

# PRINCIPALS PROMOTING ENTREPRENEURSHIP EDUCATION: THE RELATIONSHIPS BETWEEN DEVELOPMENT ACTIVITIES AND SCHOOL PRACTISES

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## ABSTRACT

*This study analyses entrepreneurship education and especially the role of principals affecting the practices used in schools. Particularly, we will analyse the relationship between principals' development activities and entrepreneurship education practices. In this study, we argue that school principals have a central role in managing and guiding the development of schools to establish new entrepreneurial practices.*

*Various tools have been provided to assist schools and their management in undertaking development processes to promote entrepreneurship education. As school leaders are in significant role by accepting, enabling and promoting the entrepreneurship education practises in their schools, the analysis focuses on 153 principals working in Finnish general education. We will conduct a survey and make an analysis of the answers. We employ ANOVA and linear regression analysis to study the principals' impact on entrepreneurship education*

*The study results suggest that schools' entrepreneurship practices are affected by the principals' entrepreneurship education development work. This, on the other hand, is strongly affected by the enterprise-related training afforded to teachers and principals. It seems that school size also matters, as the largest schools implement more entrepreneurship education activities than the smaller ones.*

**Keywords:** Entrepreneurship Education, Principal, School Management, School Development.

## INTRODUCTION

This study is about changing the school. A number of tools have been provided to assist schools and their management in undertaking development processes to promote entrepreneurship education (Eurydice, 2016; Johansen and Schanke, 2013; Johansen and Somby, 2015). The development of entrepreneurial schools requires active, intentional measures aimed at introducing different aspects of educational practices, organizational structures and cooperation.

In this paper, we argue that we need to better understand the processes of creating entrepreneurial schools. During the past few years, a number of European countries and regions have introduced enterprising and entrepreneurship education into their national norms (for example, Deakins, Glancey, Menter, et al., 2005; Brunila, 2012; Volery, Müller, Oser, et al, 2013; Eurydice, 2016). While norms and guidelines probably have an effect on schools, the management and development within the schools are likely to be even more effective. It is expected that teachers tend to independently engage, modify and challenge the new ideals and concepts introduced in the educational policy of entrepreneurship education. However, in this

study we focus on principals, who are the central actors modifying and interpreting educational policy in schools.

In this article, we argue that school principals have a central role in managing and guiding the development of schools to establish new entrepreneurial practices. We conduct the study by focusing on principals in general education in Finland<sup>1</sup>. By general education we mean basic education and general upper secondary education where students are on age of 7 to 18 years old. Principals operate as organizational and pedagogical leaders through the arranging of resources, facilitating relationships and highlighting desired models of behaviour (Birdthistle, Hynes & Fleming, 2007; Deakins et al., 2005; Montecinos, Walker & Maldonado, 2015; Tuytens & Devos, 2011). With the analysis of principals, it is possible to find new efficient methods to promote entrepreneurship education.

The leader of a school has had various labels in the literature, such as school manager, school head, head teacher, principal, educational leader, rector, head of school, teaching principal, superintendent of the school, and deputy principal (e.g., Lee & Nie, 2014; Montecinos et al., 2015; Dinham, Anderson, Caldwell, et al., 2011; Samuelsson & Lindblad, 2015; Deakins et al., 2005). These concepts, however, have different connotations related to the tasks or the role of the leading figure. For purposes of this study, we apply the title principal to the person responsible for leading the school.

The study especially targets the Finnish educational system. As such, the study highlights a special case because Finland has had entrepreneurship education included in the national core curricula for 24 years (Ministry of Education, 2009). In this study, entrepreneurship education is considered as a broad phenomenon including actions that aim to promote students' entrepreneurial behaviour, skills, competences and intentions, but also to increase students' understanding of entrepreneurship and its' role in society. (Zhang, 2017; Ramírez-Pérez, Smith, Franco-López, et al., 2015; Assudani & Kilbourne, 2015). In the Finnish curricula for general education, entrepreneurship education is a cross-curricular theme. It is expected to support students in getting familiar with the society and in learning active citizenship and basic building blocks for entrepreneurship and entrepreneurial behaviour (Ahonen & Kinnunen, 2015; Carlgren, Klette, Mýrdal, et al., 2006; Brunila, 2012; Holmgren & Foss, 2005; Johansen, 2014). The national curriculum is drawn up by the Finnish National Agency for Education, EDUFI, operating under the Finnish Ministry of Education and Culture. EDUFI's tasks and organisation are set in the legislation. Its responsibilities include, in addition to preparing the national core curricula, implementing national education policies, developing education and teaching staff and providing services for the education sector. In addition to that, schools make their own curriculums based on the national curricula. Schools' curriculums can include special emphases, for example music, languages and/or entrepreneurship. However, principals as school leaders are responsible for following the national curriculum. (Basic Education Act 628/1998, 1998). Because entrepreneurship education is supported by national norms, we expect that principals are aware of the concept and the expectations set to its implementation.

