

HUOM! Tämä on alkuperäisen artikkelin rinnakkaistallenne. Rinnakkaistallenne saattaa erota alkuperäisestä sivutukseltaan ja painoasultaan.

Käytä viittauksessa alkuperäistä lähdettä:

Jakubik, M (2019) Enhancing human capital beyond university boundaries. Higher Education, Skills and Work-Based Learning, Vol. ahead of print No. ahead of print. DOI 10.1108/HESWBL-06-2019-0074

PLEASE NOTE! This is an electronic self-archived version of the original article. This reprint may differ from the original in pagination and typographic detail.

Please cite the original version:

Jakubik, M (2019) Enhancing human capital beyond university boundaries. Higher Education, Skills and Work-Based Learning, Vol. ahead of print No. ahead of print. DOI 10.1108/HESWBL-06-2019-0074

© Emerald Publishing Limited

Enhancing human capital beyond university boundaries

Maria Jakubik

*Department of Research, Development and Innovation Services,
Haaga-Helia University of Applied Sciences, Helsinki, Finland*

Abstract

Purpose – The purpose of this paper is to present a case about the emergence of human capital (HC) during the master thesis as a work-based learning project.

Design/methodology/approach – The case study uses data from 107 master's students 2007–2011 and feedback from 91 managers as business advisors 2007–2016.

Findings – The findings show direct contributions of higher education (HE) to intellectual capital (IC) in organisations through the enhanced HC of managers.

Originality/value – The case contributes to the emerging new, fifth stage of IC research by demonstrating how HC develops beyond the boundaries of an educational institution; how it influences an organisation's IC and how 91 business advisors, as external stakeholders, assessed the achievements and value creation of HE.

Keywords Intellectual capital, Workplace learning, Human capital, Higher education, Business and university collaboration, Fifth stage of IC research

Paper type Case study

Introduction

The motivation of this empirical research arose from the need to demonstrate how master's students at universities of applied sciences (UASs) develop their personal skills, knowledge and competencies during their thesis process, which is a work-based learning (WBL) project. Moreover, there is a need to show how WBL contributes to the intellectual capital (IC) of organisations. Educating managers in higher education (HE), has the challenge of combining academic requirements with the practical competence development needs of the business world. Furthermore, researching this topic is important and necessary, because the feedback in 2017 from 1,580 master's graduates from ten universities of sciences (USCs) in Finland showed an increased demand for the following: more practical and less theoretical techniques in teaching, more practical business projects, more digital methods and more feedback and interaction between students and staff (Nissilä, 2018). Writing a master's thesis as a work development project, such as WBL, is required at a UAS.

Because master's education at UASs in Finland is the context of this paper, it is important to introduce the purposes and features of the UAS in Finland. According to the Finnish Ministry of Education and Culture and Study EU websites (MinEdu, 2019; Study.Eu, 2019), Finnish HE is comprised of USCs and UASs. The mission of the USC is to conduct basic, scientific research and provide education. They offer higher scientific and artistic education, awarding bachelor's, master's and postgraduate degrees (licentiate and doctoral degrees). UASs provide a more practical education, which aims to respond to the needs of the labour market. The main goal of UASs is to focus on education, research & development and regional development. They award bachelor's and master's degrees. The requirement for master's studies at a UAS is a UAS bachelor's degree or another suitable degree and at least three years' work experience after the completion of the previous degree.

The Finnish UAS master's degree was introduced in 2003. It gained permanent status in the Finnish HE system on 1 August 2005. This degree satisfies the need for increasing working life-linked expertise and developing pathways for professional further education; it generates the same qualifications as university master's degrees. The UAS master's programmes are strongly oriented towards the future, as their role is to anticipate changing expertise needs and develop working life. They strengthen networking and the prerequisites for creating new knowledge collaboratively. The learning outcomes correspond to level seven of the European Qualifications Framework. The master's programmes focus on multidisciplinary expertise and advanced special competence (ARENE, 2019).

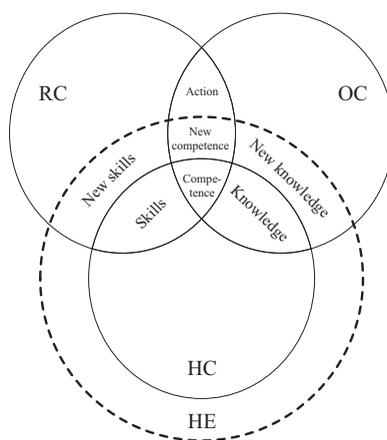
This paper focuses on the role of HE in developing the HC of managers and the IC of organisations (Figure 1). The research question is:

RQ1. How do skills, knowledge and competencies emerge in a business and university collaboration ecosystem?

The scope of this case study is limited to one master's programme at one Finnish UAS. This single qualitative case study uses data from 107 master's students 2007–2011 and from 91 business advisors 2007–2016. Even with this limited scope, the findings demonstrate the differences between the WBL approach at UASs and the more theoretical approach at USCs in Finland. Furthermore, the case study shows how the professional growth, human intelligence and HC of master's students add value to the IC of organisations.

The paper seeks to contribute to the most recently evolving IC in HE discourse (Bisogno *et al.*, 2018). In addition, the paper answers the call for more research when the achievements and value creation of universities are evaluated and assessed by stakeholders (Di Bernardino and Corsi, 2018). The case shows how 91 business advisors, who are external stakeholders, assessed improvements in the HC of managers.

