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Römer-Paakkanen, Tarja (2021). Implementing JA Junior Achievement Company Program for Vocational Colleges in SENSationalSTEM project. HHBIC 2020, 17–18.11.2020, Online. <https://esignals.fi/research/en/2021/02/15/implementing-ja-junior-achievement-company-program-for-vocational-colleges-in-sensationalstem-project/#e3946ea5>

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Please cite the original version:

Römer-Paakkanen, Tarja (2021). Implementing JA Junior Achievement Company Program for Vocational Colleges in SENSationalSTEM project. HHBIC 2020, 17–18.11.2020, Online. <https://esignals.fi/research/en/2021/02/15/implementing-ja-junior-achievement-company-program-for-vocational-colleges-in-sensationalstem-project/#e3946ea5>

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Published : 15.02.2021

How to cite:

Römer-Paakkanen, Tarja (2021). Implementing JA Junior Achievement Company Program for Vocational Colleges in SENSationalSTEM project. HHBIC 2020, 17–18.11.2020, Online.

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HHBIC 2020

Implementing JA Junior Achievement Company Program for Vocational Colleges in SENSationalSTEM project

Abstract

In this paper we introduce an action research which is part of SENSationalSTEM project. The overall objective of the project is the increased entrepreneurship of young people in Estonia, Finland and Latvia with a specific focus on SEN-students in the field of STEM-based entrepreneurship. The project provides SEN-students with the possibility to establish student companies and create international teams, which can serve as a basis for their future cooperation and business partnerships within the Central Baltic region.

It is important that obtaining and mastering STEM skills SEN students provide themselves with vast career opportunities that technology holds. Thus, the project provides them with competitive advantage to be economically successful, being as an entrepreneur or finding a job with great added value in STEM-areas.

The planning process of the project started in April 2020 and it continues in autumn, the pilot education programme with the students starts in February 2021. In the pilot student programme we are going to implement the Finnish JA Company programme that supports the objectives of entrepreneurial attitudes, working life skills, and personal financial management of vocational college students.

We are implementing the action research method (AR) when planning and piloting the educational programme for the SEN-students in vocational schools of the participating countries. This is an ongoing project and also the action research process is just in its starting point so we do not have any results to show in this paper.

Keywords: *Entrepreneurship education, Entrepreneurship skills, Work life skills, Action research, Junior Achievement Programme, SENstudents, STEM fields*

1. Introduction

SENSationalSTEM project aims to develop cross-border entrepreneurship of students with special educational needs (SEN) in the field of science, technology, engineering and mathematics (STEM). In SENSationalSTEM project, a curriculum is created to encourage students in entrepreneurship. The young Finnish, Latvian and Estonian students will develop business ideas in cross-border teams in boot camps. The emphasis will be on the field of STEM.

In SENSationalSTEM project we will implement the JA Company Programme for vocational and Upper Secondary Schools (figure 1). The JA Company Program is a study program offered by JA Finland (Nuori Yrittäjyys NY), which is part of the international Junior Achievement (JA) network. Today, the umbrella organization operates in 113 countries of six continents. Working in over 100 countries, JA Worldwide equips young people with the employment and entrepreneurship skillsets and mindsets they need to succeed. By building abilities and nurturing self-belief, JA prepares youth for the future of work, ensures they have the tools to be financially capable adults, and teaches them to think entrepreneurially. Supported by nearly half a million volunteers, and reaching more than 12 million students each year, JA is one of few organizations with the scale, experience, and passion to build a brighter future for the next generation of global innovators, entrepreneurs, makers, and managers.

In this paper the focus is in introducing the action research project in which we are going to implement the JA Company programme to encourage SENstudents in vocational schools to entrepreneurship in STEM fields.

2. JA Finland's Company programme for vocational schools

JA Finland's programs form the JA Path of Entrepreneurship Education, which offers collaboration opportunities to all grades from pre-school to universities. JA Finland provides pre-made study materials for all programs and support in using these materials.

