ENRI - Draft Research Report

Innovation Clusters for Entrepreneurship Education

A Short Summary of the Main Findings

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The Innovation Cluster for Entrepreneurship Education (ICEE) is a multi-country research project and field trials on the impact of entrepreneurship education programmes, such as mini-companies in schools.

Funded by the Erasmus+, this policy experimentation project is led by JA Europe in collaboration with:

- Ministries of Education in Estonia, Finland, Italy and Latvia plus Flanders Innovation and Entrepreneurship (representing the Ministry in Flanders, Belgium);
- three research institutes (Eastern Norway Research Institute, The Foundation for Entrepreneurship - Young Enterprise Denmark, Faculty of Economics in Osijek, J.J. Strossmayer University),
- five national JA organisations (in Belgium, Finland, Italy, Estonia, and Latvia).

This report presents a short summary of the main findings of the quantitative and qualitative research carried out by the Eastern Norway Research Institute (ENRI) that led the ICEE field trials.

More information: http://icee-eu.eu/

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1. INTRODUCTION

This is a short summary of the main findings of the ICEE project, created for the participants in the final Round Table taking place in Tallinn (Estonia) on 16-17 November 2017. All the findings presented in this document are confirmed, but tables and analyses are not yet finalised for publication. The final report will be released in January 2018. Several scientific articles will be published in 2018 and 2019 to promote specific outcomes of the research.

Considering the positive research indications from previous studies and the widespread use of mini-companies in the European schools, the ICEE project has used this method and the JA Company Programme (CP) as its test-bed. The ICEE project includes both quantitative and qualitative research methods; 25 schools in five countries (Belgium, Estonia, Finland, Italy, and Latvia) took part in the field trials; 12,000 people have responded to the surveys, 150 people have been interviewed individually or in groups, and an unknown number of students have been observed while working with their peers in the mini-companies. The Consortium carried out 96 surveys in total - (4 pre-test + 4 post-test - one for each target group) * 2 school years * 6 languages - from 2015 to 2017, and the responses to these surveys have been combined to 4 datasets (students, teachers, parents, business people).

To document the significance of CP, three groups of respondents are compared:

- students/teachers/parents with CP;
- students/teachers/parents without CP at the same school;
- students/teachers/parents without CP at control schools.

It is possible that CP-participants are different from non-participants in terms of demographic variables which may bring theoretical or empirical reasons to assume that this difference would affect entrepreneurial skills and attitudes. Thus, the analyses also check the impact of independent variables such as gender, immigrant and family background, previous entrepreneurial experiences, etc.

The ICEE research design has advantages compared to previous impact studies. To reduce self-selection bias, the ICEE research distinguishes between students who take part in the CP as a mandatory activity and those who take part in it as an optional activity. It also investigates whether the impact of CP varies according to the position in the mini-company and the data allows an investigation of whether the impact varies according to the time students have spent in the CP.

Different types of analyses are carried out for the results presented in this document. These include linear regression, logistic regression, ANCOVA, multilevel modelling, principal component analyses, tests of internal consistency, various tests of correlations and effect size. The differences between the groups are accepted and presented as likely, when results are significant at 0.01-level (99 % probability for correlation).

In general the data collected through the ICEE research enables so many different types of analyses that the ICEE research can make an important contribution on both understanding the impact of mini-companies and identifying the drivers and obstacles to entrepreneurship education (EE).

The main research questions focused upon in the **final report** are:

Drivers and hindrances to EE	CP impact on students	CP impact on schools and teachers
• What are the main drivers and obstacles for EE? • What motivates teachers and business volunteers to join EE objectives and to continue to embrace them? • Can we identify important support structures needed to achieve higher penetration of EE in schools? • Can we identify success factors of national strategy development and implementation across Europe?	• Will CP-participation in school in the age group between 15 and 19 increase the potential of being an entrepreneur later in life? • Will students who participated in CP have more knowledge and skills regarding establishing their own company? • Will students who participated in CP have higher entrepreneurial ambitions? • Will students who participated in CP improve their school performance? • Is there a connection between students' participating in CP and their motivation for school?	• Did participation in the ICEE project strengthen the schools focus on EE? • Can we identify any change in the relationship between the school and the local community among those participating in the field trial? • What kind of training and follow up is needed to support the teachers? • What kind of tools and methods will teachers find useful for CP implementation?

Table 1: The main research questions

2. EMPIRICAL FINDINGS FROM THE QUANTITATIVE RESEARCH

Students, teachers, business volunteers and parents participated in the ICEE surveys. The research collected data from 12,000 respondents in total. Below is an overview of the gross and net samples together with the response rates for each target group:

	Gross sample	Pre-test		Post-test		Total response rate
		Net sample	Response rate	Net sample	Response rate	
STUDENTS						
Belgium	1050	987	94	740	75	71
Estonia	800	751	94	565	75	71
Finland	1320	1255	95	790	63	60
Italy	1830	1718	94	1007	59	55
Latvia	2500	2297	96	1900	83	76
All countries	**7500**	**7008**	**94**	**5002**	**71**	**67**
TEACHERS						
Belgium	200	178	89	172	97	86
Estonia	160	142	89	119	84	74
Finland	200	182	91	134	74	67
Italy	420	393	94	303	77	72
Latvia	120	108	90	94	87	78
All countries	**1100**	**1003**	**91**	**822**	**82**	**75**
BUSINESS VOLUNTEERS						
Belgium	100	47	47	27	57	27
Estonia	130	100	77	67	67	52
Finland	200	164	82	64	39	32
Italy	70	58	82	41	71	59
Latvia	100	55	55	32	58	32
All countries	**600**	**424**	**71**	**231**	**54**	**39**
PARENTS						
Belgium	550	427	78	309	72	56
Estonia	300	200	67	99	50	33
Finland	750	599	80	261	44	35
Italy	1300	1140	88	682	60	52
Latvia	1500	1152	77	889	77	59
All countries	**4400**	**3518**	**80**	**2240**	**64**	**51**

Table 2: Gross sample, net samples and response rates

This chapter presents a selection of the findings from the quantitative studies. By following the structure of the research questions, it is divided into three subchapters: drivers and hindrances to EE; impact on students; impact on schools and the teachers' experience.

2.1 Drivers and hindrances to Entrepreneurship Education

EE is regarded as an important means for promoting a stronger entrepreneurship culture amongst young people (Stevenson & Lundström, 2001). Both the OECD (Ball, 1989) and the European Commission (2010) argue that EE should be included in the education policies of all countries. Most European countries have some focus on EE and have integrated EE in primary and secondary school (Eurydice, 2016), but it is a long way before Europe reaches its goal of giving all students an entrepreneurial experience before leaving compulsory education (European Commission, 2013).

The survey "Flash Eurobarometer 354: Entrepreneurship in the EU and beyond" from 2014 asked whether respondents had taken part in any course or activity at school relating to entrepreneurship (defined as turning ideas into action and developing one's own project). The EU-average was 23% stating they had, and the proportion was highest amongst younger respondents (34% of 15-224 year olds). Finland was the country with the highest proportion reporting EE (39%) and Italy was among the bottom three countries (16%). Belgium was above the average (28%), and Latvia (25%) and Estonia (22%) were close to the average.

One of the aims of the ICEE project is to analyse what is needed to increase the penetration of EE in European schools. In order to do this, the Consortium began with an analysis of existing national strategies and identified various institutions and actors of relevance, as well as central resources and support structures to increase the distribution of EE[1]. This was followed by the survey asking teachers, parents and business volunteers about their views on drivers and hindrances to EE.

2.1.1 Support structures to increase Entrepreneurship Education distribution

Teachers, parents and business people were presented with this question: *What would you say are the three main bottlenecks to increase the distribution of EE in compulsory school?* The findings can be sorted into "resources available" and "institutions involved".

The resources available is one of the most important support structures for EE. Teachers, parents and business people agree that "lack of funding" is the most important hindrance. All three groups also report "lack of integration in the curriculum/subjects" quite often. Teachers report that "lack of time" is a major obstacle, but parents and business people disagree, and they place "lack of qualified staff" higher up on the list. "Lack of good quality teaching material" is seldom reported by all three groups.

There are also notable cross-country variations. Teachers, parents and business people report that lack of funding is the main obstacle in Italy and Latvia. Teachers in Finland and Belgium consider lack of time to be most important, whilst business people and parents point to lack of funding. Teachers and business people in Estonia point lack of integration in the curriculum, whilst parents report lack of funding.

The other element that makes a difference for a country working on EE is the type of institutions involved and their level of commitment. In general the government formulates the national policy on EE and the teachers and students put EE into practice. Teachers, parents and business people agree that "lack of support from the national government" is the main bottleneck for EE. The three groups also consider "lack of good quality teacher training at universities and university colleges", "lack of support from the local community (business, NGOs)," and "lack of support from the local government/municipality" important factors. "Lack of support from the school management" is considered an important bottleneck among

[1] For further information, see the good practices and the recommendations formulated by the 4 ICEE clusters on National Strategies, Teacher Training, Content and Tools, Assessment (http://innovation-clusters.icee-eu.eu/).

business people, and some teachers and business people report that “lack of support from teachers” is a hindrance. “Lack of support from students” and “lack of support from parents” are seen as minor obstacles.

There are some similarities and differences between the countries. In Latvia all three groups consider “lack of support from the national government” to be an important obstacle. Teachers and parents in Italy also report on lack of support from the national government, whilst business people point to lack of support from the school management. Lack of good-quality teacher training in EE in higher education institutions is considered to be an important factor by teachers and business people in Belgium, Estonia and Finland, whilst the parents point to lack of support from the national government (Belgium, Estonia) and lack of support from the local community (Finland).

Can we identify important support structures needed to achieve higher penetration of EE in schools? *From the point of view of teachers, parents and business people, more support from the national government and from teacher education (universities/university colleges) is needed. Moreover, there must be funding to support the promotion of EE and EE must be integrated in the curriculum/subjects.*

2.1.2 Obstacles for Entrepreneurship Education

People participating in the survey were asked to indicate the extent to which they agree or disagree with a list of statements about obstacles to entrepreneurship education in compulsory school”. Below a short recap of the main findings:

Assessment of students: Most teachers find that most students are positive to EE.