The paper is divided into five sections. The introduction expresses the motivation, the need for research, the purposes and features of Finnish UASs, the focus (Figure 1), the research question, the scope of the research and positioning and potential contributions to the current discourse about IC in HE. Section two is a brief literature review of related fields, such as HE and IC. The research design part argues why specific approaches are selected, as well as how the data are collected and analysed. Next, the description of the case



Notes: RC, relational capital; OC, organisational capital; HC, human capital; HE, higher education

Source: Author

study includes the value promises, context and participants, as well as the findings. The discussion answers the research question, argues about the contributions of the paper, provides implications for managers, businesses and educators, indicates the limitations of the case and suggests further areas for research.

Literature review

To position this paper and its contributions within the goals of UASs, current trends and developments in HE, relevant concepts (e.g. skills, knowledge and competence) and current discourses in the IC literature are presented.

Higher education

The main goal of HE is to develop students' competencies and to contribute to their professional growth, i.e., human intelligence. Preparing students for the ever-changing business environment and preparing them for management roles are key aims of HE (Ritter *et al.*, 2018; Schumacher and Mayer, 2018). "One of the objectives of the Bologna process is to enhance the competencies and innovation required in working life and in its development", stated the ARENE (2007, p. 7) report. The main goal of a UAS is to focus on education, research & development and regional development. The Learning by Developing (LbD) model (Juvonen *et al.*, 2019) is relevant to this paper. This model emphasises that successful actions (cf. Figure 1) require more cooperation among teachers, students and working life stakeholders. Raji (2019, pp. 16-29) presents these in the didactic triangle of the LbD action model (Raji, 2019, p. 22) and she concludes, "The team of teachers, working life representatives and students enable renewing working life by working together in research and development projects". Consequently, business and university collaboration develops both the HC and the RC of the organisations (cf. Figure 1).

There are several trends influencing HE. The main catalysts impacting it are as follows:

"[...] the globalisation of the economy and business, the invention of new technologies, their impact on working methods, the *growing competence requirements of working life*, the scarcity of public resources and funds, the increasing demands for efficiency, the commercialisation of education, the diversification of the educational supply, the emphasised importance of quality assurance and its reliability and the ever-increasing competition for talented foreign students and researchers". (Lehikoinen, 2002, pp. 345-346, emphasis added)

The author of this paper strongly agrees that "the guiding principle in teaching and learning should be the development of competences, not just supplying or taking the required number of courses for awarding or obtaining a degree" (ARENE, 2007, p. 22).

Competence is a complex concept and it has numerous definitions. For example, the competence model of LeDeist and Winterton (2005) identifies several types of competencies. They argue that cognitive competence is defined by conceptual and occupational competencies; functional competence is defined by conceptual and operational competencies; meta-competence is defined by personal and conceptual competencies and social competence is defined by personal and operational competencies. For this research, both occupational (i.e. cognitive and functional) and personal (i.e. meta- and social) competencies are relevant in developing HC. Focusing on HE, Kallioinen (2010, p. 57) provides a few definitions of competence. She claims that at the master's level the generic competences are ethical, reflective, innovative, networking and globalised competences (Kallioinen, 2010, pp. 58-59). The author of this paper argues that in a learning-focused and competence-based curriculum, the identification and description of competencies are necessary. However, this is not enough; the focus should be on the journey, on the teaching methods and approaches and on how these competencies develop (Nottingham, 2017; Fleming and Haigh, 2018).

In the future, the use of human brainpower will play a pivotal role in value creation (Wall, 2017, pp. 307-308). Human capital (HC) is the human side of the organisation, which will become increasingly important in the creative and mind economy, as the major goal of businesses will be to create more profit through creativity and innovation. "As the competitive advantage between corporations becomes more and more defined by human rather than physical or financial assets, knowledge development and management gain increasing importance" (Daniele, 1998, in Sullivan, 1998, p. 316). Therefore, HC, human intelligence, individual skills, knowledge and competencies will increasingly be the centre of attention. HC is the "soul of the company" and it has three main components such as competence, attitude and intellectual agility (Roos *et al.*, 1997, pp. 34-41). This paper focuses on HC and human intelligence development of managers and on how this contributes to the IC of the organisation. Therefore, the IC literature is now explored, in order to position the paper.

New discourse in the intellectual capital literature

To position this research and to define its contribution to the discourses in the IC literature and research, a brief overview of the IC concept development, its problems, roots, paradigms, shift in contexts, current discourses and the most recent focuses in the IC literature are now presented.

The concept of IC started to develop in the mid-1980s; therefore, it is still a relatively new concept with several problems. El-Tawy and Tollington (2012) provide a critical literature review of all articles published in the *Journal of Intellectual Capital* during the period of 2000–2006. They identify the following four problems:

- (1) there is no universal definition for intellectual capital (IC); (2) the cause and effect relationship between IC and value creation is, at best, indirect; (3) the methods of measuring IC are increasing in number, but there is no universally accepted measure and (4) the components of intellectual capital are not well organised in an accepted structured.