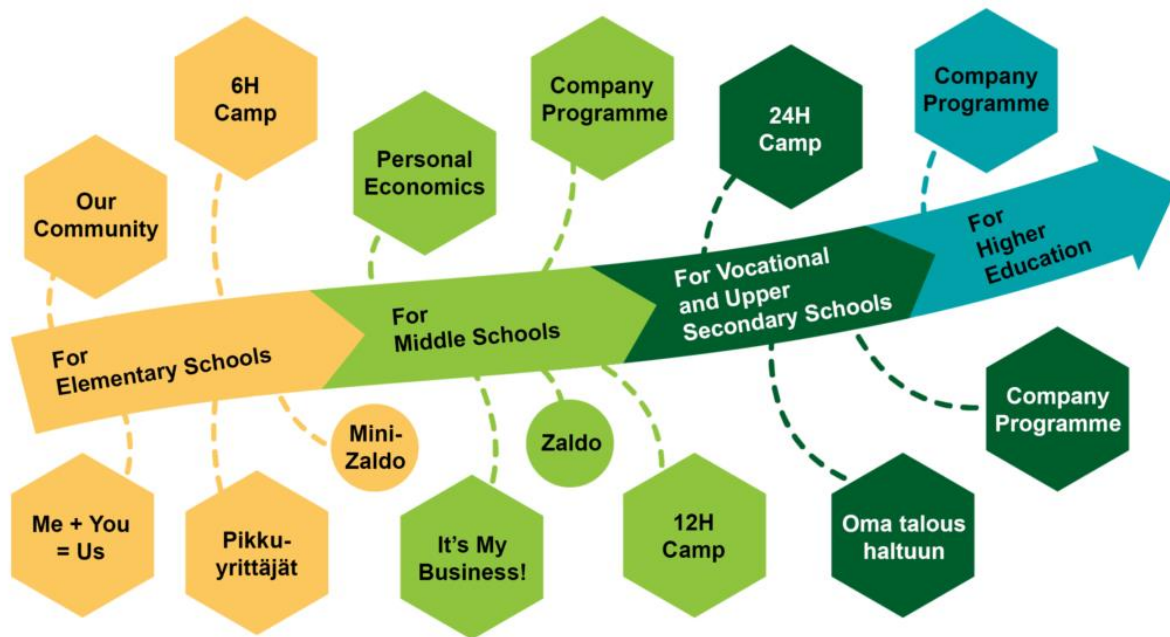


Figure 1 JA Entrepreneurship Education Timeline(JAFinland)

The JA Company Program has been in use in Finland since 1995. JA Company Program is one of the most recognized entrepreneurship education programs in Finland with yearly participant number being over 4 000 students who set up more than 1 500 JA companies. The JA Company Program is available to upper comprehensive schools, secondary education establishments, and higher education institutions.

JA Finland provides programs that support the objectives of curriculums for reinforcing the entrepreneurial attitudes, working life skills, and personal financial management of children and young people from pre-primary to higher education – learning by doing. Each year, the best Finnish JA companies from the regional semi-finals are invited to participate in the final. The final is the largest entrepreneurship competition for young people in Finland, and the winners get the chance to represent their country in the European Championship. (JA Finland 2020.)

In the program, the participants establish, alone or as part of a group, a JA company that operates using real money. The JA companies are not considered actual businesses, and thus do not have business IDs. The JA companies are not registered with the Finnish Patent and Registration Office (PRH) and the operation of the JA company is not considered economic activity. If the JA company sells products or services during the program, the generated income is considered personal income for the students. The JA companies are not taxable for VAT purposes if their turnover remains below 10,000 euros. The JA company in itself does not pay taxes, and instead the revenue generated by the company is divided amongst the members of the company as the operation is wound down. The divided revenue constitutes taxable income for the members, which must be reported on the personal tax return under other income.

The program connects the theoretical information included in the curriculum for upper secondary education with practice through genuine situations. The program offers versatile opportunities for expanding working life skills, developing an entrepreneurial attitude, gaining a wide-ranging understanding of entrepreneurship, and for creating cross-curricular study modules. The program provides vocational education teachers a turn key solution for entrepreneurship education.

The program includes for example competitions, a national teacher network, and the Twid learning platform. The registration fee is 25 euros per participating student. Program and all of its material are available in Finnish, English and Swedish.

The contents of the program take into consideration the general learning objectives for vocational education and it provides an excellent tool for completing the Planning business operations and Operating within a company vocational units. The students learn by actually working as a member of their own company. In the Ministry of Education and Culture's enterprise education policies (2017), the JA Company Program was identified as a tool for implementing entrepreneurship education in the upper secondary level in accordance with the new curriculums.

2.1 JA Company Program process and learning outcomes

The JA Company Programme for vocational college students has four steps that consist of altogether 26 modules.

