

Information Literacy and Communication Skills of University Teacher

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Abstract

In the discussions about the quality of education, an important place have the questions about the academic curriculum, skills of search, interpretation and creative usage of the information. Therefore there are increased demands on the teachers in higher education and on their skills to work with texts. Teacher should critically and creatively work with variety of texts and information and also be able to teach the students to work in this way. There is also a need to be effective in the work with information, to create texts and be able to use tools of ICT as a part of education and functional literacy. The study brings besides the theoretical overview also some practical examples from the higher education and thoughts about selected questions.

Informationskompetenz und Kommunikationsfähigkeit der Hochschullehrer

In den Diskussionen über die Qualität der Bildung spielen eine wichtige Rolle die Fragen über den akademischen Lehrplan, die Fähigkeiten der Suche, die Interpretation und kreative Nutzung der Informationen. Deshalb gibt es gesteigerte Anforderungen an die Lehrer im Hochschulbereich und auf ihre Fähigkeiten mit den Texten zu arbeiten. Die Lehrer sollten kritisch und kreativ mit verschiedenen Texten und Informationen arbeiten und auch in der Lage sein, die Studenten so zu unterrichten, damit sie auch auf diese Weise handeln. Es ist auch notwendig, die Informationen effektiv anzuwenden, Texte zu erstellen und man sollte in der Lage sein, Instrumente der IKT als Teil der Bildung und funktionaler Kompetenz zu nutzen. Diese Studie bringt, neben dem theoretischen Überblick, auch einige praktische Beispiele aus der Hochschulbildung und Gedanken über ausgewählte Fragen.

Keywords:

Teacher competences
Information literacy
Digital literacy
Communication skills
Higher education pedagogy

Schlüsselwörter:

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Hochschuldidaktik

1 Introduction

Profession of "teacher in higher education" encompasses a wide range of activities. Their implementation, the frequency and number depends on the type of higher education institution, on the field of study in which the teacher works, on the period of the academic year in which the activity is carried out (e.g. semester, examination period, and the period of state examination), the category of a university teacher, their academic function, etc. The current Slovak legislation according to the Higher Education Act no. 131/2002 Coll. (Zákon o vysokých školách č. 131/2002 Z. z, § 75) defines the functions of university teachers as follows: professor, visiting professor, associate professor, assistant professor, assistant and lecturer. The work of teachers besides

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teaching and research activities includes the development of study materials, publication of results of research, in journals and at scientific, professional or artistic events. On the other hand, in the real professional activities of a university teacher prevail scientific research and teaching activities. Although both activities are closely related and significantly influence each other, views and opinions on their importance and balance in the structure of the profession are not clear. To the science, research and publication activities are attributed strong preferences (especially by the management of universities), but on the other side, especially at the position of assistant professor prevail pedagogical activities, teaching activities and work with students. Even the teachers quite often differ in their opinions on the proportion of these activities. For example, authors G. Kravčáková, J. Búgelová and T. Lukáčová (2011) investigated the proportion of different activities of university teachers. They found that full time university teachers spend the most of the time in the working areas: scientific and research activities, then follow indirect teaching activities, then other activities and at least the direct teaching activities. In the profession of university teacher and not just in the general public but also among their own members of a profession is emphasized primarily the expert erudition, therefore it must be highlighted the demand that the university teacher should be the personality integrating scientific expertise and pedagogical-psychological expertise. From this aspect there is a need to equally fulfill the qualification requirements of university teacher but also the need for lifelong learning and professional development.

2 University teacher and pedagogical competence

In the professional career, teacher is fulfilling several basic roles, for example the role of educator, scientist and researcher, but also administrator, etc. Teacher performs in multiple roles:

- Provider of information and experience (classical role of the teacher).
- Advisory and participative roles (study advisor, consultant, mentor, tutor, facilitator, and supervisor).
- Creative and evolving roles – (creator of curriculum and teaching projects, developer of learning materials, study guides).
- Roles of evaluation (evaluator of students, teaching and curriculum evaluator and self-evaluator).
- Managerial roles - teacher acts as the administrator (includes activities related to the creation of student assessment records in information systems and archiving products of student work).
- Roles of modeling – teacher acts as a model of profession. (L. Hunt and D. Chalmers, 2013 In Sirotová, M., 2014, p. 71-72).

