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DOI 10.1007/978-981-99-1835-5_5

CITATION Heinonen, J., Ilonen, S. (2023). Entrepreneurship Education in Finland. In: Xu, X. (eds) Comparative Entrepreneurship Education. Springer, Singapore. https://doi.org/10.1007/978-981-99-1835-5_5

Comparative Entrepreneurship Education – case Finland

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This Chapter aims at presenting the state-of-the-art of entrepreneurship education (EE) in Finland through the lenses applied in this volume. We first provide ground for the chapter by describing the context for EE in Finland. We continue by discussing the internal development of EE in the individual HEIs based on the information provided in their websites in the Fall 2021. Then we describe the supporting systems of EE in HEIs and the characteristics of EE by highlighting an example of an Entrepreneurial University. We conclude with alternative futures toward higher quality of EE.

1. Context

After the second World War Finland has developed from a poor agricultural country to the forerunner in high technology and well-being. Education has had its role to play in improving the cultural level of the country. Education system in Finland is publicly financed. This implies also to the universities which currently rely heavily on public finance although some of them were originally established by private initiatives and funds.

The early roots of economic education in higher education were found in Business Schools. During 1950-60's it was more about educating economic issues, whereas later in 1980's the focus was on providing entrepreneurship education (EE). Finally, from 1990's onwards the concept of enterprise education evolved parallel with EE with slightly different meanings and foci. (Ministry of Education and Culture, 2009.)

EE or rather the first mentions of entrepreneurship in the national education programme took place only in 1985 (POPS, 1985). At national level the notion of EE to support individuals to earn their living independently or to improve their employability was launched in 1990's as a

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remedy to the great economic and financial crisis in Finland. Entrepreneurship was supposed to provide citizens with self-employment and entrepreneurial opportunities as a record number of individuals was suddenly hit by lay-offs (The Ministry of Education and Culture, 2009). Furthermore, the idea of intrapreneurship was visible as the measures also addressed individual employability (POPS, 1994).

Since 1999 the Ministry of Trade and Industry introduced a cross-sectional and horizontal approach to entrepreneurship by launching a two-year Entrepreneurship Programme with an ultimate aim to introduce economic growth, employment and diversifying of industrial structure. The focus was on SMEs with an idea to remove barriers and reduce administrative burden in order to incentivise small firms to grow. As to EE the programme focused on developing education system to support entrepreneurship, thus administration, not on encouraging individuals into entrepreneurship *per se*. The Entrepreneurship Programme was a precursor of the specific entrepreneurship policy initiatives which were included in the written government programmes from the start of the 2000's. (Heinonen and Hytti, 2016.) Through the Entrepreneurship Programme the idea of cross-sectoral and horizontal collaboration between ministries and with stakeholders was seeded into Finnish entrepreneurship policy mission and its implementation. Given this also policies on EE were guided and implemented as a part of the ministerial collaboration. In the following, we will first give an overview of the governmental level entrepreneurship policies based on the Government programmes to understand the main problems and challenges to be addressed by policies² and then move on to particular policies on EE.

In 2003 an important step was taken when the Entrepreneurship policy programme was launched as a part of the Government programme. The ultimate aim of the programme was to secure economic growth, employment and investments in Finland. The focus was on individuals, particularly potential entrepreneurs, rather than firms. The Entrepreneurship policy programme aimed at providing incentives and education for an entrepreneurial career. This was done for example by introducing guidelines for enterprise education at different educational levels.

² The developments are derived from the study of Heinonen, J. and Hytti, U. (2016) Entrepreneurship mission and content in Finnish policy programmes. *Journal of Small Business and Enterprise Development*, Vol 23, No. 1, 149-162.

In 2007 the new government introduced a policy programme on work, entrepreneurship and work-life with an ultimate aim to secure economic growth, employment and welfare society. The policy was broadened to include also work and working lives of individuals and was less focused on entrepreneurship. Employment situation was to be improved by emphasizing first, the responsibility of entrepreneurs and small businesses to create more (and better) jobs and second, the responsibility of individuals for remaining employable. The latter can be understood as a way to encourage individuals to entrepreneurship, or rather intrapreneurship, as it views every individual as an entrepreneur in charge of one's own employment. The focus of the programme was on employees and entrepreneurs. Flexicurity, i.e. balancing flexibility and security at work, was considered to remove barriers from employment and improve individual employability. Furthermore, the desirability of entrepreneurship was enhanced through EE, the offerings of which were broadened in addition to intensifying collaboration between education and businesses, for example.

In the aftermath of global financial crisis in 2011 the government again assumed the role in combatting poverty and social exclusion and balancing public finance and employment. The government programme included no dedicated programme for entrepreneurship *per se*, but the key project on enhancement of sustainable economic growth, employment and competitiveness was launched with an ultimate aim to secure socially and ecologically sustainable economic growth, employment and development of new industries. This focus was a clear reaction to the global economic crises after a long period of continuous growth in the 2000s. Entrepreneurship was again expected to create more and better jobs to tackle the challenges of the ageing population, modest economic growth, and social exclusion. Entrepreneurship was, thus, presented rather as a remedy than an opportunity in the society.

Similarly, in 2015 no dedicated entrepreneurship programme was included in the government programme. However, the entrepreneurship package including eight wider measures to promote the possibilities of mainly existing entrepreneurs and businesses was introduced. Measures such as renewal of growth services for businesses and lowering the threshold for employing the first employee were targeted to existing businesses with recruiting, growth and internationalization potential. EE was not emphasised in the entrepreneurship package of the government.

In 2019 the preparation of the Entrepreneurship strategy was included in the government programme to increase trust among companies that it is worth creating employment, developing businesses and investing as well as becoming an entrepreneur in Finland. The eight strategic themes of the Entrepreneurship strategy were again targeted to existing and potential entrepreneurs. EE was not explicitly in the agenda of the Entrepreneurship strategy headed by Ministry of Economic Affairs and Employment, although many other ministries, including the Ministry of Education and Culture, have also been involved in planning and execution of the strategy.

The emphasis of the Entrepreneurship policy in Finland has evolved during the years under the reign of different governments and political parties. Although entrepreneurship policies have addressed a variety of issues during the years, the primary focus has started from administration supporting SMEs and moved first towards entrepreneurial careers and individuals, second towards working life, third considering entrepreneurship as a remedy to the financial and economic crisis, and finally to existing and potential entrepreneurs and growth-oriented businesses. The shifts on focus have rather reflected the economic situation of Finland than the political power relationships. Although EE has been focused only thinly in the above entrepreneurship policies, particularly in the recent ones, it has been more visible in the national guidelines of Ministry of Education (and Culture).

