes and quotes for Spirit Enablers

4.2.2.1.2. Disablers

The category Disablers has 1 subcategory: Educational approach. Table 16 shows a code and a quote for this subcategory.

Occurrence	Example code(s)	Example quote(s)
	<i>Educational approach</i>	
3	Traditional Academic Approach (Non-Flexible Classes)	P17: ‘I think everything that is too close to the academic part, I think, wouldn’t work. Everyone [here] wants to get away from the academic part and learn something more applied to the real world’

Table 16 Code and quote for Spirit disabler

4.2.2.1.3. Applicable Strategies

The category Applicable Strategies has 1 subcategory: Educational approach. Table 17 shows a code and a quote for this subcategory.

Occurrence	Example code(s)	Example quote(s)
	<i>Educational approach</i>	
2	Creating A Sense Of Community	P15: ‘make things personal and create a sense of community, be creative, and don’t be afraid of being flexible and change things up from what you are used to by trying new things’.

Table 17 Code and quote for Applicable strategies

4.2.2.2. Entrepreneurial Skills

4.2.2.2.1. Enablers

Figure 22 shows, according to students, the enablers identified to mobilize the entrepreneurial skills.

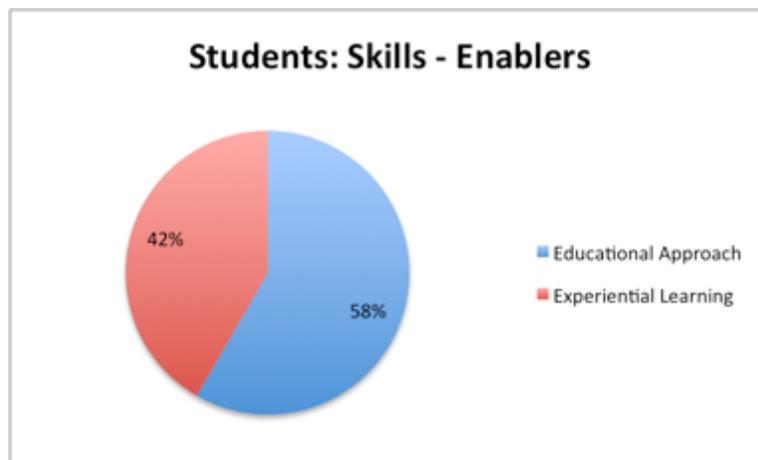


Figure 22 Skills – Enablers

Table 18 shows the codes and quotes for this category.

Occurrences	Example code(s)	Example quote(s)
	<i>Educational approach</i>	
3	Flexibility In Class To Foster Discussion	P15: ‘by having flexibility in the classroom with the curricula, I found that a lot of discussions were very effective and encouraging towards the entrepreneurial spirit’.
	<i>Experiential learning</i>	
1	Workshops To Develop Skills	P17: ‘Especially those activities that last one or half a day, kind of workshops.’

Table 18 Codes and quotes for skills enablers

4.2.2.2.2. Disablers

Table 19 shows the 1 code for the subcategory Educational approach.

Occurrence	Example code(s)	Example quote(s)
	<i>Educational approach</i>	
1	Lack Of Practical Education In Universities	P17: ‘the main reason [I joined this organization] is that our program (at the university) does not really hold what was promised, so we do not get the education that is preparing us for the job’

Table 19 Codes for Educational approach

4.2.2.2.3. Applicable Strategies

Table 20 shows the 1 code for the subcategory Educational approach.

Occurrence	Example code(s)	Example quote(s)
	<i>Educational approach</i>	
1	Design Personalized Programs	P15: ‘one of the things that always make me very happy and feel very supportive was the fact that the program was very personal. I knew my professors, they knew who I was’.

Table 20 Code and quotes for applicable strategies

4.2.2.3. Role of Intermediary according to students

In this section we identify the students’ perceptions about intermediaries. We wanted to learn how students feel about the intermediaries they participate in. We asked how they would improve their intermediaries performance, what challenges they face, why they –students- joined these intermediaries, and what the opportunities are for the managers, the students and the

intermediary itself. We identified 60 codes for this part.

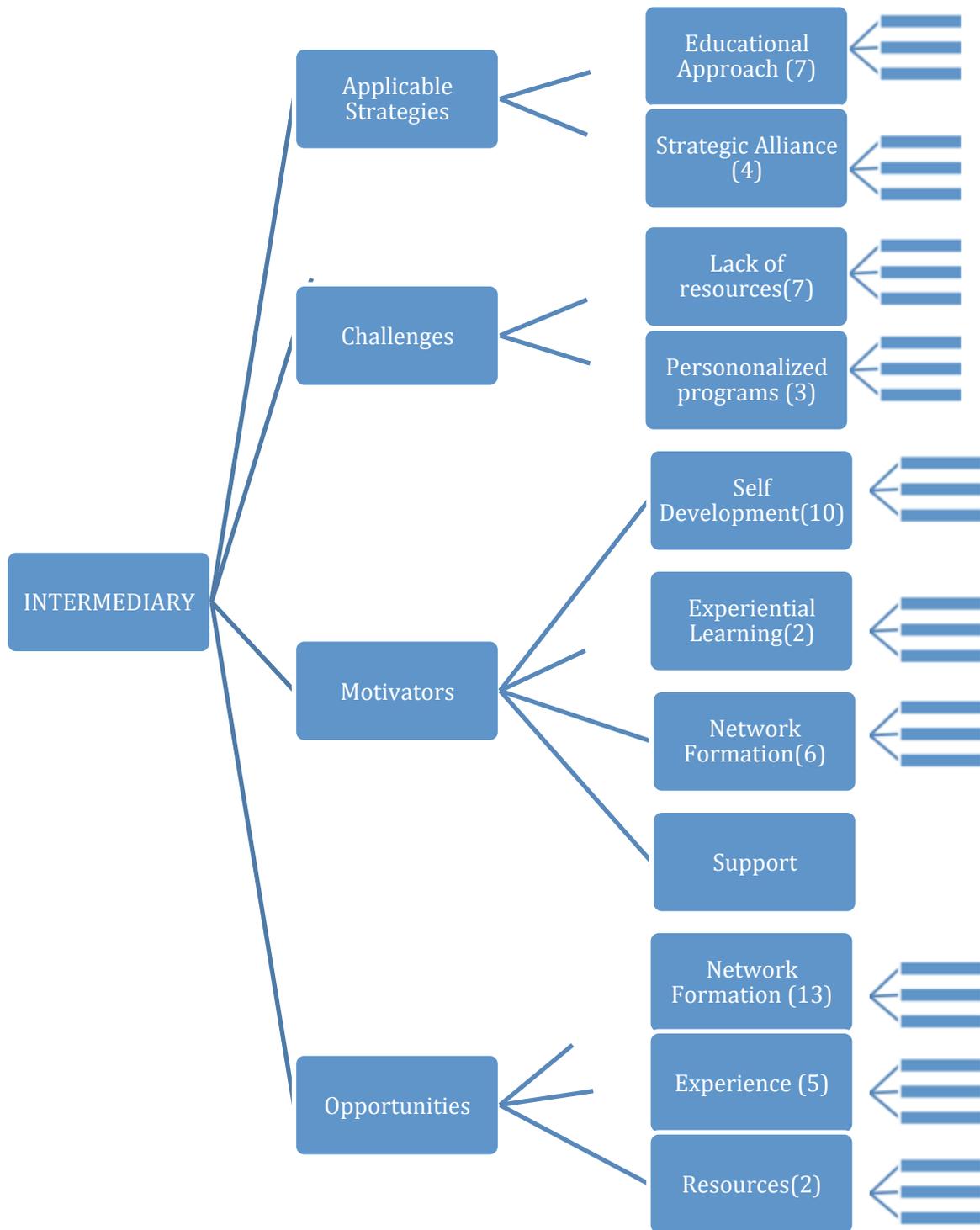


Figure 23 Students' Perceptions on intermediaries

4.2.2.3.1. Applicable Strategies

Table 21 shows sample codes and quotes for the subcategories of Applicable strategies.

Occurrence	Example code(s)	Example quote(s)
	<i>Educational approach</i>	
1	Creating Entertaining & Useful Activities	P17: ‘They need to present on campus fun activities combined with useful activities, something like social drinks’.
	<i>Strategic alliances</i>	
2	Find Sponsors	P17: ‘we are looking for sponsors, some companies who would like to contribute a bit of money, something like this.’

Table 21 Example Codes and quotes for applicable strategies

4.2.2.3.2. Challenges

Table 22 shows some codes and quotes for the subcategories of Challenges.

Occurrence	Example code(s)	Example quote(s)
	<i>Lack of resources</i>	
4	Finding People With Entrepreneurial Experience To Run Organization Finding	P17: ‘The organization is mainly run by people that have zero entrepreneurial experience. They have their own agenda, which is not always in line with the agenda of the entrepreneur’.
	<i>Personalized programs</i>	
1	Maintaining Personal Contact With Students	P15: ‘Challenges I think that as T grows as a whole, the challenge that they would face is maintaining the quality of education, and the one on one interaction for the students that they currently have.’

Table 22 Example codes and quotes for Challenges

4.2.2.3.3. Motivators

Table 23 shows example codes and quotes for the category Motivators.

