

Why is it important to start early with entrepreneurship education?

There are many reasons why pupils should be taught entrepreneurship from an early educational level. Through entrepreneurship education pupils typically acquire non-cognitive skills, which has a positive effect on their continued school education. Non-cognitive skills, or character skills, such as persistence and creativity are self-reinforcing and make it easier for pupils to acquire and utilise other skills.

At the same time, it has been demonstrated that entrepreneurship education increases pupils' school engagement and improves their marks. As entrepreneurship education thus influences pupils' entire learning process and school education, it is important that they receive this education early.

Non-cognitive skills and cognitive skills reinforce one another, and to make the most of it, entrepreneurship education should be given early

The research by James Heckman is a natural starting point when explaining why entrepreneurship education should be started early. What Heckman's research in skills shows is that some skills complement and reinforce other skills. This means that pupils who acquire certain skills early more easily learn other skills. As entrepreneurship education typically focuses on versatile skills and supports the complementarity between skills, it therefore makes sense to begin the education early. To achieve the greatest effects, it is however important that the early start is followed up with quality education at later educational stages.

Skills can roughly be divided into two categories: cognitive skills (IQ) and non-cognitive skills (character traits and social skills). The fact that some skills complement and reinforce one another creates an exponential growth in learning. That is, pupils acquire more skills, and they acquire these skills faster, if they strengthen certain skills both early and continuously during their entire school education. For example skills such as persistence, alertness and creativity make it easier for pupils to acquire new knowledge and new competences and to exploit them. These skills can all be viewed as entrepreneurial skills. And, typically, the younger the pupils, the easier it is for them to acquire new skills. In this way, entrepreneurship education will have a great effect on pupils if they participate in the education from early on, and if the early intervention is followed up by evenly distributed interventions throughout their school education. If, on the other hand, the early intervention does not take place, it will be difficult to make up for the missing educational effects later.^{1,2}

Early intervention increases pupils' school engagement

Studies have shown that when entrepreneurship education focuses

on strengthening non-cognitive skills, it has a great effect on pupils' school engagement. Pupils who receive entrepreneurship education early will thus be more motivated and engaged in their own learning process, which will have an effect on their entire school education. It must however be noted that in a study of pupils in the 9th class, the Danish Foundation for Entrepreneurship found that entrepreneurship education had the greatest effect when focusing on both enterprising (non-cognitive) and business-oriented (cognitive) skills.³

Positive effect on marks in lower secondary school

Studies of Norwegian pupils and students also indicate that it is important to start entrepreneurship education early. A study of 1,880 pupils in lower secondary school and 1,160 students in their final year of upper secondary school thus showed that only in lower secondary school did entrepreneurship education have an effect on pupils' marks. According to the researchers, this was partly owing to the fact that it is easier to align the teaching in entrepreneurship with the usual kind of teaching in lower secondary school, at least when it comes to certain forms of entrepreneurial teaching. And the alignment also makes it easier to examine the lower secondary pupils after they have received this form of education.⁴

Positive effect on non-cognitive skills of pupils in the 6th class

In the Netherlands, a randomised controlled study of 2,750 pupils in the 6th class showed that after having participated in an entrepreneurship programme, the pupils increased their acquisition of non-cognitive skills, whereas there was no effect on their acquisition of cognitive skills: The pupils did not perform better in tests that measured knowledge about entrepreneurship, but they significantly increased their confidence in their own entrepreneurial skills such as risk tolerance, creativity and proactivity.⁵

¹ Cunha, F. & Heckman, J. 2007. The technology of skill formation. *The American Economic Review*, 97(2), 31-47.

² Cunha F. & Heckman, J. J. 2010. Investing in Our Young People. In Reynolds, A. J., Rolnick, A.J., Englund, M. M., & Temple, J. A., (eds.), *Childhood programs and practices in the first decade of life*. Cambridge University Press, New York, 381-414.

³ FFE-YE. 2015. Impact of entrepreneurship education in Denmark – 2014. Report from the Danish Foundation for Entrepreneurship.

⁴ Johansen, V. & Schanke, T. 2014. Entrepreneurship projects and pupils' academic performance: A study of Norwegian secondary schools. *European Educational Research Journal*, 13 (2), 155-166.

⁵ Huber, L., Sloof, R. & Van Praag, C.M. 2014. The effect of early entrepreneurship education: Evidence from a field experiment, *European Economic Review* 72(11): 76-97.