WCES 2012

Competence-based curricular design for foreign language teaching in the Romanian Technical Universities

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Abstract

The present article aims at describing specific types of foreign language competences tailored for engineering students enrolled in the Romanian-language-taught bachelor programmes of the Romanian technical higher education. The research subscribes to the current methodological approach of the Romanian higher education which focuses on quality assurance and prioritizes learning outcomes and the formulation of course objectives in terms of knowledge, skills and know-how.

Keywords: competence-based curriculum, foreign language teaching, technical universities, methodological approach.

1. Introduction

Defined as the strategic objective of a knowledge-based society (Lisbon Strategy, 2000), foreign language teaching is currently subscribed to the global context of internationalization of personal and professional relationships. Consequently, any foreign language training programme is to be conceived so as to provide, on the one hand, an instrument of both general and professional communication, and, on the other hand, to enable assimilation by language users of intercultural communication-related principles. Foreign language teaching in technical universities is expected to reach this double goal so that, at the end of the language training programme, the engineering graduate will successfully face the challenges of today’s dynamic, ever-changing society. “The knowledge, competences, skills and abilities acquired by students must be sufficient to enable graduates to get employed, to start their own business or to further their education in post-graduate programmes (Specific Standards of academic assessment for degree programmes in the fundamental field “Engineering sciences”, 2009, p. 8).

The present research aims at outlining the competences underlying the elaboration of the foreign language curricula within the Romanian-language-taught bachelor programmes of the Romanian technical universities\textsuperscript{†}. It has sparked as a stringent need of harmonizing the foreign language curricula of the Romanian technical universities viewed as a core goal of the Romanian higher education reform. In Romania, the reform of the higher educational...
system started in 2005 with a view to applying Bologna objectives in order to harmonize the European higher education and transform it into a more unitary, flexible, coherent and transparent system. The reform of the training programme and the curricular reform are part of this process.

The paper extends previous research interests centred on the establishment of specific criteria for foreign language curricular design customised for the engineering field (Pop & Tănase-Robescu, 2009), theorizing the concept ‘competence’ (Mazilescu et al., 2010), defining training stage objectives for foreign language teaching in technical higher education in the view of the competence-based approach (Pop, 2010a) and the types of written mediation activities in foreign language teaching in technical universities (Pop, 2010b).

The description of the competences needed by users in the field of foreign languages is approached by the Common European Framework of Reference for Languages (CEFRL, 2001) and other studies, yet, the advanced principles and guidelines are targeted at general communication. The present research focuses on the issue of foreign language teaching in a specific context, namely the technical higher education. The suggested methodological and conceptual basis can be applied to other non-philological higher education fields (economic sciences, juridical sciences, social and political sciences, agricultural sciences, etc.). Furthermore, the research addresses professionals in the field of foreign language teaching, be they researchers or practitioners, curricula designers, university language teachers activating in non-philology faculties.

2. Research design and methods

2.1. Methodological approach

The authors have assimilated the principles underlying a new educational paradigm labelled ‘competence-based approach’ that has led to the reform of the European higher education. Viewed pedagogically, this type of approach has induced a paradigm shift from the teacher / trainer-centred education or knowledge transfer-centred education to the action-oriented education and learner-centred education. Methodologically speaking, the specific objectives of a training programme are defined in terms of competences that must be acquired by the future graduates. Our research is envisaged in the framework of this new reforming paradigm that focuses on the concept of ‘competence’.

2.2. The concept of ‘competence-based curriculum’

The concept of ‘competence’ is the core element of the competence-based education which views competences as standards that serve the development and recognition of individual accomplishments and performance (Spector et al., 2006) or as “an integrated set of knowledge, skills, attitudes and judgments that enable one to effectively perform the activities of a given occupation or function to the standards expected in employment” (Tardif in Curran et al., 2009, p. 297). Professionals in the field of education acknowledge that the concept of ‘competence-based curriculum’ has become widely accepted as a “way to define the knowledge, skill and attitudinal outcomes expected of the pre-licensure learner” (Curran et al., 2009, p. 297). Quite an elusive concept, given its multitude of definitions, ‘curriculum’, in other research studies (Kelly, 2009), is primarily concerned with the development of competences viewed as critical assets that enable people to cope with personal, social and professional challenges.