Through EE the Ministry of Education has supported entrepreneurship and innovation in Finland. From the beginning the ultimate aim has been to make entrepreneurship more attractive as a career option and to enhance entrepreneurial attitudes and competences throughout the Finnish education system. At different educational levels the emphasis vary. In general, in primary education the focus is on enhancing entrepreneurial attitudes, basic knowledge and skills as well as an entrepreneurial mode of operation. In secondary and higher education knowledge and skills, including entrepreneurial competences, are to be further developed.

For higher education EE implies for example strengthening entrepreneurial attitudes among students and teachers, boosting innovation and business ideas, promoting the utilization and commercialization of research findings and academic expertise, thus, academic entrepreneurship, and promoting collaboration with businesses, science parks and technology centres. For universities particularly, it implies exchange of knowledge and researchers

between academia and businesses as well as strengthening entrepreneurial competences of the researchers. (The Ministry of Education, 2004, The Ministry of Education and Culture, 2009.) These national guidelines have been adopted from the EU level policies and guidelines, and are further accommodated at regional and local level strategies and execution.

The most recent national guidelines (Ministry of Education and Culture, 2017) approach EE from different perspectives:

1. *Strategic level and leadership* defines the basics through planning, resource allocation, and evaluation of activities. Furthermore issues related to staff competence and collaboration across fields and with working life are highlighted in the guidelines.
2. *Training for education and teaching staff* defines the access of teachers to EE training at all educational levels.
3. *Training that supports entrepreneurship* defines the access of EE in all levels of education and related collaborations.
4. *Learning environments* focuses on a culture of experimentation and versatile and innovative learning environments and situations.

These EE guidelines of the Ministry of Education and Culture are to channel, guide and develop measures promoting entrepreneurship and enterprise education at different educational levels. Furthermore, they serve as a part of information guidance of the Ministry of Education and Culture and demonstrate public commitment to introduce EE in a variety of ways from kindergarten to higher education. Next, we will look at the higher education and universities particularly to understand how EE has developed there.

2. Internal development of EE in the HEIs

Finland has strong strategic emphasis for EE in all educational levels, also in higher education (Ministry of Education 2004; Ministry of Education and Culture 2009; 2017) and due to long-term efforts Finnish entrepreneurship culture has improved significantly over the last years (OECD, 2021). Finnish higher education field consists of two types of institutions: universities and universities of applied sciences. The main aim of universities is to focus on scientific

research and education while universities of applied sciences offer more pragmatic education that responds to current needs of working life. Finnish university field consists of 13 scientific universities, which are spread around the country. The Ministry of Education and Culture has monitored development of EE in the higher education system actively, and two reports produced in 2005 and 2016 give overviews of EE in Finnish universities (Ministry of Education and Culture 2016; 2005). In the following, internal development of EE in the Finnish university field is analysed based on outcomes of these two policy reports. Then the current state of EE in all Finnish universities is described. The descriptive information of the current state is handpicked from each university's website in the Fall 2021. The section ends with a synthesis of the policy developments and the current state.

2.1 EE in Finnish Universities in early 2000's

In 2005, Finnish university field consisted of 21 universities that were located all over Finland. The report emphasizes that there seems to be an extensive shift from salary work toward “an entrepreneurial society”, but universities remain not well prepared nor equipped to facilitate this shift. However, simultaneously many, quite distinct EE related expectations were directed toward Finnish university field. EE was seen as a “relatively marginal phenomenon in Finnish universities”. However, still many universities considered entrepreneurship to be an important issue, which was closely related to the university's third mission of social interaction. No specific entrepreneurship strategies were yet identified in the Finnish universities. Moreover, no explicit objectives for EE were identified. Universities' role was seen as a creator of new scientific knowledge in entrepreneurship, a compiler and distributor of entrepreneurial knowledge for the purposes of the business sector, being an EE teacher, or solver of local needs. The policy report raised up the importance of multidisciplinary in promoting EE. Integration of EE to non-business subjects was mentioned as one of the most important tools to facilitate EE in universities. In addition, there seemed to be a gap between academia and business reality. This gap was suggested to be solved with tight interaction and innovative solutions. The report also highlighted the importance of EE both in universities and universities of applied sciences. The report informed that the key challenges of EE concerned financing EE, how to facilitate interaction between universities and stakeholders, and how ongoing curriculum reform reflects to role of the EE in universities.

In 2016 Finnish University field consisted of 14 universities. The report highlighted that EE was widely offered in Finnish universities at least in a form of individual entrepreneurship

courses which implied that tremendous development had happened from 2005 to 2016. The aim of EE was particularly to support formation of new businesses and startups. Finnish universities had noticed the importance of pedagogy in facilitating entrepreneurial learning. However, there seemed to be a lack of such pedagogical training for entrepreneurship educators. Universities were also lacking behind universities of applied sciences in collaboration with the business sector. Moreover, universities and universities of applied sciences had some collaboration in terms of EE, but it was suggested that such collaboration could be further developed in the future. Multidisciplinary entrepreneurship research with diverse foci was conducted in many universities, which formed a good stepping stone to develop entrepreneurship-related education. In addition, universities were interested in commercialization of research and had invested in different types of innovation and patenting services and support structures. Student-led entrepreneurship societies had boomed all around Finland and each town with a university campus had its own student-led entrepreneurship society. In 2005, none of these student-led entrepreneurship societies existed. Universities had some connections and collaborations with the entrepreneurship societies but it seemed that the collaboration was not yet that systematic, particularly outside Helsinki area. It was suggested that assessment and evaluation of impact of EE requires further attention as universities applied very different measures in analyzing the impact. Some focused on a number of students in EE courses, some employability and the number of businesses and startups after graduation.

2.2 Current state of EE in Finnish Universities

In the following a brief description of all 13 Finnish universities and their EE activities is provided. The descriptions are not exhaustive but focus on the core EE activities as presented in the public webpages in August/September 2021. The data, thus, reflect the ways in which the universities wish to present their EE activities and, thus, the role articulated for EE activities. We did not complement or verify the data with interviews, for example.

