Developing Information Literacy

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Abstract

Currently, due to changes in Slovak Education we increasingly often meet with the concept of competences, key competences. We tend to speak about key competences as a new phenomenon in education. The term originates from the 1970s in economics where it represented a set of specific requirements for the job seeker. It was transferred to the field of education in the late 90s where it serves as a bridge between the requirements imposed by employers in the labour market and the graduate's profile. The term competence is used both in professional and common language; and ability, skill, capability, effectiveness, capacity, desired quality and others are used as synonyms for the group of terms. A person who has the abilities and skills, motivation, knowledge, etc., to carry out tasks well in a particular field is considered competent. Competence is usually applied to individuals, social groups and institutions in case they successfully fulfil requirements and achieve goals set by their environment. The theory of key competences has not yet been completely formulated and neither does a comprehensive and widely accepted definition exist. This paper will focus on information literacy and developing competencies in the information society as one of the necessary key competencies.

Keywords: Different learning, Teaching of module system, Information society, Information literacy

1 Introduction

According to Hrmo, "Key competences are a set of interiorised, interconnected groups of acquired knowledge, skills, abilities, attitudes and valuing approaches, which are important

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for the qualitative personal development of the individual, his/her active participation in society, application in employment and lifelong learning" (Hrmo, 2003).
Another definition states:

> "Having competence means having complex equipment of personality, which allows the individual to successfully address challenges and situations in life, in which one can adequately orient, take appropriate actions and take a beneficial attitude. Key competences need to allow the individual to refresh the skills and knowledge applicable in everyday life continuously. For a person in training not all educational activities (cognitive, training, and educative) need to be beneficial, but especially those, which are useful in standard practice, provide quality education and correspond with company requirements in the labour market. The attended educative process or certificate of the attended educative process is crucial, as are the learning outcomes."

2 The Concept of the Information Society

Information society from the point of view of an ordinary person, is a society where the work with information is an everyday activity. Some different information and communication technologies (ICT) are used to work with information means the methods, procedures and means such as computers, electronic diaries, mobile phones and so on.
From a social point of view, an information society is a society in which informatics and information and communication technologies are becoming an economic force, identifying, and transforming the entire social system and acting as a means of creating new social, superclass and supranational structures fundamentally altering the mechanisms of social development.
Challenges of the information society and further development directions have been the subject of several papers at the international and national level. The following ones have an important role within the frame of documents of national character:

- Policy of Information Society in the Slovak Republic for 2015 – 2018 with a view to 2025.
- National Action Programme of Society Informatization
- Millennium – National Programme of Education in the Slovak Republic for the next 15 to 20 years (10-13).

The main benefits of the information society are:

- making available the usage of information sources and their tools by the general public,
- expansion and improvement of means of services and entertainment,
- promotion of education,

- new opportunities for the application of human creative abilities, as well as the employing of handicapped people in life through “teleworking”
- increasing cultural traditions and identity of regions,
- more efficient state administration,
- more effective management of enterprises, improving competitiveness, facilitating of connection between the manufacturer, service provider and the customers themselves,
- new services in telecommunications and new markets in the field of software,
- more effective health care (Kissné Zsámboki, 2021).

Information Society was first taught at J. Selye University in the winter semester of 2020/2021. Since the subject of Information Society was not included in the accredited programs, the content of the course was divided into several subjects. Most of the topics were included in the basic subject of Information and Communication Technologies, taught in the first years of education at the Faculty of Education of J. Selye University. Part of the topics appears in the continuing subject of Information and Communication Technologies II. The subject of Informatics is taught only one semester at the Faculty of Education so only four modules of Information Society are taught by means of presentations. Individual modules were evaluated based on tests which had to be passed by all the students as the procedure within the exam. Tests were carried out in the Moodle environment where the teacher could precisely evaluate the different parts and process the percentage of success. Thematic unit on e-learning has found its place in the subject Didactics of Informatics, which is an organic part of the Master Teacher Training program. Thematic unit on legal standards of information society forms a part of the subject called Law and Ethics s in the Use of Information and Communication Technologies.

2.1 Course: Developing Information Literacy

Our previous experience of working with students and executing subjects in the first years, shows that students come to college with ever-improving skills in ICT. Not always, however, are these skills sufficiently comprehensive and are usually associated only with general information literacy. We aim to develop these skills in students and shape subject information literacy (Ugrai, 2020).

The course will take the form of e-learning as part of the subject Information Society. Since we believe it is necessary to convey to students the following information as soon as possible, we have chosen Information Society as a reference subject due to its concentration on first-year students in the faculty of education.

The course is made up of five modules, each of them containing two chapters. Modules used as a proposal for teaching e-learning courses have specifically defined instructions for studying, introduction, module objectives, content and performance standards, instructional

text, summary, auto-test, additional literature, conclusions, and bibliographical references (Szőköl, 2015).

