
PEDAGOGY

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The Importance of Incorporating the Competence-based Approach in Teaching ICT Students

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Abstract. The article aims to provide an adequate theoretical background on the subject of key competences, competence-based approach and competency-based learning. It also presents techniques of teaching key competences and soft skills to ICT students during foreign language classes as well as the methods of successful competence assessment. The paper seeks to determine successful methods of incorporating competence-based approach in the foreign language curriculum and to provide techniques of combining key language skills and core competences into the educational (learning) process.

Keywords: *competence, competency, competence-based approach, competency-based learning, skills*

Introduction and main concepts

The beginning of the 21st century brought new tendencies and essential changes to the way we look at education. *The Education and Training 2010* program came as an answer to the concerns of *The Lisbon European Council* from March 2000, that education might have ceased to provide the skills, competences and qualifications needed by students, young and experienced professionals. This brought life-long learning under the spotlight and made key (core) competences a priority for all age groups. The Recommendation of the European Parliament and of the Council on key competences for lifelong learning from 18 December 2006 listed eight 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; cultural awareness and expression; [13]) which all individuals need for personal fulfilment and development, active citizenship, social inclusion and employment. This is where competence-based approach comes in learning as a mediator between the needs of the Business and the Education's curricula.

For the needs of this research we first have to state the difference between the terms *competence* and *competency* as they are often used in the same context and with time various sources blended their definition. Competence is the functional (technical) set of traits required to perform a job better, e.g. presentation skills or IT skills. Key competences for lifelong learning, then, are a combination of knowledge, skills and attitudes appropriate to the context. They are essential in a contemporary society and guarantee flexibility in the labor force, allowing it to adapt more quickly to constant changes in an increasingly interconnected world. They are also a major factor in innovation, productivity and competitiveness, and contribute to the motivation and satisfaction of workers and the quality of work. [11] Selevko presents competence as a systematic, multidimensional concept which expresses the ability to meet individual and social needs or to perform an activity or task according to the individual's potential. [5] Competence here is the willingness or skill to carry out the work, a set of norms that influence the efficiency of labor.

Competency, on the other hand, can be defined as "a person's underlying characteristics that are related to effective or superior performance in a job or situation". [8, p. 15]

Velikova adds to the definition that competency is "not just the ability to do something, but rather the ability to perform it skillfully, with agility, properly and at that moment, at the current location for the given purpose." [9, p. 3-19] Competency includes a "person's ability to transfer concepts and skills across content areas and has to do more with improving self-skills and character traits." A sample competency might be the following: "Students will demonstrate the ability to comprehend, analyze and criticize informational text in print and non-print media." [6, p. 2] Related to this is the competency-based learning which aims to improve students' chances to learn the most critically important knowledge, concepts, and skills they will need throughout their lives. Thus, at its core the competency-based learning has two elements: the competency itself, and the assessment by which that competency is measured. [2, p. 3-5]

Competence-based approach and competency-based learning

An increasing number of organizations realize the need of developing a competency model to support organizational strategy and values, turning them into clear, measurable and generally accepted standards for their professionals' skills and behavior. Competence framework has rapidly gained popularity in Bulgaria in recent years. Therefore, some professional associations, such as BASSCOM (Bulgarian Association of Software Companies) have already successfully introduced competence standards within the association. These standards are based on the best European practices, but consistent with the terms of Bulgarian business environment, national and legal frameworks, and reflect the requirements of the ICT related professions in Bulgaria.

The Competency Model is a framework of complementary competencies describing the necessary behavior for achieving the best results in a working position. It is a combination of multiple capabilities, which altogether determine the successful job performance in a particular environment. These models are commonly tables showing the most essen-

tial skills and relevant monitored behavior necessary for excellent performance.

Competence development and assessment is regarded as a key strategy to harmonizing the employment prospects and free movement of labor within the EU, where competence-based professional growth is seen as a means of achieving competitive advantage.

Many of the competence approach ideas have actually occurred as a result of learning situations within the labor market, as well as a result of certain prerequisites applied to jobseekers. Thus, Business set specific and detailed requirements towards prospective job applicants. These are the requirements Education has to comply with in its effort to generate adequately prepared young professionals.