Assessment of teachers: A majority of the teachers and business volunteers agree that “most teachers have inadequate competence in EE” and that “most teachers do not have enough time to engage in EE”. On the positive side, both volunteers and teachers find that most teachers are supportive and believe in the importance of EE.

Assessment of parents: More than half of teachers and parents agreed that “most parents do not have enough time to engage in EE” and that “most parents have inadequate competence in EE”. On the positive side, both parents and teachers find that most parents are supportive and believe in the importance of EE.

Assessment of business people: About half of the teachers and business people agreed that “most business people and entrepreneurs do not have enough time to engage in EE” and that “business people and entrepreneurs are seldom available as volunteers for training and support”. On the positive side, both teachers and business people find that most business people are competent and supportive to EE.

Assessment of school managers: A majority of business people agreed that “most school managers have inadequate competence in EE”, but most teachers disagreed.

Cooperation between school and working life: A majority of both teachers, business people and parents agreed that “institutional cooperation between the formal education system and the labour market is weak”, and a majority of business people agreed that “schools do too little to ensure access to business people and entrepreneurs who can provide training and support”.

Political support: A majority of business people, half of the parents and rather few parents agreed that “the government has not made EE a priority” and that “the local government/municipality has not made EE a priority”. A majority of teachers felt, however, that “there is little funding available for EE”.

Higher education institutions: Half of the teachers agree that “there is a lack of good-quality teacher training in EE” and that “there is a lack of good-quality EE material”.

EE and school curricula: Half of the teachers agreed that “EE is not very well integrated in the curriculum”. On the positive side, few teachers agreed that “there are legislative and/or bureaucratic barriers to make

EE widely available", "that EE teaching methods are generally not considered effective" and that "there is no academic credibility in EE".

According to teachers, parents, and business people, what are the main obstacles for spreading EE in compulsory school? The first challenge is that most teachers have inadequate competence in EE and that there is a lack of good-quality teacher training in EE (in many countries). The second challenge is that most teachers do not have enough time to engage in EE. The third challenge is that institutional cooperation between the formal education system and the labour market is weak, and that business people and entrepreneurs are seldom available as volunteers for training and support. The fourth challenge is lack of funding, and that governments (national, local) in some countries have not made EE a priority.

According to teachers, parents, business people, what are the main drivers for spreading EE in compulsory school? The first driver is that the majority of all relevant groups (students, teachers, business people, and parents) believe in the importance of EE. A second driver is that EE is embedded in school documents/curricula in many countries, and that EE teaching methods are considered effective and academic credible. A third driver is that business people/entrepreneurs are seen as competent in EE, and (some of them) want to push schools to be ensured access so they can provide training and support. A fourth driver is that governments (national, local) in many countries have started to make EE a priority, and that many school managers seem prioritize EE.

2.2 Impact of the JA Company Programme on students

A great number of policy documents present many suppositions about the advantages of EE that have not been the subject of much research. EE is assumed to enable young people to acquire skills in starting and running a business, stimulate their creativity, contribute to the development of self-confidence and collaborative ability, generate motivation and provide additional values for all academic subjects, and for the learning of key competences etc. In a social perspective, EE is assumed to have the potential to increase the number of newly-established businesses in regions/countries/the EU, to increase the number of young people with high abilities and employability, to develop a more creative and innovative population, and to contribute to social cohesion and citizenship (European Commission, 2005; 2013; Volkman et al., 2009).

A key aspect of the research into mini-companies is studies that investigate people's intention to become entrepreneurs, knowledge about business development and the establishment of businesses. But too little research has been carried out on the connections between mini-companies and school motivation, attendance and performance. The ICEE study looks at both generic competencies and more specific entrepreneurial competencies.

This chapter is mainly based on the survey to students. Students with high CP-activity (100+ hours, 35% of the sample) is compared with students with low CP-activity (-99 hours, 15% of the sample), and students with no CP-activity (50% of the sample). Please note that there were no significant differences between the two control groups (students with no activity in the test schools and control schools), and therefore these two groups have been merged to one group "No CP-activity". Moreover, there were few differences between mandatory CP participants and voluntary participants, and thus, a distinction between the groups is seldom needed. The differences in scores between high, low and no CP activity on various measurements such as entrepreneurial skills and key competences are used to estimate the effect of CP.

2.2.1 Self-employment

	Non-Low	Non-High	Low-High	Other overrepresented groups
Knowledge/skills	+	+	+	Boys, entrepreneurial parents
Prefer to be self-employed		+	+	Boys, entrepreneurial parents
Perceived desirability for self-employment		+	+	Boys, entrepreneurial parents
Perceived feasibility for self-employment		+	+	Boys, entrepreneurial parents
Entrepreneurial intention		+	+	Boys, entrepreneurial parents, vocational education

Table 3: Comparing High-CP, Low-CP and Non-CP and self-employment (control for other variables)[2]

Will students who participated in CP have more knowledge and skills regarding the establishment of their own company? A central goal in CP is that students acquire the knowledge and skills about business development and innovative processes. The indicator used is the question: 'Do you have the necessary knowledge and skills to start a new business?' *Compared to those with no CP or low CP-activity, a significant proportion of those with high CP-activity reported that they had business skills. There was also a significant difference between those with low CP-activity and no activity.*