E. Petlák (2008) considers the following roles of teacher as significant:

- Teacher as facilitator (protector, helper in learning).
- Teacher as communicative factor (supporter and initiator of interaction, two-way communication).
- Teacher as creative personality (using creative teaching methods, promoting a creative climate, promotes creativity of students).
- Teacher as pragmatist (plans, organizes and evaluates educational process).
- Teacher as informatician (using computer and multimedia technology).

2.1 The changing roles of university teacher

In connection with actual social requirements must be taken into account the changing roles of university teacher. At present, from the teacher are expected also creative activities in the field of development of special and scientific texts. These texts are scientific, educational, popularization and study texts (e.g. study texts – for students, methodical texts- methodological guideline for teaching, distance texts- texts for guided self-study etc.).

University teacher – *author of the study support* – is the role and at the same time it is the essential element of teaching competencies that nowadays significantly affect the socio-professional structure of the teacher in higher education. The same can be also said about the role of *tutor*, which *inherently* belongs to the modern educational technology and substantially affects the success of the large amount of the learners. In this context, communication skills, empathy, knowledge of psychology and adult education are prerequisite for tutor in fulfilling their role as adviser, consultant, "coach", the evaluator of independent works of students, but also the moderator, facilitator, manager and many other. Whether a teacher performs in the role of *lector in*

attendance form of part-time study, *consultant* or *tutor* in the distance form of part-time study, their communication with learners is under the influence of modern technology changing in all forms of education. Personal contact ("face to face"), is being replaced by intermediated but perhaps more intense, more frequent and somewhat more personalized (intimate) multimedia communications. Teachers' skills in this area, including the ability to manage e-learning and to participate in its preparation and development is still urgently required and expected. Role of university teacher – *actor in e-learning* is no longer in the higher education unusual. Whether it is the off-line or on-line learning, it is needed that teachers in this modern way of education with the support of information and communication technologies are properly pedagogically and technically equipped. (Šeben Začková, 2014, p. 69)

Communication of educational content over a period of last 30 years went through the radical changes that reflect profound economic, political, social and cultural movements in the global context. The impact of technological progress on all aspects of social life had never been so positive and destructive in the same time, information and communication technologies, not excluding. To the all of these suggestions naturally had to react also the education, the quality of its content, tools of communication and dissemination of this content, as well as subjective factors involved.

Nineties' of the 20th century brings (not only) in the European space objective need to find a definition of "new core of the professionalism" of teacher. The basics of this core are changes in the requirements for professional training and for teacher performance. There are being extended the theoretical discussions on teacher competencies and skills. Discussions and efforts for the change are after time leaving theoretical level and legislative documents, norms and recommendations enter the life. The base literacy is insufficient; the efficiency of utilization of the information obtained in the area of knowledge, their transformation into is measured by levels of functional literacy as the basis for a fulfilled life. It is a process, in which are developing knowledge, creating a system of concepts and judgments, but at the same time it is the process of creating skills, habits and stereotypes. Education must be promoted into the lifelong and continuous process.

Globalization has brought also into the teacher preparation strong need for the formulation of minimum standards of teacher competency profiles. Specificity of the status of higher education teacher is in the tasks performed. Teacher belongs not only to the teaching staff, but he is also scientist. The teachers' basic task is, just through the educational process not only to integrate new information into the educational content, but also to lead students to develop their ability to integrate this information into the knowledge they already have and move to a new level of knowledge. The higher education process is without connection with science unsustainable. Experts leaving the school and entering the practice must, however, have not only the amount of knowledge, but the ability to effectively use the knowledge in their next profession. One of the factors which condition this ability is the level of information literacy and communication competence. Teaching staff at universities must also possess a summary of key competences that are within the educational process actively used and also on the other side develop them in their students. At the level of functional literacy teacher carries the ability to actively use the acquired knowledge to students and thus helps to shape the set of their key competencies. Education must reflect the current state of knowledge in a particular field of science, which requires storage capacity, processing, interpretation and reproduction of new information.

How is teacher able to work with information (their retrieval, data mining, processing and further utilization in another context) and transmit it, creates a model that is adopted by students. The teachers' abilities are again manifested in two levels already indicated in this text – teacher works with information not only as a teacher but also as a scientist. Usage of the "know-how" transferred to communication with students, thus indirectly forms their information literacy and communication skills.

At present, tertiary teaching profession in Slovakia is not conditioned by pedagogical and psychological education, for that reason is teaching usually intuitive. On the other hand, paradoxically there are legislative requirements of pedagogical education for staff at lower levels of education (pre-primary, primary, secondary). Expertise of university teachers and their scientific level is measurable and it is periodically subject to evaluation (Accreditation Commission of the Ministry of Education, Science, Research and Sport of the Slovak Republic), but the quality of educational activities, development of pedagogical competencies are left entirely at their own initiative and willingness of self-development.