The purpose of this article is to build new understanding of the entrepreneurship education in schools and especially the role of principals affecting the practices. In many cases, teachers independently use different entrepreneurial methods and tools in their teaching. However, there are certain school level practices whose use is in discretion of principal. For example, is entrepreneurship education included in the annual plan of the school, are on-the-job-training offered for teachers, have the students possibility to participate the entrepreneurship-related work placement, is there school-business partnership, does the school have theme days,

theme lessons or elective entrepreneurship courses on entrepreneurship. Furthermore, it also depends on principal's intention whether he/she brings up entrepreneurship education related topics in teachers' meetings, just to name a few. (Birdthistle, 2007; Cooper, Bottomley & Gordon, 2004; Eurydice, 2016; Frank, 2007; Fuchs, Werner and Wallau, 2008; Garnett, 2013; Gartner, 2008; Gibb, 2002a; 2002b; Honig, 2004; Jones & English, 2004; Lima, Lopes, Nassif, et al., 2015; Solomon, 2007; Frank, 2007; Gibb, 2011; Johansen & Schanke, 2013; Hytti & O'Gorman, 2004; Shepherd, 2004. Ruskovaara & Pihkala, 2013; Finnish National Board of Education, 2004; Onstenk, 2003; Johansen & Schanke, 2013. Imants & De Brabander 1996; Levin 1995; November, Alexander & van Wyk, 2010). In this study, we are focusing on those practises that need principal's decision to embed them in school's practices.

Furthermore, there are certain activities related to principals' own development in sense of entrepreneurship education, but also how he/she involves teachers to take part in development. For example, has the principal taken part in enterprise-related courses or training; has he/she taken into account the regional and/or local industry strategies when developing school's entrepreneurship education practices; is he/she developing the school's enterprise-oriented culture; is he/she encouraging or supporting teachers to broaden their understanding of entrepreneurship education; or is he/she involving teachers to develop school's, local or national enterprise education plans, curricula or strategies. (Birdthistle et al., 2007; Drakopoulou, Dodd & Hynes, 2012; Eurydice, 2016; Finnish National Board of Education, 2004; Fuchs et al., 2008; Gibb, 2011; Hynes & Richardson, 2007; Kothari & Handscombe, 2007; Volery et al., 2013.)

The research question of the paper is: How are principals' entrepreneurship education development work related to entrepreneurship education activities in schools?

The research of managing entrepreneurship education in schools is still novel and there are just few studies concerning the topic. With this article, we contribute to the literature of entrepreneurship education in three ways: first, we provide quantitative, comparable evidence of the principal's role and practices managing entrepreneurship education in general education. Second, by analysing both entrepreneurship education development and entrepreneurial practices in schools, we highlight the principal's impact on entrepreneurship education. Finally, on the basis of our findings, we show effective ways to promote entrepreneurship education in schools.

This article is divided into five sections. The second section briefly introduces the current understanding of entrepreneurship education, especially as an intentionally managed process in schools. In the third section, we present the methods used. In the fourth section, we present the results, and in the fifth section, the conclusions, limitations and suggestions for further studies.

## **THEORY AND THE DEVELOPMENT OF HYPOTHESIS**

In Europe, entrepreneurship is considered a key competence for European citizens, a skill that applies to all aspects of life and can be learned. Entrepreneurship education helps people to develop the skills, knowledge and attitudes needed to achieve the goals they set for themselves. Moreover, it aims at creating and enhancing a student's ability to act responsibly, be active, creative and able to seize opportunities, take controlled risks, and plan and manage projects of suitable sizes. Furthermore, the European Commission highlights the importance of embedding entrepreneurship education at all school levels and the crucial role of relative policies and curricula. (European Commission, 2012, 2013; European Parliament and the Council, 2006)

This study focuses on the relationship between the development and practices of entrepreneurship education. We analyse entrepreneurship education in general education and the principal's impact on the development of entrepreneurship education in the school. We maintain

that most entrepreneurship education practices taking place in schools have been systematically developed within the school. This systematic implementation could include, for instance, defining the objectives and plans for entrepreneurship education, managing the operative entrepreneurship education situations and developing the curriculum for entrepreneurship education. Most of these measures depend on the approval of the principal or actual resourcing by the school management. In other words, entrepreneurship education development must precede entrepreneurship education practices.

### **Principals developing entrepreneurship education**

As school leaders, principals are responsible for the development of the school. Development work is needed for several reasons. The principal's vision and need to improve the level of operations in the school is likely to have a central effect. In terms of improving operations, the principal's development focus is on internal efficiency (Moore, George, & Halpin, 2002) or the pursuit of well-being at work and on empowering teachers, thus improving the school & spreading good practices & initiatives generated by teachers (Muijs & Harris, 2006). Kothari & Handscombe (2007) suggest that the implementation of entrepreneurship education depends on the organizational culture and structure of the school as well as the role given for entrepreneurship education. From this perspective, the principal's managerial activities developing the school increases in importance. Frank (2007), however, suggests that entrepreneurship activities in schools are built up of random events rather than carefully planned execution. Thus, the principal's goal might not be to make exact plans but more to develop the entrepreneurial culture of the school.

In terms of entrepreneurship education, the focus is on enhancing the working community's (that is, the teachers') understanding of entrepreneurship education and the possibilities for including it in the normal routines of the school.