Occurrence	Example code(s)	Example quote(s)
	<i>Network formation</i>	

2	Meeting Potential Business Partners	P15: meet some people that could help me if I did decide to start a business.'
	<i>Self-development</i>	
5	Developing An Oriented Business Mindset	P18: 'I pursued the opportunity to join this community because I was interested in learning more about entrepreneurship, having been interested in starting my own business for many years.'
	<i>Experiential learning</i>	
1	Gaining Practical Experience	P17: 'That is the main thing: to get in touch with the real world with some business related topics and to be creative on how to establish your own company.'
	<i>Support</i>	
1	Getting Support To Grow Business	P16: 'Support really. Help to grow my business.'

Table 23 Some codes and quotes for Motivators

4.2.2.3.4. Opportunities

Table 24 shows sample codes and quotes for the subcategories of category Opportunities.

Occurrence	Example code(s)	Example quote(s)
	<i>Resources</i>	
2	Access To Resources And Facilities (E.G. Office Space)	P17: 'The easy access to office, access to network [...] that is why I wanted to join'.
	<i>Network formation</i>	
4	Networking Environment	P16: 'Second time, i was more focused on the network I could get.'
	<i>Experience</i>	
2	Gain Oriented Business Mentality	P18: 'I wanted to learn to execute my ideas and turn them into reality.'

Table 24 Some codes and quotes for category Opportunities

5. ANALYSIS AND DISCUSSION

This section discusses the results and findings from previous chapters. Furthermore, we also discuss about the limitations, and recommendations for both future researchers and i4c.

In table 25 the perceptions of managers (M) and students (S) are depicted when it comes to mobilize the entrepreneurial spirit and skills. Check marks do not necessarily mean exclusivity.

			M	S
Spirit	Enablers	Interaction with entrepreneurial stakeholders (e.g. entrepreneurs, VC's) at formal (e.g. competitions) & informal (e.g. dinner) events (network formation)	✓	✓
		Success stories of entrepreneurs (role models)	✓	✓
		Embracing & manage failure (moral support)	✓	
		Speaker series, orientation, media content (Information and knowledge sharing)	✓	
	Disablers	Managerial & negative approach, and lack of developmental feedback (counterproductive behavior)	✓	
		Traditional academic approach (educational approach)		✓
	Strategies	Create a sense of community ⁷ (involvement)	✓	✓
		Design a motivating environment (environment)	✓	
		Target the audience	✓	
Skills	Enablers	Skill building courses, workshops (educational approach)	✓	✓
		Practical instruction, experiential learning (educational approach)	✓	✓
		Coaching and mentoring, applying best practices and research, programs based on external programs (educational approach)	✓	
		Material, legal and financial support (support)	✓	
		Flexible programs (educational approach)		✓
	Disablers	Theory oriented teaching (educational approach)	✓	
		Lack of practical instruction (educational approach)		✓
	Strategies	Foster learning by doing, interdisciplinary approach (educational approach)	✓	
		Personalized programs (educational approach)		✓

Table 25 Perceptions of Managers (M) and Students (S). Check marks are not meant to be exclusive.

Spirit

According to our data, managers and students perceive the interaction with entrepreneurial stakeholders (e.g. entrepreneurs, VCs, etc.) and success stories of entrepreneurs as enablers.

⁷ Term coined by Psychologist Seymour B. Sarason

Additionally, managers also consider that fostering an environment where failure is embraced, the provision of moral support to deal and manage failure, and speaker series (of researchers, industry leaders, etc.) positively impact the development of entrepreneurial spirit. The interaction with entrepreneurial stakeholders seeks to develop social relations over time, and as Locket et Al (2012) say, this is critical for developing and realizing opportunities. Additionally, entrepreneurs usually experience failure as an inherent part of the process of coming up with something new. Lindegaard (2013) notes that what matters should not be the fail, which usually has a negative connotation, but rather the response to that failure and the lesson learnt from it, and that embracing failure builds a stronger innovation culture.

As for disablers to mobilize the entrepreneurial spirit, managers believe that a managerial approach towards students (e.g. telling students what to do instead of fostering initiatives), and the lack of developmental feedback about students' performance are detrimental factors. Additionally, students believe that a traditional academic approach (i.e. theory oriented teaching style) does not foster the entrepreneurial spirit.

Some strategies identified to mobilize the entrepreneurial spirit in our interviews are: create a sense of community, design a motivating environment, and target the audience (i.e. design specific programs for particular groups). The creation of a sense of community is the result of interaction and deliberation by people brought together by similar interests and common goals within the intermediary. Rovai (2002) identified the most essential elements of a community as: mutual interdependence among members, sense of belonging, connectedness, spirit, trust, interactivity, common expectations, shared values and goals, and overlapping histories among members.

Skills

According to our data, managers and students perceive skill-building courses with practical education (e.g. workshops) as enablers to develop entrepreneurial skills. Additionally, managers also consider that coaching and mentoring, applying best practices done in other universities, and material, legal and financial support positively impact the development of entrepreneurial skills. Similarly, students believe that flexibility in the programs encourages participation and discussion and fosters entrepreneurial skills. As for disablers, managers believe that theory-oriented teaching is the main detrimental factor, while students believe that the lack of practical instruction is a disabler. Some strategies identified to mobilize entrepreneurial skills include: fostering the learning by doing practice, designing activities with an interdisciplinary approach (ie. interacting with other disciplines in the university), and designing personalized programs for students.

Kutzhanova et Al (2009) identified four main dimensions of skill: technical (to produce the business's product or service), managerial (to run a business), entrepreneurial (to recognize

economic opportunities) and personal (self-awareness, emotions, etc.). The answers from our interviewees match these four dimensions: skill-building courses with technical skills; coaching and mentoring with managerial skills; participation and discussion due to flexibility in class with personal skills; and being part of the intermediary with entrepreneurial skills, ultimately that is the goal for students.

Intermediary

We wanted to learn how our interviewees perceive the intermediary itself. Through their answers we also identified a few strategies to run an intermediary, challenges faced by them, main motivators for the interviewees to join the intermediary, opportunities of belonging to intermediaries, and even how to keep in touch with alumni. Table 26 shows a summary of these perceptions. Check marks do not necessarily mean exclusivity.

		M	S
Applicable Strategies	Define purpose, consider local environment, find & apply best global practices, engage university management, practice inter institutional cooperation (structure and organization)	✓	
	Visibility, target specific audience (outreach)	✓	
	Hire specialized faculty (educational approach)	✓	
	Create entertaining yet practical programs (educational approach)		✓
Challenges	Find funding, sponsors (lack of resources)	✓	✓
	Produce self-sustaining programs (educational approach)	✓	
	Being innovative, maintaining institutional memory (escalation)	✓	
	Understand students' expectations (expectations)	✓	
	Have management with experience in entrepreneurship		✓
Motivators	Empower students, need for practical education, entrepreneurship helps completion degree rate (educational purpose)	✓	
	Meeting like-minded people, admiration for university (personal)	✓	
	Career development (professional)	✓	
	Personal interest, and the seek to develop oriented business mindset (self-development)		✓
	Meet like-minded people and potential business partners (network formation)		✓
	Get support to create business		✓
Opportunities	Work with local, national government and other (educational) institutions (network formation)	✓	
	Contact startups, gain business experience, access to resources and facilities (network formation)		✓
Alumni	File, random contact, annual events	✓	

Table 26 Perceptions of Managers (M) and Students (S) about the intermediary organization

5.1. Intrinsic drivers in engaging entrepreneurs in university network

In our cases we found that the generosity of accomplished student entrepreneurs who give back their time, money, and advice is an interesting aspect of student entrepreneurs' success. Participant 5 (P5) says: *'these student entrepreneurs sometimes become very wealthy, they become philanthropic and they give back to universities'*. What makes a successful student entrepreneur want to give back to university? According to Hofer (2013), giving back is 'a way to create relations and secure knowledge sharing that is not biased by any organization's or governmental point of view'.

Accomplished entrepreneurs not always give money to show appreciation. Hofer (2013) says they could act as guest teachers from time to time, present real-life experience and know-how at events, and more importantly act as mentors. Often the most valuable support and advice an entrepreneur can receive is the knowledge of whom to go to in order to gain further resources to develop the business.

Similar evidence has been found in practice. According to a survey backed by Ernst & Young⁸ and conducted by Australia's Fidelity Charitable Gift Trust in 2010, 89 percent of entrepreneurs donate to charity. An additional 70 percent donate their time as well. It is also important to note that giving back in the form of donation is also a good way for successful entrepreneurs to get a tax write-off, and boost their PR campaigns.

We believe successful entrepreneurs give back because they want to show appreciation for the education and opportunities received from intermediaries or universities that led to their success.

5.2. Intermediaries as Space to experiment: Fail fast vs. fail intelligently

The premise of failure is an important determinant of entrepreneurial activity because it influences not only the decision to become an entrepreneur, but also the choice of projects and the decision to terminate a project.

Being able to fail fast and recover faster is believed to be a competitive advantage for an entrepreneur, and the sooner the entrepreneur is able to get past the stage where they feel sorry when something goes wrong, the better. "Fail fast" could be considered a standard entrepreneurial advice. As Babineaux and Krumboltz (2013) say *"you can not know what something is like, how you will feel about it, or what will result from it until you actually are doing it"*.