Similarly, Stähle (2008, pp. 94-121), who approaches IC from the measurement perspective, talks about problems of the IC model, conceptual problems and calculation problems, defining six main challenges in the next generations of IC. According to her, the widely accepted, clear and well-structured IC model of Edvinsson and Malone (1997) has problems "in choosing the indicators for the sub-categories [...] measurement problems arise when attempts are made to form composite indexes for IC" (Stähle, 2008, p. 98). She continues that "the model does not give clear underlying metrics or straightforward guidelines for conducting reliable and unambiguous analyses" (Stähle, 2008, p. 99). These problems, however, are understandable, as the relatively new concept of IC is complex, abstract and is still evolving. Regardless of several difficulties, confusions and problems, the IC concept is important, as it shows in the exponential growth of publications.

The measurement and the strategic roots of IC identified by Roos *et al.* (1997, pp. 15-24) are still valid. They argue that concepts such as the learning organisation, conversation management, innovation, knowledge management (KM), core competencies and invisible assets belong to the strategic root of IC. Human resource accounting, along with balanced and financial scorecards, belongs to the measurement root of IC. The case of this paper belongs to the strategic root of IC because of the enhanced HC and human intelligence of managers contribute to the core competencies of their organisations. Wall (2017, pp. 307-308) claims that HC is used "as a way of conceptualizing humans and their contributions to organisations".

In the IC literature, Westberg and Sullivan (1998, in Sullivan, 1998, pp. 59-75) identify two main paradigms: value creation and value extraction. They present a historical timeline and development of IC literature during the period of 1986–1997. According to their classification, Hall (1995), Saint-Onge (1996), Sveiby (1997), Edvinsson and Malone (1997) and Stewart (1997) represent the value creation paradigm. On the other hand, Teece (1986), Roos *et al.* (1997),

Sullivan (1998), Petrash (1996), Bontis (2001, 2002) and Lev (2005) are advocates of the value extraction paradigm. The case study of this paper belongs to the value creation paradigm, because through the acquired new skills, knowledge and competencies the specific managers' ability to create value for their organisations is improved.

During the last 20 years or so discourses in the IC literature have become more diverse regarding its contexts, such as organisational IC (OIC), regional IC and national IC (Pedro *et al.*, 2018, p. 2523). Attention has shifted from OIC to individuals (KM, HC), knowledge cities (Hong Kong, Sydney), sectors (public sector, healthcare, hospitality, banking industry, corporate finance and education), countries (Arab Countries, Colombia, Lebanon, Lithuania, New Zealand and Taiwan), continents and regions (Africa, Europe, EU and Italian regions) and world (IMD competitiveness reports, UN, OECD, WEF and World Bank) contexts. The current discourses on IC literature related to organisational functions have become more specific. For example, they focus on financial reporting of intangible assets (Castilla-Pollo and Ruiz-Rodríguez, 2017), learning and KM (Jakubik, 2017, 2009), innovation (Buenechea-Elberdin, 2017), HC (Vidotto *et al.*, 2017), national culture (Lee *et al.*, 2017), entrepreneurship (Passaro *et al.*, 2018) and sustainability (Massaro *et al.*, 2018).

The case study of this paper is found in the fifth stage of IC research (Secundo *et al.*, 2018, p. 3; Bisogno *et al.*, 2018, pp. 22-25). The latest discourse in the IC literature emphasises that HC develops beyond the educational organisations' boundaries. Nottingham (2017, p. 133) argues that HE needs to extend its boundaries and to recognise different forms of IC. The case study presented in this paper provides an empirical example of the role of one Finnish UAS in developing managers' HC and human intelligence beyond university boundaries. The master's thesis solves authentic business problems, in business contexts. HC, as the most important part of IC of organisations in the creative and mind economy, develops not only during studies at the university, but beyond it as well. The development project serves as a bridge between the UAS and the business world, because it directly enhances the HC of both parties and indirectly that of society as well.

Designing the case

The research design is discussed, based on the layers of the "research onion" presented by Saunders *et al.* (2016, p. 124 and p. 164) such as the research philosophy, approach, research strategy, time horizon, data collection and analysis.

This research is social constructivist in nature, because the research question determines a research phenomenon (i.e. development of skills, knowledge and competencies), which is a subjective reality, i.e., an ontology, a reality constructed by humans. The epistemology, the knowledge that is accepted, valid and legitimate for the research purpose of this paper is subjective, i.e., knowledge provided as students' expectations and business advisors' feedback.

The case study research strategy was selected because the purpose of this paper is "to use empirical evidence from real people in real organisations to make an original contribution to knowledge" (Myers, 2009, p. 73). The case examines a contemporary issue (i.e. skills, knowledge and competence development) in a WBL context, i.e., in the thesis writing process of a master's programme, in an ecosystem of business and university collaboration.

This is an interpretive, exploratory and single holistic case study (Yin, 2009, pp. 47-50). The data used in this paper are secondary data, because they were not collected for the purpose of this research. Data were analysed through an inductive thematic approach, i.e., using keywords derived from texts and categorised.

The case

The purpose of this case is to answer the question: how do skills, knowledge and competencies emerge in a business and university collaboration ecosystem? The main

focus is on master's students' HC and professional growth, i.e., HI development, during their thesis project.