An elementary part of development work is determined by policy and curriculum renewal. As such, the development guidelines are largely prescribed (Carlgrén & Klette, 2008). In essence, Moore et al. (2002) suggest that the development of a school is the link between centrally mandated policies and their local effects. Robinson (2010) reports that principals willingly take on the role of 'policy entrepreneurs'. In that sense, principals are change agents for renewal processes designed beyond the school. To make systematic progress possible, principals are expected to initiate entrepreneurship education plans in their schools (Frank, 2007; Gibb, 2011).

While the role of the school leaders seems rather simple from the managerial point of view, there is some doubt whether entrepreneurship education has been implemented with the best possible skills. For example, Moore et al. (2002) have found that principals' traditions and styles of management were being drawn upon eclectically. The principals had become familiar with them sometimes directly (for example, through attendance in courses) and sometimes indirectly (for example, through the internalization of management 'discourses'). Clearly, principal training is key in guiding the professional development of entrepreneurship education. However, Ruskovaara, Hämäläinen & Pihkala (2016) have noticed that there is very little entrepreneurship-related training targeted for principals. Additionally, there are no specialized training resources for managing entrepreneurship education. In any case, it is important that principals develop their expertise in business and enterprises. Although there is only a limited amount of enterprise-related teacher training on the market, some studies highlight that both teachers' and principals' training in entrepreneurship education affects how actively and broadly

they apply different entrepreneurship education practices (Sánchez, 2013; Lima, Lopes, Nassif, et al., 2015; Ruskovaara et al., 2016; Ruskovaara & Pihkala, 2014; Bennett, 2006; Birdthistle et al., 2007; Frank, 2007; Johansen & Schanke, 2013). Therefore, we propose the following:

*Hypothesis 1: Enterprise-related training positively affects principals' entrepreneurship education development.*

Managing the development of entrepreneurship in their schools, principals benefit from a wider understanding of the development needs within and beyond the school (Robinson, 2010). To enable this, principals gain from involvement in the development of the regional and/or local school curriculum from the point of view of entrepreneurship education (Hynes & Richardson, 2007; Neck & Greene, 2011). Along this line, principals may be involved in the development of regional and/or local entrepreneurship education plans (Drakopoulou et al., 2012; Hynes & Richardson, 2007). Understanding the regional and local development supports the shaping of a personal vision guiding the development. Different initiatives between educational institutions and small businesses can benefit students, schools and companies in many ways. For example, taking into account local companies' needs, the school can achieve a more relevant curriculum and the students can learn from real-life practical experiences and acquire skills that are needed when they start working after graduating (Johansen & Schanke, 2013; Johansen & Somy, 2015). The principal's personal experience in business increases the principal's understanding of the needs of the business. It also forms a resource base for the principal in the form of increased networking possibilities and school-business cooperation initiatives (Ruskovaara et al., 2016; Drakopoulou et al., 2012; Fuchs et al., 2008). Evidence about the role of principals' experiences in entrepreneurship education seems contradictory. For example, related to the general performance of principals, Ballou & Podgursky (1995) found no relationship between business experience and principal performance. However, Penaluna, Penaluna & Jones (2012) together with Sánchez (2013) suggest that a teacher's personal experience supports entrepreneurship education in schools. Very recently, Ruskovaara et al. (2016) have reported that the principal's business background is not related to the level of entrepreneurship education in schools. Building on these findings, we propose:

*Hypothesis 2: Principals' personal business experience does not affect entrepreneurship education development.*

### **Principals leading entrepreneurship education practices**

As the administrative, pedagogical and visionary leader, the principal affects the practices in many ways. The principal's development activities are the main factor explaining entrepreneurship education practices in the school. One of the main structures and practices of the school is to follow the annual plan (Cooper et al., 2004; Frank, 2007; Gibb, 2011). The principal can ensure the successful implementation of entrepreneurship education by including it in the plans. For teachers, the annual plan works as the backbone for offering enterprise theme days, elective entrepreneurship courses or enterprise-oriented periods of work placement or on-the-job training. Additionally, entrepreneurship theme lessons can provide possibilities to learn creativity and collaboration as well as project management (Neck & Greene, 2011; Gartner, 2008; Hytti & O'Gorman, 2004; Johansen & Schanke, 2013; Shepherd, 2004). The other effects may include an individual teacher's autonomous entrepreneurship education activities or the

students' own projects. However, even these activities will require approval by the principal in the long run. Therefore, we propose the following:

*Hypothesis 3: Principals' entrepreneurship education development activities predict entrepreneurship education practices in their schools.*

### **The effect of school size on entrepreneurship education**

Most research about school leadership evidently deals with large schools. For example, studies about distributed leadership (Frost & Durrant, 2003) or different roles and power (Moore et al., 2002) suggest the schools are rather large. However, a principal's work is strongly related to the specific characteristics of the school he or she is managing. Clearly, the development and management of a small school is likely to be different than that of a large school. In the development of a small school, the staff can be affected more straightforwardly and the change can be directly visible, while larger schools may require the strong presence of middle management and the effect of the change may be gradual rather than immediate. On the other hand, larger schools may provide the principal with specialized resources to support the development of entrepreneurship education.