⁸ <http://www.probonoaustralia.com.au/news/2010/11/entrepreneurs-more-likely-give-charity#>

Nevertheless, some of our interviewees did not agree with the ‘fail fast’ approach. P12, who is from the USA, says: “frequently you hear about ‘failing fast’. We really believe it is not just about failing fast, it is about learning something about those failures, so [this would be] an intelligent failing process, I guess you can call it”. Landier (2005) says that a large body of anecdotal evidence suggests that failure is highly stigmatized in Europe and in certain Asian countries, whereas the American social norms are more forgiving: failing is just a step in a process of experimentation. Within the US, substantial differences also exist. Silicon Valley's entrepreneurship is characterized by an exceptional climate of tolerance for failure, while New England, for example, is more conservative for that matter.

We believe ‘failing fast’ is not the right approach because it could lead to a negative reaction. Instead, we suggest failing to be approached as a more scientific process: develop a hypothesis, and test it. If the results do not match the hypothesis, the student entrepreneur has data. If the results do match the hypothesis, then the student entrepreneur has a discovery. Our recommendation to intermediaries: provide skilled coaches or mentors to help potential entrepreneurs at these spaces to experiment, achieve their goals, and increase their effectiveness. The role of coaching and mentoring is important for this space of experimenting. The English Oxford Dictionary defines ‘coaching’ and ‘mentoring’ as 'special instruction, and the action of advising or training another person' respectively. Coaches and mentors are crucial to the entrepreneurship training process. Regardless of whether it is called coaching or mentoring, any young entrepreneurs in all types of work environments are looking to improve their skills, personally and professionally (Klofsten & Öberg, 2008).

5.3. Local vs. global role models: accessibility, culture and local conditions.

A successful entrepreneur as a role model has a positive impact on the entrepreneurial spirit. According to Brockhaus (1982), a large percentage of entrepreneurs have had role models who were entrepreneurs. Even more, according to Auken et Al (2005), role models who own a business have a significantly greater influence on career intentions than role models that do not own a business. In fact, role models are increasingly being acknowledged as an influential factor in explaining the reasons for the choice of occupation and career. P1 says ‘the key is finding role models and success stories that relate to them, real stories of real students who are almost in the same situation as student entrepreneurs are when these successful entrepreneurs started’.

Does a local role model or a global role model impact more on someone who wants to become an entrepreneur? By local role model we mean someone who is located in the area where aspiring entrepreneurs are located and is necessarily worldwide famous; by global entrepreneurs we mean someone who is worldwide famous and is not necessarily located in the same area where aspiring entrepreneurs are located. Bosma et Al (2010) finds there are three strands of literature that may provide indications that role models are of importance in the decision to

actually become an entrepreneur. First, the stylized fact that the decision to become an entrepreneur i.e. to start up a business, is correlated positively with having parents who are or were entrepreneurs, is often interpreted as the effect of parental role models. Second, it has been established that networks influence the decision to become an entrepreneur. Third, research at the regional level has shown that entrepreneurship is spread unevenly and that this regional variance in entrepreneurship is often persistent. Several studies have attributed these differences between clusters, regions and countries to the existence and availability of role models. In other words a region with high levels of entrepreneurship may further encourage new entrepreneurial initiatives. In addition, the presence of other entrepreneurs may legitimize entrepreneurial aspirations and actions.

When role models and students meet, an interesting phenomenon occurs: the socialization of knowledge, which appears to be a process capable of making specific knowledge accessible and available where it can be useful and necessary. What is knowledge? Daniel Bell (1973) defines it as *“an organized set of statements of facts or ideas, presenting a reasoned judgment or an experimental result, which is transmitted to others through some communication medium in some systematic form”*. Socialization can be described as a process of four interlinked and interdependent phases: 1) sharing, the desire to make private knowledge public; 2) making knowledge available and ready to use; 3) adaptation/adjustment, making knowledge relevant and understandable; and 4) delivery, using appropriate means to carry this knowledge to the receiving group (Assumpção, 2005).

We believe that the proximity of a successful entrepreneur in the same reality a student entrepreneur belongs to, has a more profound impact than entrepreneurs that are far out of reach. Even though these role models may, for example, be icons with whom the student entrepreneur is not familiar on a personal basis, models such as Richard Branson or Bill Gates, we think that a more personal relationship, e.g. if the role model belongs to the entrepreneur’s direct environment, such as family or friends to which there are strong ties has a more profound impact.

5.4. Opportunity to create own network

We have identified that participating in networking activities such as formal (seminars, contests, etc.) and informal events (dinners, drinks, etc.) supports the mobilization of entrepreneurial spirit and skills. As P16 says: ‘Second time [I joined this organization], I was more focused on the network I could get’. Locket et Al (2012) says that the networks that all parties involved are looking to build are reliant on developing social relations over time, and it seems that this is critical for developing and realizing opportunities.

Networking has indeed a positive impact on entrepreneurs. A study in 2000 by Iain Edmondson (Edmondson, 2000) identified two types of benefits: (1) harder benefits (leads to customers, investors, partners, suppliers, employees and technical and market knowledge/information), and (2) softer benefits (credibility/legitimacy, advice and problem solving, confidence and

reassurance, motivation/inspiration, relaxation/interest). These benefits get developed at three different stages: (1) conceptualization: entrepreneurs try and establish themselves and their ideas in the entrepreneurial community. (2) Start-up: there is a shift towards using networks to gain more tangible benefits to develop new business relationships. (3) Growth: the focus for the entrepreneur is on PR, gaining new investors, suppliers, customers and development partners.

We believe that a student feels motivated when participating in a networking event, and may later feel enabled to create his or her own network.

5.5. Preliminary model to support the mobilization of Entrepreneurial Spirit and Skills

In this section we present a preliminary ideal model based on the results, the four previous findings (intrinsic drivers in engaging entrepreneurs in university network; intermediaries as space to experiment: fail fast vs. fail intelligently; local vs. global role models: accessibility, culture, and local conditions; and opportunity to create own network), and actors involved (university, intermediary, student, and entrepreneur).

The model, shown in figure 24, simply shows that universities support, usually financially, intermediaries. At the same time, these intermediaries support students by providing them local role models, a space to experiment and the possibility to create their own network. Then, some student would become entrepreneurs, and a few of them successful entrepreneurs, who eventually might give back (money, time, etc.) to universities.

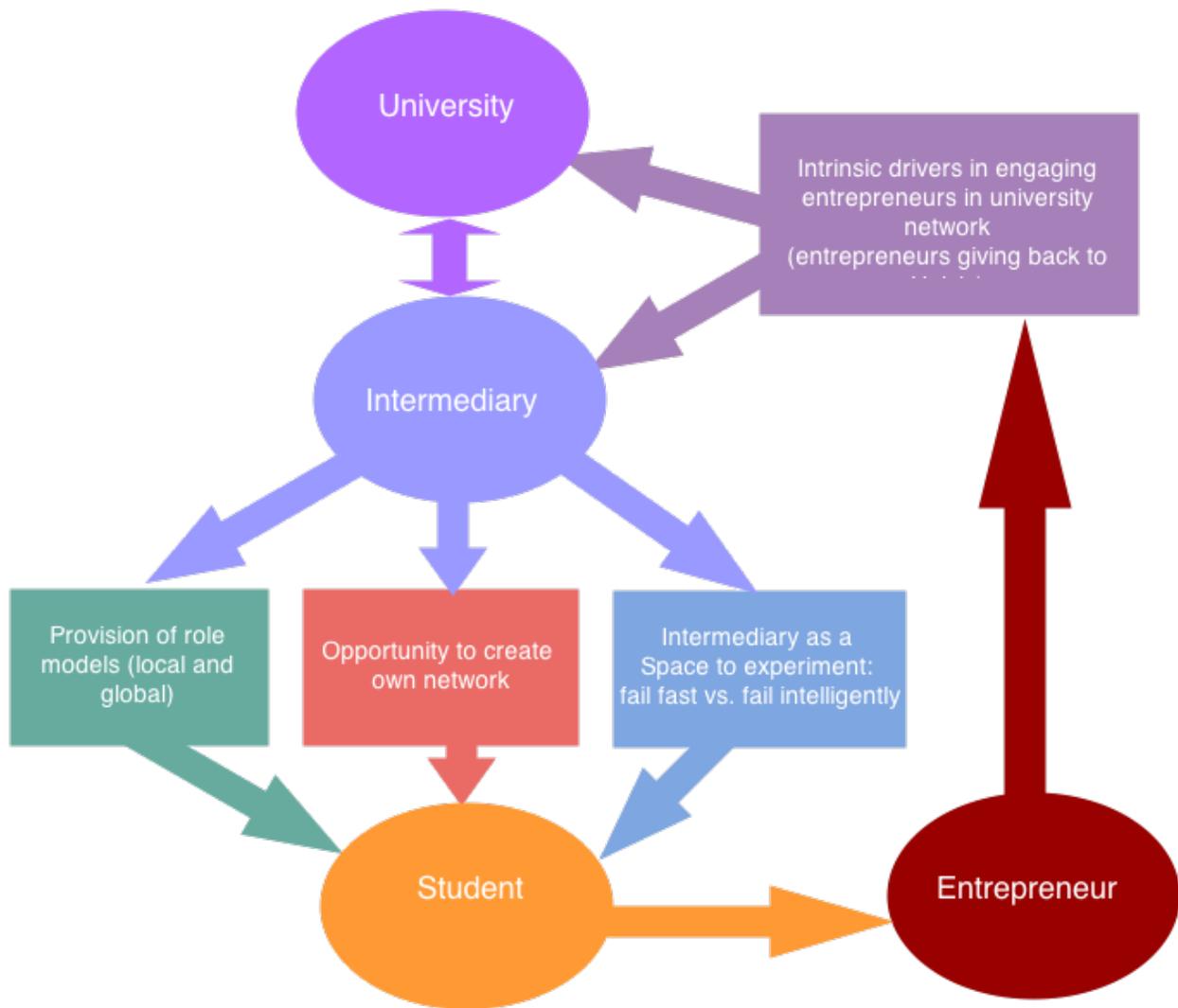


Figure 24 Preliminary model describing the mobilization of entrepreneurial spirit and skills

5.6. Discussion of research questions

Our two main research questions are:

(1) How do intermediaries support the mobilization of entrepreneurial spirit in student communities?

