

Entrepreneurial Learning and School Improvement A Swedish Case

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Abstract: *Entrepreneurial learning has become a concern for schools almost all over the world. This article aims to investigate what characterizes education in lower and upper secondary schools that claim to be working to a high or low degree with entrepreneurial learning and what implications this might have for different teaching methods. The results, measured at the end of the first year of a three-year school improvement program, show that schools with a high degree of entrepreneurial learning cooperate more with the local community, read more pedagogical literature and have changed their rhetoric to a higher degree than schools with a low degree of entrepreneurial learning. The results also indicate that teaching methods involving the local community have positive effects on pupils' learning.*

Keywords: *entrepreneurial attitude, lower and upper secondary school, learning and teaching methods, local community*

1. INTRODUCTION

Entrepreneurship as a concept and a phenomenon has become a concern for a lot of people working in the field of education in many schools all over the world. This means that teachers and principals as well as school politicians have to orientate themselves in this field and to communicate different interpretations and implementations (Skolverket, 2010). In a school context “entrepreneurship” is often used to describe a certain activity. Even if the activities seem to look the same, there are a lot of designations: entrepreneurship, entrepreneurial pedagogy, entrepreneurial learning, enterprise education, enterprise education as pedagogy (cf. Jones and Iredale, 2010), enterprise education as a method (cf. Sarasvathy and Venkataraman, 2011) or as a progressive pedagogy related to Dewey (cf. Pepin, 2012) are all concepts trying to interpret and understand the phenomenon of entrepreneurship in an educational context. What it actually is about and what influences the concept has on pupils' learning are still a relatively unanswered research question. However, there are interests in, and in what ways, entrepreneurial learning processes may affect pupils' motivation, learning and higher goal achievement, and there are hopes that an entrepreneurial perspective on teaching and learning may contribute to decreasing the proportions of dropouts from secondary schools and to creating bridges between schools and working life (European Commission, 2010).

The present study is a part of a three-year program on *entrepreneurial learning* launched in Sweden in 2012. The overall aim of the program is to study and find relationships between entrepreneurial learning and pupils' results. The purpose of the program is also to implement entrepreneurial learning in the participating schools and to give pupils a motivated and worthwhile schooling and to monitor the effects through research. For that purpose the program offers support for entre-

preneurial learning to the participating schools in lower and upper secondary education. To measure the results, a questionnaire is used and the data in this article are results from the first year.

The focus in this article is on teachers' and principals' conceptions of entrepreneurial learning with regard to school improvement, i.e. what implications their conceptions have for teaching and learning. The article is structured in the following way: first we will give a background to the concept of entrepreneurial learning and relate this to school improvement. Then we will present the results from our investigation and finally discuss the results and give some implications for further work.

2. BACKGROUND

2.1. Entrepreneurial Learning

Entrepreneurship as a concept has its ground in an economic context. However, like all concepts it changes and gets a new or widened understanding as society develops and grows. Entrepreneurship is not an exception. As research on entrepreneurship and entrepreneurs is a multidisciplinary research field, there is wide variation of how entrepreneurship may be understood, interpreted and defined (cf. Berglund, 2007). The content of entrepreneurship has also been widened from an economic basis to social and cultural perspectives (Leffler, 2009) and there are warnings in research that too many definitions may dilute the meaning of it. Nationally, in this case Sweden, and internationally, there seems to be a consensus that entrepreneurship as a phenomenon is important in society as well as in schools (Leffler, Svedberg and Botha, 2010; Røe Ødegård, 2012). On the policy level, both the OECD (1989) and the European Commission (2002; 2011) advocate a more entrepreneurial attitude in society and in schools. On an overall level, causation and perspectives that have to do with globalization, competitiveness, growth, employment and regional development are highlighted. On an individual level, it is often about pupils' learning, motivation and knowledge to meet and create tomorrow's society (Skolverket, 2010).