Individual modules are completed with a self-test summarising the discussed curriculum. After successfully completing this test, students can advance to the next module. At any time, frame of the program, students can use electronic consultations (Marks & Lajčn, 2017).

The study support of each module is divided and structured so that the acquisition of knowledge and the creation of knowledge by the study participants work with maximum efficiency. Efficiency lies mainly in the fact that the study participants can fully engage in the study of the educational content because it is not constrained by directed learning, as the study text includes features allowing rapid and accurate autoregulation. Participants in the study, after applying for the subject (course) receive the study materials.

2.2 The Necessity of Realization of the Modular System of Education

Quality is the measure of the perfection, preciousness, and usefulness of education and learning, fulfilling of requirements and expectations of the school's clients: pupils, students, parents, employees, and citizens of the country. The quality of education is able to rise continuously without consideration of the actual level (Pavlov, 2018).

Internally the subject informatics at the university is possible to reach only modularly, so all students can study only what they do not know. Different kinds of secondary schools have different standards which students have to reach. There are significant differences between the students, who are applying to universities from the area of informatics, which affect the competence and practical abilities from the enfaced area. Wherever in this area are existing standards, which influence the level of information ability of the senior, in most cases, the knowledge of the students, which are starting the first year at the university, are not reaching this standard. The reasons for these imperfections are different (Porubčanová, 2018). One of the reasons could be the kind of secondary school, as the level of teaching information and communication technology (ICT). The next reason for the big difference is that not all of the students have a connection to these disciplines, and many students are missing motivation. The first two reasons we can classify as external conditions of education, which are closely connected with the school's preparedness, which is concerned with the tooling of material-technology basics and preparedness of the students. The material and technology tooling of education is the question of finance, and in a short time, it could be changed from the nought to above the average. With the preparedness of the students, it is not so easy. It could be possible that the different knowledge of the students coming to universities will be a problem for a long time. That is why it could be a good solution to the modular system of education informatics – teach somebody, what he does not know with the help of a cloak test.

To ensure of informational knowledge on single levels, the educational programs contain basic and subjects oriented toward computing, informatics and information communication technologies.

3 Results and Discussion

The questionnaire included four teacher competences closely related to the internationalisation of education: *communication in foreign languages, digital competence, interaction skills* and *cooperative skills*. The averages for each listed competence were calculated from the questionnaire. We can conclude that none of the listed competences reached worse than the 3 points average, meaning that the respondents consider them at least essential or higher.

Communication in foreign languages is based on the ability to understand, express and interpret concepts, thoughts, feelings, facts and opinions in both oral and written form in an appropriate range of societal and cultural contexts (in education and training, work, home and leisure) according to needs. Competence in foreign languages requires knowledge of vocabulary and functional grammar and an awareness of the main types of verbal interaction and language registers. Knowledge of societal conventions, the cultural aspect, and the variability of languages is important. Essential skills for communication in foreign languages consist of understanding spoken messages, initiating, sustaining, and concluding conversations, and reading, understanding, and producing texts appropriate to the individual's needs. A positive attitude involves an appreciation of cultural diversity and an interest and curiosity in languages and intercultural communication. European Communities (2007)

Digital competence involves the confident and critical use of IST (Information Society Technology) for work, leisure and communication. Basic skills in ICT underpin it: the use of computers to retrieve, assess, store, produce, present and exchange information and to communicate and participate in collaborative networks via the Internet European Communities (2007). Digital competence is closely linked with technology skills. The use of ICT in teaching is also a particular technological process. This includes a variety of technical devices used alone or in combination with other teaching aids. Using ICT can easily and quickly connect with people from abroad, and so consult with experts or obtain new information to learn. However, the information is mostly not available in the national language.

Interaction skills are a part of interpersonal skills. Interpersonal interaction is a communication process that involves the exchange of information, feelings and meaning using verbal and non-verbal messages between two or more persons (teacher and children or teacher and others). Children learn and develop by interacting with teachers, each other's families and other people. Adults who are respectful listeners and keen observers prepared to negotiate, change their practice, and make meaning with children are most responsive to them. They know the children well, are sensitive to their current level of understanding, know

their interests and intentions, and pitch activities and experiences that are just beyond what they can currently do and understand to extend their learning. Their interactions promote children's learning and development and help them reach their full potential. (2)
Cooperative skills are a skill set everyone needs to cooperate effectively – i.e. work with others in a collective, non-hierarchical, democratically managed organisational structure. The cooperating teacher has the most significant and longest-lasting influence on the student teaching experience and the aspiring teacher's growth and development long after student teaching has ended. (1)

In our research of all monitored key competences, teacher competences, skills, knowledge and other attitudes, communication in the mother tongue reached the highest preference. Similarly, it was ranked first in the competence survey provided by Szőköl (2016) conducted by practicing teachers in Hungary. Overall, we found that our results and results by Szőköl (2016) regarding the most preferred teaching competences are very similar.
Only three competences reached the average value of 4.5 points: communication in the mother tongue, ability to take responsibility and expertise. Similarly, interaction and cooperative skills also got high scores in our questionnaire (Tab. 1).

