CROSS CURRICULAR COMPETENCES FOR LEARNERS FROM TECHNICAL HIGHER EDUCATION

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Abstract: *The present paper presents the cross-curricular competences, which represents a challenge for the teachers from technical higher education. It represents a starting point for restructuring the way of teaching, by taking into account the importance of constructing the students' competences according with their needs for life long learning. After presenting the concept of cross-curricular competences and a model elaborated in an educational program, the paper will focus on the modalities which a teacher from technical higher education could address to cross-curricular competencies and on the methods used in different European countries to assess these competences.*
Key words: *competences, assessment, teacher, learners*

1. INTRODUCTION

Within the framework of the "Education and Training 2010 Program", the working group on key competences has developed a reference framework to identify key competences that are necessary for successful functioning in the knowledge society and economy. Subsequently, in December 2006, the Council and the European Parliament approved the Recommendation on key competences for lifelong learning, constituting the milestone in the process of enhancing the importance of the issue, by defining the 8 key competences: communication in the mother tongue; communication in foreign languages; mathematical competence and basic competences in science and technology; digital competence; learning to learn; social and civic competences; sense of initiative and entrepreneurship; and cultural awareness and expression (*Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning*, 2006).

The idea of developing the cross-curricular competences appeared based on the learners' needs for life long learning and because of the specific competences developed on different specific subjects which do not include all the skills students needed. One of a good model to be followed is the *Québec Education Program* (2009).

At university level it is important to develop the cross-curricular competencies through all subjects and all types of activities. They represent aspects of education that are the responsibility of all teachers. These competences will help students to adapt to a variety of situations and continue to learn throughout their lives. They are mutually complementary, since all complex situations necessarily call for more than one cross-curricular competence at a time. It could be interpreted as an applicaton of the constructivist approach of learning.

2. CROSS-CURRICULAR COMPETENCES

Today, the competences are frequently used in normal speaking, implicit in pedagogical languages by reffering to the students or teachers competences (Chi , 2005). The Lisbon Strategy (2000) is reffering to the quality of education and of the teachers who are realizing it, meaning that the formation of competences at the ones who are being trained and the formation of competences at the ones who are training the others.

The cross-curricular competences apply to all the broad areas of learning and are closely linked to the subject's specific competences, which draw on them to varying degrees, thus contributing to their development. These competences are developed both at school and especially in universities through a gradual process.

The Québec Education Program proposes nine cross-curricular competences grouped in four categories (*Cross curricular competences*, 2009): intellectual: uses information, solves problems; exercises critical judgment; uses creativity; methodological: adopts effective work methods; uses information and communications technologies; personal and social: achieves his/her potential; cooperates with others; communication-related: communicates appropriately.

Each cross-curricular competence is presented under four headings: the *Focus of the Competence* indicates the competence's function and nature; the *Key Features of the Competence* describes the components; the *Evaluation Criteria* suggests ways to judge the extent to which a student has developed the competence and the *Developmental Profile* gives an idea of how the competence develops over time.

It is important for the teachers from higher education to take into account and to address by their activities to the competences mentioned before. Especially for the teachers from technical higher education it is needed to develop the competences which will help the students to transfer the knowledge and the skills into practice and to form some frames which will facilitate, in the future, the adaptation of the new information and procedures to its own knowledge. The dynamicity of technical field asks for the formation of cross-curricular competences.

3. MODALITIES OF ADDRESSING CROSS-CURRICULAR COMPETENCES

The idea of cross-curricular competence may seem new, but it corresponds to the practices already used by many teachers and other educators to encourage their students to draw on their cognitive, social and emotional resources in order to integrate knowledge better. In this sense, the cross-curricular competences are not really a new feature of the curriculum, but rather a set of guidelines that make it easier to identify important dimensions of learning that should be used and worked on in all the subject areas and in the broad areas of learning and should not constitute the focus of students' work, in isolation from any program content.

The intellectual competences play an essential role in learning and, consequently, they concern all the subjects. Although some subject areas are more spontaneously associated with certain cross-curricular competences, they do not have a monopoly on them. All of the subject areas can offer students

many opportunities to call upon them, to use and to develop them. For example, in the area of technology from school (for a pupil) or in a technical field (for a student) problem solving, may be used in any subject as long as students do not simply reproduce an existing procedure. It is also important for students to use their critical judgment in many learning situations.

The intellectual competences, which are essential tools in the integration of subject-specific knowledge, are also useful for dealing with problems or carrying out projects related to the broad areas of learning.

The methodological competences are closely linked to the techniques, strategies and tools required in various subject areas. Every subject constitutes an appropriate context for helping students to adopt effective working methods and to use information and communications technologies properly, but also to recognize and evaluate their personal learning styles. This process has a metacognitive dimmension, related to the knowledge that students acquire about their own ways of understanding and learning and the way in which they manage them.