Entrepreneurial education includes two perspectives; one *broad* and one *narrow*, which are also described as enterprise and entrepreneurship education (Erkkilä, 2000; Jones and Iredale, 2010). The broad perspective aims at developing pupils' power of initiative, creativity, responsibility, self-confidence and ability to cooperate, while the narrow perspective aims to prepare pupils to start and run businesses (European Commission, 2004). According to the European Commission (2004) these perspectives are interdependent. The broad perspective is advocated in primary and lower secondary schools and for younger pupils, while in upper secondary schools it is mainly the broad perspective, but also the narrow one. The narrow perspective is found in vocational programs' curricula. Although it is the concept of entrepreneurship that is expressed in the Swedish curriculum, it is the concept of entrepreneurial learning that is most abundant in the broad perspective, while the concept of entrepreneurship characterizes the narrow perspective. Entrepreneurship in the Swedish curricula is expressed as follows:

An important task for the school is to provide a general but coherent view. The school should stimulate pupils' creativity, curiosity and self-confidence, as well as their desire to explore their own ideas and solve problems. Pupils should have the opportunity to take initiative and responsibility, and develop their ability to work both independently and together with others. The school in doing this should contribute to pupils developing attitudes that promote entrepreneurship (Skolverket, 2011a, p. 11)

In upper secondary schools, the writing in the curriculum is almost the same with the addition "enterprise and innovative thinking" (Skolverket, 2011b, p 6).

A recurring issue when the concept of entrepreneurship is discussed is if initiative and driving forces are needs emanating from schools or are political decisions. However, research shows that many school development programs in entrepreneurial education may neither be seen as a top-down initiative nor as a bottom-up perspective; it is rather a meeting between these two perspectives (Skolverket, 2010). The purpose of schools is education and upbringing and for that reason it is of great importance for schools to foster individuals who can create values not only for themselves but also for others (cf. Lackéus, 2013). As the content of entrepreneurship is supposed to be integrated throughout the Swedish education system (Government Offices of Sweden, 2009), school improvement is of great importance.

In this studied improvement program the basis is pedagogy, where entrepreneurial learning is described as a process where the point of departure is the pupils' interests, motivation, responsibility and power of initiative, where pupils are challenged in their conceptions and thoughts, and where cooperation with the surrounding community plays an important part in pupils' learning (cf. Leffler and Falk-Lundqvist, 2013; Otterborg, 2011; Deuchar, 2006; Ruskovaara and Pihkala, 2012). It is about the development of pupils' "entrepreneurial mind-set" which also includes innovative working methods (European Commission, 2011). It is also about communication, as communication as well as a good school climate rests on security and a feeling of reliance between teacher and pupils and between pupils (cf. Jones and Iredale, 2010), or in other words, that teachers and pupils see themselves as "fellow workers" (Falk-Lundqvist, Hallberg, Leffler and Svedberg, 2011). Entrepreneurial learning also emphasizes the importance of starting from pupils' life-world and working with real problems. In this article we use the concept of *entrepreneurial learning* as understood above and the focus is on the broad perspective.

There is research discussing if the phenomenon of entrepreneurship actually can be taught, because there seem to be different dilemmas depending on whether the focus is on a trait approach or a behavioural approach (Haase and Lautenschläger, 2011). The consensus seems to be that entrepreneurship can be taught but that one cannot teach people to become entrepreneurs. Other studies indicate that entrepreneurship in education has visualized a battle between traditional and progressive education (Lackéus, 2013), or between economic and pedagogic interests (Leffler, 2009). There is also research within the field of entrepreneurship in a school context, which entrepreneurial learning is a part of, which states that there are three research challenges; "the lack of studies in secondary schools, the lack of quantitative studies and that the business approach to entrepreneurship education is at the centre of most studies" (Johansen and Schanke, 2013, p. 358). This article tries to widen that research perspective with an emphasis on learning and learning processes and put the focus on the possibility for schools to create pupils' entrepreneurial skills such as creativity, innovativeness, proactiveness, risk-taking and cooperation related to the meaning of entrepreneurship, as defined in the Swedish curricula and in the studied improvement program.