Step 1: Introduction to entrepreneurship, skills, and business idea	1. Welcome to the Program 2. Introduction to Entrepreneurship 3. Competence 4. Team 5. Finding a Business Idea 6. Modeling a Business Idea + circular economy as extra
Step 2: Launching your company and refining your business idea	7. Name and Logo 8. Starting a Business 9. Business Plan 10. Marketing 11. Digital Marketing 12. Social Media Marketing 13. Introduction to Finance 14. Cost and Profitability Accounting 15. Budgeting & Bookkeeping 16. Taxation 17. Risks and Safety + Pitching and presenting as extra
Step 3: Monitoring, developing, and reporting your business operations	18. Digital Marketing 19. Social Media Marketing 20. Introduction to Finance 21. Cost and Profitability Accounting 22. Budgeting & Bookkeeping 23. Taxation 24. Risks and Safety 25. Sales and Customer Service
Step 4: Winding up your company, evaluations, and the future	26. Conclusion of the Program

Table 1 The steps and modules of JA Company programme for vocational college students(JA Finland 2020).

The targeted learning outcomes of JA Company program concerning business skills are:

- The student recognizes the requirements of entrepreneurship and is able to evaluate their own strengths and areas that require development.
- The student develops their entrepreneurship skills, which include sales, teamwork, problem solution, communication, and public speaking, among others.
- The student builds cooperation networks that can further their business operations.
- The student recognizes and evaluates their operation within the company as part of a team.
- The student is able to plan the business operation of the company.
- The student is able to use tools related to the planning of business operations and to draw up the documents related to establishing a company.
- The student can create a business model and plan to support their idea, as well as develop them during the operation.
- The student understands the basic principles of business and develops the operation of the company.

(JA Finland 2020.)

It is important to notice that either the SENSationalSTEM project or the JA Company programme do not aim just teach the business skills and creating the new businesses but they both aim to encourage the students to find their strengths, to learn team work, to learn to take responsibility of their own actions, to find their own path in work life and in the society etc.

We will use learning-by-doing pedagogy (i.e. collaboration and mutual experience acquired through action) and entrepreneurial learning pedagogy (i.e. curiosity, risktaking and passion and ownership of the mutual project).

2.2 Program Implementation, teaching materials and teacher training

NY/JA trains the teachers to use the program and the provided learning materials. Thus, specific experience of the subject matter is not required. The program provides an excellent tool for working with networks of the surrounding environments. In Finland the companies run by students are widely acknowledged in national media.

The program includes electronic materials for the teacher and the students. A pedagogical handbook based on Innovation Pedagogy has been created for teachers. The teaching materials for the program can be found on the digital Twid platform. Teaching can be provided as contact instruction or partially as distance learning.

The program also has Ready-made teaching materials (PowerPoint presentations) that are available after the school/teacher registration. There are presentations on:

- A program from the teacher's perspective
- Presentation of the program
- An Introduction to Entrepreneurship
- Competence
- Schedule & Goals
- Team
- Business Idea 1
- Business Idea 2

- Name & logo
- Innovation
- Starting a JA company
- Finance
- Business plan
- Pitching and presenting
- Pitch deck.

The program provides training for teachers to use the program. The monthly training sessions are provided online. Typically, training takes place in Helsinki, but it can also be organized in other areas where necessary. The duration of each training event is approximately 3–4 hours. Training topics are: Using the JA Company Program as part of teaching, Main components and methods of the JA Company Program, Using the Twid platform, Utilizing the JA camps, Minicamp and 24h camp, Circular economy and entrepreneurship game Circula.

3. Methodology

In the project team of SENSationalSTEM-project, we have both practical and research experience in entrepreneurship and entrepreneurship education and also in teaching and coaching SEN students from different projects and different points of views. To generate ideas for developing and constructing the curriculum for the professional development of SEN students and for training them in entrepreneurship, we implemented the action research (AR) methodology and adopted the constructive research approach (CRA).