Why is this case interesting and important? How does it contribute to knowledge and HC development? First, this is the first time when master's students' HC and professional growth during this master's programme were analysed. Second, the case provides evidence to the students about the value of their master's studies. Third, the case shows the benefits the HC development of the UAS master's programmes provides to business managers. Furthermore, the case promotes the UAS master's studies to businesses. Additionally, the case is an acknowledgement of teachers and thesis advisors as knowledge facilitators during master's studies. Finally, the timing of this case is important, because its findings could provide valuable input into the ongoing renewal of the competence-based curricula of master's programmes at UASs.

Value promises

The goal of this master's programme is "to develop students" international business management competences through a variety of work development methods and tools, international business management courses and through tutoring them in an applied research and work development project as their master's thesis (Students' Guide, 2018). The master's thesis is a large part (one-third) of one's entire studies (Master's Thesis, 2018; Master's Thesis Process, 2018).

Context and participants

This case focuses on the thesis process, because this is where business and university collaboration is the strongest. The participants in this process are managers, students and academic advisors from the university, as well as advisors from the business world. In previous research, the master's students' profile was determined as follows:

The average age is 34 years and the average work experience is 8 years. Gender distribution shows that there are more women (64%) than men. However, male students' representation has increased continuously from being 30% in 2007 to 45% in 2011. Students were from 16 different cultures. Nevertheless, in each group Finns were in the majority. Students were in middle-managerial positions within different (e.g. large, small, domestic, international, global, public, private) organisations. (Jakubik, 2012)

The students' titles are, for example, Account Manager, Country Manager, Credit, Consultant, Head of CRM, Key Account Manager, Legal Compliance Manager, Management Assistant, Personal Banker, Project Coordinator, Sales Manager, Senior Global International Sales Professional, etc. Their employers are, among others, Canon Oy, Cesim Oy, Danske Bank AS, European Chemical Agency, Landbrokes Coral Group, Lektar Oy, Lidl Suomi Ky, Lindström Group, Metso Corporation, Neste Oyj, Radisson Blu, YKK Corporation, etc.

The managers who provided assessment of the students' professional growth during the thesis process are from organisations such as the following: Accenture, Basware Oyj, Danone Finland Oy, Danske Bank Oyj, Ericsson Finland, Ernst & Young Oy, Fazer Food Services, Hartwall, Hewlet-Packard Oy, InterCall Sweden Ab, KONE Corporation, Nokia Oyj, Reaktor, Trawise Oy, etc. Their titles are, for example, CEO, CFO, Director of Learning & Development, Global HR Line Manager, Head of Product Development, Information Manager, Managing Director, Process Development Leader, Program Manager, Sales and Customer Service Manager, Sales Manager Finland, Senior Account Manager, Senior Executive, Senior Manager People Advisory Services and Technical Director.

In earlier research, using a WEBROPOL survey, the university teachers and academic advisors profile was identified as follows:

[...] the average age is 55 years, the gender distribution is about equal, and the average business experience is over 20 years, from different sectors such as banking, consulting, logistics, supply chain management, export-import, direct marketing, customer service, research, HR, publishing, mass media and communication, entrepreneurship, etc. [...] educators worked for companies such as ABB, Accenture, Asahi Television Japan, Fazer, Getzner Textil AG Austria, Hilti Corporation Liechtenstein, Hobby Hall, ICL, Nokia, Stockmann, Zumtobel Group Germany and several Finnish companies.

The cultural background of the educators is also diverse, and includes American, Austrian, Finnish, German, Hungarian, Irish, Portuguese and Swiss citizens. Their language skills are very strong: English, Finnish, French, German, Hungarian, Japanese, Russian, Spanish and Swedish. They speak on average three or more languages each; most have a Ph.D. (Jakubik, 2017, p. 55)

Having presented the goal, context and participants of the case next, the main findings are now presented.

Findings

Skills. Next, a few examples are provided to illustrate and compare the skills expected and achieved while working on a master's thesis. Students are expected to develop such skills as the following: communication, argumentation, presentation, language, report writing using new electronic tools, leadership and managerial, people, networking, knowledge sharing, research, analytical, interviewing and project management. While managers acting as business advisors indicated for example, the following main skills of students have been developed: communication and presentation, listening to others, analytical, research, information search, survey, interviewing, prioritising, openness to new ideas, time management and project management. Students focused on developing their communication and language skills, while managers emphasised the development of students' research skills.

Knowledge. Students are expected to acquire knowledge during their master's studies in such areas as international business, fresh ideas, new viewpoints, theoretical knowledge and subject-specific knowledge (HR, Talent Management, CRM, Marketing, Project Management, Change Management, Finance, Social Media, E-commerce, etc.), as well as gaining self-knowledge. According to managers, students gained knowledge such as understanding business processes and strategy, business knowledge, customer experience, a holistic view of the market, reverse logistics, remote selling, business models, channels of distribution, the business environment, the internationalisation needs of the company, practical knowledge of conducting research, etc. While students were expected to gain more subject-specific knowledge, managers saw it as important that students also develop more business and practical knowledge.

