The PhD thesis “Assessing the impact of entrepreneurship education – from ABC to PhD” was defended in August 2014, by Kåre Moberg at the CBS department of Strategic Management and Globalization and focuses on assessing the effects of different approaches to entrepreneurship education at secondary and tertiary level of education. In this article Kåre Moberg summarises his research approach and revealing findings.

Is it possible to create entrepreneurs through education? Which types of entrepreneurship education are most effective at different levels of education? And, is it after all important to foster entrepreneurial behaviour and attitude, or should the educational system focus on developing other types of skills and behaviours? These are questions that researchers and policy makers have been struggling to answer for the past decades. During my PhD project I have tried to answer these questions by investigating the effects of different types of educational approaches at different levels of education. The main empirical sources have been a longitudinal study on ninth-graders (6000 fifteen years old pupils) who we followed throughout their secondary level of education, and a longitudinal study on master level students (12 programmes) at four Danish universities.

Many entrepreneurship researchers have viewed entrepreneurship as divided in two dimensions: the science of entrepreneurship and the art of entrepreneurship. The former, which is characterized by “hard” and codifiable skills (such as business planning, finance and evaluating business opportunities), is perceived as being teachable, whereas the latter, which is characterized by more “soft” and tacit skills (such as managing ambiguity and un-
certainty, creativity and resource marshalling), has been viewed as being unteachable. In my view this perception is understandable but unfortunately detrimental. Naturally, it is easier for the education system to focus on skills of a more codifiable nature and teach these with traditional educational methods. However, my empirical findings demonstrate that a sole focus on these types of skills does not have a very strong impact on pupils and students.

My results show that pupils who go to schools that have a strong focus on education about entrepreneurship have lower levels of school engagement. The opposite is, however, true for pupils who attend schools that focus on education through entrepreneurship. When the focus is on the softer entrepreneurial skills of a more non-cognitive character, the teachers are forced to change their teaching style and switch from the traditional lecture based educational approach to more practice and action oriented teaching methods. These types of teaching methods are perceived as more authentic and fun by the pupils, allow pupils to take ownership over their conception and permit the use of many different talents, not just of academic nature. Overall, the supportive teaching style that teachers use to foster entrepreneurial skills of a more non-cognitive character, makes the pupils view their education as less abstract and more purposeful.

The longitudinal results show that this type of education has a positive influence on the pupils’ educational motivation, their self-image, their connectedness to classmates and teachers as well as their entrepreneurial intentions. However, these effects become smaller at later levels of education. This indicates that the educational interventions should come at an early educational level and the main focus should be on education through entrepreneurship, that is, education that focuses on fostering the softer entrepreneurial skills of a non-cognitive character.

At university level I have investigated how the focus on student ownership over the entrepreneurial projects and the inclusion of students’ prior contextual knowledge in the educational process affect students’ levels of entrepreneurial self-efficacy, that is, their confidence in their ability to perform various entrepreneurial skills and activities, as well as how these two dimensions affect their entrepreneurial behaviour. Both ownership and focus on prior contextual knowledge are recognized as important dimensions by entrepreneurship researchers, but are nevertheless often left out when it comes to entrepreneurship education. The reason why this is the case has to do with the fact that many educators do not believe that students have entrepreneurial ideas that are sufficiently innovative, and thus, they prefer to have their students working on ongoing entrepreneurial projects in established organisations.

In order to isolate the effects of the ownership and prior contextual knowledge dimensions I selected four master programmes in which the students were working on entrepreneurial third-party projects, and four master programmes in which the students got the opportunity to work with their own entrepreneurial projects and focus on areas that motivated them and in which they had prior contextual knowledge. In all of the programmes practice-based and experiential teaching methods were used and provided the students with the opportunity to work with authentic entrepreneurial projects.
This allowed me to control for dimensions which prior research has already documented as having positive effects and instead focus on dimensions about which we still have limited knowledge. My results showed that the programmes which focused on student ownership and on including students' prior contextual knowledge had a strong positive influence on the students' levels of entrepreneurial self-efficacy, especially when it came to their belief in their ability to perform entrepreneurial skills of a more non-cognitive character (such as managing ambiguity and resource marshalling). Such skills are important when it comes to exploiting - not just exploring and evaluating - entrepreneurial opportunities.

Furthermore, my results showed that these programmes had a transformative effect on the students since their view of their entrepreneurial self-efficacy had changed significantly, that is, their initial levels in these dimensions explained to a very limited extent their latter levels. The number of students who were starting companies in these programmes also increased with 53 percent. In the four entrepreneurship programmes in which the students had worked on third-party projects my results showed that there was only a small increase in the students' entrepreneurial self-efficacy, but their perception of their abilities had not changed in a major way. The number of students who were engaged in starting up or running a company had also decreased with 26 percent, which indicates that their interest in entrepreneurship had declined. The study thus shows that in order to “learn entrepreneurship” you need to learn as an entrepreneur. In order to do this it is important to get the opportunity to view yourself as an entrepreneur rather than as a student who performs assignments - even if these assignments are very entrepreneurial, authentic and innovative.

The findings that I came up with during my PhD project should, however, only be viewed as the first step in a large research project. The longitudinal character of the surveys will make it possible to investigate long-term effects of the educational approaches and how these influence the students' labour market performance. Moreover, the instruments that have been developed during this project are currently being transformed into assessment tools that will be available in an App format with an atomized analysis. This will thus allow many educators and practitioners with limited knowledge of quantitative techniques to evaluate their educational initiatives and find out what works for them. In this way, it will be possible to compare many more approaches, investigate the importance of many more dimensions, and further our knowledge of how entrepreneurship education is best structured for different types of students and pupils at different levels of education.

The latest results of these projects are available (in Danish) at http://www.ffe-ye.dk/videncenter/kortlaegning-effektaaing/effektmaalings, and my dissertation is available at http://openarchive.cbs.dk/handle/10398/8965