In foreign language teaching, the concept of ‘competence’ is defined by CEFRL (2001, p. 9) in light of the action-oriented approach which sees “competences are the sum of knowledge, skills and characteristics that allow a person to perform actions”. The language user is seen in his / her interaction with other individuals and the surrounding environment as a social actor able to perform specific tasks at the end of the training programme according to the field in which s/he functions, be it educational, professional or familial.

2.3. The conceptual-methodological model

The present research is rooted in the conceptual and methodological model used for the description of the competences related to the study programmes of the Romanian higher education (CNCIS Methodology, 2008) as well as in the action-oriented approach to foreign language teaching advanced by CEFRL (2001).
In previous research studies (Pop & Tănase-Robescu, 2009; Pop, 2010a), we have argued in favour of a modular teaching and learning programme, identifying three stages of foreign language training programme: 1. the stage of general language training targeted at developing general communication skills; 2. the stage of specialised training with two components: a stage of initiation into specialised communication based on the assimilation of the vocabulary and structures characteristic of the general technical discourse, followed by a stage of further development of the technical vocabulary and specialised domain-related communication in close relation to the field specificity; 3. the stage of socio-professional training oriented towards the development of techniques of written and oral communication demanded by the current professional environments.

Because only the stage of specialised training is characteristic of the engineering training, whereas the stage of general training and the stage of socio-professional training can characterize the other non-philological fields, we shall focus on the competences underlying the communicative competence in the special purpose language.

The various types of competences are being described in terms of knowledge (‘cognitive competences’) and practical skills and know-how (‘functional / action-oriented competences’) intended to be acquired by the engineering graduates.

3. Types of competences underlying the communicative competence in the special purpose language

Inspired by CEFRL’s general communication-oriented model (2001, p. 108-130), the authors have identified three components within the communicative competence in the special purpose language: linguistic competences, pragmatic competences and mediation competences.

3.1. Linguistic competences

According to the adopted conceptual-methodological model, this category can be described in terms of ‘cognitive competences’ (mastering the general technical vocabulary and the engineering field-specific vocabulary with a view to successfully deploy them later in professional settings) and in terms of ‘functional’ / ‘action-oriented competences’ (deploying spoken and written special purpose discourse for specific functional purposes).

The linguistic competences entail the following components:

a) Knowledge: mastering the terminological resources of the special purpose language (general technical vocabulary common to the technical field and / or specialised vocabulary specific to the engineering degree, derivation of technical terms, technical text syntax, etc.);

b) Practical skills and know-how: reading / comprehension of written and spoken messages characteristic of the technical field regarding topics of interest for technically-minded users (understanding a lecture on a technical topic, comprehension of a general technical text and / or specialised text); reading / comprehension of figures, percentages, symbols, chemical elements, measuring systems, charts, drawings, tables, schemes, legends, etc.; production of written and spoken messages regarding topics of interest for technically-minded users: delivering presentations on technical topics, descriptions of objects (components, tools, instruments), product / equipment descriptions (dimensions, shapes, features, materials), describing processes and operations, writing technical instructions or reports, note-taking during presentations on technical topics.

3.2. Pragmatic competences

According to CEFRL (2001, p. 123), “pragmatic competences are concerned with the user / learner’s knowledge of the principles according to which messages are: organised, structured and arranged (‘discourse competences’); used to perform communicative functions (‘functional competence’); sequenced according to interactional and transactional schemata (‘design competence’). The pragmatic competences can be described in terms of:

a) Pragmatic knowledge entailing discursive knowledge (i.e. mastering rules for organizing and structuring the general and specialised technical discourse such as coherence, cohesion, thematic organization, logical reasoning)
and functional knowledge (mastering the communicative functions characteristic of general / specialised technical communication).

b) Practical skills and know-how such as structuring discourse in order to produce coherent and logical written / spoken messages (e.g. initiating and maintaining a conversation on a technical topic, writing a coherent text in the target language on a specialised topic, structuring information in a presentation, describing various mechanisms, products, equipment, operations, etc.) or deploying communicative functions characteristic of technical language (defining, describing, exemplifying, generalizing, arguing, etc.).