According to the *Glossary of Education Reform* the general goal of competency-based learning is “to ensure that students are acquiring the knowledge and skills that are deemed to be essential to succeed in school, higher education, careers, and adult life.” [10] While the goal of competency-based learning is to ensure that more students learn what they are expected to learn, the approach can also help educators with more detailed information on students’ learning progress, which can help them more precisely identify academic strengths and weaknesses, as well as the specific competences students have not yet mastered. In order to successfully acquire competences, one also needs competencies.

Competence-based approach in EFL classes and Evaluation

The following research is conducted during the *English Language for General Purposes*’ classes of ICT students at University of Plovdiv “Paisii Hilendarski”. The process of teaching English at the *Faculty of Mathematics and Informatics* is founded on the redistribution of students from administrative groups into language groups. In the administrative groups all students from a given specialty, or program, are assigned, depending on their faculty numbers. In contrast, language groups are formed on the basis of the students’ knowledge and skills in English. [7] The experimental group is formed by first year students who study Informatics at the *Faculty of Mathematics and Informatics* and are distributed in the Elementary Level (A1) group. The group consists of twenty-five students. The methodology used is based on the principal of using the foreign language as a means of teaching soft skills, social and cultural competences, but also of provoking life-long learning incentive, sense of initiative and enterprise spirit.

The English language classes’ curriculum is divided into two parts. Part one focuses on teaching language skills such as: writing, reading, listening and speaking with emphasis on grammar. Part two focuses on developing functional skills and competences during the classes, namely: research skills, presentation skills, teamwork and decision-making skills, reliability and commitment, critical thinking, time management skills, self-assessment and peer assessment skills. Both parts were incorporated in the learning process and are involved in each week’s lesson.

Each class has similar structure so that students can get familiar with the process and be aware what to expect. Thus, each lesson comprises of three parts:

- At the beginning of each class time is allotted for discussing the self-study projects and the homework. This is the time when students present their individual work, when they assess their peers and give feedback. Due to the heterogeneous character of each individual assignment, presentation and evaluation time varies.
- Then, there is the grammar section of the lesson. This involves teaching language skills, exercising, and revising previous lessons. These activities aim to develop writing, reading, listening and speaking skills, proficiency in grammar and ICT vocabulary. The exercise always includes teamwork, presentation and leadership skills, creative and innovative thinking.
- The time of the lesson left is used by the teacher to give directions for next week’s assignment. This is the time for questions and discussion.

Lessons focus on a few important steps to ease the teaching process and to increase the degree of involvement on students’ behalf. For this purpose the teacher uses some successful teambuilding techniques, specifically adjusted for classroom environment. At the beginning of the semester students are distributed in teams (four to five people) and remain part of the team till the end of the semester. Teamwork is encouraged by students working with their teams in class and completing self-study tasks with the other team members. As well as this, the most productive team at the end of the semester ensures a boost in each member’s final grade. As motivation is essential for the subject, “healthy competition” between teams, as S. Rimm calls it, is encouraged. [4] All of the students’ activities aim to develop certain skills. Brainstorming sessions focus on teamwork, innovative and out-of-the-box thinking, time management skills and goal setting. Group PowerPoint presentations develops self-motivation, attention to details, research skills, as well as management and public speaking skills. Peer evaluation between teams emphasizes critical thinking, decision making, personal and group responsibility. Lastly, a job fair activity involves presentation skills, stress management, sense of initiative and enterprise spirit.

The main purpose of the experimental methodology is to bring students as much as possible to real work environment and to teach them some core competences that they can use in any professional sphere. For this reason, it is very important that students observe and witness their own progress. As evaluation is also a vital part of incorporating the competence-based approach in EFL teaching, a questionnaire is developed to assist students in their self-evaluation and to keep track of their advancement. The questionnaire contains forty-four self-reported questions related to seven research constructs (categories). In it competencies are measured using a five-item scale instrument where 1 corresponds to very poor and 5 corresponds to excellent. Competencies are measured in terms of user’s ability, intensity and purpose, as well as application.

