The Way of Integration of Key Competences and Education for Entrepreneurship into the field-specific didactics

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Abstract

The paper submits a basic way outs of incorporation of key competences and education for entrepreneurship in the field-specific didactics in relation with opportunities and requirements of curricular reforms of secondary technical education in the Czech Republic. The important and big curricular objective is to arrange functional links between subject integration and education for entrepreneurship and their incorporation in the system of teacher training. It would lead to teachers´ abilities to design to quality school edacational programmes, to make effective plans and organise their instruction.

Keywords

Didactics, teachers´ training, education for entrepreneurship, key competences, curriculum.

The Curricular Basis

In February 2001 the Government of the Czech Republic adopted the National Programme for the Development of Education. In keeping with the above mentioned European trends in education, this document offers an overall vision of education system in the Czech Republic. The education system is conceived as a single whole with mutual penetration between education and employment, facilitating the acquisition of the same qualification in a number of different ways at any point of time throughout a person's life. The National Programme for Vocational and Technical Education was drawn up for the area of secondary vocational education. National requirements for vocational education reflect the standards of secondary vocational education. These standards are embedded in the fundamental curriculum broken down by levels and streams of education. They comprise the components of general education, vocational education (training) and key skills. Key skills are taken as integrating educational objectives responding to requirements for broader general qualification for finding one's place in the civil society. Key skills are broken down into the following categories: communicative skills, personal and interpersonal skills, skills to solve problems and problem situations, numerical applications, skills necessary for the use of information technologies and skills to employ them as working tool. Based on that the National Institute of Technical and Vocational Education, Prague drafted the framework educational programmes for individual fields of study as a starting point for the development of school educational programmes (school curricula). The school educational programmes are elaborated by individual secondary schools reflecting their own specific conditions. An emphasis should be laid particularly on the following aspects:

- Ensuring that young people are ready and prepared for lifelong learning – to provide the instruments for effective work with information, motivation, creativity, activity, system of values,

- Promoting the employability of young people throughout their lives – general basis, specialisation, career guidance, introduction to the world of employment,
- Broader general and generally specific basis of education,
- Key competences such as abilities, skills, attitudes, values and other personality characteristics which enable an individual to act adequately and effectively in diverse work and life situations.

Key competences

When creating both the framework educational programmes and school educational programmes, the curricular concept should be applied responding to the conclusions of the National Programme for the Development of Education. This concept is not based on mechanical memorizing of the largest possible volume of facts. The role of the school is to provide a system structure of elementary notions and relations of each discipline as a basis for the creation and development of knowledge system of pupils. Closer links should be promoted between the objectives, content of education and competences, while emphasis should be laid on the acquisition of key competences. The following structure of competences was established for the field of studies of M category (secondary education with the GCE - school leaving examination):
I. Competences for learning – ability to learn efficiently, to continuously evaluate the attained achievements, to determine the needs and objectives of one's own further education
II. Competences for problem solving – ability to independently solve routine working or non-working problems, to understand the assignment, to get necessary information, to propose the ways of solution, to provide its rationale, to evaluate and validate the correctness of the selected procedure and the attained results
III. Communication competences – ability to express oneself appropriately both in a written and oral form in various learning, life and work situations, to present and assert oneself
IV. Personal and social competences – readiness to set oneself adequate objectives of personal development based on the knowledge of one's own personality, to take care of one's health, to cooperate with others and to contribute to the establishment of desired human relations
V. Civic competences and cultural awareness – adopting values and assuming attitudes essential for life in a democratic society, particularly the sustainable development principles and national, European and world culture values
VI. Competences for employment and the conduct of business – ability to utilise one's own personal and professional capabilities for successful participation in the labour market, for career building and growth and the associated need for lifelong learning, understanding the essence and principles of entrepreneurship, legal, economic, administrative, personal and moral aspects of going into private business
VII. Competences in mathematics – ability to use mathematical skills in practice in different life situations
VIII. Competences to use information and communication technologies and to work with information – computer, internet and information literacy, ability to use the computer as a working tool and to effectively process information
Competence-oriented education is based on mastering the methods of how to learn effectively, of how to use the state-of-the-art ICTs, of how to manage to work with information with their help, but also on the abilities of critical thinking and evaluation, communication, team work, autonomous conduct and problem solving. Practical activities should be introduced to a much higher degree into the instruction, links between individual subjects should be further promoted, instruction should take place in integrated units giving priority to such forms of instruction which facilitate internal differentiation and