Possibility how to combine expertise and pedagogical competence among university teachers - university graduates from other than teacher programs, is to complete *complementary pedagogical studies*. Complementary pedagogical studies for teachers of vocational subjects are organized according to the law, which represents the Act. No. 317/2009 Coll. on pedagogical staff and professional staff on amendments to certain laws (Zákon č. 317/2009 Z. z.). Another option is the completion of various forms of internal lifelong education at universities in the field of higher education which are not, however, legislative defined and the

universities organize them differently. Some of the higher pedagogy courses are conditioned by their internal regulations or as a criteria for habilitation process, some of them are accredited by IGIP (<http://www.igip.org>) or as a part of one-shot projects.

3 Literacy, competences and key competences

In the preparation for the profession (hence the teaching profession) is currently a trend – competency-based education. Competence is the ability (behavior, action or set of actions), characterized by outstanding performance in any field of activity. Competences are characteristic elements of activities that occur much more frequently and more consistently in achieving excellent performance in achieving than average and poor performance in certain areas. As someone competent in a particular area tends to be regarded as a person who has the capacity, motivation, knowledge, skills, etc. to do a quality work.

In 2006, the European Parliament and the EU Council adopted the joint Recommendation on key competences for lifelong learning as a reflection of the need to improve the quality of human capital and to match the current needs and requirements. Human Resources and their quality becomes the principal basis of how society copes with the process of globalization and the transformation into a knowledge-based society and economy. What must have the citizens of modern Europe to be able to respond to changing social and economic conditions? The requirements of the time found reflection also in the need to define new goals for European education and training (Recommendation of the European Parliament, 2006, p. 10). As the education in its dual role – both social and commercial - plays a major role in ensuring that that Europe's citizens acquire the key competencies that enable them to adapt flexibly to the ongoing social and economic changes (Recommendation of the European Parliament, 2006, p. 13). Even the discussions at the end of the last century and further some of their conclusions summarized within the document "Making a European Area of Lifelong Learning " raised the issue of new basic skills as a priority for further action and strategy making, and stressed that lifelong learning must cover learning from pre-school up to retirement age (Council Conclusions of 11 May 2010). Detailed development of the entire strategy was adopted into the Action plan for lifelong learning (Council Conclusions of 11 May 2010).

3.1 Digital competence and information literacy models

There are many definitions of literacy and skills. The aforementioned European Framework defines competence as a combination of knowledge, skills and attitudes appropriate to the context. Key competences are then those which all individuals need for personal fulfillment and development, active citizenship, social inclusion and employment (Recommendation of the European Parliament, 2006). The document sets out eight key competences; the fourth in the order is the digital competence. *Digital competence* involves the confident and critical use of Technology in the Information Society (TIS). It is based on the basic skills in ICT – the use of computers to retrieve, assess, store, produce, present and exchange information, and to communicate in different social networks. It expects:

- To master the basic relevant computer applications for processing certain types of data;
- The ability of information/data mining, storage and organization;
- The ability of information/data sharing, respectively to share them in the process of further communication;
- Understanding of the opportunities and possibilities offered by the Internet and electronic communication in all areas of life;
- Understanding the potential risks posed by internet and electronic communications (e-mail, social networks, ...);
- Participation in the virtual world based on knowledge and respect for the applicable legal and ethical principles.

Use of information technology requires a critical and reflective attitude towards available information and a responsible use of the interactive media. It therefore assumes the mastery and constant development of the information literacy of every individual, whether in a personal or professional lives. *Information literacy* is expressed by human capacity to operate effectively in the information society and in general it is defined as the ability to recognize, identify, evaluate and effectively saturate information needs. The emphasis is put on the aspect of effective utilization of information technology/information technologies and systems, and not to use.

The term was first used by P. G. Żurkowski (1974) to describe the techniques and skills needed for to be possible to "employ a wide range of information tools as well as primary information sources", while important is the ability to "measure" a value of information, to "supply" information needs and to formulate solutions to problems.