The students fill in the questionnaire twice- once at the beginning of the semester and once at the end. The ques-

tionnaire comprises of questions testing students' core competences and functional skills and includes several questions on the students' EFL teaching preferences. The questions are united under several practical areas that are to say:

- Applied skill areas (teamwork skills, presentation and public speaking skills, brainstorming and collective thinking skills, task management skills);
- Communication skills (verbal and non-verbal communication, understanding and group dynamics management skills, information structuring skills);
- Personal skills (decision-making skills, skills related to understanding others' perspective and behavioral norms; personal responsibility and planning);
- Emotional skills (feelings and stress management);
- Reflective skills (objective and factual-based thinking skills, creative and proactive thinking, critical and constructive thinking skills, problem-solving and result-oriented thinking);
- Other skills (time management skills, enterprise spirit, detail and quality orientation);
- EFL- related questions;

After processing both questionnaires' data we observe the following results. We monitor deviation in the general-

ized results from the whole questionnaire as well as in the several practical areas. Based on the self-evaluation questionnaire's overall results students have increased their functional skills and core competences by 8.86%*. The result testifies that students claim to have improved their competences. Based on the practical areas of research we can draw the following conclusion, included in Fig.1:

- The section which demonstrates the highest growth is Emotional skills. It has an increase of over 12%. This practical area shows that emotion and stress management, as well as impulsive behavior control were all well-mastered. It can be the key to later demonstration of competencies such as: will to succeed, ability to work autonomously, interpersonal skills and dedication.
- On the contrary, the overall Personal skills section shows a decrease by almost 2%. This is to witness that teamwork activities strengthen devotion to the group and team spirit. However, it may have a negative effect on taking personal responsibility as group members tend to display group responsibility and avoid accounting for their own actions. Thus, a note for future work will be to involve more initiatives inside the group where participants can develop personal responsibility.

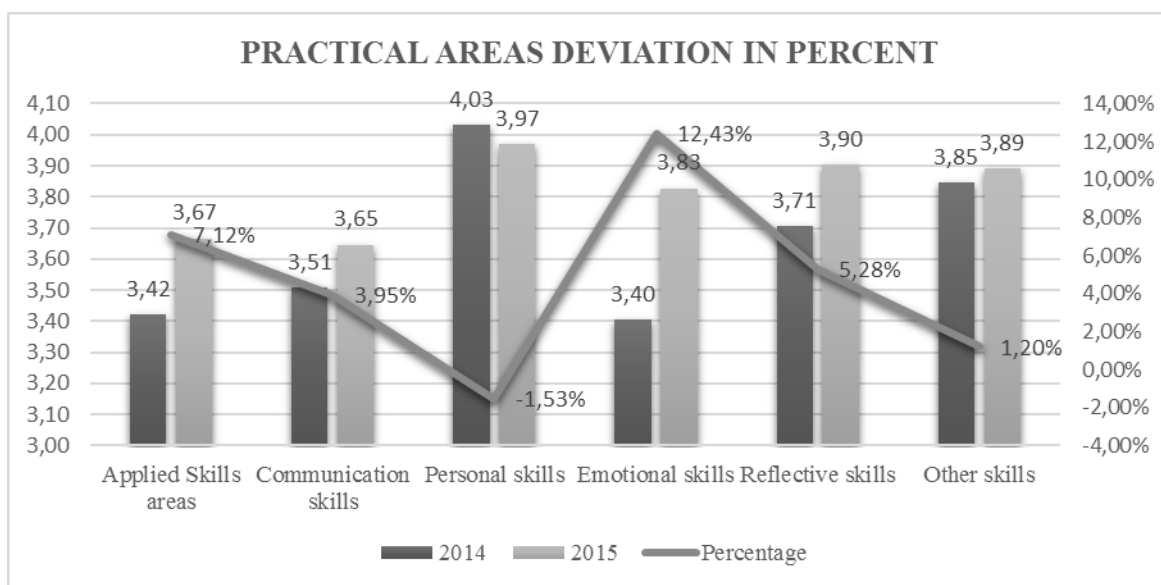


Fig. 1

It is worth to mention the Practical areas' ratio towards the whole questionnaire. Reflective skills questions comprise about 30 % of the whole questionnaire (Applied skill areas are roughly 17%, Communication skills - 14%, Personal skills - 14%, Emotional skills - 11%, and Other skills - 14%). Fig.2 This is due to the fact that Reflection skills are vital to the successful professional realization in the ICT sphere. It consists of questions exploring strategic thinking, creative and out-of-the-box thinking, innovative thinking, problem-solving and result-oriented thinking. The fact that this part represents the largest share of the questionnaire can

testify for the most reliable deviation ratio. Here we observe a 5.30% increase in the overall results.