Will students who participated in CP become aware of the possibility of becoming an entrepreneur? A central goal in CP is that students become aware of the possibility of becoming an entrepreneur. The indicator of career preferences is the question: 'If you could choose between being self-employed and being an employee, what would you prefer?' *Compared to those with no CP or low CP-activity, a significant higher proportion of those with high CP-activity reported that they preferred self-employment.*

Will students who participated in CP have higher entrepreneurial ambitions? Perceived desirability refers to the degree to which one feels attraction for a given behaviour, and it is assessed by four items: "I want to be my own boss"; "I like the idea of having my own company"; "I can't imagine working for somebody else"; "Running my own company would be personally satisfying". The scale structure is satisfactory. *Those with high CP-activity had significant higher scores compared to those with no CP or low CP-activity on perceived desirability for self-employment.*

Perceived feasibility is defined as the degree to which people consider themselves personally able to carry out certain behaviour. Three items are used to measure feasibility: "I know what it takes to start my own company"; "If I started my own company, I am sure it would be successful"; "I have enough self-confidence to start my own company". The scale structure is satisfactory. *Those with high CP-activity had significant higher scores compared to those with no CP or low CP-activity on perceived feasibility for self-employment.*

[2] **+** = positive significant correlation at 0.01-level, **-** = negative significant correlation at 0.01-level, **blank** = not significant

Will CP participation in school in the age group of 15 to 19 increase the potential of being an entrepreneur later in life? Entrepreneurial intention is a significant predictor of someone becoming an entrepreneur. Four items are included in the measure of entrepreneurial intention: "I am determined to create a company in the future"; "I have very seriously thought about starting a company"; "I intend to start a company someday"; and "I will make every effort to start and run my own company". *Those with high CP-activity had significant higher scores compared to those with no CP or low CP-activity on entrepreneurial intention.*

2.2.2 Transversal entrepreneurial competences

	Non-Low	Non-High	Low-High	Other overrepresented groups
Project management	+	+	+	Natives, entrepreneurial parents
Perceived self-efficacy		+	+	High educated parents
Problem solving		+	+	
Team work		+	+	High educated parents

Table 4: Comparing High-CP, Low-CP and Non-CP and entrepreneurial competences (control for other variables)[3]

Entrepreneurial competencies can be understood as a specific group of competencies relevant to the exercise of successful entrepreneurship. But, entrepreneurial competencies can also be understood as transversal and applied to all spheres of life. This is the way the European Commission is suggesting to consider entrepreneurship. As a competence it is defined as "acting on opportunities and ideas and transforming them into economic, cultural, or social value for others" (European Commission, 2016; FFE-YE 2012).

Will students who participated in CP have higher scores on transversal entrepreneurial competences? Yes, all results go in that direction.

The first scale is "project management". Project management is assessed by four items, starting with "I am able to": "create a project plan"; "set project goals", "structure tasks in a project"; and "delegate various tasks/activities". The scale structure is satisfactory. *Those with high CP-activity had significant higher scores compared to those with no CP or low CP-activity on project management.*

The second scale is "perceived self-efficacy". The five items are: "I can deal efficiently with unexpected events"; "Thanks to my resourcefulness, I know how to handle unforeseen situations"; "I can solve most problems if I invest the necessary effort"; "I remain calm when facing difficulties because I can rely on my coping abilities"; and "I can usually handle whatever comes my way". The scale structure is satisfactory. *Those with high CP-activity had significant higher scores compared to those with low CP-activity on perceived self-efficacy.*

The third scale is "problem solving". Ability to solve problems is assessed by five items: "I am good at combining ideas in new ways"; "My thoughts, ideas and actions are often original/new"; "I am good at making routine tasks exciting"; "I like trying new things and activities"; and "I am often able to come up with answers to difficult problems". The scale structure is satisfactory. *Those with high CP-activity had significant higher scores compared to those with low CP-activity on problem-solving.*

[3] **+** = positive significant correlation at 0.01-level, **-** = negative significant correlation at 0.01-level, **blank** = not significant

The fourth scale is “team work”. A team is two or more individuals who must interact to achieve one or more common goals, and the competency to work in a team is central to CP. Team work is assessed by four items: “I am able to work together with other people”; “I am able to actively participate in team work”; “I am good at promoting my own ideas and opinions when working in a group”; “I am good at giving positive feedback when working in a group”; and “I am able to listen to what the others are saying when working in a group”. The scale structure is satisfactory. *Those with high CP-activity had significant higher scores compared to those with low CP-activity on problem-solving.*

2.2.3 Key competences for lifelong learning

	Non - Low	Non - High	Low - High	Other overrepresented groups
Sense of initiative and entrepreneurship		+	+	High educated parents, entrepreneurial parents
Civic competence		+	+	
Mathematical competence		+	+	High educated parents, boys
Oral communication in the mother tongue	-	+	+	High educated parents, entrepreneurial parents
Digital competence		+	+	Boys, academic/technical
Learning to learn		+	+	Girls, entrepreneurial parents
Written communication in the mother tongue				High educated parents
Communication in foreign languages	-			High educated parents,
Cultural awareness and expression				High educated parents,
Social competence				High educated parents, boys
Competence in science and technology				High educated parents, boys

Table 5: Comparing High-CP, Low-CP and Non-CP and key competences (control for other variables)[4]

The development of the entrepreneurial competencies of European citizens and organisations has been one of the key policy objectives for the EU for many years. The European Commission’s Recommendation on key competences for lifelong learning defines key competences as a combination of knowledge, skills and attitudes which all individuals need for personal fulfilment and development, active citizenship, social inclusion and employment. Young people’s key competences should be acquired at the end of their compulsory education and training, equipping them for adult life, particularly for working life, whilst forming a basis for further learning.