2.2.1 *Aalto University*

Aalto university is composed of six schools (faculties) with close to 17,500 students and 4,000 faculty members. It is Finland's second largest university. The main campus is located in Otaniemi, Espoo. Aalto university is one of the best known universities in Finland in terms of its entrepreneurship related activities. Every student in Aalto can complete a minor or take individual courses in entrepreneurship. It is organized through Aalto Ventures Programme, which was founded as a joint initiative of students and faculty across the university in 2012. In

addition, Aalto offers another entrepreneurship related minor: Aaltonaut, which is a Bachelor's Minor Programme on Interdisciplinary Product Development (launched for the first time in 2013). Aalto has a Master's programme in Entrepreneurship and Innovation Management but it will be discontinued in the future. Students can graduate from the MSc programme in Entrepreneurship and Innovation Management until July 31, 2023. Startup orientated researchers can receive help in commercializing their research in Aalto Startup Center, which is a hybrid accelerator offering its own incubator and accelerator services, as well as several partnership programs. Its focus is on sustainable research-based and innovative deep-tech startups. Clear strength of Aalto is its student-led Entrepreneurship Society AaltoES, which is the first student-led entrepreneurship society in Finland. AaltoES is active in organizing entrepreneurship related event and boosting entrepreneurship within Aalto University. AaltoES has an important role in development of awarded, international startup event Slush. In addition, it runs KIUAS, which is an incubator, accelerator and bootcamp. Moreover, it organizes FallUp event, which is Europe's biggest entrepreneurship event for students run by students. It organizes hackathons such as Junction and Dash. Aalto university also provides a possibility to take internship in startups in Asia and Silicon Valley (Startuplifers). The programme was established from the initiative of students and it is now open for students in several universities in Finland. Aalto university also contributes to the EE in the country by offering Starting up - online course free of charge for anyone who is interested in taking the course. Starting up is an introductory course to startup entrepreneurship where one can learn basics of setting up a small business. Aalto University has active research groups that work around the phenomenon of entrepreneurship.

2.2.2 University of Helsinki

University of Helsinki is the largest university in Finland with close to 32,000 students and 8,000 faculty members. It has 11 faculties, and it provides teaching on four campuses in Helsinki. University of Helsinki provides individual courses in EE for all interested students. Faculty of Agriculture and Forestry provides a possibility for students for entrepreneurship-related module consisting of several entrepreneurship courses. The faculty has also planned for developing a hub, where companies and students can better interact in terms of projects and real-life cases. Ruralia Institute provides entrepreneurship-related courses from a perspective of rural studies. Moreover, it coordinates Co-op Network Studies, which offers courses and modules related to co-operative sector and social economy. Other participants in the network are Aalto University School of Business, University of Jyväskylä, LUT University, University

of Oulu and University of Tampere. Helsinki Think Company has an important role in supporting and organizing courses and programmes in collaboration with the University of Helsinki to encourage students to get on the entrepreneurial path and to support startup teams at different stages of development.

2.2.3 University of Eastern Finland

The University of Eastern Finland has approximately 16,000 students and close to 3,000 faculty members. The university is composed of four faculties and campuses are located in two cities: Joensuu and Kuopio. University of Eastern Finland provides minor and individual course in entrepreneurship for all interested students. The minor studies in entrepreneurship deepen students understanding of the bases and requirements of generating, managing, and developing businesses. The minor is organized by the business school. Moreover, there has been initiatives for providing entrepreneurship studies in specific programmes, for instance in bioeconomy. Major degree studies in entrepreneurship were provided in the past, but the programme was discontinued during structural development of university field in 2010. Joensuu campus collaborates with SPARK Joensuu, which offers entrepreneurial studies and start-up business activities in Science Park facilities. SPARK is open for students from different levels of education. University of Eastern Finland has two student-led entrepreneurship societies, one in Kuopio (KuopioES) and another in Joensuu (JoensuuES). University of Eastern Finland has active entrepreneurship-related research in their Business School.

2.2.4 University of Jyväskylä

University of Jyväskylä has approximately 14,000 students and around 2,600 faculty members. It is composed of six faculties. Entrepreneurship is highlighted in the university's strategy and it has been brought as a cross-sectional element to the all educational programmes. University of Jyväskylä provides minor and individual courses for anyone who is interested in studying entrepreneurship. Moreover, it offers a Master's Degree Programme in International Business and Entrepreneurship. The university collaborates closely with other educational institutes in terms of entrepreneurship studies. For instance, Edufutura, which is a joint initiative of the university, university of applied sciences and Jyväskylä Educational Consortium Gradia providing general upper secondary education and vocational education, organizes courses available for university students. The students can take part to the operations of the Startup Factory, which is an incubator where initial-stage business ideas can be grown into companies in cooperation with educational institutes. JyväskyläES is the student-led entrepreneurship

society in the region. It organizes activities, which can be integrated to entrepreneurship studies. University of Jyväskylä, particularly its Business School, is active in entrepreneurship-related research.

2.2.5 University of Lapland

The University of Lapland is located in Rovaniemi. It is a relatively small university, which consists of four faculties and has approximately 4,300 students and around 450 faculty members. It is the most northern university in the European Union. The university offers a possibility for all its students to take minor and/or individual courses in entrepreneurship. The entrepreneurship studies, in total 60 ECTS, are organized by the open university. The university has provided EE in teacher-education for decades. Student-led entrepreneurship society LaplandES is one of the most recent entrepreneurship societies in Finland. It has organized hackathons and other entrepreneurship-related events for the students. University of Lapland has active entrepreneurship research with a particular focus on EE.

2.2.6 Lappeenranta University of Technology

Lappeenranta University of Technology has approximately 5,300 students and almost 1,000 faculty members. It consists of three distinct schools. The campuses are located in cities of Lappeenranta and Lahti. University has a strong strategic emphasis in entrepreneurship in terms of sustainability and renewal of industries. It offers entrepreneurship studies and a possibility for minor in entrepreneurship to all university students. Moreover, it has two master's degree programmes with the focus on entrepreneurship: International Business and Entrepreneurship and Entrepreneurship major in Engineering. At the campus exists J. Hyneman Center, which brings together students, university research and skills as well as companies. It aims to support student entrepreneurship and university innovation. Student-led entrepreneurship society LutES organizes entrepreneurship-related events and programmes for entrepreneurship-oriented students. The university has active entrepreneurship research. For instance, they have coordinated national data collection of Global University Entrepreneurial Spirit Students' Survey for years and been active in developing a measurement tool regarding EE.

