Liudmyla Khoruzha, Mariia Bratko,
Olha Kotenko, Olha Melnychenko,
Volodymyr Proshkin
Ukraine

The Study of the Higher School Lecturer's Competence in Ukraine: Diagnostics and Analytics

Abstract

The article presents the diagnostic and analytical results of the research on higher school teachers' competence at Borys Grinchenko Kyiv University (Ukraine). Theoretical and methodological analysis is carried out and the content of three competence profiles of lecturers in higher education is defined: professional and pedagogical, social and personal, academic, reflecting the main areas of the lecturer's activity. Diagnostic tools of qualitative assessment of teachers' competence components in each of the profiles are developed. The study allowed for revealing the development of certain lecturer competences according to the identified profiles: innovative, digital, management (professional and pedagogical profile), leadership, civic (social and personal profile), research, international cooperation, and scientific PR (academic profile). The results of the diagnosis are the basis for the development and implementation of a system of measures for increasing the quality and standardization activities of higher education lecturers at the institutional, national and European levels. The article provides appropriate recommendations.

Keywords: *competences, competence profiles, academic staff, students, diagnostic tools, education quality, standardization*

Introduction

Social transformations taking place in the whole world and the European countries, in particular, affect many areas of life and education. These socio-economic contexts primarily actualize the development of new professional competences of lecturers, reviewing and updating the content of those already acquired. So there is a need for a timely diagnosis of these competences. The international project №21720008 "Higher school teacher competence in change" (funded by the Visegrad Fund and the Ministry of Foreign Affairs of the Kingdom of the Netherlands, attended by researchers from Ukraine) aims to solve these tasks. Researchers from Poland, the Czech Republic, and Slovakia are also working on defining and diagnosing the complex of competences. Therefore, the ultimate goal of the project will be achieved through comparative analysis of the nature and condition of the competences development in the partner countries, further elaboration of the advisory opinions and standardization of lecturers' activity results.

The first results have been obtained by researchers from Ukraine, i.e., the research group from Borys Grinchenko Kyiv University (BGKU). They concern the complex of competences of Ukrainian higher school lecturers.

Research Problem and Focus

The problem of defining the essence of both the teacher's and higher school lecturer's competences is the research subject of many scholars. Analysing this question, scholars claim that numerous professional functions performed by a lecturer enable consideration of his/her activity as an integral nonlinear system, capable of self-organization and development on the basis of an awareness of one's own image and professional identity (Shelton, 1996).

The basis of the methodology of the problem study is the analysis of socio-economic contexts in which the higher school lecturer is considered as an executor of an important public mission. The paper considers A. King and B. Shnaider's concept of re-orientation of part of global tasks at a local level as a "rapid response" to complications that arise in civilized society (King & Shnaider, 1991).

What was important for the definition of methodological foundations of the study were analytical materials concerning variable processes taking place in the higher education systems of different European countries published by the European Commission and titled "Modernisation of Higher Education in Europe: Academic Staff 2017" (Crosier at al., 2017).

There are different approaches to defining competences and their classification. The range of interpretations and variability of scientific approaches to understand-

ing competences can be traced in the studies of Ukrainian and foreign scholars. For instance, G. Light studied the problem of personality competences development in terms of continuous training (Light, 2003); D. Glover and D. Miller studied the essence of teachers' information competences (Glover & Miller, 2006), D. Raven characterized the peculiarities of competence expression (Raven, 1984), Ukrainian scientists dwelled on the terminological foundations of competence-based education, the essence and structure of competences, world experience, key competences as an innovative result of education, and competence as a didactic concept.

According to the definition by the European Educational Agency (Training Agency): competence is a description of what the person working in the professional field is capable of. This is a description of the actions, behaviour, and results that a person is able to demonstrate (Walters, 1979).

According to L. Holmes, professional competence is associated not only with certain actions required for "organizational component of the profession," but is also compiled at the expense of the complex of personal, social and technical factors (Holmes, 2017). Professional competence is related to the personal style of a professional, whose activity is based on their own experience, values, moral qualities, etc.

It should be mentioned that science has no generally accepted approach to the classification of competences and their measurement. However, there are many scholars' developments regarding approaches to their study and definition. For example, within the research framework organized by the European NGO "CORDIS," professional competence is defined as the complex formation of training blocks providing educational needs based on knowledge, scientific literacy, and scientific thinking.