According to managers and students' point of views, interacting with entrepreneurial stakeholders (entrepreneurs, mentors, VC's, etc.), at formal and informal events, which leads in network formation and inspiration, is the main activity to foster the entrepreneurial spirit.

(2) How do they support the development of entrepreneurial skills in student communities?

Managers believe that skill-building classes, coaching and mentoring (educational approach) are

the main activities to support the development of entrepreneurial skills. Similarly, students favor practical education (experiential learning) with flexible and personalized programs. Additionally, theory oriented teaching and lack of practice are found to be detrimental to the mobilization of entrepreneurial spirit and skills.

Similarly, our sub-questions were:

(1) What incentives can university bodies apply to intermediaries to support the mobilization of entrepreneurial spirit and skills?

We found that the main incentives university bodies can provide to intermediaries are: funding, encouragement (moral support), and the connection to other institutions within and outside the university, such the industry (network formation).

(2) What support should university bodies provide to the students to support the mobilization of entrepreneurial spirit and skills?

The support from the university body perceived by students is: the provision of facilities such as incubators, patent offices, research centers etc. Additionally, students also point out that diversity in the student ecosystem or a multicultural environment is valuable.

(3) What support should intermediaries provide to the students to support the mobilization of entrepreneurial spirit and skills?

We identified that they way intermediaries can support students is: (1) formal events (conferences, contests, seminars, etc.) and informal events (dinners, drinks, etc.) to interact with entrepreneurial stakeholders such as entrepreneurs, VC's, etc. (network formation), (2) encouragement to become a leader and manage failure (moral support), (3) information and knowledge sharing, (4) skill-building courses, and coaching and mentoring (educational approach), (5) practical sessions (experiential learning), and (6) facilities and resources (material and financial support).

6. CONCLUSION

The purpose of this study was to explore how university-based intermediaries foster the entrepreneurial spirit and support the development of entrepreneurial skills in students. This research was started in the assumption that entrepreneurship can be learned. We collected data by participating in the i4c-launching event in March 2014, and by conducting semi-structured interviews from April to September 2014 amongst a convenience sample of 21 stakeholders (14 managers –people with a managerial role at these intermediaries, and 7 students –regular participants at these intermediaries) from universities in The Netherlands, Germany, and the USA (table 1). These interviews were recorded in about 630 minutes of audio, which transcribed produced about 87 pages. The collected data was analyzed with Grounded Theory. We identified 13 main categories and 482 codes (appendix F). On September 5, 2014 we presented the results of this work to a few members at i4c to gain some feedback as well (appendix C).

Our main research purpose was to find out how university intermediaries mobilize the entrepreneurial spirit and skills. We found out that, according to managers and students, interacting with entrepreneurial stakeholders at formal and informal events which leads to network formation and inspiration, are the main drivers to foster the entrepreneurial spirit. Also, managers believe that skill-building classes, coaching and mentoring are the main activities to support the development of entrepreneurial skills. Similarly, students favor practical education (experiential learning) with flexible and personalized programs. Additionally, theory oriented teaching and lack of practice are found to be detrimental to this purpose. The interviewees also suggested applicable strategies to design and run intermediaries. We also found motivators that make managers and student join these intermediaries, and identified opportunities provided by intermediaries to stakeholders. The concepts of intrinsic drivers for further engagement of successful student entrepreneurs, fail fast vs. fail intelligently, local role models vs. global ones, and opportunities in belonging and creating own network were also identified as interesting findings to discuss.

We conclude that university students would also like to be immersed in more practical concrete and entrepreneurial activities, rather than receiving formal education only. But they need support. This support can come from various actors such as industry, local and national government, and especially universities. Universities used to educate job seekers; now the thinking has been gradually shifted to educating or generating job creators instead. Making this shift happen in practice is the hard thing. There is where intermediaries come in handy by providing to students the possibility to interact with entrepreneurial stakeholders, coaching and mentoring, practical education, and even moral support. It is important to mention that entrepreneurship is not only about having students who start their own businesses, it is about students who set their own goals in life, and figure out means to achieve them. It is about initiative and proactive attitude to solving problems that matter to people. It is about university working closely with the surrounding society and private sector. It is about understanding what students need to know to

achieve something, and how to learn it.

7. RECOMMENDATION

7.1. Recommendations for research

We propose the following recommendations to future researches:

- Focus on the student side, how do they perceive intermediary mobilize the entrepreneurial spirit and skills?
- Carry out an in depth study about what activities or actions are more effective to mobilize the entrepreneurial spirit and skills.
- Carry out a in-depth study about the interesting findings found: (1) perceptions of managers and students, (2) intrinsic drivers in engaging entrepreneurs in university work, (3) space to experiment: fail fast vs. fail intelligently, (4) local vs. global role models: accessibility, culture and local conditions, and (5) opportunity to create own network.
- Find protocols, the official or most usual procedure or system of rules governing intermediaries.
- Empirical research to ascertain the factors that contribute to disengagement amongst students from entrepreneurship.

7.2. Recommendations for practice

Another major goal for this thesis work was to provide a recommendation for university-based intermediaries based on the 21 interviewees' experiences. We now compile a list of what could help university-based intermediaries mobilize the entrepreneurial spirit and skills:

Provide local-role models

How can intermediaries provide local role models? Answer: Connect to Alumni. On September 5, 2014 we presented this thesis work to 10 attendees at an i4c meeting. Participants were interested in knowing how to identify local role models, even more, how to create local role models in the short term. Our answer was and is that they should look into the alumni network to find local role models; and that creating role models in the short term does not seem to be feasible, simply because role models acquire that reputation with time, experience takes time as well. One of the participants provided an interested idea about how to create role models for the short term: 'create something great and have others to continue, and the cycle goes on'.

Design an environment to experiment, a space to reflect and to embrace the concept of failing intelligently

How can they do it? They can do it by mainly embracing and helping manage failure by providing coaching and mentoring.

Facilitate the opportunity to create own network

There are several ways, but the two most common ways to do it is through:

- Formal events: contests, seminars, workshops, pitches, etc.
- Informal events: dinners drink nights, etc. These type of activities are welcomed by students because the nature of these type of events allow them to freely and easily interact with others.

Additionally, appendix C shows a possible strategic plan based on the interviews.

8. LIMITATIONS

An important limitation in this research work is the reliance on the few interviewees on the student sample in comparison to the manager sample. We collected 21 interviews in total, 14 for the manager sample and 7 for the student sample. Such difference in number of participants can lead to a biased result. Nevertheless, we kept the managers' opinions separated from the students' opinions. Also, this research provides a starting point since it incorporates information gained from a pool of interviewees from intermediaries in prestigious universities.

Furthermore, as Maxwell (2013) says, there are two specific threats to validity: a) bias, the selection of the data by us, the researchers; and b) reactivity, the influence of us, the researchers, on the settings or interviewees or material found. From the very beginning of this thesis work we set out to interview people from intermediaries from high profile universities because we believe the best practices are done there, but what would have happened if we interviewed intermediaries from average-profile universities? Similarly, it is acknowledged that in qualitative research, eliminating the actual influence of the researcher is not possible.

Therefore, we recognize that we may have offered some uncertain assumptions, potentially flawed logical arguments, or have made statements that will prove, ultimately, to be inconsistent with data yet to be collected. Nonetheless, we hope that it will prod scholars from many different fields to join us in the quest to create a systematic body of information about mobilizing the entrepreneurial spirit and skills in students. Skeptics might claim that the creation of such a body of theory and the subsequent assembly of empirical support for it are impossible. We hope that other researchers will join our effort to prove skeptics wrong.