2.2.7 University of Oulu

University of Oulu has close to 14,000 students and around 3,400 faculty members. It is composed of eight faculties. University of Oulu provides minor and individual courses in entrepreneurship for all students who are interested in entrepreneurship studies. The minor was

piloted in 2016 (Ministry of Education and Culture, 2016). Student-led entrepreneurship society OuluES is active in organizing entrepreneurship events and trainings such as Human Accelerator, Startup Weekend Oulu and Idea Accelerator. Moreover, university students can take part in Demola, which is an open innovation platform. The university has taken part in organizing Polar Bear Pitching event, which has become fairly popular nationally and globally recent years. University of Oulu has active entrepreneurship-related research in their Business School.

2.2.8 Hanken School of Economics

Hanken is a small Swedish-speaking university with approximately 2,500 students and around 250 faculty members. Hanken operates in both Helsinki and Vaasa. Hanken offers a major degree studies in entrepreneurship and management for its students. Hanken has a student-led entrepreneurship society HankenES, which was founded already in 2010. Hanken has an incubator called Hanken Business Lab, which is a new form of incubator aiming to help start-ups, scale-ups, non-profit organizations and individuals to achieve significant growth at Hanken. Hanken Business Lab has operations in both university campuses. Hanken has active research in entrepreneurship.

2.2.9 University of Arts

University of Arts is a small university based in Helsinki. It has less than 2,000 students and around 750 faculty members. It consists of three academies. University of Arts offers a master's degree programme in Arts Management, Society and Creative Entrepreneurship.

2.2.10 Tampere University

Tampere University is a community of 21,000 students and close to 4,000 faculty members. The University consisting of seven faculties was created in 2019 through a merger between the University of Tampere and Tampere University of Technology. Tampere Universities Community has a strategy for promoting particularly sustainable entrepreneurship. Tampere University provides minor and individual courses in sustainable entrepreneurship for anyone who is interested in studying entrepreneurship. Tampere University collaborates with HUBS, that offers optional studies in entrepreneurial themes open for all students of Tampere University and Tampere university of applied sciences. Student-led entrepreneurship society TampereES organizes entrepreneurship-related events and programmes for entrepreneurship-

oriented students. Moreover, university students can take part in Demola, which is an open innovation platform.

2.2.11 University of Turku

The University of Turku is a multidisciplinary university, which has approximately 20,000 students and around 3,400 faculty members. It consists of eight faculties. The University of Turku is an Entrepreneurial University, which has a strategic aim to facilitate entrepreneurship awareness and enhance entrepreneurial education in its all faculties. The purpose of entrepreneurship education in university is to boost entrepreneurial behaviour across the society by generating new and supporting established business activities as well as by enhancing entrepreneurial culture and attitudes among students and faculty members. All of the faculties offer some study programmes that include courses with an entrepreneurship or entrepreneurship-related focus. The business faculty offers individual courses on entrepreneurship and entrepreneurship as a major and minor. Moreover, the students in all faculties can take entrepreneurship as their minor or they can take only some individual entrepreneurship courses. All business students have an obligatory course in entrepreneurship. There is also a minor study module of “The Innovation and Business Creation” which is included as a minor study in seven master’s degree programmes in the faculty of science and engineering. The business school offers also faculty specific entrepreneurship studies, e.g. in medicine. University students can take part in student-led entrepreneurship society Boost Turku, which is Turku-based entrepreneurship society that inspires and helps young students from different higher education institutes to become startup entrepreneurs. It organizes several events and programmes. Boost Turku collaborates closely with university and the students can acquire study points if they participate to its activities. The SparkUp startup community organises events and office space for startup teams.

2.2.12 University of Vaasa

University of Vaasa has around 5,000 students and 550 faculty members, and four schools for research and teaching. University of Vaasa has a master’s degree programme in management of growth businesses. Moreover, it has an Innovation and Entrepreneurship laboratory InnoLab, which is a phenomenon-based, multidisciplinary open research platform for academics and experts. VaasaES (VES) organizes some entrepreneurship-related events for entrepreneurship-oriented students.

2.2.13 Åbo Akademi University

Åbo Akademi University is the Swedish-speaking multidisciplinary academic university located in Turku. It has around 5,500 students and 1,000 faculty members. Åbo Akademi University offers an entrepreneurship module (20 ECTS) with several entrepreneurship-related courses for the students. This is done through Startup Åbo, which is Åbo Akademi's unit for entrepreneurship. The unit offers also support for educators if they are willing to develop entrepreneurship-related education. Åbo Akademi University has provided a course on "Business Essentials for Scientists" since 2011. It is targeted for faculty members in Åbo Akademi University and University of Turku. Åbo Akademi University operates in close collaboration with University of Turku. Åbo Akademi also encourages students to take entrepreneurial courses in other Finnish universities. The students of the Åbo Akademi University students can take part in student-led entrepreneurship society Boost Turku which serves all higher education institutions in Turku region. Similarly, the services of SparkUp are open also to the students of the Åbo Akademi University.

2.3 Summarising Internal development of EE in Finnish Universities in 2000's

The policy reports and our investigation of the current state of EE in a Finnish university sector in 2021 provide evidence that EE has developed drastically during the past two decades. While in 2005 EE was considered as a "relatively marginal phenomenon in Finnish universities" currently EE is offered at least as a form of individual courses in all universities in Finland. In recent years, the focus of EE has expanded from strong support of business ownership to intrapreneurship and support of learning of students. While in 2005 universities were not able to articulate the university or faculty-level objectives of EE, in 2021 there exists multiple university or faculty level strategies for entrepreneurship in line with national and supranational political agendas. Moreover, in many universities' EE has expanded from business schools to the whole university. However, at the same time some entrepreneurship programmes are being disclosed. Many universities have emphasized their willingness to develop their entrepreneurial activities among the students and/or faculty members, and particularly in recent years entrepreneurship studies are integrated to topical societal phenomena such as sustainability, responsibility and arts to address the societal changes and challenges. Pedagogical approaches and learning environments have developed to the direction which supports entrepreneurial behavior of students, and also teachers' education among faculty members has increased. The education of faculty members also responds to the calls of

researchers (Béchar and Grégoire, 2005; Neck and Corbett, 2018; Ilonen, 2021) as teacher education is considered to be an important element of successful EE. Teacher education has been provided as part of formal (e.g. courses, information sessions) and informal activities (informal mentoring, informal networks). Universities are active also in commercialization of research, and have continued to invest in related support structures and services.