To determine the contents of the higher school lecturer's competences, it was important to analyse the results of the DeSeCo project, carried out by researchers in the context of the OECD. Researchers generalized the results and conclusions were also examined. The content of education was reinterpreted and presented as a scope of competences. The main groups of competences are defined as the ability to use the tools of interaction with the environment; to interact with others in heterogeneous groups; to act independently.

Research methodology

The complexity of research into the higher school lecturer's competences lies in the fact that their activity is multidimensional. They perform research, educational, design, organizational, evaluation, upbringing, innovative and other functions.

According to the TUNING Project, researchers' arguments regarding the structure of common competences (instrumental, interpersonal, systemic) that a university graduate should possess were taken as a basis. Therefore, the defined competence categories in the structure of general competences were taken as a basis and reviewed in three professional dimensions of the higher school lecturer: *academic, professional and pedagogical, social and personal,* receiving the name of the profiles of professional activity. The choice of these competence profiles of lecturers met the following general criteria: universality as a mandatory requirement for all lecturers who are engaged in educational activities; compliance with the requirements of the development of the educational process of a modern higher education institution; importance for all lecturers in different European universities; controlling and self-governing.

Each profile is presented through a set of competences. Their content in accordance with specified numbers is in diagnostic tools.

The professional and pedagogical profile consists of the following competences: Innovation, Professional self-development, Digital, Communicative and interactive, and Management.

Social and personal profile consists of the following competences: Socio-cultural, Professional and personal responsibility, Leadership, and Civic.

Academic profile consists of the following competences: Research, International cooperation, Scientific PR, Methodological, and Academic integrity.

The relevance of the project researchers' approach concerning the definition of lecturers' competences is consistent with the recommendations of the Commission of the European Parliament and the Council of Europe on the Council Recommendation on Key Competences for Lifelong Learning (European Commission, 2018).

Table 1. Survey participants' demographics

Respond-ents	Men	Women	Age, years			Experience			Scientific degree	
			25–40	41–55	56	Less 10	11–20	21	PhD	Without scientific degree
Academic staff										
125	17 (13.6%)	108 (86.4%)	58 (46.4%)	45 (36.0%)	22 (17.6%)	44 (35.2%)	35 (28.0%)	46 (36.8%)	66 (52.8%)	59 (47.2%)
Students										
269	-	-	-	-	-	-	-	-	-	-
394	Total									

To diagnose the quality components of the lecturer's competences in each of the profiles and identify the relevant transformations that occur in the lecturer's competence space today, a diagnostic toolkit was developed. The basis for designing the diagnostics were certain statements teachers had to evaluate. The guidance in the development of diagnostic tools were ideas of foreign scientists on using research methods in studying various phenomena and processes in education (Cohen et al., 2002; Paul van Geert, 2017).

The respondents were asked to assess 37 characteristics according to the degree of dominance. It should be mentioned that the lecturers participating in the survey made the self-assessment of their professional activity, and the students answering questions defined their own expectations regarding high school lecturers' activities. For the students, the following filters were involved: gender and year of study.

Research Results

Generalization of obtained results and their analysis allowed us to make several important conclusions. The lecturer's professional and pedagogical competence profile is not homogeneous in its content.

The greatest attention and development is required for the innovative, digital, and management competences of lecturers. These competences are principal in their activity, being a core for the development of other competences. Let us characterize the essence of each of them.
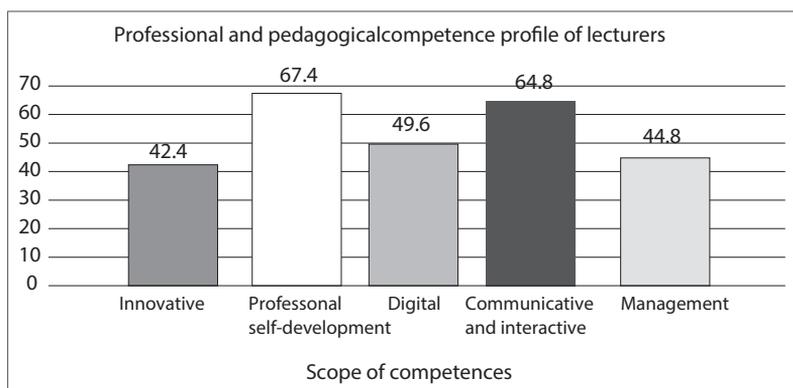

Chart 1. Dynamics of the lecturer's competence development in professional and pedagogical profile

The innovative competence is regarded as the lecturer's openness to changes at all levels of society, educational reforms, transformations taking place in consciousness and values of the modern person.