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ANNEX

Appendix A: Graphic explanation of thesis

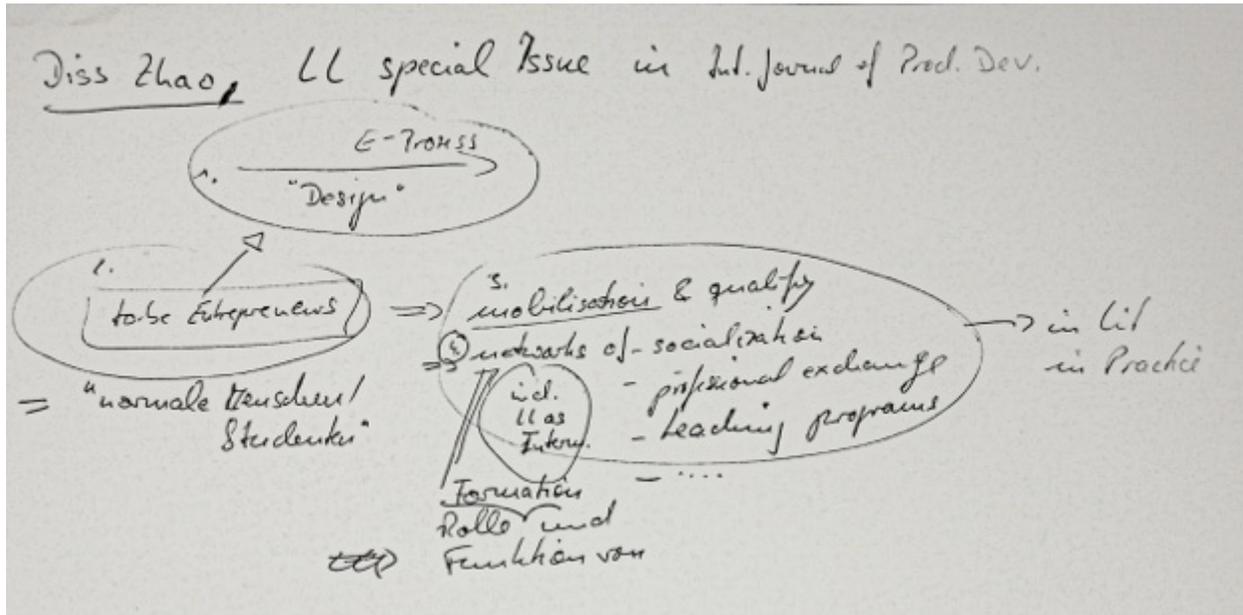


Figure 25 Thesis explained in a drawing

Appendix B: Collecting Data at i4c



Figure 26 Debate table



Figure 27 People participating at a lab.

i4C Launch event at the Centre for Innovation The Hague on March 19, 2014



Figure 28 Post-in 1



Figure 29 Post-in 2

Result of collecting data at i4c launch event (March 19, 2014)

QUESTION	GREEN	RED	ORANGE
1. Do you think universities should support entrepreneurship?	11	1	0
2. Do you consider yourself an entrepreneur?	3	4	7
3. Would you like to be [more] entrepreneurial?	8	1	2
4. Do you think only technical students can be entrepreneurs?	3	8	1
5. Do you think social science students should be more entrepreneurial?	8	2	3
6. Do you think social sciences should be more innovative?	14	2	1
7. Do you think students can innovate academia?	8	0	1
8. Do you think entrepreneurs help economy grow?	13	0	0

Figure 30 Result of data collection at i4c launch event

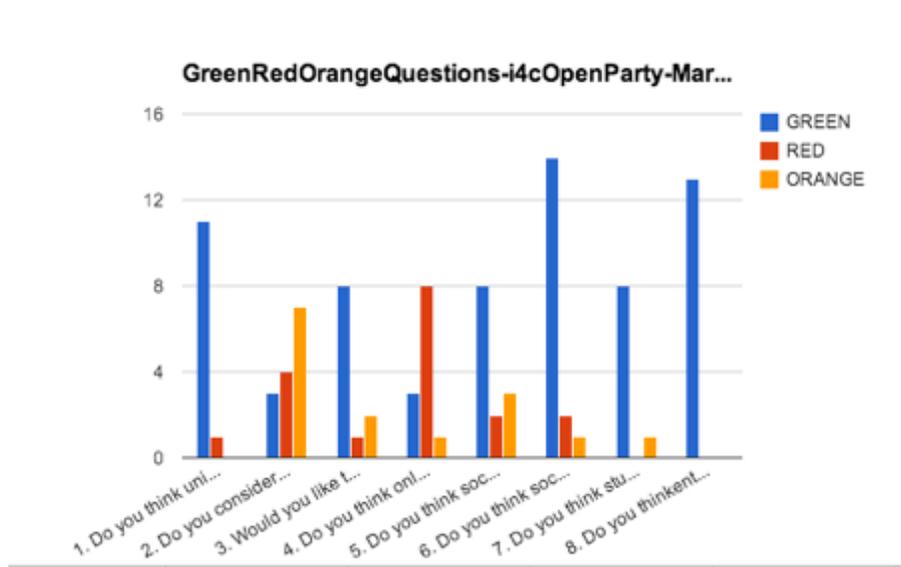


Figure 31 Result of data collection at i4c launch event

Working on the questions after i4c Launch event

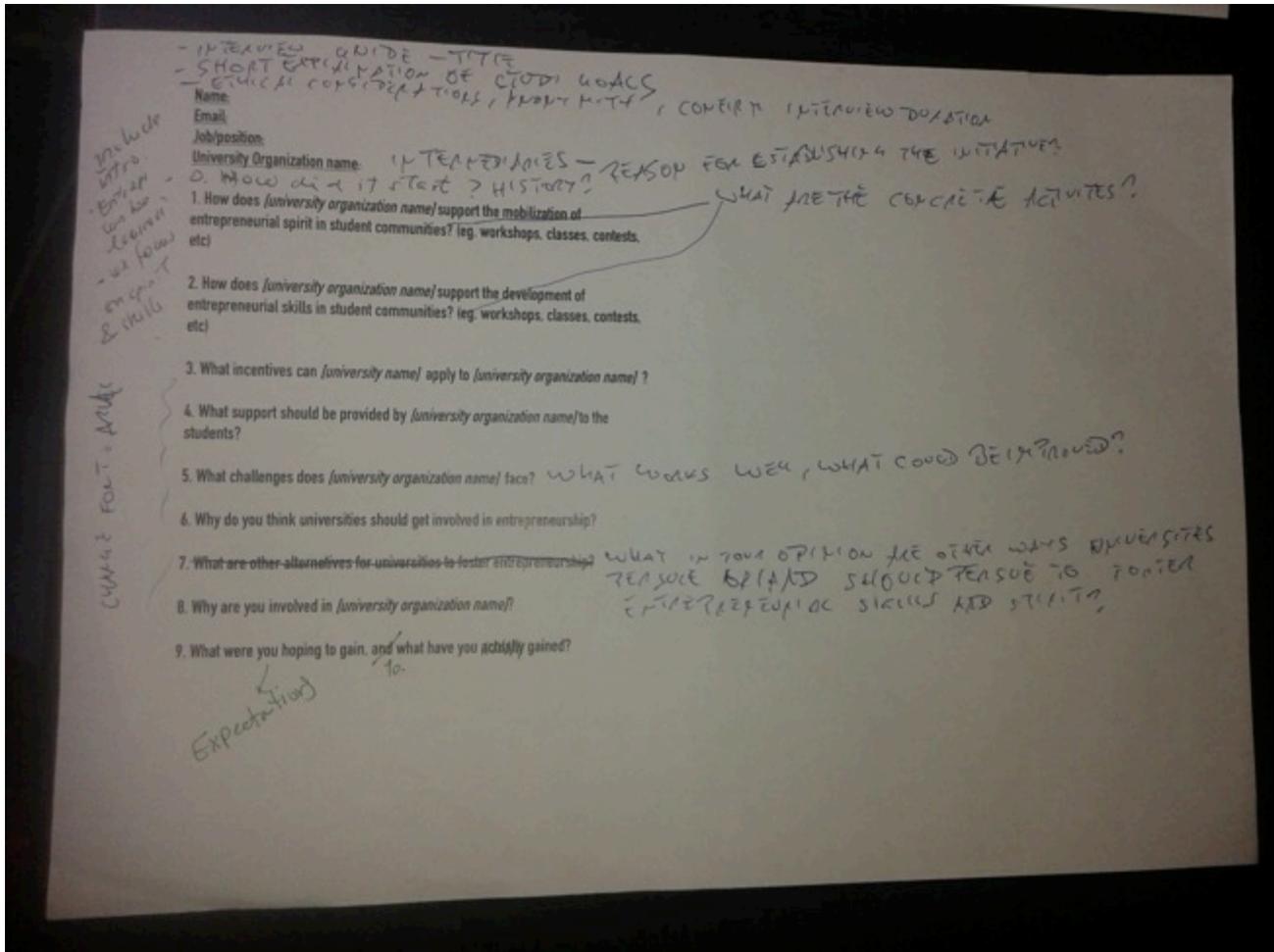


Figure 32 Elaborating final questions

Name:
Email:
Job/position:
Educational background:

C4i i4C

INNOVATING TOMORROW TODAY

ENTREPRENEURS

EPIC - RESEARCH STUDENT
How did your engagement start?
How do you engage in this community?

1. Which lab/group/organization are you a member of?

2. What's your role?

2. When did you join?

3. What have you gained since ~~being~~ being member?

3. What were you hoping to gain, and what have you actually gained?

4. What are your expectations of being a member in ---?

4. What interactions have you had with other members?

(How do you interact with other members) (Example) none 3-5

5. Are there alternative ways that you could interact?

What ~~things~~ " " does suggest to have better interactions/ activities

X 6. Where did your best business idea come from in the last 12 months?

6) What are the reasons of your membership?

7) How ^{does} this affect on your idea generation?

8. How did the community affect ~~to~~ your idea generate influence your ideas and generation

Figure 33 Elaborating final questions

Appendix C: Presenting findings at i4c (September 5, 2014)



Figure 34 Me (Ramiro Huayllar) pre-presenting results at i4c

On September 5, 2014 we presented the findings of this thesis work to 10 attendees at an i4c meeting. The purpose was to collect feedback.

We organized the session in 2 parts. First part was about the presentation of the findings for about 20 minutes. We provided some background, the purpose, research questions and methods, then the results and findings. The second part was about a discussion around 2 questions for the attendees: a) what do you think about the findings? and b) how do you think intermediaries can mobilize the entrepreneurial spirit and skills in students?