In their study on school performance, Barnett, Glass, Snowdon, and Stringer (2002) compared schools of different sizes. They suggested that large schools over 1,000 students outperformed smaller ones in grades and cost-effectiveness. On the other hand, Humlum & Smith (2015) ended up with different results. They suggest that school size is not related to school performance with regard to education outcomes. Finally, Ruskovaara et al. (2016) found evidence that school size would not be related to entrepreneurship education activities in schools. While the findings are somewhat confusing, we propose

*Hypothesis 4a: School size is not related to the principal's development of entrepreneurship education.*

*Hypothesis 4b: School size is not related to the level of entrepreneurship education in the school.*

## **METHOD**

### **Data collection and analysis**

This piece of research continues a larger research project where different aspects of entrepreneurship education have been studied (Ruskovaara, Pihkala, Seikkula-Leino & Rytkölä, 2015b; Ruskovaara & Pihkala, 2013, 2014; Ruskovaara, Pihkala, Seikkula-Leino, et al., 2015a; Ruskovaara et al., 2016). For the analysis, we apply data collected with the Measurement Tool for Entrepreneurship Education (MTEE) (Ruskovaara et al., 2015b).

Using the MTEE, teachers and principals respond anonymously and voluntarily. The tool is available publicly for anyone ([www.lut.fi/mittaristo](http://www.lut.fi/mittaristo)), and it was built in extensive cooperation with The National Board of Education and a group of basic and upper secondary education teachers and principals. The tool is supported by a range of educational institutions and authorities. The reliability and validity of the tool have been secured by tests and re-tests (Ruskovaara et al., 2015b).

The MTEE is designed to measure teachers' and principals' entrepreneurship education operations in schools. The survey asks the respondents what they do when they are carrying out entrepreneurship education. For the present study, we use data that has been saved in the

database by March, 2016. The questionnaire has 140 questions; in the present study, we focus on 14 items from the survey. In the analysis, we first build an overview of the respondents' entrepreneurship education in schools. Next, we study the impact of a set of principals' background measures on entrepreneurship education. Third, using linear regression analysis, we examine the explanatory power of the background characteristics and principals' development activities on the level of entrepreneurship education activities.

## Measures

Dependent variables consist of seven variables of development and seven variables of practises.

**Development:** We built the measure for the development of entrepreneurship education using seven items describing the principal's activity in development. The principals assess their past six months in their responses. The following dichotomous indicators are coded as 0=no; 1=yes.

The items are as follows. All items start with "During the past six months, I have..."

**Developed my expertise regarding business and social enterprises:** Although there are limited possibilities for principals to take part in enterprise-related training, studies highlight the importance of training in developing principals' understanding of enterprises and entrepreneurship education (Birdthistle et al., 2007; Eurydice, 2016; Fuchs et al., 2008).

**Taken regional and/or local industry strategies into account in my entrepreneurship education:** According to Drakopoulou et al. (2012), the regional context influences the educational objectives, outcomes, resources and cultures in many ways. (See also Gibb, 2011.)

**Developed enterprise-oriented activity in the school:** Studies emphasize the principal's role in developing the school's culture and organizational structure (Birdthistle et al., 2007; Kothari & Handscombe, 2007).

**Enhanced my working community's understanding of entrepreneurship education:** Studies highlight the principal's role in encouraging and supporting teachers in broadening their understanding of current topics (Birdthistle et al., 2007; Kothari & Handscombe, 2007; Van Ewijk & Al-Aomar, 2016).

**Been involved in the development of regional and/or local curricula from the point of view of entrepreneurship education:** Drakopoulou et al. (2012) claim that regional aspects influence entrepreneurship education and its school-level objectives. (See also, Eurydice, 2016; Finnish National Board of Education, 2004.)

**Been involved in the development of entrepreneurship education plans in our school:** Kothari and Handscombe (2007) highlight the multiple possibilities principals have to develop their school in a certain direction. (See also Hynes and Richardson, 2007; Volery et al., 2013.)

**Been involved in the development of regional and/or local entrepreneurship education plans:** Hynes and Richardson (2007) showed positive results when principals have participated in developing local or regional entrepreneurship education plans.

**Practices:** We measured entrepreneurship education activities with seven items. All of them are dependent on the principal's decisions and school policy. The principals assess the past six months in their responses. The following dichotomous indicators are coded as 0=no; 1=yes.

The items are as follows. The items start with "In our school, we have..."

**Entrepreneurship education included in the annual plan:** Annual plans are steered by principals, and they are mandatory in some sense. In practice, it is up to the principal how detailed the plan is (Frank, 2007; Gibb, 2011; Finnish National Board of Education, 2004).

**Students' entrepreneurship-related work placement:** In Finland, secondary schools and high schools are to organize work placement for students. The indicator depicts whether the school has organized work placement periods for students where they especially familiarize themselves with and enrich their knowledge of entrepreneurship (Finnish National Board of Education, 2004; Garnett, 2013; Solomon, 2007; Gibb, 2002a; 2002b; Onstenk, 2003; Honig, 2004; Jones & English, 2004; Dobratz, Singh & Abbey, 2015).