individualisation of education. It concerns especially the integrated forms of instruction and project teaching, which are based on activity and independent work of students and which enable better understanding of the subject matter, its in-depth theoretical and practical knowledge. The new concept of curriculum and the introduction of relevant teaching methods and forms have to be introduced to teachers during the theory of instruction training.

Information literacy and education for entrepreneurship

The referred to principles are similar to integrated forms of teaching in economic subjects. Also the work in practice firms, student companies and laboratory offices reckons with the autonomy of students, their independent information processing and decision making free from direct teacher's guidance. Mobilizing teaching methods and integration of instruction prepare such students considerably better for the moment at which they will have to receive and process the information on their own. Under this concept, the function of a teacher in a teaching unit is actually very similar to that of a teacher in a practice firm. The teacher does not directly manage the education process, but merely offers his guidance, provides support as an adviser or assistant if a difficulties arise in work with information. The learner fulfils the set out education objectives at his individual speed, he applies his own logics (corrected, if necessary, by the teacher for the sake of higher efficiency), and his work bears the marks of independent efforts. The learner starts to feel considerably more independent, inner freedom, he works with objectives and contents that he has endorsed and which he has the ambition to master and achieve. He does not work in isolation, he communicates with the other members of the group and the teacher. The final education effect is thus the result of his own learning efforts as well as the result of the work of the group and the educator – facilitator. Proper application of the referred to principles in education practice should under favourable conditions lead to the improvement of competences of learners in their independent work with information, their ability to take decisions and act independently, their ability to solve problems and be more flexible in new situations. The thing is that key competences are based on activities and skills resulting from them, not only on memorising and already absorbed knowledge. An important complement to key competences is information literacy and education for entrepreneurship. The Czech information policy describes information literacy as the ability to identify and formulate one's information needs, to be familiar with information sources, to seek information through ICTs, to evaluate the colleted information and to use it when solving particular life situations or addressing technical tasks. Such definition of a comprehensive ability to work with information achieved by the combination of knowledge of technical means and the methods of information seeking complies with the relevant global concepts. Apart from technical and key competences they should also achieve information literacy. That presupposes an acquisition of a range of information skills. One of the most accurate concepts for the support of information literacy in education is "The Big Six®" concept which understands information skills to be information literacy curriculum, the process of information problem solving based on work with information. The strategy of six fundamental information skills is applicable to numerous situations, when students get the assignment with incomplete information and have to find the "hidden" information by themselves. Education for entrepreneurship is seen as a purposeful effort of educators to shape the attitudes learners towards entrepreneurship and to create abilities which would help them successfully join the business community, i.e. especially creativity, independent critical thinking, responsibility, and willingness and ability to take reasonable risks. The referred to qualities are closely linked to key competences which are to be the results of education process.