Since 1993 in the UK works non-governmental organization Jisc (Joint Information Systems Committee), which specializes in the training of the groups of post-16 years old and higher education? During the years 2010 to 2013, the organization carried out three extensive studies on the area of academic literacy, their forming-elements and processes. The result was detailed analytical studies summarizing the requirements for the area of academic competence development. General conclusion of the studies is that the development of digital literacy in the higher education environment is more and more urgent priority. If universities are to be able to exploit the potential of new media in the educational process and in the preparation of graduates, they have to accept as one of the main tasks the sustainable development of digital literacy. But this is a task for both sides. Each side has a very different scale of experience, orientation to the field of technologies and their practical use in everyday life. Not only the experience but also the habits of the younger generation to find and work with information must find reflection in the educational process. This integration cannot be spontaneous; a teacher must have the process under control. It assumes that the teacher will have a quality knowledge corresponding to the understanding on how the relevant information support can be used in their field. Different standards that seek to define competency framework of the teacher, cast a spotlight on the topic of information literacy and work with information.

How to effectively integrate information literacy and digital competences into the educational process in higher education? There is often accented he need for linking formal and informal education, with emphasis on the general implementation of technologies in the processes of human activity. And what is the place of a teacher? In the search for answers it is often based on existing models of teacher competence, which, however, solve the problem from different philosophical and methodological foundations, and social framework. One model is the model TPCK, which defines three core areas of competence of a teacher: pedagogical-psychological competence, subject knowledge and technical and information skills involving all aspects of digital literacy – that is, the ability to work with technical tools, as well as with information. TPCK model characterizes the whole structure and scope of knowledge that a teacher must possess to be capable of integrating technology into the learning process. The authors of this model, P. Mishra and M. J. Koehler (2006), extended formerly known PCK model of Lee S. Shulman from Stanford University based on the priority of pedagogical and subject-related knowledge (Pedagogical Content Knowledge – PCK) by technology. "Technological knowledge" is understood by them as understanding of information technology, which enables one to effectively and productively use them in everyday as well as in professional life. This understanding also allows individual to recognize where to use information technology for the achievement of their goals. And also understand where it is an obstacle. Technological knowledge develops humans' ability to adequately respond to technical and technological progress and development. Only the establishment of technology in the educational process is not sufficient. To the center of attention is coming the question what teachers need to know to properly integrate technology into their teaching. The need is thus on the study of how the technology is used. (Mishra and Koehler, 2006, p. 1018) Correlation between content, pedagogy and technology is very complex, but with some nuances and shades. Technologies often come with their own imperatives, which limit the content and nature of their possible interpretations. Therefore the technology knowledge cannot be seen in isolation from pedagogy and content knowledge. (Mishra and Koehler, 2006, p. 1025) As the authors state at the end of their study, none (even not their) framework provides a comprehensive and structured answer to the question of integration of technology in education. However, they expressed the belief that any framework, even the poorest, is better than none. Waiting is not an option, any effort and establishment of the scope is a way to start a discussion and search for solutions. (Mishra and Koehler, 2006, p. 1074)

A separate area for discussion is the understanding of information literacy. Again, there is portfolio of approaches, assumptions, conclusions and recommendations. Several characteristics of models of information literacy can be found in the literature. Models can be divided at the general levels into the process and competence models. Here can be included for example **model Big6** and **The SCONUL Seven Pillars of Information Literacy**.

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- Google Generation, Use Behaviour in Resource Discovery and Digital Literacy in Higher Education.
 - Interesting research results among students interprets the study by A. Cartelli (2010).

The **Big6** is a process model of how people solve an information problem. Successful information problem-solving encompasses six stages. Strictly defined process steps cannot skip or change the order. (The Big6). There are six steps:

- 1 Task Definition (Define the information problem/Identify information needed)
- 2 Information Seeking Strategies (Determine all possible sources/Select the best sources)
- 3 Location and Access (intellectually and physically locate sources/Find information within sources)
- 4 Use of Information (read, hear, view, touch engagement/ Extract relevant information)
- 5 Synthesis (Organize from multiple sources/ Present the information)
- 6 Evaluation (Judge the product effectiveness/ Judge the process efficiency)

Model of **Seven Pillars of Information Literacy** is competence model based on the fact that, information literate people will demonstrate an awareness of how they gather, use, manage, synthesize and create information and data in an ethical manner and will have the information skills to do so effectively. (SCONUL, 2011, p. 3) Between elements of the model is no time dependence of conditionality and their development depends on the specific and actual conditions, so as to achieve the best outcome (quality). This model defines the core skills and competencies (ability) and attitudes and behaviors (understanding) at the heart of information literacy development in higher education. A series of "lenses" is being developed for different user populations to enable the model to be applied in specific situations. The lenses may extend or simplify the core higher education model, depending on the learner group to which they relate. The pillars of information literacy according to the model (SCONUL, 2011, pp. 5-11):

- 1 Able to identify a personal need for information (Identify).
- 2 Assess current knowledge and identify gaps (Scope).
- 3 Construct strategies for locating information and data (Plan).
- 4 Locate and access the information and data they need (Gather).
- 5 Review the research process and compare and evaluate information and data (Evaluate).
- 6 Organize information professionally and ethically (Manage).
- 7 Apply the knowledge gained: presenting the results of their research, synthesizing new and old information and data to create new knowledge and disseminating it in a variety of ways (Present).