**On-the-job training for teachers:** Often teachers have limited working experience outside of schools. Therefore, different kinds of on-the-job training periods are created for broadening teachers' understanding of the "world out there" (Eurydice, 2016; Fuchs et al., 2008). The principal's role is crucial in encouraging teachers to take part in such training. Moreover, it is the principal's responsibility to find a suitable substitute if needed and to allocate resources for extra costs.

**School-business partnerships:** Many studies highlight the positive possibilities provided by school-business partnerships (Ruskovaara & Pihkala, 2013; Lima et al., 2015; Solomon, 2007; Onstenk, 2003; Cooper et al., 2004; Frank, 2007; Gibb, 2011; Johansen & Schanke, 2013). The principal is a natural partner when discussing and deciding such operations.

**Theme days or theme lessons on entrepreneurship:** Earlier research suggests that special theme days may be positively effecting the learning environment (Gartner, 2008; Solomon, 2007; Hytti & O'Gorman, 2004; Shepherd, 2004). Such activities demand careful planning and decisions by the principal.

**Elective entrepreneurship courses:** Although all Finnish schools are to provide entrepreneurship education as a cross-curricular theme, some schools also offer elective courses. The indicator depicts whether the school offers elective entrepreneurship-related courses (Birdthistle, 2007; Finnish National Board of Education, 2004; Onstenk, 2003; Johansen & Schanke, 2013). In Finland, schools are free to provide elective courses on different themes. The courses are organized if enough students enrol. As with theme days and theme lessons, courses are approved—if not planned—by the principal.

**Teachers' meetings where entrepreneurship education practices are discussed:** Teachers' meetings have proven to be an effective way to involve teachers and to present and discuss current topics (for example, Imants & De Brabander, 1996; Levin, 1995; November et al., 2010). The indicator shows whether the principal intentionally brings up entrepreneurship education related topics in teachers' meetings.

The independent variables of this study consists of five characteristics. For the purposes of the analysis, four personal characteristics related to principals and one school characteristic are used. Table 1 presents the descriptive statistics for these indicators.

		<b>N</b>	<b>percent</b>
All		153	100.0
Gender	Men	79	51.6
	Women	74	48.4
Business background	No	81	52.9
	Yes	72	47.1
Work experience	0-10 years	17	11.1
	11-20 years	55	35.9
	21-30 years	61	39.9
	Over 31 years	20	13.1
Principals' assessment of enterprise-related seminars	None	56	36.8
	Some	82	53.6
	Many	15	9.8
School size	Less than 100 students	41	26.8
	100-299	53	34.6
	300-499	29	19.0
	More than 500 students	30	19.6

**Principal characteristics:** The characteristics of principals include the following indicators:

Gender—an indicator for the sex of the respondent. In the data, the values are coded as male=0; female=1.

Business background—an indicator referring to the principal's experience in business. In the data, the values are coded as no experience=0; has business experience=1.

Work experience—A variable referring to the principal's work experience. In the data, the values are reported on a scale: 1=0-10 years; 2=11-20 years; 3=21-30 years; 4=more than 30 years.

Principal's enterprise-related seminars—the measure reflects the respondent's own assessment of his or her participation in enterprise-related seminars or courses: No courses=0; some courses=1; many courses=2.

**School characteristics:** We selected one indicator to characterize the school where the principal operates.

School size—a measure to classify the size of the school: 1=smaller than 100 students; 2=100-299 students; 3=300-499 students; and 4=more than 500 students.

### Respondent profile

The respondent profile can be seen in Table 1. Of the total 153 responses, men and women are equally represented. The respondents seem very experienced in their work, about half of the respondents having worked 20 years or more. Finally, most principals lack training in entrepreneurship education. Participating in specific theme training is voluntary for principals, and thus this finding is not surprising. In sum, the respondent profile seems rather similar to Finnish principals in general.

## RESULTS

In this section, we present the results of the study. First, we analyse the principals' development activities, and after that, we focus on the entrepreneurship education practices in the schools.

### Developing entrepreneurship education

The profile of entrepreneurship education development is depicted in Table 2. Over 60% of the principals have developed their own expertise in business and social enterprises and have enhanced their working community's understanding of entrepreneurship education. Furthermore, half of them have developed enterprise-oriented activities in their school. It seems that regional/local industry strategies have not been taken widely into account in entrepreneurship education. Finally, only a quarter of the principals have developed regional/local school curricula from the point of view of entrepreneurship education or have developed regional or local entrepreneurship education plans.

<b>Table 2</b>	
<b>THE RESEARCH ITEMS: DEVELOPMENT (N 153)</b>	
	<b>Percent of principals doing</b>
Developed my expertise regarding business and social enterprises	62.7%
Enhanced my working community's understanding of EE	60.1%
Developed enterprise-oriented activity in the school	50.3%
Been involved in the development of EE plans in our school	44.4%
Taken regional and/or local industry strategies into account in my EE	42.5%
Been involved in the developed or regional/local curricula from point of view of EE	28.8%
Been involved in the development of regional and/or local EE plans	26.1%

To capture the phenomenon of entrepreneurship education development, we created a new indicator by summing the development items (see Table 2). The new sum measure is labelled “entrepreneurship education development”; it shows the level of principals’ activity entrepreneurship education development. The range of the new indicator is from 0 to 7, with a mean of 3.15. In other words, principals apply 3.15 different entrepreneurship education development methods in their work, on average. Cronbach’s alpha for the sum measure is 0.788, and the values for skewness and kurtosis are 0.171 and -1.121, respectively.