Higher education institutes (universities and universities of applied sciences) and other external institutions have increased systematic collaboration locally and nationally in terms of entrepreneurship courses and programmes. There are also different support channels for educators who wish to engage in EE. Universities and faculties work increasingly in collaboration with industry, and related models have been developed in recent years. Here, universities have caught up universities of applied sciences.

Entrepreneurship research provides a good basis for EE in Finnish universities. Multidisciplinary entrepreneurship research is conducted in majority of Finnish universities, and many universities have active research groups with particular focus on entrepreneurship. Research projects are conducted in collaboration with businesses. During the past decade student-led entrepreneurship societies have boomed in Finnish university cities to support startup activities and entrepreneurial behavior among higher education students through extra-curricular activities. Scholars argue that student-led entrepreneurship societies are important creators of positive energy and thinking around entrepreneurship (Siivonen et al. 2019; Parkkari, 2019). Many universities have started to systematically cooperate with these student-led entrepreneurship societies and in some cases, students can receive higher education study points by taking part to entrepreneurship society activities. In all, EE has received relatively comprehensive position in Finnish university field but this implies increased complexity due to multiple courses, programmes, actors and collaboration. To summarise, the recent EE developments in the Finnish universities include:

- EE currently offered in all Finnish universities
- University and faculty-level strategies in entrepreneurship identified in several universities
- Multiple approaches and themes of EE: e.g. sustainability, arts, responsibility
- Increased support of educators

- Increased collaboration among HE institutes locally and nationally
- Increased collaboration with the business sector
- Systematic collaboration with student-led entrepreneurship societies
- Increased complexity due to multiple courses, actors and collaboration.

3. Supporting system of EE

3.1 Funding model of Finnish universities

Education system in Finland is publicly financed. The Ministry of Education and Culture coordinates the activities of universities and acts as their main financial source. The Parliament of Finland annually decides on the amount of core funding that the Ministry of Education and Culture allocates to the universities. This allocation of core funding is done based on the national financial model. In the current Universities Core Funding From 2021, 42 % is directed based on educational input (amount of degrees, continuous learning, number of employed graduates, student feedback). Of the educational input, 4 % is allocated based on a number of employed graduates with emphasis on entrepreneurship. This is closely related to EE, which aims to enhance employability and entrepreneurship after graduation, and thus encourages universities for EE. 34 % of core funding is allocated based on research input which consist of number of PhD degrees, number of publications and competitive research funding. This encourages high quality research in any research fields, including entrepreneurship and cooperation with business sector. 24 % of funding is allocated based on other education and science policy considerations. These considerations entail strategic development and national duties of universities. As entrepreneurship is strategic element in many universities or faculties, and also noted in national educational goals, some additional although minor funding is directed based on it. Besides the core funding, universities are encouraged to apply for external financing from other sources such as the Academy of Finland, Business Finland, the European Union, foundations and businesses.

Universities have internal support mechanisms to encourage entrepreneurship and EE. As EE is high in the political agenda in Finland, there exists also several support organizations with which the universities can collaborate when promoting EE. These support mechanisms are discussed next.

3.2 Internal support in universities

The core funding model of the Ministry of Education and Culture takes entrepreneurship into consideration in funding allocation, which provides possibilities and incentives for universities to internally support EE. Internal support can take place at several levels and different forms either formally or informally. Universities may centrally provide top-down support for EE to encourage their staff and students to entrepreneurship.

Top-down encouragement of EE implies that the university rectorate clearly demonstrates its commitment to entrepreneurship on the strategic level and makes it visible also in everyday activities. This can take place via communication and incentive systems for example. Internal support can be related to entrepreneurship strategies in universities and faculties, such as in University of Turku (see section 4 the example UTU Entrepreneurial University). Strategies provide legitimacy for EE within the university. Universities may design internal support services for entrepreneurship, such as staff training or innovation and technology transfer offices. These aim to generate new research-based ventures and coordinate and support in gaining funding for entrepreneurial endeavours. University innovation services often manage the existing IPR portfolio and negotiate the sales and licensing agreements. Assessment mechanisms and measures to evaluate the outcomes of the EE may be provided top-down on the university level. EE outcomes usually relate not only to education but also to the third mission of the universities, namely societal interaction. The existence of these internal support mechanisms is not enough, but there needs to be individuals to step in to the process (see OECD and European Commission, 2012).

Concrete steps in EE are taken bottom-up by faculty members whereas encouragement and guidance thereof is provided top-down. It is up to each individual to participate to teachers' training targeted to educators to improve the quality of EE. Furthermore, individual teachers plan and execute EE courses and programmes in the frame of university policy and resources. They may also jointly discuss the approaches and by sharing their experience learn from their peers. It is important that university top-down provides forums and room for such activities and articulates their importance, but the very actions are taken by the committed teachers. In addition, the university support structures to commercialise research for example are to be exploited by faculty members and the ways in which this is done depends on the discipline. Such technology transfer offices, incubators and innovation services can also be important for graduating students who wish to start new ventures. For this external support organisations can be useful – these are briefly discussed next.

3.3 External support organizations

There are a variety of national, regional and local organisations which are dedicated to support entrepreneurship in different ways. Locally in different cities there are for example informal teacher networks for university and/or higher education teachers' where educators can share their experiences and learn from others. These can be particularly important in EE, where experiential learning approach is encouraged. In the following we list some national organisations on which the universities can lean in their EE activities.

Junior Achievement Finland

Junior Achievement Finland positions itself as a leading organization in EE in Finland. Their aim is to help to learn entrepreneurial and working life skills as well as financial literacy all school levels from early childhood education to higher education. The organization acts in cooperation with education providers, decision makers, business communities, and students. Junior Achievement Finland offers different study programmes, which can be integrated into the curricula. The organization equips educators with tools that are crafted in accordance with the current national curricula. One of its most well-known programme is a company programme, where students set up and run businesses for an academic year or semester. The programme is vastly spread in higher education institutes in Finland.

YES Network

YES Network describes itself as Finland's most significant network for the development of EE. It aims to promote the implementation of EE by strengthening the entrepreneurial culture, coaching teachers, developing training and building school-business cooperation. YES Network organizes several events that support EE. Moreover, it collaborates vastly with different operators and individuals.