[4] + = positive significant correlation at 0.01-level, - = negative significant correlation at 0.01-level, blank = not significant

Key competences are essential in a knowledge society and guarantee more flexibility in the labour force, and they are also a major factor in innovation, productivity and competitiveness. Many of the key competences for lifelong learning overlap and interlock: aspects essential to one domain will support these in another. The transversal nature of key competences makes them essential. In 2006, the European Commission identified a 'sense of initiative and entrepreneurship' as a key competence and in 2016 published a framework describing the distinctive elements of entrepreneurship as a competence.

Will students who participated in CP have higher scores on key competences? There were no differences between the no/low/high-activity group on assessments related to "competence in science and technology", "social competence" and "cultural awareness and expression". As regards "communication in foreign languages" and "oral communication in the mother tongue" those low CP-activity scored lower than the non-participants. However, those with high CP-activity had significant higher scores compared to those with no CP or low CP-activity on "sense of initiative and entrepreneurship", "civic competence", "mathematical competence", "oral communication in the mother tongue", "digital competence" and "learning to learn".

2.2.4 School motivation and performance

	Non - Low	Non - High	Low - High	Other overrepresented groups
Low absence				
Medium/high sickness presence			+	Female Academic/technical
School motivation	-		+	Vocational
School effort	-		+	Female
School performance		+	+	Female, high educated parents, native

Table 6: Comparing High-CP, Low-CP and Non-CP and school motivation, attendance and performance (control for other variables)[5]

Is there connection between students participating CP and attendance at school? Absence from work/school can be based on leave (when a person is allowed to be absent from work because of civic duties, children's sickness, medical appointments, etc), sickness absence (when absence is caused by disease, injuries, or illness), or absenteeism (unexcused absence in the form of truancy, shirking, lateness, etc). *Differences between the groups on absence were non-significant.* Sickness presence (SP) refers to going to work despite illness. There are both positive presence factors (e.g. enjoy work, going to work is beneficial for health) and negative presence factors (e.g. attendance pressure). *Compared to those with low CP-activity, a significant higher proportion of those with high CP-activity reported that they had three or more SP-episodes in the previous school year.*

[5] + = positive significant correlation at 0.01-level, - = negative significant correlation at 0.01-level, blank = not significant

Is there connection between students participating CP and motivation and effort at school? Motivation has been an important driving force of learning and has an impact on behaviour in school. Within the psychological field, it is common to differentiate between intrinsic and extrinsic motivation, and this scale was connected to intrinsic motivation. Four items were included: 'I like to do schoolwork', 'I have great interest in what we learn in school', 'I enjoy going to school' and 'I like to work with most of the subjects'. *Those with high CP-activity had significant higher scores on intrinsic motivation compared to those with low CP-activity. But those with low CP-activity had also lower scores on intrinsic motivation compared to those with no CP-activity*

There are various approaches to school effort, and one viewpoint is that a high degree of school effort is about being committed to school tasks and working hard in various subjects. The effort-scale was related to the process of achieving certain goals and the students' priorities in school and how hard they are willing to work. Four items were included: "I prioritise schoolwork", "I always do my homework", "I work as hard as I can on the subjects", and "I keep working on subjects even if they are difficult". *Those with high CP-activity had significant higher scores on effort compared to those with low CP-activity. But those with low CP-activity had also lower scores on effort compared to those with no CP-activity.*

Will students who participated in CP improve their school performance? The indicator used for school performance is the students' Grade Point Average (GPA) for one school year. GPA is calculated by adding the grade points a student earned and dividing the sum by the total number of subjects taken. *The GPA of students with high CP activity is significantly higher than the GPA of non-participants, among the whole sample and in three of the countries in the study (Finland, Italy, and Latvia). Moreover, about half of the CP teachers report that CP improves school performance among most students.*

2.3 Impact of the JA Company Programme on the school and the teachers

This chapter consists in its entirety of empirical analyses about the impacts of the JA Company Programme for teachers and the school. Little research has been carried out on the impact of participation in EE and a possible change in attitudes towards the use of EE in school. There are some studies about teacher experiences, but no previous study comparing groups of teachers who have taken part in EE with groups who have not. This is a methodological weakness that the ICEE study aims to correct.

CP teachers (about 20% of the sample) are compared to teachers not participating in CP (80% of the sample). Please note that there were few differences between the two control groups (teachers with no CP in the test schools and control schools), and therefore these two groups can stand as one group "No CP-teacher".