2.2. School Improvement

There are ongoing reform changes in schools, not only in Sweden but all over the world, with the aim to improve schools' results (Höög and Johansson, 2011). The reforms are often oriented towards how leaders and teachers are supposed to work, in other words towards changing the structures. Principals and teachers thus play an important role. The professional learning of teachers is highlighted in research as the most important part in improving schools (Harris and Muijs, 2005; Opfer and Pedder, 2011; Timperley, 2011). Schools that learn are a key factor and their focus is learner-centred, encouraging variety and understanding a world of interdependency and change (Senge, 2000). There seems also to be a consensus to view schools as a professional community where teachers share good practice, work together and learn together (Harris and Muijs, 2005). To become a professional reflective teacher, the point of departure is first to investigate what the pupils need to know to reach the goals. Pupils' engagement, learning and wellbeing are therefore very important (Timperley, 2011). When teachers are aware of the pupils' learning profiles at a deeper level, the next step is to investigate what knowledge and skills are necessary for themselves to be able to meet both each pupil's and groups of pupils' needs. According to Sagar (2013), teachers who get most out of in-service education are those who are open for change and have support in their teaching teams. The teachers in her study emphasized the importance of collaborative learning in teaching teams as a key factor for school improvement.

3. AIM AND METHODOLOGY

3.1. Aim and Research Questions

The teachers, pupils and principals in this study are all a part of a school improvement program in entrepreneurial learning. All principals and a selected group of teachers from each school have participated in seminars, three per year. The seminars contain lectures, experience exchanges and discussions and have one thematic focus each time: the concept and content of entrepreneurial learning, motivation, creativity, cooperation and assessment. Teachers participating in the seminars are supposed to share their knowledge from the seminars with their colleagues. During the

time between the seminars, schools are supposed to work with tasks related to entrepreneurial learning. The participating schools had from the start different knowledge, understanding and experience of the meaning of entrepreneurial learning and how to teach in an entrepreneurial way. For that reason we asked the teachers and principals to what extent they felt that they were currently working with an entrepreneurial approach. After that, we divided the schools into two categories: schools working to a high degree with entrepreneurial learning and schools working to a low degree with entrepreneurial learning. The aim of this study is therefore to investigate what characterizes a school that claims to have a high or low degree of entrepreneurial learning and what implications this might have for different teaching methods in the end of the first year of the school improvement program.

The research questions concerned the effects of entrepreneurial learning with a focus on pupils' learning and development, and whether there are different perceptions of the educational content and form, if schools claim that they work to a high or low degree with entrepreneurial learning and in that case, what factors matter.

3.2. Method

Teachers, principals and pupils in the schools that participate in this school improvement program in entrepreneurial learning answered a questionnaire in the end of the first year of the improvement program. The three groups answered different questionnaires, but several questions were designed to measure the same issue. 27 schools participated in the improvement program, but only 20 of these schools answered the questionnaires, and in these 20 schools not all groups, pupils, teachers and principals answered the questionnaires. Explanations given why schools did not answer the questionnaires were lack of time, fatigue of questionnaires and that the improvement program was not anchored in the school.

The three questionnaires were answered by a total of 630 pupils in lower secondary schools (form 8) and upper secondary schools (form 2), 207 teachers and 26 principals from the 20 schools. Pupils', teachers' and principals' views of their school and the education were important to capture. To make it possible to compare pupils', teachers' and principals' answers, some of the questions were designed in the same manner and contained the same problems. For example, there were questions concerning pupils' possibilities to be involved in the content, planning, working methods, choosing textbooks, accounts and assessment. There were also questions about the overall view of teaching and learning, such as how often pupils were allowed to be active in the learning processes, in what ways they were working with issues that concerned them and had an effect on their learning and in what ways working life and the local community played a part in pupils' learning. These aspects are important issues in entrepreneurial learning.

The questionnaires were web-based and links to each questionnaire were sent out to contact persons and principals in each school. The contact persons or the principals were then supposed to copy each link and send it to the participating pupils and teachers. Before the questionnaire was sent out, the questionnaire was tested by a pilot group of pupils, teachers and principals.