The personal and social competences are related to several of the focuses of development of the broad areas of learning, particularly those that deal with the adoption of behaviors and attitudes— everyday teaching practices and positive role models play a greater part in helping students to develop the personal and social competences.

The communication-related competence involves the assimilation of various modalities of communication and their appropriate use in a variety of contexts and they can be developed only if all teachers share a concern for language quality and an effort should be made in every subject to use many resources for communication.

4. THE ASSESMENT OF THE CROSS-CURRICULAR COMPETENCES

In the "Report on key competences on Europe" (2009), the authors underlined the two main questions which will structure the assessment of the cross-curricular competences: What is being assessed? (typology of assessed constructs, assessing knowledge, skills and attitudes, competences and contexts) and How are these competences being assessed? (competences, sub-competences and indicators, acquisition of 'competence', modes of assessment and purposes). This model will help the teachers from technical higher education and they could be used as guidelines for the evaluation of the competences for the cross-curricular competences.

There is a different typology assessed among the Member States and it could be used as example in order to adapt some models to teachers' own needs, regarding teaching and learning contexts: in Flanders, this assessment focuses on final objectives (relating to learning areas and cross-curricular themes), and cross-curricular final objectives, which define the minimum set of knowledge, skills and attitudes required to pupils during compulsory education and continuing after that for students in higher education system; in Finland, knowledge, skills and attitudes are embedded in the subjects and cross-curricular themes of the curriculum and the cross-curricular themes include, for example, 'active citizenship and entrepreneurship' and 'sustainable development'; in Greece, the cross-curricular thematic framework for compulsory education includes general goals, including knowledge, values, attitudes and skills which corresponding to or integrate each of the key competences set out in the EU reference framework. For Romania, the key competences are in the process of being introduced in the new Education Law, but the cross-curricular competences aren't stipulated. It will be a good exercise for the teachers from all levels to realize this, by taking into consideration the examples mentioned above.

The second question indicates that the key competences which have been identified, each naturally broad in scope, have been disaggregated into sub-competences. These sub-competences can then be attributed to learning outcomes in the form of measurable statements. This enables teachers or other assessors to interpret the competences in the specific circumstances of each pupil and the contexts in which learning is taking place. For example, in Belgium (Flanders), the content of cross-curricular final objectives is broken down into areas and, in turn, into outcomes statements for teachers to use (one of the areas within the cross-curricular competence of "social skills" is "ways of relating"); in France, the *Livret de compétences* records "global and itemized" observations of the learner during the learning process to assess sub-competences and competences, Northern Ireland's levels of progression for cross-curricular skills take a similar approach but also describe outcomes at seven levels; Ireland provides another example of the disaggregation of competences – a key skills framework is currently being developed, in which each skill is broken down into essential elements and learning outcomes, the elements further describe the skill, clarifying the skills that students will develop and the learning outcomes indicate what students might show as evidence of achieving in the key skill.

5. CONCLUSIONS

The present paper tried to signalize the importance of an integrated view on education, for teachers from different areas of study, especially for teachers from technical education because this could be a good starting point or could serve as guidelines for adapting the models which are already in use.

Because of the dynamics of the technical fields, it is essential that teachers and students realize that the construction of the competences for life long learning begins with the developing of key competences and cross-curricular competences. The European models of realizing are good opportunities for Romanian teachers to frame it by adapting or creating new contexts in which students could construct their learning in order to achieve these competences that will serve for continuing education.

Also, the assessment of these competences is the teachers' feed-back, needed for the restructuring of the competences or contexts in order to respond to the needs of students and of community.

6. REFERENCES

Chis, V. (2005) Pedagogia contemporană – pedagogia pentru competențe (Contemporary pedagogy – pedagogy for competencies), *Colecția Științele Educației*, Casa Cărții de Știință, 973-686-695-5, Cluj-Napoca

***Lisbon Strategy* (2000), available at http://en.wikipedia.org/wiki/Lisbon_Strategy, accesed 2010-02-10

***Cross curricular competencies (2009). In *Quebec Education Program*, chp.3, pp. 33-53, *available at* www.mels.gouv.qc.ca/DGFJ/dp/programme_de.../pdf/.../chapter3.pdf, accesed 2009-02-27

*** Key Competence in Europe: Opening Doors for Life Long Learners Across the School Curriculum and Teacher Education 2009, on *Case Network Reports*, vol 87, pp. 123-147, CASE-Center for Social and Economic Research on behalf of CASE NetworkEAN 9788371784972, Warsaw, *available from* http://www.case-research.eu, accesed 2009-02-15

***Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning* (2006/962/EC), Official Journal of the European Union