Competencies. Students expected to develop their competencies such as the following: the ability to make decisions, applying knowledge, understanding the big picture, understanding cultural differences, learning ability, learning from others, networking and cooperation ability, career development, becoming professional, meeting future challenges, career opportunities, satisfying their hunger for knowledge, self-discipline, self-confidence and motivation. Managers assessed students' competence development during the work development project as being highly motivated, committed, goal oriented, open minded, well focused, independent in work and learning and able to adapt to changes. In addition, these areas were also seen as important: listening to feedback, asking questions, the ability to collaborate and network, the ability to see the big picture, the ability to apply theory in practice, creativity and presenting new ideas for business development. Managers most

appreciated competences regarding the ability to learn and manage oneself, as well as the ability to make decisions. Students most valued competences in the areas of managing themselves and in the ability to manage their own career.

The thematic analysis of the expectations of 107 master's students led to 383 keywords. An analysis of 91 business advisors' feedback on HC enhancement led to 247 keywords. These keywords were first categorised into main categories, i.e., skills, knowledge and competencies, and then into subcategories. For example, the subcategories in the area of knowledge are subject specific, practical, new, theoretical, business and personal. Table I shows the categorisation and comparison of the keywords.

The findings are very surprising. At the beginning of their studies, students had the highest expectations towards increasing their skills (154 keywords), followed by developing their knowledge (138 keywords). The lowest expectations were regarding growth in their competencies (91 keywords). Very interestingly, the reverse was observed in the business advisors' feedback at the end of the master's studies, as students' competencies were numerically the highest (116 keywords), followed by their knowledge (85 keywords) and lastly, their skills (46 keywords).

In brief, the case presented in this part of the paper covers value promises, a description of the context and participants and a comparison of the findings (Table I) related to HC and human intelligence development outside of the university environment. Next, the contributions of this qualitative case study, its implications and further research directions are discussed.

Discussion

The aim of the paper was to present an empirical case study about the emergence of the HC of master's students during their master's thesis, conducted as WBL outside of the university environment, as business development projects. The New Media Consortium, together with the EDUCAUSE Learning Initiative and EDUCAUSE Program, prepared a report on HE (NMC Horizon Report, 2017). This report presents the findings of a Delphi

	Skills		Knowledge			Competencies		
	Students	Managers	Students	Managers	Students	Managers	Managers	
43	Communication and language	8	65	Subject specific	13	21	Ability to manage themselves	27
29	Practical and project management	10	23	Practical	18	20	Ability to manage own career	9
27	Leadership and managerial	3	20	New	8	15	Ability to learn	41
26	Research	19	18	Theoretical	11	13	Ability to collaborate and network	13
21	Social and networking	3	7	Business	21	12	Ability to deal with differences	5
8	Team working	3	5	Personal	14	10	Ability to make decisions	21
154	Total	46	138	Total	85	91	Total	116

Table I. Comparison of students' expectations and managers' feedback on human capital development

method research based on an expert panel consisting of “78 education and technology experts from 22 countries on five continents” (NMC Horizon Report, 2017, p. 50). The experts selected 18 important topics in HE. Not surprisingly, among these topics we find the need for real-world skills and workplace development, collaborative learning, collaboration, communities of practice, social networks, agile learning ecosystems and lifelong learning. The author of this paper believes that the NMC report validates the findings of this case study and underscores the contemporary character of its main research question:

RQ1. How do skills, knowledge and competencies emerge in a business and university collaboration ecosystem?

Furthermore, the importance and contemporary character of the case study presented in this paper was also validated by Nissilä's (2018) report on analysing feedback from 1,580 master's graduates from ten USCs in Finland. In her report, Nissilä shows an increased demand for more practical and less theoretical techniques in teaching, more practical business projects, more digital methods, more feedback and more interaction between students and staff. Therefore, based on this single case study, it could be concluded that UAS master's graduates should develop more practical skills needed in business, gain more practical knowledge and acquire more practical business competences than master's graduates from USCs, because of the strong collaboration with the business community during the work development master's thesis.

Additionally, the author of this paper strongly believes that learning is a social construct and that it takes place when people act together, sharing their ideas, knowledge and problem-solving abilities. The author concurs with Nottingham (2017, p. 133), who argues that there is a need for WBL pedagogy in facilitating professional learning within HE, in order to extend the workplace skills and abilities of people in business. Nottingham also points out the importance of recognising the different forms of IC by extending the boundaries of HE. Similarly, Okolie *et al.* (2019, p. 626) show how innovation in teaching pedagogy, such as problem-based, work-based, self-directed, practice-based and student-centred learning, along with a good student to teacher ratio, helps HE to meet the demands of the labour market. Collaborative learning is based on four principles: “placing the learner at the centre, emphasising interactions, working in groups and developing solutions to real challenges” (NMC Horizon Report, 2017, p. 20). The case study presented in this paper is a practical example of collaborative learning, where the manager as master's student is the focus, where the student, the university tutor and the tutor from business interact, and where the master's thesis is directed to organisational development in a real, authentic business environment (Jakubik, 2017). During business and university collaboration, not only does the HC of master's students develop, but businesses also benefit from the master's thesis of UASs (Jakubik, 2018). There are specific solutions, products, frameworks and guidelines developed for organisations. There are specific, immediate (Jakubik, 2018, pp. 73-76) and future (Jakubik, 2018, pp. 76-77) business benefits that have an impact on organisations' IC (cf. Figure 1).