3.3. Categorization of Schools

The teachers and the principals answered to what degree they thought their school or educational program worked with entrepreneurial learning. In six of the 20 schools, only one principal and no teachers answered the questionnaire. In these six schools, the principal's answer is used to categorize the school as having a high (at or above three) or low degree (below three) of entrepreneurial learning. In the remaining 14 schools both principals and teachers answered the questionnaires. In these 14 schools, teachers and principals had different opinions of the degree to which they were working with entrepreneurial learning. To be able to categorize schools in terms of the degree of entrepreneurial learning in their school, the average of all teachers' and principals' answers in each school was calculated. An average below three is treated as a school with a low degree of entrepreneurial learning, while an average at or above three as a high degree of entrepreneurial learning. Ten schools were categorized in each as having either a low or a high degree of entrepreneurial learning.

3.4. Statistical Analyses

The questionnaires included a lot of different questions and the result is based on the questions that correlate most strongly with each other. Factor analysis was used to confirm which correla-

tions loaded more than others (see Table 1). The factor analysis was made as a principal component analysis, with varimax with Kaiser normalization as rotation method in SPSS version 22. The initial eigenvalues are reported in Table 1 for the three first and most strongly loading factors. There were more factors with eigenvalues lower than three, but these are not reported.

Table 1. *The three factors with highest loading from the factor analysis*

Question	Factor 1	Factor 2	Factor 3
Pupils carry out one part of the schoolwork in the local community/working life	.88	.10	.14
Pupils solve a problem together with support from the local community/working life	.84	.10	.09
Pupils solve a problem on behalf of the local community/working life	.84	.01	.00
The teachers work consciously to develop pupils' ability to cooperate with the local community/working life	.77	.02	.14
The teachers work consciously to develop pupils' abilities and knowledge which prepare them for working life	.47	-.04	.09
The pedagogical and methodological discussions have increased significantly in the group of staff	.01	.74	.09
We read more pedagogical literature	-.12	.70	.03
We have changed our rhetoric	-.06	.78	.01
We involve the pupils more in the planning of teaching	.13	.80	0.18
We involve the pupils more in the assessment	.09	.78	-.05
We involve local community/working life more in the teaching	.46	.60	.08
We do more interdisciplinary work	.12	.70	.04
Have the pupils influenced the content of the teaching?	.05	.03	.75
Have the pupils influenced the way and form of working?	.11	.04	.78
Have the pupils influenced the time for the work?	.07	.11	.65
Have the pupils influenced what textbooks and teaching aids to use?	-.01	.05	.68
Have the pupils influenced how to show their knowledge?	.13	.12	.71
Have the pupils influenced how to assess?	.18	.11	.48
Initial Eigenvalues	10.44	4.31	3.54
Rotation sums of squared loadings	4.36	4.32	3.44

The first factor will be called *Cooperation with the local community/working life*. The second factor will be called *Changes in working methods due to the school improvement program*. The third factor will be called *Pupils' influences on teaching*.

For the three factors, Pearson correlations are reported in the Results. Abott and McKinney (2013) use the square of correlation as a measure of effect size. A correlation between .10 and .29 shows a small effect size, a correlation between .30 and .49 an average effect size and a correlation of at least .50 shows a large effect size.

For each of the questions from the factor analysis, average and standard deviations are reported for the two categories of schools. To be able to test whether the differences between the two categories are significant or not, results from the t-test are reported. The level of significance is five per cent. Five more questions other than those from the factor analysis showed significant differences and the differences for those questions are also reported in the Results. For all but one question, either or both a chi-2-test and a Kolmogorov-Smirnov-test confirmed the significant differences detected by the t-test.

4. RESULTS

The results are reported for each of the three most strongly loading factors, *Cooperation with the local community/working life*, *Changes in working methods due to the school improvement program* and *Pupils' influences on the teaching*. For each factor, correlations between the questions

dealing with the factor are reported. Last in the Results the averages for schools with a high and low degree of entrepreneurial learning are reported for the questions that deal with the three reported factors and five more questions which show significant differences between these two categories of schools.

4.1. Cooperation with the Local Community/Working Life

The first and most loading factor found in the factor analysis was *Cooperation with the local community/working life* (see Table 1). Table 2 shows the correlations between the questions dealing with this factor.