2.3.1 Focus on Entrepreneurship Education in the school

Interesting findings come up when investigating whether or not participation in the ICEE project has changed the schools focus on EE. First, the test schools have definitely strengthened their focus on EE through participation in ICEE. Second, answers from CP-teachers at the test-schools and non-CP-teachers are consistent. Thus, all teachers at the test schools find that ICEE has strengthened and developed the focus on EE, and that the school has become much more entrepreneurial.

Most teachers at the test schools agree that their school "has a plan for EE", that "EE is an integral part of the school`s ethos and culture", that "content and methods related to EE are prioritised", and that "there is a leader/leading team that sustains the promotion of EE". Moreover, most teachers at the test schools agree that "teachers are encouraged to engage in EE", that "the importance given to promote EE is widely communicated with the staff and with the students", and that "the school collaborates with local businesses and/or organisations in the delivery of EE". For all these dimensions, the teachers at the control school score much lower.

Almost half of the teachers at the test schools agree that “the importance given to promote EE is widely communicated with partners and the local community” and that “sufficient financial resources are available for EE”. For all these dimensions, the teachers at the control school score much lower.

Most teachers at both the control schools and the test schools agree that “project work is widely practiced”, that “learning by doing and self-organised learning is widely practiced”, that “learning outside the classroom is widely practiced” and that “bringing the real world into the classroom is widely practiced”.

Few teachers at both the control and the test schools agree that “sufficient human resources are available for EE”, that “professional development and training are available for teachers to be involved in EE”, that “teachers are familiar with different concepts and working methods related to EE”, and that “EE activities include most of the teachers”.

2.3.2 Teachers’ attitudes towards Entrepreneurship Education

There are interesting findings when looking into teachers attitudes towards EE.

First, teachers with CP experience had higher scores on some dimensions compared to non-CP teachers. CP teachers more often found that “EE should focus on methods based on real experience”, that “EE should be embedded as a subject in compulsory education”, and that “teachers who have completed their education should be offered advanced training in EE”. Most teachers, and particularly those with CP experience, agree on the importance that students in compulsory school have an education focus on: entrepreneurship, education for entrepreneurship, and education through entrepreneurship.

Second, most teachers (also non-CP-teachers) agree that EE should focus on methods based on real experiences (e.g. mini-companies), that all students should have at least one practical, entrepreneurial experience, and that EE must be prioritised in both vocational and academic schools. But fewer teachers favour integrating EE into existing subjects in compulsory education, and think that EE should be a mandatory part of teacher education.

Third, asked about the applicability of EE as regards subjects, teachers consider EE useful in Economics, Information and communication technology and Social sciences and Technology. It is seen as less relevant in Physical education and Religion/Ethics. There are no differences between the test and the control group of teachers.

2.3.3 Assessment of the JA Company Programme

ICEE is also about assessing the CP and improving the programme. Starting with the CP-teachers, the overwhelming majority report that the goals of CP are clearly defined and articulated, that concepts are explained clearly and effectively, that the CP is an effective teaching tool, and that they are satisfied with the CP as a an educational method. Most students were able to use their skills and knowledge in the CP, felt that their opinion was heard in decisions that involved their work situations, enjoyed working in a team, took pride in completing tasks, and combining theoretical and practical work.

In contrary, only half of the teachers feel that the support from the business volunteer is good enough, that the volunteer role is well defined, and that the teaching material is of high quality. The students agree with the teachers that these aspects can be challenging for the teachers when guiding the students during the whole mini-company experience. In addition, only half of the teachers were satisfied with the teacher training before the programme implementation. During the course of the CP, most teachers declare to be satisfied with the work and support of JA (e.g. trade fairs, competitions, website, guidance throughout the programme implementation, and its role as an intermediary between schools and businesses).

3. EMPIRICAL FINDINGS FROM THE QUALITATIVE RESEARCH

The qualitative study included interviews with students, teachers, headmasters, parents, business volunteers, JA representatives, and government representatives. The study covered many topics, such as hindrances and drivers to EE, preparation and training for the CP, assessment of the CP as a working method, learning process and outcomes for the students and their relation with teachers and mentors. Few specific areas of interest such as teachers' role in the mini-company, impact on students' self-efficacy and the mini-company as a method for students with special needs have been specifically studied.

The qualitative studies covered half of the test schools. In each country one general/academic school and one vocational school was visited in the two years of the study by interviewing a total of 150 people:

Target Group	Number of Interviews
Students	55
Teachers	40
Parents	20
Business Volunteers	20
Headmaster	5
Ministries Representatives	5
JA Representatives	5
TOTAL	**150**

Table 7: Overview of the data collection

This chapter recaps the main findings of the qualitative research by looking at drivers and hindrances to EE, the JA Company Programme experience, learning process and learning outcomes for students and the general experience with the programme.

3.1 Drivers and hindrances to Entrepreneurship Education

The qualitative research also investigated obstacles and drivers for spreading EE in compulsory school. An important point is that factors identified as drivers were often simply the reverse of hindrances. Thus, drivers and hindrances are presented together.

Educational reforms: EE and mini-companies are understood and interpreted in relation to ongoing discussions about modern versus traditional pedagogy. This frame of reference is employed in addressing issues of curriculum, teaching method and assessment method. Many European countries are in the process of implementing comprehensive educational reforms, in practice turning away from subject-oriented learning and adopting a more competence-oriented approach. This way of learning is close to the 'learning-by-doing' approach which lies at the heart of the EE and CP. These reforms may pave the way for spreading EE, but since they take a long time to be implemented they also act as a hindrance. However, in a long-term perspective, the reforms may construct the platform upon which EE can be built.