Regarding the first question, most of the participants acknowledged that learning while doing is important but that they need a framework, a space to experiment. Another participant was curious about how to identify local role models, even more, how to create local role models. We replied by saying that they should look at the alumni network, and that creating role models in the short term does not seem to be possible because role models acquire that reputation with time, also experience takes time. Nevertheless, another participant provided an interested idea about how to create role models for the short term: 'create something great and have others to continue, and the cycle goes on'. Another participant kept asking what we tried to demonstrate with these findings. It was probably our fault not to have made very clear that we did not try to demonstrate anything, but to find good examples on how to mobilize entrepreneurial skills and spirit in order to give good recommendations like proving a space, looking for role models, etc.

As for the second question, how do you think intermediaries can mobilize the entrepreneurial spirit and skills in students?, a participant said that 'just being here. Listening to things I haven't heard before, speaking to people . That exposes me to new things, and help me develop, and expands my mind'. Other participants suggested that having open and formal presentations, whether by i4c members or outsiders such as master students, would be a good addition to the i4c community to support the mobilization of entrepreneurial spirit and skills.

Appendix D: Strategic Plan for i4c

Another goal for this thesis work was to design a recommendation in the form of a strategic plan for i4c based on the 21 interviewees' experiences. This plan, summarized in Figure 35, would assist i4c, and potentially other intermediaries, to facilitate their strategic thinking and consequent planning to mobilize the entrepreneurial spirit and skills in students.

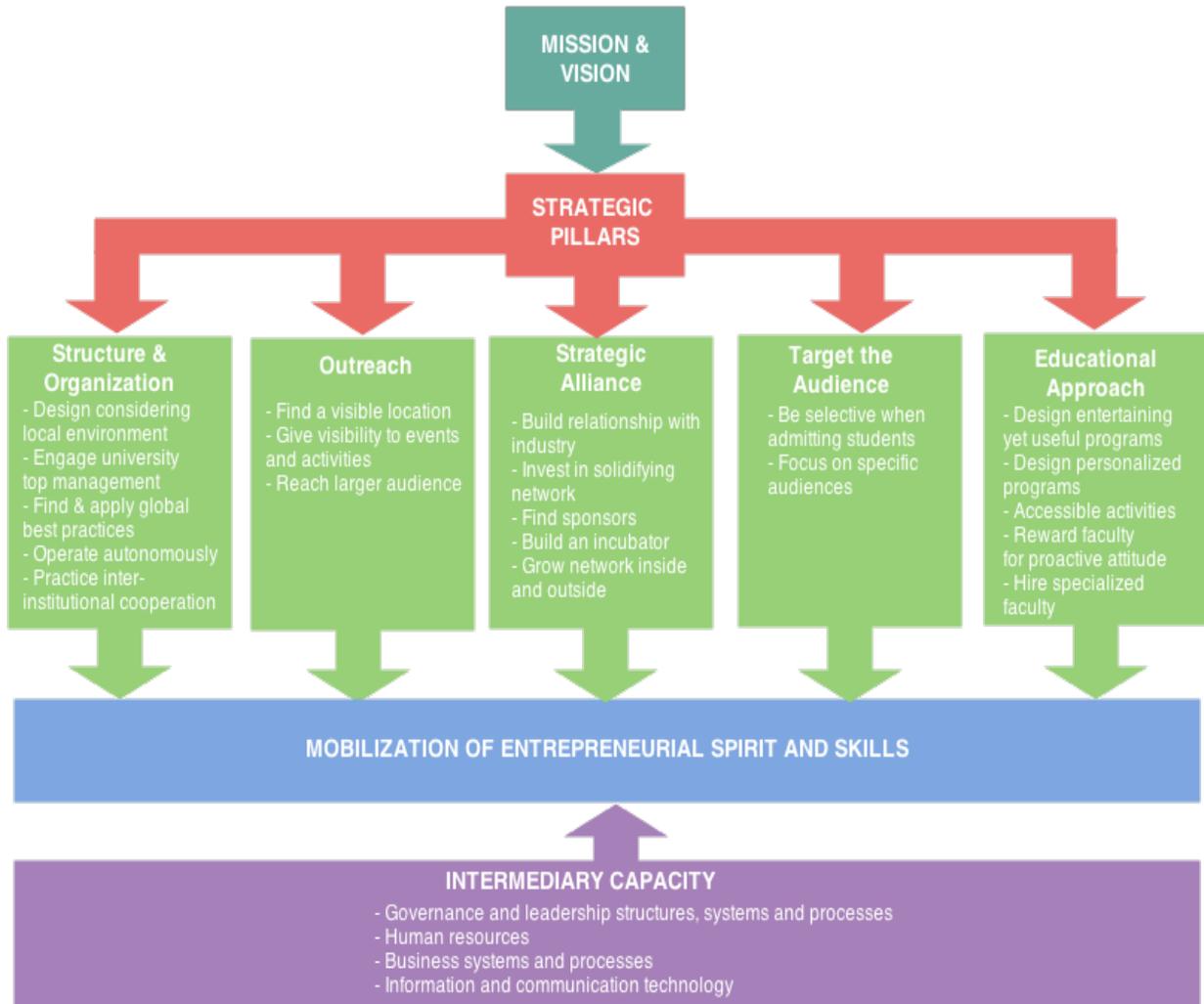


Figure 35 Strategic plan for i4c

Mission and Vision

Mission is an organization's character, identity and reason to exist. It provides a rationale for action. On the other hand, vision may be as vague as a dream or as precise as a goal or mission or statement. Both a mission and a vision can be one at the same (Campbell & Yeung, 1991). Our interviewee P1 said: 'be smart about what you want to build, especially in determining what type of [intermediary] you want to be. I think there [are] a lot of them that focus on, primarily, innovation, and others focus on more small businesses, some want help people start, some [...] want to maintain growth, and some [...] are focusing on all these different things [...]. So really

determining what your goals are going to be, and how you are going to measure that is important'. An intermediary's mission and vision statement are an articulation of its major goals and ambitions.

Strategic Pillars

The strategic pillars were extracted and combined from the applicable strategies proposed by managers and students.

- Structure and organization: design considering local environment, engage university top management, find & apply global best practices, operate autonomously, and practice inter-institutional cooperation
- Outreach: find a visible location, give visibility to events and activities, and reach larger audience
- Strategic alliance: build relationship with industry, invest in solidifying network, find sponsors, build an incubator, and grow network inside and outside
- Target the audience: be selective when admitting students, and focus on specific audiences,
- Educational approach: design entertaining yet useful programs, design personalized programs, design accessible activities, reward faculty for proactive attitude, and hire specialized faculty.

Intermediary Capacity

Overall, the capacity of an intermediary would include: governance and leadership structures, systems and processes, human resources, business systems and processes, and information and communication technology (ICT).

Appendix E: Documents

I) Interview guide for managers

Dear sir/madam

[Day Month] 2014

This interview guide is part of a project at Leiden University in The Netherlands to research communities and other initiatives supporting the development of entrepreneurial mentality and skills at universities.

To this end, I would kindly like to request to answer the questionnaire regarding your experience in promoting and teaching entrepreneurship at the [organization name] via a Skype interview, which should last no longer than 50 minutes.

You will find the interview questions with this document. Should you be concerned about privacy, please refer to the consent form.

Your response to this questionnaire in the interview is valuable to this research, and to Leiden university entrepreneurial centers. Results of this thesis will be accessible online, and if you wish they can be sent to you by e-mail.

I would kindly like to know if you could contact me with one or two students at [organization name] that learn entrepreneurship. I have a different questionnaire for them. Their experience will enrich this research work.

Should you have any queries or comments regarding this questionnaire, you are welcome to contact me telephonically at +31 06 45335892, skype: ramiro.huayller, or e-mail me at r.huayller.zuleta@umail.leidenuniv.nl.

Yours sincerely
Ramiro Huayller
ICT in Business master student, Leiden University

Your Name:
Your Email:
Job/position:
University:
University Organization name:

INTERVIEW QUESTIONS

Section A – Background information

This section of the interview refers to background or biographical information of the Entrepreneurship and Innovation Institute at Cornell university fostering entrepreneurial spirit and skills in students. Although I am aware of the sensitivity of the questions in this section, the information will allow this research to understand the motivations behind the foundation of your organization. Your cooperation is appreciated.

[0. Introduce yourself]

1. How did your organization engage in fostering entrepreneurship?
2. Name the top three reasons for which your organization was established.

Section B - Concrete activities

This section of the interview explores the concrete activities carried out by your organization to foster entrepreneurial spirit and skills in students.

3. How does your organization support the mobilization of entrepreneurial spirit in students?
Name three or more concrete activities (e.g. workshops, classes, contests, etc.).
4. How does your organization support the development of entrepreneurial skills in students?
Name three or more concrete activities (e.g. workshops, classes, contests, etc.).

Section C – University & Entrepreneurship

This section of the interview explores the relation university - entrepreneurship when fostering entrepreneurial spirit and skills in students.

5. Why do you think universities should get involved in entrepreneurship?
6. What, in your opinion, are other ways universities should pursue to foster entrepreneurial spirit and skills?

Section D – Incentives & Support

This section of the interview explores the incentives and support required to foster entrepreneurial spirit and skills in students.

7. What support is provided by your organization to students when fostering entrepreneurship? Name three or more examples.

8. What incentives does your university provide to your organization to foster entrepreneurship in students? Name three or more.

Section E – You & Entrepreneurship

This section of the interview explores the relation: You - entrepreneurship when fostering entrepreneurial spirit and skills in students.