Table 2. Correlations between questions dealing with cooperation with the local community/working life

	The pupils carry out one part of the schoolwork in the local community/working life	The pupils solve a problem together with support from the local community/working life	The pupils solve a problem on behalf of the local community/working life	The teachers work consciously to develop pupils' ability to cooperate with local community/working life	The teachers work consciously to develop pupils' abilities and knowledge which prepare them for working life
The pupils carry out one part of the schoolwork in the local community/working life	1	.78	.70	.69	.42
The pupils solve a problem together with support from the local community/working life	.78	1	.71	.64	.33
The pupils solve a problem on behalf of the local community/working life	.70	.71	1	.58	.28
The teachers work consciously to develop pupils' ability to cooperate with the local community/working life	.69	.64	.58	1	.57
The teachers work consciously to develop pupils' abilities and knowledge which prepare them for working life	.42	.33	.28	.57	1

Table 2 shows correlations with a large effect size between four of the questions regarding cooperation with the local community/working life, since their correlations are above .50. The effect size is also large between the question "The teachers work consciously to develop pupils' abilities and knowledge which prepare them for working life" and the question "The teachers work consciously to develop pupils' ability to cooperate with the local community/working life". The correlation was strongest between "The pupils carry out one part of the schoolwork in the local community/working life" and "The pupils solve a problem together with support from the local community/working life". This means that if a school cooperates with the local community/working life in one way, it also cooperates in some other way to a high degree.

4.2. Changes in Working Methods Due to the School Improvement Program

The second factor found in the factor analysis was *Changes in working methods due to the school improvement program*. Table 3 shows correlations between the seven questions dealing with this factor.

Table 3. Correlations between questions dealing with how the work in schools has changed with the school improvement program

	The pedagogical and methodological discussions have increased significantly in the group of staff	We read more pedagogical literature	We have changed our rhetoric	We involve the pupils more in the planning of the teaching	We involve the pupils more in the assessment	We involve the local community/working life more in the teaching	We do more interdisciplinary work
The pedagogical and methodological discussions have increased significantly in the group of staff	1	.54	.61	.53	.46	.37	.44
We read more pedagogical literature	.54	1	.50	.44	.47	.27	.35
We have changed our rhetoric	.61	.50	1	.63	.56	.38	.46
We involve the pupils more in the planning of the teaching	.53	.44	.63	1	.68	.56	.52
We involve the pupils more in the assessment	.46	.47	.56	.68	1	.52	.53
We involve the local community/working life more in the teaching	.37	.27	.38	.56	.52	1	.50
We do more interdisciplinary work	.44	.35	.46	.52	.53	.50	1

Table 3 shows some correlations indicating a large effect size, while most of the others show an average effect size. If the staff have changed their work in some way, they have also changed some other aspects of their work to a fairly high degree. The strongest correlation indicates that if teachers involve the pupils more in the planning of the teaching, then the pupils are also involved more in the assessment to a high degree. The second strongest correlation indicates that if the pedagogical and methodological discussions have increased, then the teachers' rhetoric has also changed to a high degree.

4.3. Pupils' Influence on the Teaching

The third factor found in the factor analysis was *Pupils' influence on the teaching*. Table 4 shows correlations between the six questions dealing with this factor, divided on teachers and pupils.

Table 4. Correlations between questions dealing with pupils' influence on teaching for both teachers and pupils. The correlations for the pupils are in italics

	Have the pupils influenced the content of the teaching?	Have the pupils influenced the way and form of working?	Have the pupils influenced the time for the work?	Have the pupils influenced what textbooks and teaching aids to use?	Have the pupils influenced how to show their knowledge?	Have the pupils influenced how to assess?
Have the pupils influenced the content of the teaching?	1	.61 <i>.69</i>	.42 <i>.49</i>	.44 <i>.53</i>	.49 <i>.57</i>	.49 <i>.47</i>
Have the pupils influenced the way and form of working?	.61 <i>.69</i>	1	.44 <i>.52</i>	.42 <i>.64</i>	.60 <i>.61</i>	.35 <i>.44</i>
Have the pupils influenced the time for the	.42 <i>.49</i>	.44 <i>.52</i>	1	.31 <i>.52</i>	.42 <i>.58</i>	.38 <i>.52</i>

work?						
Have the pupils influenced what textbooks and teaching aids to use?	.44 .53	.42 .64	.31 .52	1	.40 .56	.25 .41
Have the pupils influenced how to show their knowledge?	.49 .57	.60 .61	.42 .58	.40 .56	1	.48 .53
Have the pupils influenced how to assess?	.49 .47	.35 .44	.38 .52	.25 .41	.48 .53	1

Table 4 shows that the correlations for the pupils are all but one higher than for the teachers. The largest difference in correlation between teachers and pupils is the correlation between the question “Have the pupils influenced what textbooks and teaching aids to use?” and the question “Have the pupils influenced the way and form of working?” The pupils are more positive to both questions than the teachers.