In Table 3 we show the ANOVA analysis of principals’ entrepreneurship education development. Contrary to the study on secondary school teachers by Birdthistle et al. (2007), it seems that there is a difference in the development of entrepreneurship education in favour of male principals. In line, principals with a business background seem to score higher in entrepreneurship education development. It may be due to their broader understanding of business, but also from their understanding of the crucial role of enterprises in society. Thus, it is possible that principals experienced in business may be more devoted to participating in regional or local strategic planning. Furthermore, they seem to encourage their colleagues to develop their expertise in business and entrepreneurship education. Not many studies deal with entrepreneurship education in basic and secondary schools. Especially research on teachers and principals is very limited. However, the findings above concerning principals’ backgrounds are in line with earlier studies (Ruskovaara et al., 2016; Deakins et al., 2005; Penaluna et al., 2012).

Variable	Group	Means	F-value	Sign.
Gender	Men	3.42	2.36	0.127
	Women	2.86		
Business background	Yes	2.74	5.97	0.016*
	No	3.61		
Work experience	0-10 years	2.13	2.35	0.057
	11-20 years	3.71		
	21-30 years	3.10		
	Over 31 years	2.75		
Principals’ enterprise-related seminars	None	1.84	28.05	0.000***
	Some	3.59		
	Many	5.67		
School size	-100	2.95	2.28	0.082
	100-299	3.19		
	300-499	2.52		
	500+	3.97		

Note: \* $p < 0.05$ . \*\*  $p < 0.01$ . \*\*\*  $p < 0.001$ .

While principals’ business experience has an effect on entrepreneurship education development, it seems that work experience lacks predictive power in this regard. However, in line with the study by Birdthistle et al. (2007), a principal’s entrepreneurship education training (that is, participating in entrepreneurship related seminars or courses) is an important influential element. It seems that principals’ participation in entrepreneurship training is directly related to

the principal's ability to develop the school's entrepreneurship education and participate in regional and local strategic planning. This is in line with the study by Fuchs et al. (2008), who examined teachers working in basic education. Finally, the analysis suggests that different development tasks are similar in larger and smaller schools.

Table 4 depicts the results of the linear regression analysis. The analysis shows the role of different characteristics for entrepreneurship education development. In Model 1, the R-square is 0.286, and only one variable reaches statistically significant loading. A principal's entrepreneurship education seminars seems to gain predictive power for entrepreneurship education development. Therefore, the findings substantiate the first hypothesis – that enterprise-related training positively affects principals' entrepreneurship education development. This is in line with earlier studies on teachers and teacher educators (Birdthistle et al., 2007; Hytti & O'Gorman, 2004; Seikkula-Leino, Ruskovaara, Hannula, et al., 2012; Johansen & Schanke, 2013; Seikkula-Leino, Satuvuori, Ruskovaara, et al., 2015).

<b>Variable</b>	<b>Model 1</b>
Constant	1.820**
Enterprise-related seminars	1.776***
School size	0.092
Business background	0.428
Gender	-0.134
Work experience	-0.126
R-square	0.286***

Note: \* p<0.05. \*\* p<0.01. \*\*\* p<0.001.

In Hypothesis 2, we suggested that principals' business experience does not affect entrepreneurship education development. Our results are in line with Ballou & Podgursky's (1995) study, confirming that principals' experience in business does not have predictive value for entrepreneurship education development. Finally, to control the effect of the operational context, Hypothesis 4a suggested that school size is not related to principals' development of entrepreneurship education. The analysis supports this hypothesis. In other words, the principal's entrepreneurship education development activities counts no matter what the size of the school is or how much resources it has (See also Humlum & Smith, 2015; Moore et al., 2002).

### **Factors behind entrepreneurship education practices in schools**

Table 5 presents the profile of practice-related research items. A total of 77 percent of the schools discuss entrepreneurship education in teachers' meetings. Furthermore, most of the schools have entrepreneurship education in their annual plans. Since entrepreneurship education has been one of the cross-curricular themes in the Finnish core curriculum since 1994 (Ministry of Education, 2009), one might think that every school should have included entrepreneurship education in their annual plans by now. It seems that this is not the case, as the percentage of those schools is 64.1. Interestingly, elective entrepreneurship courses have been widely adopted. Another interesting finding is that only a little more than half of the schools have developed

business partner relationships. A lack of such partnerships was also found by Cooper et al. (2004) and Birdthistle et al. (2007). Finally, every fourth school provides on-the-job training for teachers.