The case example presented in this paper concurs with current research in management education (Ritter *et al.*, 2018; Schumacher and Mayer, 2018). Ritter *et al.* argue that universities must re-examine their curricula in order to answer their stakeholders' needs by better preparing students for the demands of work. Further, they add that because of the complexity of and constant changes in the work environment, the demand for soft skills such as interpersonal skills, emotional intelligence, teamwork and communication skills of employees has increased. Similarly, Schumacher and Mayer (2018) argue that teaching the five principles, i.e., user focus, problem framing, experimentation, visualisation and diversity of design thinking, will prepare managers for ever-changing business contexts. The case presented here shows how master's students developed their collaboration skills

during their work development projects. In this collaborative ecosystem of academia and business, the students' leadership, communication, problem solving, networking and team working skills are developed, as approved by managers.

The paper contributes to the emerging new, fifth stage of IC research, i.e., IC in HE discourse, because it demonstrates how HC develops beyond the boundaries of an educational institution; how it influences business and managers' work and how 91 managers as external stakeholders assessed the achievements and value creation of universities. Furthermore, the case demonstrates how relationships were enhanced among HE and local firms and communities (Bisogno *et al.*, 2018, p. 25) during a work development project. In brief, this research highlights the value of the human intelligence and HC development in a business and university collaboration ecosystem, by providing empirical evidence. The findings are novel (Table I) and original, and are supported by 107 master's students and 91 organisations in Finland.

The research has practical implications for business managers, educators and educational policy makers. First, the managerial implication is an increased awareness of the value contributions of managers as students to businesses. In Finnish UASs it is required to do the master's thesis as a work development project. This practice, however, is not common among USCs in general (cf. Nissilä, 2018). Second, the collaboration of businesses and academia has benefits for all participants, as there is collaborative learning (NMC Horizon Report, 2017) taking place. Third, infusing theoretical knowledge into business practices of managers has several benefits: it helps businesses to make sense of their practices, it creates new concepts and it comes up with innovative solutions during the knowledge co-creation process. Combining practical and theoretical knowledge in solving business problems (Jakubik, 2017) is an advantage for the organisation, as well as for society, because it leads to addressing both current challenges and future business opportunities. Collaboration could lead to a competitive advantage in business, as it contributes to an organisation's IC, through the enhanced human intelligence and HC of managers (cf. Figure 1).

The paper proposes implications for both educators and students. Educators, i.e., thesis supervisors who are involved directly in a project, learn from businesses, learn about their current concerns and, through the managers as students, help businesses to address these challenges. The contribution of educators in this process is very valuable, because they guide the students and suggest to them relevant theories and sources, as well as supporting and encouraging them (in many cases emotionally as well) during the entire process. They also provide guidelines for thesis report writing and ethical rules, e.g., how to handle confidentiality and business secrets, as well as how to conduct empirical research professionally. In HE there is a need for teachers "to inspire and motivate students to increase the knowledge (know-how), skills (how to do), self-efficacy (effectiveness) and qualities (technical and creative knowledge) required by the LM" (labour market) (Okolie, Nwosu and Mlanga, 2019, p. 632). Nevertheless, the manager students benefit most from business and university collaboration. They learn new theories and approaches during their studies that they can directly apply in business contexts. They learn about business practices, strategies, values and specific topics. Managers develop their business knowledge and acquire useful skills, as the case study in this paper shows. In this way they increase their human intelligence (cf. Figure 1), which leads to better employability and career opportunities.

The scope of this research paper is limited to the educational sector, to one UAS and to one master's degree programme in Finland. This limitation, however, could lead to several further research opportunities, such as examining other master's programmes at the same UAS, or other UASs in Finland, and researching other UASs in other countries. Furthermore, it would be an interesting future research area to study the master's thesis ecosystem of USCs, compare them and ascertain the differences in their knowledge co-creation ecosystems, both in Finland and internationally.