Most of the correlations for the pupils show large effect sizes, while for the teachers only two correlations show large effect sizes. For the teachers most of the correlations only show average effect sizes.

4.4. Differences between Schools with a High and Low Degree of Entrepreneurial Learning

Table 5 shows the differences between schools with a high and low degree of entrepreneurial learning for 23 questions. 18 of these questions deal with the three reported factors, while the extra five questions show significant differences between schools with a high and low degree of entrepreneurial learning.

Table 5. Average and standard deviations (in parenthesis) for schools with a high and low degree of entrepreneurial learning (EL) respectively for the questions in the three factors and five questions not belonging to the factors but showing significant differences.

Question	High degree of EL	Low degree of EL
*Pupils carry out one part of the schoolwork in the local community/working life ¹	2.48 (.87)	2.27 (.96)
*Pupils solve a problem together with support from the local community/working life ¹	2.33 (.85)	2.14 (.90)
*Pupils solve a problem on behalf of the local community/working life ¹	2.26 (.90)	2.02 (.89)
*The teachers work consciously to develop the pupils' ability to cooperate with the local community/working life ²	2.90 (.93)	2.45 (.85)
The teachers work consciously to develop the pupils' abilities and knowledge which prepare them for working life ²	3.22 (.62)	3.10 (.65)
The pedagogical and methodological discussions have increased significantly in the group of staff ²	2.38 (.79)	2.31 (.77)
We read more pedagogical literature ²	1.88 (.75)	2.01 (.74)
*We have changed our rhetoric ²	2.33 (.89)	2.10 (.73)
We involve the pupils more in the planning of the teaching ²	2.40 (.86)	2.42 (.84)
We involve the pupils more in the assessment ²	2.29 (.79)	2.18 (.79)
We involve local community/working life more in the teaching ²	2.09 (.82)	2.13 (.86)
We do more interdisciplinary work ²	2.38 (.85)	2.26 (.82)
Have the pupils influenced the content of the teaching? ¹	2.45 (.98)	2.51 (.96)
Have the pupils influenced the way and form of working? ¹	2.67 (.96)	2.65 (.95)
Have the pupils influenced the time for the work? ¹	2.32 (.92)	2.43 (.93)
Have the pupils influenced what textbooks and teaching aids to use? ¹	2.62 (.99)	2.63 (.98)
Have the pupils influenced how to show their knowledge? ¹	2.41 (.95)	2.53 (1.02)
Have the pupils influenced how to assess? ¹	1.99 (.89)	2.06 (.89)
*The teacher has high expectations of the pupils. ¹	3.05 (.72)	3.15 (.73)
*The teacher is good at connecting the teaching to life and reality. ²	3.21 (.78)	3.07 (.79)

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*The teachers support the pupils' understanding well. ²	3.37 (.77)	3.23 (.77)
*The pupils work in groups ¹	3.04 (.62)	2.94 (.64)
*The pupils do laboratory or practical work ¹	2.64 (.88)	2.81 (.87)

* $p < 0.05$; ¹Pupils, teachers and principals answered the question; ²Teachers and principals answered the question

Schools with a high degree of entrepreneurial learning differ significantly from schools with a low degree of entrepreneurial learning regarding change of rhetoric among principals and teachers, cooperation with the local community/working life, connecting teaching to life and reality, supporting pupils' understanding, teachers having high expectations of the pupils and letting the pupils work in groups and do laboratory and practical work (see table 5). For all these questions, except for the questions about high expectations of the pupils and pupils doing laboratory and practical work, schools with a high degree of entrepreneurial learning have a higher average than schools with a low degree. The more the schools believe they work with the content of a question, the higher the average is.