The Federation of Finnish Enterprises

The Federation of Finnish Enterprises is a national interest and service organization for small and medium-sized enterprises (SMEs) and the business owners. Organization's task is to improve the position of entrepreneurs and the conditions for entrepreneurship nationally. Suomen Yrittäjät also aims to make Finland an entrepreneurial society. In relation to this mission, the organization has a strong emphasis in educating educators. 'Competent teachers - entrepreneurial young people' project funded by Sakari Alhopuro Foundation has contributed

significantly to promotion of EE in Finland. It provides materials, education and network for educators who wish and/or are expected to take part in EE.

TAT

TAT is a national influencer that aims to help young individuals to develop their economic and working life skills and get excited about entrepreneurship. TAT's operations are financed by several Finnish organisations such as the Confederation of Finnish Industries (EK) and the Ministry of Education and Culture. TAT provides materials for educators as well as possibilities for students to engage to their programmes and events.

Support materials:

Some useful examples of support materials include:

*An Entrepreneurship Gamebook*³ which consists of the joint recommendations of the Rectors' Conference of Finnish Universities of Applied Sciences Arene, Universities Finland UNIFI, and The Federation of Finnish Enterprises for the promotion of entrepreneurship in higher education.

*Entrepreneurship for Education Guidelines*⁴ provided by the Ministry of Education and Culture is informative about the principles and concrete measures to promote entrepreneurship and EE at different education level (see section Context).

4. Characteristics of EE

EE in the Finnish universities is governed and guided by the Government and its entrepreneurship and educational policies as discussed above. Naturally these reflect EU level policies and guidelines and are further accommodated to meet the regional and local needs when executed in practice. The uniqueness of the Finnish entrepreneurship policy is its cross-sectoral and cross-ministerial approach both at strategic and operational level. This implies that ministries attempt to coordinate their individual promotion of entrepreneurship indicating a consensual understanding of the holistic nature of the phenomenon of entrepreneurship.

³ <https://www.unifi.fi/wp-content/uploads/2019/04/Entrepreneurship-recommendations-for-higher-education-institutions-2018.pdf>.

⁴ Ministry of Education and Culture (2017) accessed at <https://minedu.fi/documents/1410845/4363643/Entrepreneurship-for-Education-Guidelines.pdf/ad2a7ecc-ae1b-4460-8fc6-d394e9a0a23a/Entrepreneurship-for-Education-Guidelines.pdf>

(Heinonen and Hytti, 2016.) The cross-sectoral approach also highlights the importance of entrepreneurship as an engine of economic and social development in Finland.

The leading ministry in entrepreneurship policy is the Ministry of Economic Affairs and Employment. Therefore, it is understandable that the main focus of entrepreneurship policy is not in EE as such but in measures focusing on more instant measures to support the development of new businesses and economic growth. However, to start with in early 2000's entrepreneurship and enterprise education were high in the entrepreneurship policy agenda to raise awareness of entrepreneurship and to improve entrepreneurial attitudes and skills. Ever since Ministry of Education and Culture has a long tradition of introducing entrepreneurship to educational institutions at all levels. This is done by integrating entrepreneurship to other subjects as civic competences in the curricula. Given this entrepreneurship as such is not on the focus, although many of its facets become implicitly introduced in the education. Due to the longstanding work at primary and secondary schools the entrepreneurial awareness and attitudes of the students entering to universities have improved during the years. Therefore, the playground for university level EE endeavors has also changed.

Finnish universities have special foci in promoting entrepreneurship through their core tasks in research, education and social interaction as described in earlier sections. The focus is on developing knowledge-based academic entrepreneurship and innovations and the multidisciplinary of the universities is considered as an asset. EE activities are research-based although implemented in close collaboration with stakeholders and embedded in entrepreneurial ecosystems. Student-led entrepreneurship societies have their important role to play and these extra-curricula activities are usually somehow integrated to entrepreneurship studies.

Such governmental push and systematic and long-term measures of the Ministry of Education and Culture have encouraged universities to introduce and increase their offerings in EE and other activities to promote entrepreneurship. Next, we showcase an example of an entrepreneurial university in Finland, University of Turku, which demonstrates the core characteristics of entrepreneurial university and EE at the level of one educational institution. Many similar characteristics and activities are found also in other Finnish universities.

Example: University of Turku (UTU) – Entrepreneurial University⁵

The Entrepreneurial University strategy was adopted at the University of Turku in 2015. The Entrepreneurial University strategy with related objectives, action plans and activities for future steps was prepared by the multidisciplinary task group consisting of professors, teachers, researchers and students. In the following year the major elements thereof were integrated to the whole University strategy 2016-2020 to serve as a route map for the University of Turku to strengthen its profile as an Entrepreneurial University.

Consequently, the strategy for Entrepreneurial University focused on strengthening entrepreneurial attitudes and working practices supporting entrepreneurship within the university. The concrete actions were derived from a Guiding Framework for Entrepreneurial Universities⁶ which is aimed at the European universities and higher education institutions looking for advice and ideas for the management of institutional and cultural change (OECD and European Commission, 2012) that was also focused on in the University of Turku. In the UTU strategy entrepreneurship is promoted mainly through the dedicated policy programme “*A university for Entrepreneurship*” which incorporates goals for enhancing entrepreneurial attitudes, behaviour and culture across UTU to strengthen UTU as an academic and societal influencer. Furthermore, UTU with its multidisciplinary expertise is a partner in business and working life and, thus, present in the regional entrepreneurial ecosystem (e.g. Turku Science Park Ltd, the start-up community SparkUp and student-led entrepreneurship society Boost Turku). The programme included various measures with implementation schedule and responsible actors (such as rectorate, deans, staff members and students). The measures acknowledged the differences of the needs and approaches in faculties and therefore emphasized faculty embeddedness and multi-faculty collaboration. From the very beginning it was decided that the strategy needed to be guided top-down but implemented bottom-up by the faculties. The entrepreneurial university has been coordinated by two designated Programme

⁵ Both of the authors have been involved in implementing the Entrepreneurial University of the University of Turku. The first author chaired the initial Entrepreneurship strategy process in 2015 the outcome of which was the Entrepreneurial University Strategy of the UTU. In addition the description of the practices are based on the confidential Self-evaluation report of the University of Turku prepared for the Entrepreneurial University Accreditation, which was awarded to the UTU in 2022 for its achievements in the field of entrepreneurship and entrepreneurial activities.