Description of the grant project on the Institute of Education and Communication

The Institute of Education and Communication actually prepares a new grant project with name "Implementation of key competences and education for entrepreneurship in the field-specific methodology". The main aim of the submitted project is to identify optimum ways of incorporating key skills and education for entrepreneurship into the system of field-specific methodologies (didactics) in order to educate consistently technical subject teachers in this spirit. This implementation is closely related to the currently ongoing curricular reform, especially its application stage when the secondary technical schools, proceeding from the relevant framework educational programmes, independently develop their own school educational programmes. Education objectives are in this case directly linked to the competences of graduates. Important are also the relations to functional and information literacy matters, development of creativity (creative school), integration of subject matters and support of action-oriented teaching. All of that helps promote the independence of learners, encourage them to assume part of the responsibility for their own education, and develop the spirit of enterprise. The last mentioned attribute is especially topical and it is being paid attention to in the framework of scientific and research activities conducted by education institution across Europe and overseas. The education for entrepreneurship builds on technical competences, training on how to set up, manage and effectively run a company. Traditionally, this has been covered by economic education, namely the Economic Teaching Methodology Department, Faculty of Finance and Accounting of the University of Economics, Prague, where the teacher training comprises the matters of integrated forms of instruction, especially practice firms, student companies (Junior Achievement), laboratory offices, subject exercises, various forms of placements in business and project teaching. The submitted project reckons with the participation of this workplace, it is designed as an university-wide project with primary focus on system links between integrated forms of instruction and education for entrepreneurship and their incorporation in training of technical subject teachers so that it would be possible:

- to develop quality school educational programmes that shall comprise integrated technical subjects, in the framework of which key competencies and information skills of students will be effectively developed and their education for entrepreneurship will be effected
- to train qualified technical subject teachers who will be able to effectively plan, organise and guide the direct instruction in integrated practice-oriented subjects on the basis of a portfolio of mobilizing teaching methods, problem-based teaching and integrated forms of instruction

At first the baseline situation will be described in detail and a scientific analysis will be conducted of the effectiveness of existing approaches to the integration of key and technical competences in the curriculum of the teaching practice. Subject to examination will also be the relevant ways of the integration of crosscutting subject matters - The man and the world of work and the space made for the development of education for entrepreneurship, independence, creativity and motivation of students in order to support their abilities to learn (self-responsible learning). If the implementation of key competences and education for entrepreneurship is to be truly functional, the following fundamental groups of requirements have to be met:

- school educational programmes should be designed in such a way to allow for inclusion of integrated subjects focused on the consistency and application in practice of technical knowledge of theoretical subjects and on the development of skills necessary for the acquisition of key competences – the point is not to prove the key competences merely by their formal inclusion in curriculum, but to see to it that they truly fulfil their functions and are reflected in actual target competencies of the graduates

- technical subject teachers (teachers of integrated subjects in particular) should avail of methodological competences tailored not only to technical competences, but also to the development of key competences, information skills, creativity, independence and spirit of enterprise of students. The level of methodological training of teachers will have to be considerably enhanced in the field of theory and even more so in the area of the application of mobilizing teaching methods, methods of problem-based teaching and integration of subject matter in practice-oriented (comprehensive) subjects
- teaching styles in secondary vocational education should be differentiated, methodological stereotypes of teaching units with predominance of monologue should be overcome, students should be active and should learn how to work with information independently and under indirect guidance of the teacher, which will also prepare them for a lifelong learning process
- students should be effectively prepared also for the common section of the upper-secondary school-leaving examination, expecting their information literacy and general knowledge. They should be able to use the opportunity to write an essay (project) as part of the school-specific section of the upper secondary school-leaving examination and to defend it before the board of examiners

The above referred to requirements for functional implementation of the addressed matters shall be investigated by the submitted project, with the output being the innovation of field-specific methodology curricula at the workplaces of investigators, a scientific monograph which provides a synthesis of the achieved results and recommendations for teaching practice, a practice-oriented handbook for technical subject teachers at secondary technical schools, an international scientific conference to disseminate the results of the research, and further promotion of scientific and research cooperation. Investigation stages and project time schedule:

I. Stage of preparation – situation analysis, survey (mapping the situation) - 2009
II. Stage of implementation (concept) – development of methodological instruments - 2010
III. Stage of completion and validation – integration of methodological approaches to field-specific methodology, a monograph, a handbook for teachers, a scientific conference - 2011

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