	<b>Percent of schools having</b>
Teachers' meetings where EE practices are discussed	77.1%
EE included in the annual plan	64.1%
Theme days or theme lessons on entrepreneurship	51.0%
Students' entrepreneurship-related work placement	45.8%
School-business partnerships	58.2%
Elective entrepreneurship courses	71.9%
On-the-job training for teachers	24.8%

Next, we created a sum measure to capture the volume of entrepreneurship education practices. It describes the level of entrepreneurship education practices in schools (Table 6). The new sum indicator ranges from 0 to 7 with a mean of 3.32. This means that on average the schools have 3.32 different entrepreneurship education practices. The level of Cronbach alpha for the sum measure is 0.606, and the values for skewness and kurtosis are -0.162 and -0.602, respectively. We use the sum measure against the respondent characteristics to analyse schools' entrepreneurship education activities.

<b>Variable</b>	<b>Group</b>	<b>Means</b>	<b>F-value</b>	<b>Sign.</b>
Gender	Men	3.57	3.03	0.084
	Women	3.07		
Business background	Yes	2.99	6.36	0.013*
	No	3.71		
Work experience	0-10 years	2.47	3.46	0.010*
	11-20 years	3.82		
	21-30 years	3.39		
	Over 31 years	2.40		
Principals' enterprise-related seminars	None	2.55	12.83	0.000***
	Some	3.59		
	Many	4.80		
School size	-100	2.73	5.65	0.001**
	100-299	3.26		
	300-499	3.17		
	500+	4.40		

Note: \*p<0.05. \*\* p< 0.01. \*\*\* p<0.001.

In general, entrepreneurship education seems to vary a lot in schools. The variation is related to both the principal and the school size. It seems that schools that have a principal with

business experience report more entrepreneurship education practices than those without business-experienced principals. Interestingly, the principal's work experience seems to produce similar outcomes. However, the results suggest a curvilinear tendency.

Similarly to prior findings (e.g., Ruskovaara et al., 2016; Birdthistle et al., 2007), entrepreneurship education training for principals seems to have predictive value. The results indicate that schools with principals with training in entrepreneurship education score higher in entrepreneurship education practices than schools with principals without training. Finally, in terms of school size, it seems evident that the largest schools outscore the smaller ones.

Table 7 depicts the results of the linear regression analysis. We tested the explanatory value of different characteristics on entrepreneurship education practices. In Model 1 (R-square .236), there are two variables with statistical significance. The analysis shows that both the principal's participation in entrepreneurship courses and the school size have a strong positive effect on entrepreneurship education. Conversely, the gender, work experience or business experience of the principal lack predictive power on entrepreneurship education practices. (See also Ruskovaara et al., 2015a, 2016; Ballou & Podgursky 1995; Bennett, 2006.)

<b>Variable</b>	<b>Model 1</b>	<b>Model 2</b>
Constant	2.205***	1.364**
Gender	-0.228	-0.166
Business background	0.401	-0.288
Work experience	-0.214	0.203
Enterprise-related seminars	0.983***	0.162
School size	0.374**	0.332**
Development		0.462**
R-square	.236***	0.473***

Note: \*  $p < 0.05$ . \*\*  $p < 0.01$ . \*\*\*  $p < 0.001$ .

In Model 2 (see Table 7), we introduce the sum measure "development" into the equation to understand the impact of principals' development activities on entrepreneurship education in schools. The results suggest some changes compared to Model 1. It seems that the explanatory value doubles from Model 1, with an R-square of .473. At the same time, school size consistently shows a strong positive effect on entrepreneurship education. However, the principals' participation in entrepreneurship courses loses its predictive status (Model 2), while the principal's development activities receives a positive and statistically significant beta. In line with Model 1, the principal's gender, work experience and background in business do not seem to be effective in predicting entrepreneurship education practices.

Table 7 shows that principals' participation in enterprise-related training seems to be very significant in relation to entrepreneurship education practices (Model 1). This is in line with earlier studies by Bennett (2006), Deakins et al. (2005) and Ruskovaara et al. (2016). However, principals' enterprise-related training loses its significance when the development activities are included (Model 2). It seems that a principal's enterprise-related training positively affects the development of entrepreneurship education activities, which further advances the school's entrepreneurship education practices. This is a very important finding in this study.

As suggested in Hypothesis 3, the principals' entrepreneurship education development activities predict entrepreneurship education practices in schools. Indeed, the principal's enterprise-related training and the school size have predictive power over the school's entrepreneurship education practices. However, the results in Model 2 suggest that the principal's development activities are more important and explanatory for entrepreneurship education practices in the school. We find strong support for Hypothesis 3.

Hypothesis 4b suggested that school size is not related to the level of entrepreneurship education practices in the school. Contrary to studies by Moore et al. (2002) and Humlum and Smith (2015), our findings do not support this hypothesis: school size seems to be an explanatory factor in both models 1 and 2. As we earlier found out, school size does not explain the principal's entrepreneurship education development activities, but it is related to the implementation of entrepreneurship education practices at the school level.