3.2 Information literacy, communication competence and continuous training of academic staff in practice – An example of the Slovak University of Agriculture in Nitra

As stated by V. Rosa (2000), professional competence should acquire all teachers of vocational subjects through continuous education in the forms of formal, non-formal and informal learning. Thereby it is being created a specific subsystem of preparatory and lifelong learning. Example of how to use non-formal means of lifelong learning is a project that was realized in the years 2010-2013 at the Slovak University of Agriculture in Nitra. Under the title "Human Resources Development and ensure the Quality at the Slovak University of Agriculture (LUZK)", in a time horizon of three years, candidates attended training activities that had expanded their capacity in the selected groups of literacy and helped them to develop their professional competencies. The target group was faculty teaching staff and management of the university departments. The project involved more than 500 employees of the university. Within six activities there were available several training modules.

The activity "Improving information literacy" was aimed at following themes:

- Formal aspects of publishing, an overview of standards, rules and conventions;
- Intellectual property rights and publishing;
- Web Design (basics);
- Tools for creating electronic documents;
- Open Access and repositories;
- Support for publication (search, processing of expert information, statistical processing and data presentation).

Personnel training activities were ensured by Slovak Agricultural Library at the Slovak Agricultural University, which offers similar topics as the part of the information education for students at all levels of study at the university. Further are briefly described the contents of two themes "Formal aspects of publishing" and "Tools for creating electronic documents" and also some results from lecturers' observations.

A. Formal aspects of publishing – Topics:

- Standards, reference books and other rules
 - Technical Standards (STN, STN ISO, EN ISO)
 - Laws
 - The codification guides and reference resources of the Slovak language
 - Network/Web standards
- Typography

Hours: 14 hours / 7 hours of theory, 7 hours of practical examples and activities.

Observations:

- Lack of knowledge of the formal rules of creating documents (norms, recommendations, typographical conventions etc.);
- Lack of a deeper understanding of the ethical principles of communication (publication ethics, plagiarism);
- Problems with the basic terminology.

B. Tools for creating electronic documents - Topics:

- Office suites (text, tables, graphics)
 - PC Programs (MS Office, OpenOffice.org)
 - Online office suites, web services
- PDF format
- Graphical elements (images)
- Charts, graphs
- Desktop publishing (DTP)
- Templates
- Publishing online (wiki, personal pages, etc.).

Hours: 14 hours / 7 hours of theory, practical examples 7 hours and employment.

Observations:

- Knowledge of available applications for word processing is almost exclusively limited to MS Office.
- Participants understand word processing applications on the level of learned steps, not understanding the principle of functionality (do not know which function they want to use, they know where a specific command in the menu is, but change of the application version is a problem).
- Problem with the document formatting (styles, templates...).
- Problem with the creation of graphic design of document (layout).
- Problem with the integration of graphic elements into the text.
- Problem with the relevant use of various tools for data processing (for example, they do not handle tables in the spreadsheet, but in a text editor; a tool for processing statistical output represents almost exclusively only Excel; difficulties in identifying graphics and therefore they have also difficulties with the possibilities for editing).

Participants frequently expressed opinions on time limitations and the inability to devote enough time to the issue because of other work duties. The responsibility is then transferred to the Publisher, respectively, to more experienced colleagues (a group of so-called "Guru"). We agree that, the university environment is characterized by time (not only) stress and the large amount of professional duties and tasks. This should not be an excuse for the fact that the fundamental issue of text creation and content communication (including publications) are often largely unknown for the university teachers.

The experience of implementing the modules in the project led to establishment of contacts with the Department of Education and Psychology at Faculty of Economics and Management of Slovak University of Agriculture in Nitra. National Agency approved the project – "KEGA Konceptuálna modernizácia obsahu a metodická podpora Kurzu vysokoškolská pedagogika pre učiteľov technických univerzít" – Project no. 026SPU-4/2013 (Conceptual content modernization and technical support of Higher Education Pedagogy Course for teachers at technical universities).