9. Why are you involved in your organization? Name three or more reasons.

10. What were you hoping to gain before joining? Name three or more.

11. What have you actually gained so far after joining? Name three or more.

Section F – Challenges

This section of the interview explores the challenges faced by your organization when fostering entrepreneurial spirit and skills in students.

12. What challenges does your organization face?

13. What activities or actions do in your opinion work well in fostering entrepreneurial spirit?

14. How do you think this/these activity(ies) can be improved?

15. What activities or actions do in your opinion not work well in fostering entrepreneurial spirit?

Section G – Other related questions

16. Can you tell a success story of any of your students?

17. How do you track your students after they complete their studies on entrepreneurship at your organization?

18. What would you advise to other university organizations that seek to foster entrepreneurship?

II) Interview guide for students

Dear sir/madam

This interview guide is part of a project at Leiden University in The Netherlands to research communities and other initiatives supporting the development of entrepreneurial mentality and skills at universities.

To this end, I would kindly like to request to answer the questionnaire regarding your experience in learning entrepreneurship at [your organization] via an interview session, which should last no longer than 40 minutes. Kindly let me know the most convenient time and date for the interview, preferably before 17 of September 2014.

You will find the interview questions with this document. Should you be concerned about privacy, please refer to the consent form.

Your response to this questionnaire in the interview is of the utmost importance to this research, and to Leiden university entrepreneurial centers. Results of this thesis will be accessible online, and if you wish they can be sent to you by email.

Should you have any queries or comments regarding this questionnaire, you are welcome to contact me telephonically at +31 06 45335892, skype: ramiro.huayller, or email me at r.huayller.zuleta@umail.leidenuniv.nl.

Yours sincerely
Ramiro Huayller
ICT in Business master student, Leiden University

Name:
Email:
Job/position:
Age:
Experience:
Education:
University:

INTERVIEW QUESTIONS

Section A – Background information

This section of the questionnaire refers to how you have started at [your organization], which fosters entrepreneurial spirit and skills in students. From now on, this organization will be called community. Although I am aware of the sensitivity of the questions in this section, the information will allow this research to understand the motivations behind your engagement at your community. Your cooperation is appreciated.

1. When did you join your community?
2. What triggered your engagement at your community?
3. What is your role in the community?

Section B – Engagement in the community

This section of the questionnaire explores the way you participate in your community.

4. How do you engage in your community?
5. What are the reasons of your membership?
6. What were you hoping to gain when you joined?
7. What have you actually gained?
8. What are your expectations of being a member in your community?

Section C Concrete activities

This section of the questionnaire explores the concrete activities carried out by you within your community when learning entrepreneurial spirit and skills.

9. How do you interact with other members in your community?

10. What activities do you suggest to have a better interaction with other members in your community?

Section D – Idea generation

This section of the questionnaire explores the influence the community has on your idea generation and vice versa when learning entrepreneurial spirit and skills within your community.

11. How does being a member in your community affect your idea generation?

12. How does your idea generation affect your community?

Section E – Challenges

This section of the interview explores the challenges faced by [Organization Name] when fostering entrepreneurial spirit and skills in students.

7. What challenges does [Organization Name] face?

8. What activities or actions do in your opinion work well in fostering entrepreneurial spirit?

9. What activities or actions do, in your opinion, not work well in fostering entrepreneurial spirit?

10. What do you think could be improved in your community?

Section F - Other

16. Can you tell a success story of any of your colleagues?

17. What would you advise to other university organizations that seek to foster entrepreneurship?

III) Consent form

Leiden Institute of Advanced Computer Science, Leiden University
Research Thesis - Information Sheet
INFORMED CONSENT FORM FOR RESEARCH PARTICIPANTS

Purpose of the study. As part of the requirements for obtaining the master degree at Leiden University in The Netherlands, I have to carry out a research study. The study is concerned with how university organizations approach the fostering and teaching of entrepreneurial spirit and skills in their students, based on the premise that entrepreneurship can be taught.

What will the study involve? The study will involve interviewing a member of the administrative staff (such as director, coach, coordinator, etc.), as well as two students at university organizations that mobilize entrepreneurial spirit and skills.

Why have you been asked to take part? You have been asked because you are part of the administrative staff / student at [your organization].

Do you have to take part? No. Participation is voluntary. Even if you agree to participate, you can decide to withdraw before the interview commences, or to discontinue after data collection has started. You can even withdraw within two weeks of participation and ask to have your data destroyed. These remarks are reiterated in the consent form.

Will your participation in the study be kept confidential? Yes. I will ensure anonymity, and that no clues to your identity appear in the thesis. Any extracts from what you say that are quoted in the thesis will be entirely anonymous.

What will happen to the information which you give? The data will be kept confidential for the duration of the study. On completion of the thesis, they will be retained for a further three months and then destroyed.

What will happen to the results? The results will be presented in my thesis. They will be seen by my supervisors, and external examiner(s). The thesis may be read by future students on the course. The study may be published in a research journal.

What are the possible disadvantages of taking part? I do not envisage any negative consequences for you in taking part. It is possible that talking about your experience in this way may cause some distress.

What if there is a problem? At the end of the interview, I will briefly discuss with you how you found the experience and how you are feeling.

Any further queries? Should you require any further information, you can contact me: Ramiro Huaylller, tel. +31 06 45335892, email: r.huaylller.zuleta@umail.leidenuniv.nl

If you agree to take part in the study, please sign the consent form overleaf.

Consent Form

I.....agree to participate in Ramiro Huayller's research study.

The purpose and nature of the study has been explained to me in writing.

I am participating voluntarily.

I give permission for my interview with Ramiro Huayller to be tape-recorded

I understand that I can withdraw from the study, without repercussions, at any time, whether before it starts or while I am participating.

I understand that I can withdraw permission to use the data within two weeks of the interview, in which case the material will be deleted.

I understand that anonymity will be ensured in the write-up by disguising my identity.

I understand that disguised extracts from my interview may be quoted in the thesis and any subsequent publications if I give permission below:

(Please tick one box:)

I agree to quotation/publication of extracts from my interview

I do not agree to quotation/publication of extracts from my interview

Signed.....

Date.....

Appendix F: Codes

Managers/Org's Perspective	Categories	Subcategories	Codes	Occurrence
SPIRIT	Enablers	Network Formation (43)	Interacting With Entrepreneurs	7
			Interacting With Founders, Investors, Advisors, Inventors, Industry Leaders	5
			Interacting With The Entrepreneurial Ecosystem Inside And Outside University (e.g. Fellow students)	10
			Connecting Students To Alumni	1
			Helping Students Contact Other Student Organizations	1
			Holding Formal Events (Business Pitches, Conferences, Competitions, Forums, events To Find Jobs/Internship/Funding)	9
			Holding Informal Events (Free Events, Dinners, Drinks)	3
			Creating an Internationally oriented student body (PROVIDED BY UNIVERSITY)	1
			Connecting Students To Companies	3
			Enabling Students to start enterprises	3
		Moral Support (22)	Inspiring Students To Be More Entrepreneurial	4
			Encouraging Engagement In Activities	3
			Encouraging Independence	1
			Encouraging To Take A Leadership Role (E.G.By Taking Initiatives)	7

		Supportive Community (e.g. Manage Failure)	3
		Promoting The Culture Of Practicing	1
		Embracing Failure	1
		Entrepreneurship-Friendly Environment	1
		Featuring Student entrepreneurs in university publications (PROVIDED BY UNIVERSITY)	1
	Role Models (18)	Entrepreneurs As Role Models	8
		Sharing Success Stories	10
	Information And Knowledge Sharing (15)	Communicating Opportunities (Events, Internships, Competitions, Conferences Etc.)	4
		Engaging On Social Media	1
		Orientation To Find Resources To Start Business	3
		Speaker Series	2
		Web-Based Platform To Share Business Ideas And Interact With Like Minded People	2
		Featuring Internal Success Stories In Publications	1
		Handbook To Identify Opportunities On Campus	1
		Sharing Videos On Internet of Business Leaders, Researchers, Philanthropies, Founders	1
Disablers	Counterproductive Behavior (5)	Activities With little or No Developmental Feedback	2
		Managerial Behavior With Students Instead Of Leadership	2
		Pessimistic Behavioral Approach	1

		Environment (6)	Designing A Motivating Environment	6
	Applicable Strategies	Involvement (6)	Getting Students Involved	3
			Using Social Media To Integrate And Communicate	2
			Designing Competitions Where Students Have The Potential To Get Funded	1
		Target The Audience (1)	Gathering Highly Motivated Students	1
SKILLS	Enablers	Educational Approach (54)	Curricular And Co-Curricular Programs	2
			Programs Based On Studying External Entrepreneurship Programs	1
			Inclusive Programs For Students And Non-Students	1
			Turning Lectures Into Practical Workshops	1
			Skill-Building Classes (Eg. Accounting, Marketing, Etc)	11
			Fellowship Program	2
			Coaching And Mentoring for skill-building	10
			Preparing Students To Pitch Business Ideas And Start Enterprises	7
			Applying Best Practices And Research Done abroad	1
			Business Development And Business Plan Execution	4
			Guidance To Build A Defensible Business Plan	2
			Guidance To Develop Business Skills	2
			Prepare For Competition	1
			Pairing Students With Professionals	1