## DISCUSSION AND CONCLUSION

The purpose of this study was to analyse the relationship between principals' development activities and entrepreneurship education practices. The results gained in this study are well in line with previous research concerning the role of principals in developing entrepreneurship education. However, we provided quantitative, comparable evidence of the principal's role and practices managing entrepreneurship education in general education. The results of the study seem rather clear: the principals' development activities affect the level of entrepreneurship education in schools directly and positively. Although this relationship is largely assumed in the promotion of entrepreneurship, entrepreneurship education research has not shown empirical evidence of it earlier. Entrepreneurship education has been promoted through the introduction of various norms, tools, models and training intended for the schools' teaching staff. We suggest that the role of the principal as the pedagogical leader developing the school and its processes is decisive in this process. In schools, the level of entrepreneurship education is a result of the development activities undertaken.

Through analysis of the schools' entrepreneurship development work and entrepreneurial practices in schools, we can highlight the principals' impact on entrepreneurship education. Finally, on the basis of our findings, we show effective ways to promote schools' entrepreneurship education. Furthermore, our results show clear ways in which entrepreneurship education development can be promoted. The results show a positive effect of principals' training for entrepreneurship education on the development of entrepreneurship education. Providing principals with models, tools and information about available resources has a direct effect on their efforts to develop entrepreneurship education. On the other hand, the development entrepreneurship education creates entrepreneurship education practices at the school level. That is, principals who consistently develop their school's entrepreneurship education have more and versatile entrepreneurship education practices in their school. This finding stresses the importance of increasing the supply of training in entrepreneurship education for educational staff and especially principals. In our view, it seems that there is a lack of entrepreneurship education training possibilities for principals.

Lately, discussions have stressed the superiority of small schools. To this topic, this study brings an interesting perspective. From the point of view of entrepreneurship education, large schools seem to score higher than smaller ones. That is in line with the study by Barnett et al. (2002), who found that large schools perform better than smaller ones. Reasons for that may be found in the schools' resources and characteristics. Firstly, larger schools may have greater

resources for planning entrepreneurship education, both within the school and with external stakeholders, when local and regional strategies are prepared. Secondly, larger schools are most likely located in urban areas where enterprises are in convenient reach, and therefore a variety of joint operations may be organized quite effortlessly. Finally, entrepreneurship education introduces the question of resource management and more open learning environments. In larger schools, the principals are more likely to adopt managerial styles developed for managing professional organizations and a wider set of resources (Moore et al., 2002). In other words, through professional leadership, larger schools may obtain better results in entrepreneurship education. We suggest that more studies are needed to uncover the relationship between the different aspects of school size and entrepreneurship education.

Next we present the limitations of our study, the data, and the focus of analysis. The data consists of responses from only one country and is therefore rather limited. Consequently, the generalizability of the results is quite restricted, especially in international contexts. Notwithstanding, we think that our results may prove useful for both research and practice due to the current strong interest in guiding and supporting entrepreneurship internationally. Understandably, while our analysis seeks to highlight causal relationships, due to the limited generalizability they are far from being confirmed. Further international research is needed about principals to uncover their role in managing entrepreneurship education.

Furthermore, the data collection has been conducted with an online tool that principals use voluntarily. As the Measurement tool for Entrepreneurship Education (MTEE) is based on self-reporting, it may suffer from various biases in the responses. While we have not observed biases in the responses, a common method bias is possibly related to expected or socially acceptable answers. Responding to MTEE questionnaire is voluntary. As this is the case, it is possible that the principals who are most familiar with or think highly of entrepreneurship education are more represented in our data than the ones who are not so involved in entrepreneurship education. Should that be the case, it may have led to too optimistic results. Furthermore, it is also possible, that the respondents who are very familiar with entrepreneurship education, have more critical view of their development activities or the practices used.

The results underline the importance of training available for principals about entrepreneurship education. Overall, there seems to be very little training targeted for principals. As an implication for practice, we suggest that enterprise-related training for principals needs to be developed. We also suggest that the content of the training for principals supporting entrepreneurship education should be studied. As a consequence, leadership and the management of entrepreneurship education are themes that would benefit from more in-depth studies and practices developed accordingly. Furthermore, we acknowledge that development of entrepreneurship in schools is not solely dependent on principals' activities, but it is also affected by the knowledge and attitudes of the teachers. In general, further research is needed to examine the contents of entrepreneurship education practices in schools.

Moreover, our findings show that a principal's business background does not affect the development of entrepreneurship education or practices at school. Therefore, this can be seen as promising news, as it would be a lengthy process to recruit a new generation of principals instead of providing the existing ones with relevant training.

Although entrepreneurship education seems to have established its role in the field of research, there are still knowledge gaps. While principals' relationship to entrepreneurship education has been studied with growing interest, their role and contribution to entrepreneurship

education are still under-researched. We suggest that more emphasis should be paid to uncover the principals' role as leaders of entrepreneurial school culture.

Research on principals usually deals with small data samples. Also the data of this study is statistically small, but at the same time it is relatively extensive for this field. There is a great need for more comprehensive and international analysis, as international studies about principals in the field of entrepreneurship education are still largely lacking. Nevertheless, further studies about the national characteristics of different educational systems and their effect on entrepreneurship education are also needed.

## FOOTNOTES

<sup>1</sup>For more about Finnish education system, visit:

[http://www.oph.fi/download/146428\\_Finnish\\_Education\\_in\\_a\\_Nutshell.pdf](http://www.oph.fi/download/146428_Finnish_Education_in_a_Nutshell.pdf)

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