References

- ARENE (2007), *The Bologna Process and Finnish Universities of Applied Sciences. Participation of Finnish Universities of Applied Sciences in the European Higher Education Area. The Final Report of the Project*, Edita Prima Oy, Helsinki.
- ARENE (2019), "Master's degree studies in Finland", available at: www.arene.fi/wp-content/uploads/Raportit/2018/arene_masters-degree-studies-in-universities-of-applied-sciences.pdf?t=1526901110 (accessed 29 September 2019).
- Bisogno, M., Dumay, J., Rossi, F.M. and Polcini, P.T. (2018), "Identifying future directions for IC research in education: a literature review", *Journal of Intellectual Capital*, Vol. 19 No. 1, pp. 10-33.
- Bontis, N. (2001), "Assessing knowledge assets: a review of the models used to measure intellectual capital", *International Journal of Management Reviews*, Vol. 3 No. 1, pp. 41-60.
- Bontis, N. (2002), "Intellectual capital: an exploratory study that develops measures and models", in Choo, C. and Bontis, N. (Eds), *The Strategic Management of Intellectual Capital and Organisational Knowledge*, Oxford University Press, New York, NY.
- Buenechea-Elberdin, M. (2017), "Structured literature review about intellectual capital and innovation", *Journal of Intellectual Capital*, Vol. 18 No. 2, pp. 262-285.
- Castilla-Pollo, F. and Ruiz-Rodríguez, C. (2017), "Content analysis within intangible assets disclosure: a structured literature review", *Journal of Intellectual Capital*, Vol. 18 No. 3, pp. 506-543.
- Daniele, J.J. (1998), "Understanding and managing knowledge assets for competitive advantage in innovation and product development", in Sullivan, P.H. (Ed.), *Profiting from Intellectual Capital. Extracting Value from Innovation*, Chapter 23, John Wiley & Sons, New York, NY, pp. 305-318.
- Di Bernardino, D. and Corsi, C. (2018), "A quality evaluation approach to disclosing the third mission activities and intellectual capital in Italian universities", *Journal of Intellectual Capital*, Vol. 19 No. 1, pp. 178-201.
- Edvinsson, L. and Malone, M. (1997), *Intellectual Capital: Realizing your Company's True Value by Finding its Hidden Brainpower*, Harper Business, New York, NY.
- El-Tawy, N. and Tollington, T. (2012), "Intellectual capital: literature review", *International Journal of Learning and Intellectual Capital*, Vol. 9 No. 3, pp. 241-259.
- Fleming, J. and Haigh, N.J. (2018), "Using sociocultural insights to enhance work-integrated learning", *Higher Education, Skills and Work-Based Learning*, Vol. 8 No. 4, pp. 395-407.
- Hall, B.P. (1995), *Values Shifts. A Guide to Personal and Organisational Transformation*, Twin Lights Publishers, Rockport, TX.
- Jakubik, M. (2009), "Emerging knowledge-creation spaces: why should HR managers participate in knowledge-creation?", *International Journal of Learning and Intellectual Capital*, Vol. 6 No. 4, pp. 362-379.
- Jakubik, M. (2012), "Expected market value of the master's degree in international business management", *19th International Conference In Holland University of Applied Sciences, Educational Innovation in Economics and Business, Haarlem, 2-4 May*, available at: www.researchgate.net/publication/281439577_Expected_Market_Value_of_the_Master's_Degree_in_International_Business_Management (accessed 25 April 2019).
- Jakubik, M. (2017), "Solving business problems together. case: a master's degree programme in Finland", *Journal of Systemics, Cybernetics and Informatics: JSCI*, Vol. 15 No. 4, pp. 53-57, available at: www.iiisci.org/journal/sci/FullText.asp?var=&id=SA045MC17 (accessed 7 April 2019).
- Jakubik, M. (2018), "Masters bring business benefits – proved by Finnish managers", *TOJET – The Turkish Online Journal of Educational Technology*, Vol. 2, pp. 65-77, available at: www.tojet.net/special/2018_12_3.pdf (accessed 20 March 2019).
- Juvonen, S., Marjanen, P. and Meristö, T. (Eds) (2019), *Learning by Developing 2.0. Case Studies in Theory and Practice*, PunaMusta Oy, Helsinki.

- Kallioinen, O. (2010), "Defining and comparing generic competences in higher education", *European Educational Research Journal*, Vol. 9 No. 1, pp. 56-68, available at: <https://journals.sagepub.com/doi/pdf/10.2304/eeerj.2010.9.1.56> (accessed 19 January 2019).
- LeDeist, F.D. and Winterton, J. (2005), "What is competence?", *Human Resource Development International*, Vol. 8 No. 1, pp. 27-46.
- Lee, I.-C., Lin, C.Y.Y. and Lin, T.-Y. (2017), "The creation of national intellectual capital from the perspective of Hofstede's national culture", *Journal of Intellectual Capital*, Vol. 18 No. 4, pp. 807-831.
- Lehikoinen, A. (2002), "Tutkintojärjestelmien ja korkeakoulutusmallien kehitys Euroopassa", in Liljander, J.-P. (Ed.), *Omallalla tiellä – Ammattikorkeakoulut kymmenen vuotta*, Edita, Helsinki, pp. 340-349.
- Lev, B. (2005), "Intangible assets: concepts and measurements", *Encyclopedia of Social Measurement*, Vol. 2, Elsevier.
- Massaro, M., Dumay, J., Garlatti, A. and Mas, F.D. (2018), "Practitioners' view on intellectual capital and sustainability", *Journal of Intellectual Capital*, Vol. 19 No. 2, pp. 367-386.
- Master's Thesis (2018), available at: www.haaga-helia.fi/en/opinto-opas/opintojaksokuvaukset/mgt7lg501 (accessed 18 November 2018).
- Masters' Thesis Process (2018), available at: <https://mynet.haaga-helia.fi/english/studies/thesis-master/Documents/Master%20Thesis%20Process.pdf> (accessed 18 November 2018).
- MinEdu (2019), "The Finnish Ministry of Education and Culture", available at: <https://minedu.fi/en/education-system> (accessed 29 September 2019).
- Myers, M.D. (2009), *Qualitative Research in Business & Management*, SAGE Publications.
- Nissilä, W. (2018), "Vastavalmistuneiden kauppatieteiden maisterien palaute 2017", Suomen Ekonomien Julkaisu No. 2/2018, Ekonomit, MER, English Summary, September, p. 6, available at: <https://ekonomit.emmi.fi/NNQDXjxLHjxh> (accessed 14 January 2019).
- NMC Horizon Report (2017), "Higher education edition. new media consortium, educause learning initiative", EDUCAUSE Program, available at: www.unmc.edu/elearning/_documents/NMC_HorizonReport_2017.pdf (accessed 14 April 2019).
- Nottingham, P.M. (2017), "Re-evaluating work-based learning pedagogy", *Higher Education, Skills and Work-Based Learning*, Vol. 7 No. 2, pp. 129-140.
- Okolie, U.C., Nwosu, H.E. and Mlanga, S. (2019), "Graduate employability – how the higher education institutions can meet the demand of the labour market", *Higher Education, Skills and Work-Based Learning*, Vol. 9 No. 4, pp. 620-636.
- Passaro, R., Quinto, I. and Thomas, A. (2018), "The impact of higher education on entrepreneurial intention and human capital", *Journal of Intellectual Capital*, Vol. 19 No. 1, pp. 135-156.
- Pedro, E., Leitão, J. and Alves, H. (2018), "Back to the future of intellectual capital research: a systematic literature review", *Management Decision*, Vol. 56 No. 11, pp. 2502-2853.
- Petrash, G. (1996), "Managing knowledge assets for value", *Knowledge-Based Leadership Conference, Linkage, Boston, MA*.
- Raij, K. (2019), "Summarising the basis of LbD for further development – review", in Juvonen, S., Marjanen, P. and Meristö, T. (Eds), *Learning by Developing 2.0. Case Studies in Theory and Practice*, PunaMusta Oy, Helsinki, pp. 16-29.
- Ritter, B.A., Small, E.E., Mortimer, J.W. and Doll, J.L. (2018), "Designing management curriculum for workplace readiness: developing students' soft skills", *Journal of Management Education*, Vol. 42 No. 1, pp. 80-103.
- Roos, J., Roos, G., Dragonetti, N.C. and Edvinsson, L. (1997), *Intellectual Capital. Navigating the Business Landscape*, MacMillan Press.
- Saint-Onge, H. (1996), "Tacit knowledge: the key to the strategic alignment of intellectual capital", *Strategy & Leadership*, Vol. 24 No. 2, pp. 10-16.