National strategies: Several informants mentioned that having a national strategy on EE is a main driver for the integration of EE and the CP into the curriculum. If it becomes part of the school curriculum, it is much easier for teachers to implement EE and CP in their respective schools. So educational reforms based on a more competence-oriented way of learning and a national EE strategy are major drivers at the national level. The main actors responsible for these processes are the ministries of education and in some countries also national centres (directorates) of education.

Head teacher: The headmasters plays an important role in promoting and implementing EE and CP in their schools. Much has already been accomplished if school leaders understand the importance of EE and how it can play a role in contributing to a new way of learning. Headmasters serve as important door openers with regard to introducing EE in the school system.

Teacher: Teachers play a crucial role in the implementation and upscaling EE and the CP. Many informants said that if some of the teachers are enthusiastic about EE, their interest could spread to the other teachers as well as to the parents. Furthermore, having access to good teacher training is important. The role of JA organisations on educating and supporting the teachers plays a very important role. By the same token, if the teachers lack sufficient EE training and knowledge and also claim that the time allocated for the CP is too limited, the teachers themselves may become major hindrances.

Students: Students' experience is positive and the teachers and the parents see that EE is making a difference with regard to knowledge, skills and personal growth. Students participating in CP and EE may play the role of ambassadors in relation to the headmasters, the teaching staff and other students. Their enthusiasm depends crucially on whether they get sufficient time for learning and the dedicated support they need. It is therefore important for the students to have at least one person they feel they can ask for help and advice. This person may be the teacher, the mentor or both.

Volunteers: In some of the countries there are regional business networks, like the YES networks in Finland and the regional development centres in Estonia, or institutional agreements, such as the school-to-work exchange in Italy. These networks may serve as drivers with regard to introducing and supporting EE in the school system. Often they supply the schools with mentors, but we also see mentors offering their services at the schools they once attended. Establishing strong links between mentors, schools and the JA organisation may be crucial to successfully implement EE in the school system.

Parents: Although parents felt very satisfied with the practical and non-theoretical way of learning that EE and the CP represent, they also felt uninformed about the big picture, including the learning process and the lack of individual assessment. Parents need more information about the CP and the pedagogical platform on which it lies; only then, can they become more involved and thereby, act as a positive driver for EE in school.

3.2 Improving the JA Company Programme

As a working method, the CP receives very good assessments from teachers and students. There are also some challenges.

Time: CP is a time-intensive working method and teachers and students have worked much longer than the time initially allocated to the CP. One factor is that this requires them to use their free time. Another factor is that the time set aside to integrate CP into the various subjects at school has been too limited. Many teachers have not managed to adopt the method into the curricula of other subjects in a constructive enough manner. It is therefore, important to discuss and eventually expand the timeframe for CP.

Relations between student and teacher/volunteer: The success of the CP is partly dependent on a good relationship between the student and the facilitator. This facilitator can be the teacher, a business volunteer, or both. The most important success factor seems to be that a dedicated person guides and leads the students through the learning processes. In cases where the teachers lack skills and experience, the volunteers assume a more important position. The teacher and the volunteer both seem to fill the functions of tutor and helper, and in general, there is little contact between them. If the teachers are less involved than the volunteers, there may be challenges for the teachers in assessing and monitoring the students' learning process.

Communication with parents: It is important to communicate to parents the educational principles that underline the CP's learning-by-doing method and assessment system. Some parents call for clearer learning goals and assessment criteria. They feel they have little control over what their children must learn, how they learn it and when they learn it, and they ask for more information about these principles of teaching.

3.3 Teacher preparation and teamwork

Training: Among teachers there is a wide range of experience with regard to preparation and training for EE and the CP. In some countries, the teachers have many years of experience, and in other countries the teachers are newcomers to the field. The newcomers felt that they had inadequate training for the responsibility of leading their students in the CP. They had a need to feel competent both in the pedagogical process and in the academic content of the CP, and called for more training. Teachers that had studied EE at university and had received basic CP training (and follow-up courses) from the JA organisation, were particularly confident.

Teamwork: In some of the countries the teachers worked in teams and felt that the mutual support they got from teamwork was a big asset. They emphasised that they divided the work between the team members and that no one was leading the process. Their challenge was to integrate the CP with other subjects at their school and to engage the teachers of these subjects in the CP. In some schools for instance, they successfully involved the English teacher in student companies whose members planned to attend fairs and competitions abroad. But in this regard, there is still much work to do.

3.4 Learning process for students

Progression: The teachers emphasise that through the CP the students have been introduced to a new way of learning. This is project-based learning, where teamwork and cooperation are among the most important assets. 'Learning by doing' is a new approach for most of the students, and the teachers observe a noticeable progression made by the students from the beginning to the end of the school year in terms of handling the many project challenges.

Taking responsibility: The students are content with working independently and taking responsibility, and they claim they learn more that way. The teachers, mentors and parents are of the same opinion. The students describe the CP as more 'real' than any other projects they have been part of, due to the programme's length and time requirements, which enhance authenticity and provide opportunity for trial and error. They learn to take responsibility both for the student company and for their own learning process.