The result of cooperation of the Slovak Agricultural Library SUA Nitra and the Department of Pedagogy and Psychology for the academic year 2013-2014 was a new curriculum of the course in which is integrated module focused on work with information and texts. This module was created on the basis of the IGIP recommendations and educational activities of the project LUZK. In the near future there are expected outputs

in the form of textbooks and other study materials for the participants of the courses. Library at SUA opens its facilities as well as other system resources (databases, network infrastructure, etc.) for the realization of the objectives and tasks within the education. Library among other activities, seeks also for the active acquisition of information sources that thematically cover the fields of education and training (including remote access to information resources that allow work with databases at any location with an Internet connection – it means that everyone can work from home even if the use of resources is determined by the connection to the university network).

Some recommendations for practice:

1. Make use of the potential of electronic text when communicating educational content. An electronic document is not a new type of document; it is only a specific way of content dissemination. New media are the result of the convergence process. The result is always remediation - new media is a reconstruction of the content and form of their predecessors. Even modern electronic (digital, virtual ...) environment brings a new quality to the interpretation and presentation of content. Electronic textbook (or other text) is not electronic document because of its' processing and distribution on digital storage media or on the Internet. We can talk about electronic documents - digital content, when the processing and interpretation of content uses the available potential (hypertext, text, graphics, sound elements ...). The content in the online environment is usually expressed by multimedia features, not by the text processed by computer and projected through a data projector.
2. University teacher as the author not only presents the results of their efforts in the form of a text (texts), but also indirectly (or non-formally) shape the future attitudes, habits (or bad habits) of students in processing, typing and creating various materials. How the teacher can master the role of "author", this is penetrating to the student community where he operates. Part of the basic study duties is writing various types of works - from seminar works up to the final thesis. Working with information, interpretation of opinions of other authors, discussions with other authors, identifying the ideas of other authors, critical and reflective attitude towards available information, editing documents – these are only a few fragments that shape the overall mosaic. Knowledge, acceptance and respect for the principles of publishing ethics as part of information literacy forms also the information and communication skills of the students.
3. Communication in the electronic environment also has its own rules (technical as well as ethical). The educational process at the university thanks to the deployment of modern technologies in addition to direct teaching contact enables also virtual modalities. They are used for mutual exchange and sharing of information between educators and students. Basic literacy means acquiring available resources and tools. Functional level expects the effective use of the available portfolio of instruments, but competence also assumes involvement of certain personal value systems and ethical principles of electronic communication. Even these moments spread into the student's personality development - the way in which teacher communicates with student also shapes the social and communicative competence of future graduates. Responsible use of interactive media is not only technical, but once again the ethical disposition of the user.

4 Conclusions

Regardless of whether are accepted the process models or competencies models, there can be identified some common qualitative factors which determine the education. These include in particular: the ability to identify own information needs and to formulate them; the ability to orientate in the global information space; to select and critically evaluate the information and information resources; the ability not only to utilize, synthesize and reproduce, but especially to exploit and interpret information on the level of added value while respecting intellectual property rights and ethical principles; the ability to process information and present it at relevant physical representation. This all is in order to achieve the learning goals. The specific character of tertiary education creates a unique space for effective contribution of available pedagogical, didactic and technological elements. Studies mapping the level of information literacy and digital competences of students also form in a certain way the relevant competencies of teachers. Not at the level of acceptance, but at the level of ways to shape.

Information technology should be helpful for user in identifying information, its assessment and further processing. This means saturation of information needs. An important aspect is the assessment of received information, as currently assessing the significance of the information adds its' value in terms of who works with it; There is needed critical thinking, awareness of personal and professional ethics, information evaluation,

information needs conceptualization, organization of information, creation of effective use of information in problem solving, decision making and research. Saturating specific information needs is not the end of the search, but the information needs form a higher level. Therefore, to acquire the information literacy and communication competence is not a one-shot, finished and particularly easy process. An important moment of perception and evaluation of literacy is, that "literacy is situation grounded and is linked to social structures, relationships and activities" (Gavora, 2002, pp. 171-178). The same applies to the quality of communication competences of the individual. When the academic environment of universities has to shape the future quality professionals, it must not only adapt, but the whole system of initial training and lifelong learning of teaching staff has to be subordinated to the social requirements. The global labor market but also the global educational space set a very sharp real mirror image.

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