- Saunders, M., Lewis, P. and Thornhill, A. (2016), *Research Methods for Business Students*, 7th ed., Pearson Education Limited.
- Schumacher, T. and Mayer, S. (2018), "Preparing managers for turbulent contexts: teaching the principles of design thinking", *Journal of Management Education*, Vol. 42 No. 4, pp. 496-523.
- Secundo, G., Lombardi, R. and Dumay, J. (2018), "Guest editorial", *Journal of Intellectual Capital*, Vol. 19 No. 1, pp. 2-9.
- Stähle, P. (2008), "National intellectual capital as an economic driver – perspectives on identification and measurement", in Ahonen, G. (Ed.), *Inspired by Knowledge in Organisations. Essays in Honor of Professor Karl-Erik Sveiby on His 60th Birthday 29th June 2008*, Edita Prima, Helsingfors, pp. 94-121.
- Stewart, T.A. (1997), *Intellectual Capital. The new Wealth of Organisations*, Doubleday Dell Publishing Group, Inc, New York, NY.
- Students' Guide (2018), "Degree programme international business management", available at: www.haaga-helia.fi/en/students-guide/degree-programmes/degree-programme-international-business-management-helsinki-pasila?userLang=en (accessed 18 April 2019).
- Study.Eu (2019), "Study in Europe", available at: www.study.eu/article/universities-of-applied-sciences-in-finland-all-you-need-to-know (accessed 29 September 2019).
- Sullivan, P.H. (Ed.) (1998), *Profiting from Intellectual Capital. Extracting Value from Innovation*, John Wiley & Sons.
- Sveiby, K.E. (1997), *The New Organisational Wealth: Managing and Measuring Knowledge-Based Assets*, Berrett-Koehler Publishers, San Francisco, CA.
- Teece, D.J. (1986), "Profiting from technological innovation", *Research Policy*, Vol. 15 No. 6, pp. 285-305.
- Vidotto, J.D.F., Ferenhof, H.A., Selig, P.M. and Bastos, R.C. (2017), "A human capital measurement scale", *Journal of Intellectual Capital*, Vol. 18 No. 2, pp. 316-329.
- Wall, T. (2017), "A manifesto for higher education, skills and work-based learning – through the lens of the Manifesto for Work", *Higher Education, Skills and Work-Based Learning*, Vol. 7 No. 3, pp. 304-314.
- Westberg, P.B. and Sullivan, P.H. (1998), "In search for a paradigm", in Sullivan, P.H. (Ed.), *1998, Profiting from Intellectual Capital. Extracting Value from Innovation*, John Wiley & Sons, New York, NY, pp. 59-75.
- Yin, R. (2009), *Case Study Research. Design and Methods*, 4th ed., Applied Social Research Series, Vol. 5, SAGE Publications.

Further reading

- Choo, C. and Bontis, N. (Eds) (2002), *The Strategic Management of Intellectual Capital and Organisational Knowledge*, Oxford University Press, New York, NY.
- Liljander, J.-P. (Ed.) (2002), *Omalla tiellä – Ammattikorkeakoulut kymmenen vuotta*, Edita, Helsinki.
- Swart, J. (2006), "Intellectual capital: disentangling an enigmatic concept", *Journal of Intellectual Capital*, Vol. 7 No. 2, pp. 136-159.

Corresponding author

Maria Jakubik can be contacted at: maria.jakubik@ronininstitute.org