AR aims to change common practices and solve different kinds of problems. AR involves and activates actors, requiring participation in the research. Also the researchers participate in the process and are part of the everyday action of the organization or team. The researchers bring their own experiences from previous research projects, practices found in other research, and best practice. (Kuula, 1999.) According to Mertler (2012, 14), numerous authors and researchers have proposed models for the AR process. Because this process is somewhat dynamic, models can look different from one another but will also possess numerous common elements. AR models begin with a central problem or topic. They involve some observation or monitoring of current practice, followed by the collection and synthesis of information and data. Many AR processes follow similar steps that include planning, acting, evaluating, and reflecting. One example of this process can be found in Bachman (2001), where he presents a spiral that suggests participants *gather information, plan actions, observe and evaluate those actions, and then reflect and plan for a new cycle of the spiral based on the insights gained in the previous cycle.*

We also follow the CRA proposed by Kasanen, Lukka, and Siitonen (1993) as a specific opportunity for management accounting researchers to engage in problem solutions that are relevant to managers (Labro & Tuomela, 2003). CRA is a problem solving process through which new constructions are created. The new construction of a model, plan, or other procedure can provide a more functional solution to managers in an organization (Kasanen et al., 1993, p. 224). CRA involves seven steps (Kasanen et al., 1993; Lukka, 2000), which we also will implement in this research project (Table 2).

Step Stages in CRA

Stages in this research

1	Find a practically relevant research problem that also has potential for theoretical contribution.	There is a need for helping SENstudents plan and reflect on their professional development and growth in entrepreneurship.
2	Examine the potential for long-term research co-operation with the target organization(s). Both primary parties should be committed to putting significant effort into the project.	All SENSationalSTEM project organisations and the project team members are committed to this development project.
3	Obtain deep understanding of the topic area both practically and theoretically.	The team members have deep pre-understanding of the topic, both from their practical work and from prior research. To gain an understanding of the students' point of view, workshops with the students will be arranged.
4	Innovate a solution idea and develop a problem solving construction that also has potential for theoretical contribution. Conceptualizing the problem area so that useful communication between the parties can take place.	The existing JA Company programmewill be constructed for the use of SEN students in vocational schools in workshops with the project team, the teachersand the students.
5	Implement the solution and test how it works. This is the first level practical test (market test) of the designed construction.	The pilot entrepreneurship course for the SEN students from the participating countries will be arranged.
6	Ponder the scope of applicability of the solution.	Focus-groups, personal interviews and digium inquiry for the piloting partners and test groups are will bearranged.
7	Identify and analyze the theoretical contribution.	After piloting and testing also the theoretical contribution is evaluated.

Table 2. The CRAprocess that will be implemented in this research (modified from Kasanen et al., 1993 and Lukka, 2000)

The first phases of the action research project have the following targets:

1. to collect students' and teachers' first comments and expectations
2. to outline the crucial elements for constructing the entrepreneurship education curriculum for SEN students in vocational schools in Finland.

4. Results and impact of the project

This is an ongoing project and also the action research process is just in its starting point so we do not have any results to show. But we have reflected some results from previous research made on JA Worldwide's and from JA Finland's Company programmes and based on those results we have the confident that also our actions will make some good impact on our piloting students' competencies and skills on the future work markets.

According to an impact report (JA Worldwide 2019), cultivating an entrepreneurial mindset through JA's entrepreneurship programs, students not only create real companies with real products and services, but also learn to overcome adversity and rise to the challenges that they face. JA students also show time and again that they're interested not only in improving their financial situations but

also in improving the world. JA's experiential learning also gives young people the opportunity to develop skills that are critical to employment success, including – but certainly not limited to – STEM and digital-literacy skills. In addition, JA alumni attain degrees in higher numbers than non-JA students, using traditional educational paths to further build skills, unlock the imagination, and open a world of opportunities.

Extracts from the Finnish JA program's primary and secondary feedback survey averages from 2013 to 2018 (N:2962) the students stated that:

- I learned how to take responsibility 82 %
- I understand the importance of an entrepreneurial attitude 77 %
- My own initiative increased 74 %
- My teamwork skills improved 68 %
- The program provided a realistic experience of entrepreneurship 59 %
- I understood the value of my work 58 %
- I learned how to use money 55 %
- The program strengthened my employability skills 54 %
- I plan to start a company after the program 12 %

In Johansen's (2018, 7) study the teachers, students and parents in all the countries mentioned a wide range of learning outcomes of JA Company Program, such as knowledge (how to start and run a company); generic skills (creativity, conflict solving and presentations), and attitudes (school motivation, responsibility, self-efficacy and self-confidence). Both students and teachers also mentioned that a by-product of the process, was more students coming to understand the usefulness of the other subjects that they were being taught. In their report (2018) Suonpää and Römer-Paakkanen concluded that that programs like JA Program provide the students a learning environment that enhances their general wellbeing: Work life and economic skills (standard of living), communication and relationship skills (sense of community) and entrepreneurship competencies (meaningfulness and self-realisation).

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