Cooperation with teacher: Learning outcomes depend on the cooperation with the teacher throughout the learning process. When teachers monitor their students closely, we see that the learning process is of higher quality. The teachers also relate to the students in a more respectful way as a result of gaining a closer relationship with the students and following their learning processes. Teachers and students find themselves on more equal terms, with relationships that are more informal and cooperative in nature.

Pedagogical advantages: Some teachers highlight the pedagogical advantages of this way of learning, saying they feel they have gained a greater understanding of their students. They realise the students are knowledgeable, creative and have many good ideas. One of the headmasters had observed a clear difference in how the teachers related to their students, and saw this as one of the greatest impacts of the CP. Other teachers noticed a change in the quality of their relationship and took a new and closer look at the students.

Group process: The students participating in the CP find that they have learned what competencies they have, what role within the company they feel comfortable with and what they can master. They take part in a group process, which is not unique to the CP, but in which they learn to work in a democratic way, with everyone taking part in the discussions and exerting influence. Consequently, they learn valuable communication skills, conflict solving and decision making; although they still need coaching and guidance in these skills from the teachers or business volunteers. The students also learn that they must keep their passions alive and work hard for their mini-company to succeed.

3.5 Learning outcomes of students

Considering learning outcomes of the students, the same results are confirmed across the five countries. Teachers, students and parents mention a wide range of learning outcomes, such as knowledge, generic skills, personal growth, and self-confidence.

Knowledge: Both the teachers and the students point out that the students have gained considerable knowledge about starting and running a company, not only in theory, but in practice. This is concrete knowledge about the different phases of a building a business, from having an idea to implementation, marketing and selling it. The students realised that it takes passion, hard work and long hours to carry out their initial ideas.

Generic skills: In relation to this process, students also learn a number of generic skills. Teachers, parents and students all mentioned such skills as: how to communicate and resolve conflicts within a group, how to present a product (native language and English), and how to handle company finances. For students, a by-product of this process was coming to understand the importance of other subjects they were being taught and consequently, they started paying more attention to other subjects.

Personal growth: This relates to the changing attitudes and the personal growth that the teachers, parents and students noticed. The students have developed new attitudes towards themselves and the other students, having to do with responsibility, courage, patience, pro-activity and independence. These were a few of the character traits mentioned by the informant groups. The teachers mentioned personal gains such as improved confidence and competence as some of the most valuable CP learning outcomes. The parents also witnessed these personal change.

Gender roles: Some teachers could see a certain change in gender roles among boys and girls. In particular, more girls took a leading role in CP. But in terms of what the company should produce or sell, and in the way companies presented themselves, there held mainly traditional roles. Consequently, there seems to be a need to focus more on gender roles in the student companies and to find ways to challenge the traditional gender pattern. National JA organisations can raise the issue in relation to both their teaching and their teaching materials.

3.6 Teachers' experience

Equal footing with the students: Several teachers express that they find it meaningful to be on an equal footing with their students in the cooperative nature of mini-companies. They enjoy learning together with their students. Teachers do not find it problematic not to be the expert. In addition, teachers say that the students can show their individual strengths through CP when the teacher acknowledges and sees the individual. In order to get each student involved, the teacher needs to create autonomous learning environments that build on the students' skills and sense of belonging. The teachers describe how they must support their students by building relationships with and customising assignments for each individual student from the beginning of the school year. The way that CPs are organised will have an effect on whether or not they can get each student actively involved.

Reflection-on and in-action: Organised knowledge sharing can enhance teacher awareness about why they succeed or are challenged by CP work, and how they can change the way they face those challenges. The teachers recount that they find it useful to share positive and challenging practical experiences with other teachers, and to have time to reflect.

Enabling mastery: The students' ability to value and support one another is a cooperation skill that must be learned. It requires the guidance of a teacher. For a teacher to be able to help students to open their hearts and minds, they themselves must first go through a process of self-reflection to identify their blind spots. When teachers practice at really seeing themselves, they simultaneously act as good role models for their students. The way CP is organised is key for the opportunity which allows teachers have to enable mastery, which again contributes to students' personal growth in the work with CP. The teachers have a large amount of freedom and unique possibilities to acknowledge the strengths of students through the CP method, and can affect and raise the individual student's awareness in relation to his or her CP group.

Personal growth: Many teachers find that entrepreneurial skills are direct correlation with the needed life skills, and that all students need to acquire such skills. The most important success factor for CP is the opportunity it provides to the individual students who participate. Participants describe how CP provide opportunities for personal growth through practical knowledge; opportunities that the school otherwise does not provide.

Relationship-building: CP teachers could benefit from having more knowledge about relationship-building. Increased knowledge in this area could enable teachers to reflect upon their own roles and obtain a greater understanding of what impact they can have on students' opportunities to take part. Teachers need knowledge about pedagogic methods that can strengthen cooperation and increase participation opportunities for all students.

School administration: It is important that teachers experience the school administration as a supportive network because teachers have differing backgrounds and motivations for working with CP. Several teachers describe how they experience increased motivation and mastery by having appropriate areas of responsibility when working with CP.