⁶ Areas to be covered according to the Framework: 1) Leadership and governance 2) Organisational capacity, people and incentives 3) Entrepreneurship development through teaching and learning 4) Pathways for entrepreneurs 5) University – business/external relationships for knowledge exchange and 6) The entrepreneurial university as an international institution. (OECD and European Commission, 2012.)

Managers: one with the focus on EE, and other with the focus on innovation services. They collaborate closely with the faculties and external stakeholders. Moreover, UTU has nominated entrepreneurship champions and innovation scouts for each faculty.

Next, some exemplary measures are presented to demonstrate the ways in which UTU 'has practiced' entrepreneurial university. University faculty deans are responsible for implementing the strategy and ensuring that students are offered opportunities to participate in EE. UTU offers variety of **entrepreneurship studies for students'** despite of their study programme (see also University of Turku description in the section Internal development of the EE in HEIs). All students have a possibility to take individual courses on entrepreneurship or study entrepreneurship as their minor. Particularly minor degree module had become increasingly popular with increasing demand from other faculties. Business students can select entrepreneurship as their major at Bachelor and Masters' level and even defend their PhD in entrepreneurship. Some dedicated courses have been designed to support students from different faculties to study entrepreneurship in action in a multidisciplinary setting:

- *The Intoa! Lean Business programme* provides a new type of research and commercialisation tool for collaboration with companies. In the programme, a multidisciplinary product and business development team – consisting of UTU students and researchers – ideates, conceptualises and tests new business concepts for the client company.
- *The Startup!* course is an 18-week long, practice-based course organised jointly by three HEIs and a junior achievement (JA) programme. During the course students work in multidisciplinary teams and craft business ideas, test suitable business models and set up operating businesses that exploit the business ideas in real markets.
- *The entrepreneurship for research professionals* course is targeted to doctoral candidates in the UTU. It fosters multidisciplinary and the cross-fertilisation of expertise among the candidates. The 10-hour workshop follows the lean startup method and introduces the participants to the process of teambuilding, working with and validating the problem, interacting with the (potential) customers to get early feedback, developing the business model and communicating one's idea to different audiences (through pitching). The course is run as an intensive, experiential learning workshop.
- *Business essentials for scientists* is a joint doctoral course for young researchers at the University of Turku and the Åbo Akademi University. The contents of the course

include starting a company, pitching, financing a startup, intellectual properties, technology/knowledge transfer, working outside the academic sector and marketing academic expertise.

School of Economics has also launched *Entrepreneurship in Residence (EiR) programme*, where entrepreneurs are committed to take part to faculty's activities as guest lecturers, experts and advisors for example. EiR is a means to bring entrepreneurs to the classroom and familiarise students with a real life of an entrepreneur and vice versa. Moreover, the *Innovation and Business Creation (IBC) study module* provides students with fundamentals of new venture creation and business development and it is targeted to master level students at the Faculty of Science and Engineering. In addition to dedicated entrepreneurship courses, UTU provides **entrepreneurship-related training for its educators**, which is an important mechanism in facilitation of EE. The course "*Entrepreneurship and entrepreneurial behaviour in the University education*", for example, aims to support the integration and adoption of entrepreneurial pedagogies and an entrepreneurial curriculum, particularly in non-business disciplines.

There are also other concrete ways to **encourage individual staff members, teachers and researchers** to behave entrepreneurially and develop their entrepreneurial knowledge and skills. In order to showcase entrepreneurial achievements of the staff UTU has rewarded annually the *Intoa! Entrepreneurial Act of the Year* (€30 000). Annually two dedicated Entrepreneurship Days are organized around the Intoa! Entrepreneurial Act of the Year Award to launch it and to celebrate the achievements. Additionally, in 2019 the University launched a small funding for student-initiated entrepreneurship projects in order to support student activities.

The UTU has designed **an entrepreneurial path** to enhance the entrepreneurial potential of UTU students and staff members. The entrepreneurial path comprises education, training and support services available both in the UTU and in the local entrepreneurial ecosystem. The UTU promotes different services, such as start-up advisory services, co-working spaces and local governmental business support offices in the region, to guarantee a versatile environment for academic entrepreneurship. The entrepreneurial path and research commercialization processes are further supported by a variety of internal guidelines and instructions which help assessing, protecting and commercializing innovations, expertise and skills within the UTU.

As a result, the UTU has been able to ensure that students from all faculties have a possibility to attend at least some entrepreneurship courses. The participation in EE is mainly voluntary based on the interest of the students. The majority of the students still come from the School of Economics (business school) or other fields where entrepreneurship is incorporated into the degree programme. Furthermore, students participate increasingly to the student-led extra-curricular activities, such as Boost (Entrepreneurship society) which are impactful forums for students to acquire entrepreneurial skills in action.

University level support is important in gaining legitimacy to EE and related activities. Despite of long historical roots in entrepreneurship research and education in the School of Economics particularly and demand that stemmed outside the School of Economics, incorporation of EE and related activities is challenging. Faculty members in different faculties perceive entrepreneurship very differently. We have noticed that for example Faculties of Medicine, Science and Technology are more focused on developing business ideas and commercialisation of research findings, whereas the Faculty of Humanities are interested in the employability of the students. It is understandable that despite of university level strategy in entrepreneurship, core emphasis of faculty activities is in the subject area and obviously entrepreneurship is considered only as a complementary topic or skill. Therefore, the individual interest defines how much room entrepreneurship receives during the studies and at work. Furthermore, the strategic interest of the UTU in entrepreneurship changes over time shaping the course offerings and individual interests.

The UTU example of an entrepreneurial university showcases many features that characterize EE in Finnish universities. Students have become increasingly interested in EE – their participation to different types of entrepreneurship programmes and courses as well as extra-curricula activities has increased. This motivates also the faculty members and educators to further develop their EE competences and offerings as highlighted also by the researchers (Bechard and Gregoire, 2005; Neck and Corbett, 2018; Ilonen, 2021). Student-led entrepreneurship societies seem to be active in all cities with university campuses and related inspiring learning experiences and numerous start-ups created encourage students and businesses to engage with these activities (Pittaway et al., 2010; Brush, 2014). Indeed, businesses are also becoming more interested in collaborating with universities and different programmes to enhance such collaboration are being designed, such as Entrepreneurs in

Residence in the University of Turku. EE is also closely connected to entrepreneurial ecosystem, including governmental support agencies, associations, businesses etc. Hence, EE does not flourish in a vacuum but in a close collaboration with other entrepreneurial-minded actors. Furthermore, entrepreneurship studies reflect the changes in the society as the topical themes such as responsibility and sustainability have been integrated to many entrepreneurship courses and programmes (Lourenço et al., 2013). Some of the programmes or courses may also be targeted and accommodated to special target groups or disciplines, such as entrepreneurship for life-sciences or humanities.