3.3. Mediation competences

The term ‘mediation’ was coined by CEFRL and is understood as a form of communication mediation in foreign language teaching. The “oral” and “written mediation” include “spoken interpretation and written translation as well as summarising and paraphrasing texts in the same language when the language of the original text is not understandable to the intended recipient” (CEFRL, 2001, p. 87).

In addition to the linguistic and pragmatic competences in the special purpose language, the authors have identified the need of getting students accustomed to mastering the technics of oral and/or written mediation, particularly from the source language into the target language, to searching, retrieving and documenting techniques, therefore they have subsumed under the umbrella term ‘mediation competences’ the following:

a) Knowledge: written and spoken rendering, particularly in the target language, of short passages of general or specialised technical sequences (e.g. rendering from the source language into the target language of equipment operation instructions, comparing specialised terms, etc.), mastering the various categories of information retrieval resources including paper-printed and electronic resources (dictionaries, glossaries, lexicons, websites, etc.);

b) Practical skills and know-how: identification and interpretation of topics, terminology, discourse structures, transcoded elements, graphical and visual elements specific of technical texts, retrieving information and getting documented on a given topic, selecting relevant information, processing data, deploying technical dictionaries, glossaries, lexicons, parallel resources, search engines, etc., summarising a technical text on paragraphs, extraction of essential information in a text, paraphrasing sentences that raise terminological, stylistic or contextual problems, establishing translation equivalences, translation of the whole text or of a paragraph.

This type of competence can be practiced and developed in mediating activities, specially written mediation activities (Pop, 2010b, pp. 1519-1520): text comprehension activities, information and documentation activities, paraphrasing activities and translation activities.

The technical competences and personal development-supporting competences are regarded as indispensable in the engineering students’ training, yet they are not acquired in the stage of foreign language training programme.

Similarly with the already-described competences, technical competences are ‘professional competences’ can be outlined in terms of knowledge and practical skills and know-how. Knowledge consisting of technical knowledge acquired through education, information or experience (this type of knowledge is related to the engineering field attended by students, e.g. the field of civil engineering with its metallic construction) and procedural and fact-oriented knowledge regarding mechanisms, processes, operations, equipment, objects associated to the technical domain (e.g. technical data, data regarding equipment operation, process description). Practical skills and know-how concern the students’ ability to identify, to describe, to explain mechanisms, processes, operations, objects associated to the general and / or specialised technical domain. In accord with the intercultural communication-related principles, intercultural skills can be added to the engineering students’ training, as the ability to relate one’s own professional culture to the foreign culture and sense differences (e.g. technological innovations, product design styles, mechanism functioning etc.).

The personal development-supporting competence is included by education professionals in the category of transversal competences that can be developed and enhanced throughout life. Within the stage of specialised training, the personal development-supporting competence implies the users’ capacity to learn, to make progress, to discover latest advancements in the chosen engineering field, and, equally important, the users’ capacity to refine and develop his / her linguistic knowledge and special purpose language skills through reading, self-study, professional contacts, experiences, etc.
Conclusion

The model suggested for the competence description comes as a helpful working tool that can serve the elaboration of curricular models. Curriculum designers shall examine and precisely determine the topics, structure and content elements that are adequate for the students’ study field. The language teacher’s responsibility shall be to select the activities and pedagogical resources appropriate for the students’ field, simultaneously taking into account the two components of the specialised training stage (initiation and specialised training) as well as the students’ language proficiency.

To sum up, the authors consider that any foreign language training programme in technical universities should aim at offering students adequate knowledge, skills and abilities so as to ensure graduates’ better interpersonal socialization in face-to-face, written, phone-based communication (the stage of general language training), linguistic knowledge, skills and know-how in the technical field that enable engineering graduates to integrate in a foreign team (the stage of specialised training), and, last but not least, a basic training in the area of professional communication (the socio-professional training).

Although the space constraints did not allow the description of all types of competences associated to the three language training stages identified in previous research, the authors consider advancing the research on competence description in subsequent studies.

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