

The effect of extracurricular entrepreneurship training programs on students' ability and creativity beliefs and social skills

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Summary

General competencies form a complex set of processes – cognitive and motivational processes, skills, knowledge, attitudes and values. General competences are becoming more and more a central issue in education, both at the level of scientific conceptualization, assessment and methods for supporting their development. One of general competencies – entrepreneurship competence – is being developed in Estonian schools through various extracurricular programs and initiatives. For example, there are international and local programs facilitating the foundation of student's companies; programs that integrate entrepreneurial learning into the school system; but also private enterprises offering entrepreneurial learning in a form of role play or other active learning methods that foster knowledge and skills essential for entrepreneurship. However, clear evidence is lacking about the effect of these entrepreneurship training programs on the students' entrepreneurial mindset and skills.

At the same time, in recent years there have been attempts to conceptualize the subcomponents and their relationships of entrepreneurial competence and in this process, a model of entrepreneurship competency has been created that relies on relevant pedagogical, entrepreneurial and psychological knowledge. According to the model, the entrepreneurship competence consists of four dimensions that divide, in turn, into sub-competencies (Venesaar et al., 2018). These are called self-management (regulating one's own motivation, ability beliefs, emotion regulation, and metacognition); value-oriented thinking and problem solving (higher-order cognitive processes like planning, problem-solving, but also a level of thinking development and value-based and ethical reasoning); solving social situations (social skills, cooperation, initiation) and

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more domain-specific knowledge about how to realize entrepreneurial ideas (knowledge about business environment, business possibilities and financial literacy). Thus it became possible to assess, whether the subcompetencies of the described model of entrepreneurship competency are facilitated and developed in entrepreneurship programs applied at the middle school level. Although the model has not yet been the basis for creating given educational programs for developing students' entrepreneurial skills and attitudes, it is still likely that successful interventions in this field catches the aspects that form the core for entrepreneurial activity, whether explicitly or implicitly.

Current analyses are a part of larger longitudinal study with the aim to assess and compare the effect of different entrepreneurship programs applied in middle school (8th grade) in various Estonian schools. The larger study concentrates on different motivational, cognitive and social aspects of entrepreneurship competency, but in the current analysis, only three components of entrepreneurial competency were examined, which are more related to the *soft skills* side of the entrepreneurship: beliefs about malleability of abilities; beliefs about malleability of creativity (both further referred to as "ability beliefs", based on Dweck & Leggett, 1988; Schommer, 1990; Schommer-Aikins, 2004) and self-reported social skills (based on SOCIAL model, Beauchamp & Anderson, 2010). Ability beliefs can be considered as the core motivational aspect related to effort- and challenge-related behaviours and resilience, assumingly fundamental in entrepreneurial activities. Social skills are also considered as mediating successful entrepreneurial activity. As a background variable, a general ability marker (Raven's progressive matrices, E-set) was evaluated. These variables were assessed with paper-and-pencil questionnaires and tests before and after students took part in entrepreneurship programs, both in program schools ($N = 198$) and matching control schools ($N = 125$, mean age 14.11, $SD = 0.36$). The test-retest interval of the longitudinal study was 7–8 months.

Results indicated no significant difference in ability beliefs related to general ability and creativity, and self-reported social skills between schools where students took part in different entrepreneurship programs compared to control schools. Specifically, there were no differences in given variables between pre- and post-intervention data collection in the program school sample and the control group. Also, there were no differences in studied variables between children participating in different entrepreneurship programs, both pre- and post-intervention. Also when tested for cognitive abilities, no interaction effect of cognitive ability or taking part in the program was revealed. Thus it seems that entrepreneurship programs do not explicitly affect beliefs about the malleability of abilities and creativity, as well as self-reported social skills compared to controlled schools.

Various explanations can be suggested as to the result revealing no significant change in assessed variables in students participating in entrepreneurship programs. First, although entrepreneurship education programs aim, explicitly or implicitly, at enhancing resilience and perseverance, it is assumed that without the teachers' specific knowledge of how ability beliefs relate to the task-oriented behaviour and how to support adaptive beliefs, the change is unlikely to occur. Second, when offering a program at group level, it may be that various children perceive or interpret the intervention in different ways and thus need a slightly different kind of intervention. Not all students may get such an experience from the program that supports their underlying sub-competencies of entrepreneurship. Indeed, although insignificantly, subgroup analysis revealed that in the intervention group, the children with the weakest level of general ability reported insignificantly more fixed mindset and poorer social skills after the intervention. A similar pattern was not apparent in the control group. Although the numbers of subgroups were modest and the result non-significant, one may further hypothesize that the slower-learning students may perceive the new, challenging extracurricular learning context as yet another evaluation of their abilities, thus lowering their belief that they might do well in a given field. Hence, in future studies, individual-level analyses would be necessary to understand better the profiles and needs of individual learners in the extracurricular programs.

Keywords: entrepreneurship training in middle school, development of entrepreneurship competence, ability beliefs, self-reported social skills