Based on the personally achieved results from the self-evaluation questionnaire, we can conclude that 64% of the students have increased their competence and functional skills level, 28% claim to have a minor decrease in their competence and functional skills level and with 8% we do not observe any change. This signifies that on one hand students consider to have bettered their competences in the researched areas; on the other- that students can now demonstrate a more accurate and trustworthy self-evaluation.

*The calculated results exclude the EFL-related questions.

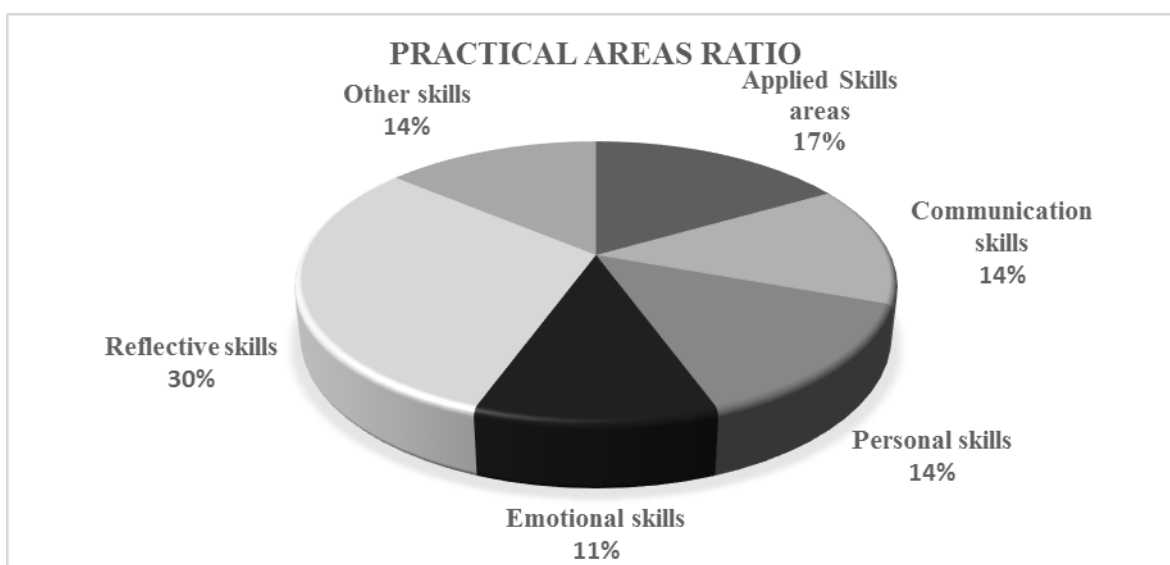


Fig. 2

Conclusion

The development of key competences for lifelong learning has been an important policy imperative for EU Member States. Key competences were expressed in the European Reference Framework (OJEU, 2006), which built on previous developments by the OECD, UNESCO and Member States themselves. [1] The incorporation of key competences or similar intended learning outcomes in school and university curriculum frameworks has therefore been evident for some time and is a much needed effort in Education's attempt to approach Business. The conducted research

shows methods of core competence and functional skills implementation within the EFL classes. Here, the idea is not to substitute language skills with competency-based learning, but rather to use the language as a means of teaching practical ICT oriented competences. The methodology aims to enhance students' soft skills, as well as social and cultural awareness, but also to provoke life-long learning incentive, sense of initiative and enterprise spirit. It does not intend to disclaim traditional methods and standard techniques; it only attempts to add a more contemporary and functional approach towards learning practices.

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Бойкова К.Д. Значение компетентно-ориентированного подхода в обучении студентов в сфере информационных и компьютерных технологий

Аннотация. Цель статьи – предоставить адекватную теоретическую основу таких понятий, как компетентность, компетентно-ориентированный подход и компетентно-базируемое обучение. В статье представлены как методы преподавания ключевых умений и компетентностей студентам по специальностям в области информационных и компьютерных технологий, так и оценка приобретенных компетентностей. Автор стремится показать, как компетентно-ориентированный подход может быть успешно включен в учебную программу по иностранному языку, и продемонстрировать методы сочетания (в преподавании) основных языковых умений и ключевых компетентностей.

Ключевые слова: компетентность, компетенция, компетентно-ориентированный подход, обучения на основе компетентности