There are also a variety of challenges for the universities to tackle in order to perform better in EE. Perennial shortage of resources and competences of the faculty members pose a challenge to universities (Liguori & Winkler, 2020). There are some very competent and enthusiastic pioneers in the field of EE, but the numbers are still quite modest. Overall, the skills and competences of the faculty members vary significantly. Furthermore, the organization of entrepreneurship programmes is spread across universities and the faculties without coordination implying that it is difficult to benchmark and learn from others. There are some national and regional competence or support centres to provide advice for those interested. Many universities have also dedicated entrepreneurship support services as well as training for staff and potential entrepreneurs. It seems that those interested have access to these services but the major challenge is a limited number of interested ones, and entrepreneurship awareness raising across university faculties is, thus, needed.

EE suffers from some misconceptions and strong pre-set assumptions which challenge EE. For some the word entrepreneurship is equivalent for profit making businesses and therefore they may wish to remote themselves from it. Similarly, for some entrepreneurship implies negative memory footprints from the great depression in 1990's when entrepreneurship was introduced as a remedy to a poor employment situation. Later the notion of opportunity-driven entrepreneurship has encouraged universities to support knowledge-based, academic entrepreneurship which relies on one's competences, expertise and scientific research. On the other hand, some may understand entrepreneurship as any skills and competences needed in working life implying that entrepreneurship is a synonym for employability. To put it bluntly, entrepreneurship can be narrowly understood as a money-making machine or broadly as anything related to working life skills. This demonstrate the need to critically discuss and understand how EE is understood and what it is that EE is expected to deliver in different

university settings. Also, the downsides need to be discussed and taken into consideration (Bandera et al., 2020; Berglund et al., 2020; Shepherd, 2019). All these assumptions, in good and bad, influence the ways in which entrepreneurship is understood and appreciated and also the ways in which it becomes accepted as a part of university curricula and other activities.

5. Toward higher quality EE

EE in Finland has evolved over time reflecting the economic and societal changes. Early roots were found in Business Schools and the focus was on educating economic issues. Later EE as such started and expanded in the 1990's and 2000's when the concept of enterprise education emerged. In the university setting the development of EE has implied the evolution from early awareness raising to expansion, when an increasing number of universities introduced at least some EE courses and a possibility for their students to familiarize with entrepreneurship. Currently all universities offer some courses on entrepreneurship, but it seems that a shift in their current and future offerings is already taking place. Based on the information gathered for this chapter we anticipate at least three alternative futures for EE in Finnish universities. We can already identify steps to the alternative futures, and suggest that different universities may diversify in terms of EE and follow different paths.

Running down dedicated entrepreneurship programmes

Some universities run down the dedicated entrepreneurship programmes and integrate the resources to other related disciplines. This may be relevant in business schools particularly, where the collaboration with other business studies (such as marketing and management and organization) is evident and a joint playing field may be easily found in the field of innovation, for example. However, this may imply that the core of entrepreneurship research gradually deteriorates and fades away posing challenges to EE.

Integrating entrepreneurship to new topical themes and societal challenges

Some universities introduce other topical themes and phenomenon such as responsibility, sustainability, and digitalisation to EE. This is done to bring new flavours to EE and entrepreneurship research. Such phenomenon-based approach may be more impactful in addressing the great challenges in the society although may lose some focus on entrepreneurship.

Strengthening entrepreneurship studies with a multidisciplinary approach

Some universities continue to invest on the core of EE and integrate the core to other disciplines so that an increasing number of students get access to entrepreneurship studies. This implies that EE endeavours need to be applied to different disciplinary needs which requires multidisciplinary collaboration and poses both challenges and opportunities for actors involved. The approach broadens the understanding of entrepreneurship and gives new avenues for entrepreneurship research and related EE endeavours.

There may be also other future alternatives that we were not yet able to identify in the Finnish context. We are not suggesting that any of these alternatives were better or worse than the others – they are just different. It is understandable that universities design their own strategies and critically assess also how entrepreneurship fits to the overall strategies. We do suggest that it is hard to enhance EE in the university context if it is not supported by university strategies and top management. Even if these basic requirements – strategy and management – were in place, it takes joint efforts and enthusiasm to practice EE in the university setting. The examples presented in this chapter demonstrate that EE have room and a role in the Finnish university sector although critical assessment is always needed. Indeed, educators need to bring critical and alternative perspectives to EE and not only teach entrepreneurship without pushing students to criticality and reflexivity (Berglund and Verduijn, 2018). In order to be viable, EE needs to evolve during the times and find new ways of thinking and getting access to wider audiences. It is a joint and multidisciplinary effort to work for a more sustainable and inclusive future of EE.

Acknowledgements:

The first author would like to acknowledge the financial support provided by the NordForsk NCoE program 'NordAqua' (#82845).

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University of Eastern Finland, <https://www.uef.fi/en>

University of Jyväskylä, <https://www.jyu.fi/en>

University of Lapland, <https://www.ulapland.fi/en>

Lappeenranta University of Technology, <https://www.lut.fi/web/en/>

University of Oulu, <https://www.oulu.fi/en>

Hanken School of Economics, <https://www.hanken.fi/en>

University of Arts, <https://www.uniarts.fi/en/>

Tampere University, <https://www.tuni.fi/en/about-us/tampere-university>

University of Turku, <https://www.utu.fi/en>

University of Vaasa, <https://www.uwasa.fi/en>

Åbo Akademi University, <https://www.abo.fi/en/>

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KuopioES, <https://www.facebook.com/KuopioES>

JoES, <https://joensuu.es.fi/>

JES, <https://www.jkles.fi/>

LaplandES, <https://www.laplandes.fi/>

LUTES, <https://lutes.fi/>

OuluES, <https://oulues.com/>

HankenES, <https://www.hanken.es.org/>

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SparkUp, <http://www.sparkup.fi/en>

TAT, <https://www.tat.fi/>

Turku Science Park Ltd <https://turkubusinessregion.com/en/>

YES Network, <https://yesverkosto.fi/en>