5. DISCUSSION

In the background, the definition of entrepreneurial learning focuses on the pupils' interests, where the pupils are challenged in their conceptions and thoughts, and where cooperation with the local community plays an important part in pupils' learning. Schools with a high degree of entrepreneurial learning have a significant higher average in all questions about cooperation with the local community/working life. This result indicates that cooperation with actors outside school means not only cooperation in a quantitative way but also in a qualitative way, i.e. it is also about how this is implemented and how the local community and school work together.

According to Otteborg (2011), pupils separate school tasks from authentic tasks. School tasks tend to be tasks that can be answered right or wrong, while authentic tasks give an opportunity to discuss the answers from different perspectives because of the inherent uncertainty. According to Sonntag (1997), the more variable and problem-oriented the environment and conditions for application are, the transfer of learning from one situation to another is better. Authentic tasks in cooperation with the local community/working life give opportunities for this transfer of learning and therefore improve the pupils' learning. The results show that if education involves items of cooperation, the pupils are given not only higher opportunities to work with tasks, but also opportunities to work together towards common goals. Letting the pupils get assignments from actors outside the school, but also letting them learn to solve problems with the support of the local community/workplace, gives rise to a win-win system, in which teachers and stakeholders in society may benefit from such cooperation (Falk-Lundqvist, Hallberg, Leffler and Svedberg, 2011).

To prepare pupils for the future and working life is a goal in the Swedish curricula. Teachers are supposed to support cooperation between working life and the local community in general and to provide a general but coherent view (Skolverket, 2011a, 2011b). Table 2 indicates that teachers that involve working life and the local community in their teaching also do interdisciplinary work to a higher degree and with laboratory and practical tasks. This is also confirmed by the pupils' answers. The results also show that pupils' influences on teaching and assessment are higher in schools working with entrepreneurial learning to a high degree.

Teachers who have a driving force to learn by themselves and learn together are the fundament for successful education (Harris and Muijs, 2005; Sagar, 2013; Timperley, 2011). Teachers in this study who indicate that they are highly involved in entrepreneurial learning, also indicate that they learn through reading more pedagogical literature and have more educational discussions. This could be interpreted as if educational literature and educational discussions have helped the teachers to become more aware of their rhetoric and therefore changed it. The teachers also indicate that to a higher degree they involve their pupils in lesson planning and assessment, i.e. that they are using their pupils as fellow workers in their teaching and learning (Jones and Iredale, 2010; Falk-Lundqvist, Hallberg, Leffler and Svedberg, 2011).

In this study, the schools have been categorized as having either a high or a low degree of entrepreneurial learning based on how teachers and principals judge to what degree their schools work with entrepreneurial learning. In 14 of the 20 participating schools, both teachers and principals

answered this question and the result shows a variation of answers in the same school. Therefore, an average of the teachers' and principals' answers to that question has been calculated and used for the categorization. There are, however, often rather few teachers and principals in each school and therefore one person's answer to one question can alter the categorization. In six of the schools, the categorization was based on only one principal's answer and this is also problematic, because it only shows the principal's point of view, *which can* be different from the teachers' point of view. This indicates that the categorization should be based on both teachers' and principals' views and that there should be a large number of participants in each school. The reliability of the categorization could also be higher if the categorization is based on more than one question.

To sum up, this study shows that cooperation with the local community/working life may be used as one important entrance into doing more entrepreneurial work in schools, but it is of crucial importance how the partnership is formed and how the cooperation is related to pupils' learning processes. Teachers in these schools seem to be more aware of letting the pupils become more involved in the learning processes, which is an indicator for successful teaching and learning. As this study is the first part of a three-year program, the questionnaires will be followed up two more times, but it is also important to follow up this study and relate entrepreneurial learning to other fields in education and to use interviews with teachers and pupils and observations in classrooms to make it possible to visualize how and in what ways an entrepreneurial attitude to teaching and learning can change the learning processes. It is thus clear that all school improvement, as research indicates, is based on learning processes, for pupils as well as teachers, both on an individual and on a collective level, if entrepreneurial leaning is supposed to be integrated throughout the education system.

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