However, our survey's lowest value (3.21 points) was achieved by mathematical competence and basic competences in science and technology – even though this competence also belongs to key competences. Although the preference for digital competence is higher than mathematical competence and basic competences in science and technology, but it is also very low, on the 33rd place in the ranking of all forty observed key competences, teacher competences, skills, knowledge and other attitudes. In the list of eighteen competences published by Bendíková (2014) digital competence is ranked on 16th place with 3.65 points.
A basic statistical evaluation of four selected teacher competences of the research is presented in Table 1.

Key competences, teacher competences, skills, knowledge and other attitudes	**Maximum**	**Minimum**	**Range**	**Modus**	**Arithmetical average**	**Variance**	**Standard deviation**	**Median**
Communication in foreign languages	5	2	3	4	3.73	0,70	0,84	4
Digital competence	5	2	3	3	**3.56**	0.62	0.79	3.5
Interaction skills	5	2	3	**5**	**4.41**	0.52	0.72	5
Cooperative skills	5	2	3	**5**	4.31	0.54	0.73	4
Sample size	**5**	**2**	**3**	**4**	**4.0025**	**0.595**	**0.77**	**4.125**

Tab. 1: Statistics on four selected teacher competences

Key competences, teacher competences, skills, knowledge and other attitudes	**Maximum**	**Minimum**	**Range**	**Modus**	**Arithmetical average**	**Variance**	**Standard deviation**	**Median**

Sample size: **40**	**4.58**	**3.21**	**1.37**	**4.2**	**3.90**	**0.14**	**0.37**	**3.875**

Tab. 1: Statistics on four selected teacher competences

Key competences, teacher competences, skills, knowledge and other attitudes	**Answers**				
	1 Unnecessary %	**2 Less necessary %**	**3 Important %**	**4 Very important %**	**5 Indispensable %**
Communication in foreign languages	0.00	7.50	30.00	**45.00**	17.50
Digital competence	0.00	6.25	**43.75**	37.50	12.50
Interaction skills	0.00	1.25	10.00	35.00	**53.75**
Cooperative skills	0.00	1.25	12.50	40.00	**46.25**

Tab. 3: Preference of four selected teacher competences

Table 3 shows the distribution of response preferences of the four selected teacher competences.

The reasons why should occur internationalisation and modernisation of teacher training programmes: Students obtain updated information and knowledge and are not burdened with data and knowledge not essential to their future life. Graduates succeed in today's world and be competitive in the labour market; be not only educated but also confident and independent; become able to work creatively and solve unforeseen situations but also to cooperate with others regardless of whether it is a fellow citizen or foreign.

4 Conclusion

Knowledge is only the basis of preferred core competencies of the individual and may not be sufficiently beneficial for individuals, even if they were associated with other components of competences. Acquiring key competencies is a life-long process. For these competencies to be developed qualitatively, we must achieve a quality education system.

In applying for an e-learning course, the process of initial motivation, the evaluation and classification of individual modules, and the process of exposure to the new curriculum are bound to be dealt with.

For teachers to lead their students to the use of the Internet in the learning process, they need to gain computer and information literacy, which means that they will get to know, understand and be able to explain the basic concepts of information technology, the use of a personal computer (PC) and work with data sets, work with a PC's word processor, create and work with tables, charts, figures, create and work with a PC's databases, create presentations, obtain information and communicate via the PC, i.e., to operate with the internet, create web pages, and handle e-mails.

Concerning that the transformation of the subject system of teaching to a modular system of teaching belongs to the most actual themes in the university system, the main benefits will be:

- Working out a modular system of teaching informatics in the theoretical field, as in practical realisation too.
- With the survey, we have found that the launch of the modular teaching system is reachable with individualisation of preparing students in big quantities and finally rationalisation of the teacher's work and reach higher affectivity of the teaching process.
- Launching the modular structure of content and adaptive method of teaching the subject of informatics will save the needed number of contact hours of the teaching hours. It follows that the requirements for the classroom technique will be fewer.
- The chance to use the teaching method "learning by doing" as the compensation absolving the contact hour.
- The number of needed direct teaching hours will be decreased by 38%. Single thematic wholes probably will have different replacements in the time plan of the teaching process.

In the validation process of the modular teaching system, it is necessary to work with the process of cloak motivation, the process of rating and classification of single modules with the process of exposition of the new tutorial, and the process of defining the homework.
At the beginning of the semester, we need to find out the level of the student's knowledge in the first class on the Faculty of Education of UJS in informatics. We need to find out their requirement and their preferred learning style.

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