		Sessions With Angel Investors (Eg. To learn Finance)	4
		Provision of Developmental Feedback	3
		Coaches With Global Experience And Perspective	1
	Experiential Learning (30)		
		Focusing On Experiential Learning	3
		Technical Skill building (e.g. Hackathons and Hardware Hacking)	2
		Practical instruction (e.g. Internships, Capstone Projects)	3
		Solving Problems Faced By Entrepreneurs	3
		Skill-Building events (Workshops, Boot camps, Training Courses)	12
		Teamwork To Develop A Student Company	4
		Taking Business Plan Into Realization (E.G Product To Market)	2
		Learning From Others' Failure	1
		Support (11)	Legal Advice
	Facilities (E.G. Incubator, office of technology, etc) - (PROVIDED BY UNIV)		4
	Providing Students Financial And Material Support (Eg. To Attend Competitions/Conferences)		6
Disablers	Educational Approach (2)	Excessive Focus On Specific topics while neglecting others	1
		Theory Oriented Teaching	1

	Applicable Strategies	Educational Approach (5)	Facilitating Entrepreneurial Courses	3
			Designing Activities With Interdisciplinary Approach	1
			Fostering Learning By Doing	1
INTERMEDIARY	Applicable Strategies	Structure And Organization (7)	Being Creative	1
			Define Main Purpose To Run Organization (Define Type Of Organization)	1
			Designing Organization Considering Local Environment	1
			Engaging Top University Management In Designing Organization	1
			Looking for Global Best Practices And Implementing Them Locally	1
			Operating Autonomously	1
			Practicing Mutual Cooperation With Other Organizations	1
		Outreach (6)	Finding A Visible Location	1
			Giving As Much Visibility As Possible To Events And Activities	1
			Reaching Larger Audience	4
		Network Formation (4)	Building An Incubator	1
			Building Relationship With Industries	1
			Investing In Creating A Solid Network (e.g. a Joint Venture)	2
		Target The Audience (2)	Being Selective When Admitting New Students	1
			Targeting Specific Audience	1

		Having Entrepreneurship Professors Working With Non-Entrepreneurship Professors	1	
	Educational Approach (3)	Rewarding Faculty For Proactive Attitude	1	
		Hiring Specialized Faculties On Entrepreneurship	1	
Challenges	Lack Of Resources (11)	Creating Self-Sustaining Programs	1	
		Finding Financial Resources	8	
		Finding Own Office Space	1	
		Getting More Student Involved (need of resources to attract more people)	1	
	Escalation (5)	Being Innovative while growing	1	
		Adapting Programs To Larger Audiences	1	
		Enhancing Organization Reputation	1	
		Expanding Operation Outside Campus	1	
		Maintaining Institutional Memory	1	
	Expectations (3)	Keeping People Motivated	1	
		Lacking Of Understanding Students' Expectations Towards Future	1	
		Raising Awareness Of Entrepreneurship Education	1	
	Motivators	Educational Purpose (30)	Educating Business Leaders (MFI)	1
			Empowering Students (MFI)	2
Including Entrepreneurship In University Strategy (MFI)			1	
Creating Interdisciplinary Programs (MFI)			1	

	Having Something Distinctive Within School (MFI)	3
	Need For Practical Education (MFU)	4
	Building Culture Of Entrepreneurship Across Campus(MFU)	1
	Students Want To Create Businesses (MFU)	3
	Empowering Students To Take A Leadership Role (MFU)	2
	Entrepreneurship Can Be Taught (MFU)	2
	Need To Have An Entrepreneurship Center (MFU)	1
	Entrepreneurship Creates Value And Innovation (MFU)	1
	Entrepreneurship Adds Diversity (MFU)	1
	Entrepreneurship Education Help Students Stand Out (MFU)	6
	Entrepreneurship Helps Completion Degree Rate In (Engineering) Students (MFU)	1
Personal (15)	Meeting Like Minded People (MFM)	7
	Admiration For University (e.g. University has a Worldwide Reputation (MFM)	2
	Prestige Of Being Part Of The Board (MFM)	1
	Believing That Entrepreneurship Supports Economic Growth (MFM)	1
	Personal Interest (MFM)	4
Professional (15)	Learning About Business Creation, Investors And Vc (MFM)	2
	Personal Career	3

		Development (MFM)	
		Being Independent And Develop Entrepreneurial Programs (MFM)	3
		Interested In Disruptive Markets And Organizations (MFM)	1
		Developing Entrepreneurial And Managerial Skills (MFM)	4
		Working On Entrepreneurial Field (MFM)	1
		Contribute to Organization (MFM)	1
	Increase Capabilities (8)	Getting Funding For Entrepreneurship Programs (MFI)	1
		Working With Government And Companies (MFI)	1
		Being Independent From Business School (MFI)	3
		Creating A Supportive Network (MFI)	1
		Supporting the Quality of Startups rather than the Quantity of Startups (MFI)	1
		Supporting Startups Rather Than Existing Businesses (MFI)	1
	Labor Market (3)	Labor Market Will Change And Require Entrepreneurial Skills (MFU)	2
		Market Need For Entrepreneurial Mindset (MFI)	1
	Inspiration (1)	Entrepreneurial Activities In Silicon Valley (MFI)	1
Opportunities	Support (13)	University Assistance To Develop entrepreneurial Programs (OFIPBU)	1
		Financial Resources (OFIPBU)	7

		University Helps Recruit Members For Organization (OFIPBU)	1
		Public Announcement By University Chair leaders (OFIPBU)	3
		University Provides Visibility To Organization (OFIPBU)	1
	Network Formation (11)	Inter Institutional Cooperation To Increase Capabilities (OFU)	3
		Partnership With Existing Companies (OFU)	2
		Working With Local And National Government (OFU)	1
		Access To Alumni Network (OFIPBU)	2
		Connection To Other Institutions Within University (OFIPBU)	2
		Interdisciplinary Cooperation (OFIPBU)	1
Alumni	Documentation (8)	Alumni File	3
		Magazines And Newsletter To Keep Engagement	3
		Questionnaire	2
	Anecdotal (5)	Random Contact	2
		Requesting Feedback	2
		Social Media	1
Network Formation (3)	Annual Event For Alumni	3	
		Total	371
		<i>MFI=Motivator For Intermediary</i>	
		<i>MFU=Motivator For University</i>	
		<i>MFM=Motivator For Manager</i>	
		<i>OFU=Opportunity For University</i>	

<i>OFIPBU=Opportunity For Intermediary Provided By University</i>

Table 27 Codes -Managers

Students' Perspective	Category	Subcategory	Code	Occurrence
SPIRIT	Enablers	Network Formation (20)	Access to Network Of Entrepreneurs	2
			Events to share Business Ideas	1
			Formal Events (Regular Business Events, Competitions, Pitching)	5
			Informal Events (Social Drinks, Bbq'S)	7
			Interaction with Students Within And Outside University	4
			Foster The Students - Companies Interaction	1
		Moral Support (9)	Encouraging Sharing Ideas	1
			Supportive Community (e.g. Encouraging Independence)	7
			Activities to Show Skills	1
		Role Models (3)	Success Stories Of Entrepreneurs	3
		Disablers	Educational Approach (3)	Traditional Academic / Business Approach (Non-Flexible Classes)
Applicable strategies	Educational Approach (2)	Creating A Sense Of Community	2	
SKILLS	Enablers	Educational Approach (7)	Related Courses	2
			Experiential Learning Component In Programs	1
			Flexibility In Class To Foster Discussion	3
			Up-To-Date Educational Programs	1
		Experiential Learning (5)	Participating In Group Projects (e.g. Business games)	3
			Workshops To Develop Skills	1
			Execute ideas approach	1
		Disablers	Educational Approach (1)	Lack Of Practical Education In Universities

	Applicable strategies	Educational Approach (1)	Design Personalized Programs	1	
INTERME DIARY	Applicable strategies	Educational Approach (7)	Creating Entertaining & Useful Activities	1	
			Designing Accessible Activities	1	
			Breaking Up Large Groups Into Smaller Groups For Better Interaction	1	
			Student-centric approach	2	
			Create compelling programs (visit startups, etc.)	2	
		Strategic Alliance (4)	Find Sponsors	2	
			Focus On Growing Network Both Inside And Outside Organization	2	
		Challenges	Lack Of Resources (7)	Finding People With Entrepreneurial Experience/committed To Run Organization	4
				Finding Funding/Sponsors To Potentiate Events	3
	Personalized Programs (3)		Maintaining Personal Contact With Students	1	
			Keeping Quality In Education As Organization Grows	1	
			Design compelling programs	1	
	Motivators		Self-Development (10)	Personal Interest	5
		Developing An Oriented Business Mindset		5	
		Experiential Learning (2)	Participating In Business-related activities	1	
			Gaining Practical Experience	1	
		Network Formation (6)	Meeting Potential Business Partners	2	
			Network With Like-Minded People	4	
		Support (1)	Getting Support To Grow Business	1	

			Contacting Startups	1
		Network Formation (13)	Supporting other students (E.G. By Organizing Company Visits, giving speeches)	3
			Participating In The Study Society	2
			Participating In Entrepreneurship-Related And Extracurricular Events	3
			Networking Environment	4
			Experience (5)	Business Experience In Dealing With Different Cultures
		Experience In Organizing Study Trips		1
		Gain Oriented Business Mentality		2
		Understanding Of How Large Companies Work		1
		Resources (2)	Access To Resources And Facilities (E.G. Office Space)	2
			Total	111
			Total codes (managers + students)	482

Table 28 Codes - Students