The digital competence determines lecturers' ability to use a variety of ICT in working with students and create new information resources.

The management competence reflects a set of actions of the lecturer within the educational process, associated with pedagogical means, human resources, certain processes, result assessment, etc. for the effectiveness of this process and ensuring its quality.

Comparison of quantitative results obtained during surveys of the lecturers and students confirms the relevance and necessity of the lecturer's above-mentioned competence development. The students turned out to be more demanding about the competences of a lecturer, as presented in Table 2.

Table 2. Quantitative results of professional and pedagogical competence profile diagnostics evaluated by lecturers and students (arithmetic mean)

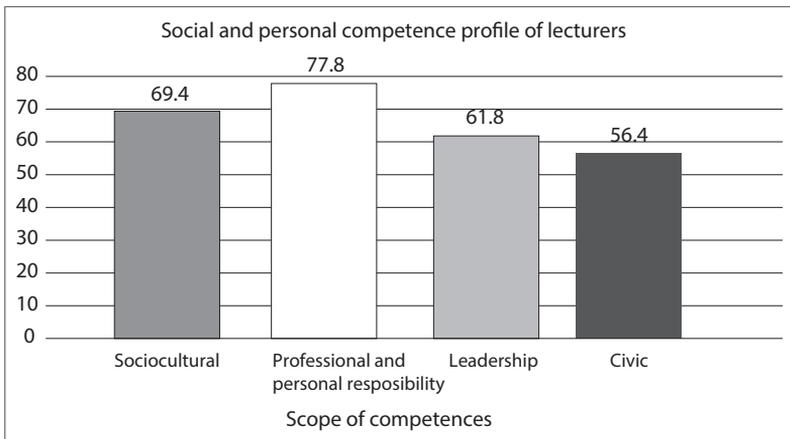| №	Competence	Lecturers, %	Students, %
1.	Innovative	42.4	58.5
2.	Professional self-development	67.4	65.9
3.	Digital	49.6	60.2
4.	Communicative and interactive	64.8	67.1
5.	Management	44.8	58.2

Chart 2. Dynamics of the higher school lecturer's competence development in the social and personal profile

Lecturers' competences in social and personal profiles are a core of the higher school lecturer's overall professional activity. This profile is also heterogeneous in its content.

Analysis of the obtained results shows that lecturers' leadership and civic competences are the least developed. Let us characterize some of the features of such a situation in relation to specified competences.

The leadership competence involves the lecturer's ability to support students, communicate with them, and encourage the development of self-government and youth initiatives.

The civic competence is an integral part of the activity of the lecturer performing an important social mission in society.

Quantitative results obtained during surveys of the lecturers and students provide an opportunity to compare these results. He students turned out to be more demanding about these competences of lecturers, as shown in Table 3.

Table 3. Quantitative results of social and personal competence profile evaluated by lecturers and students (arithmetic mean)

№	Competence	Lecturers, %	Students, %
1.	Sociocultural	69.4	66.5
2.	Professional and personal responsibility	77.8	70.5
3.	Leadership	61.8	68.7
4.	Civic	56.4	68.7

The competences of the lecturer's academic profile characterize a very important sphere of activities related to scientific research, its implementation, and promotion, and organization of international cooperation, as presented in Chart 3.

The research competence reflects the core of the performance of the modern lecturer, who is not so much someone transmitting ready knowledge to students, but an active person, able to acquire new knowledge, creator of science in the university environment.

International cooperation of lecturers is the prerequisite for the internationalization of science and education as one of the conditions of quality increase.

The scientific PR of a lecturer is associated with the popularization of scholar achievements, continuous complementing of educational courses with new scientific ideas and achievements of modern science, creating scientific school on topical scientific problems, etc.
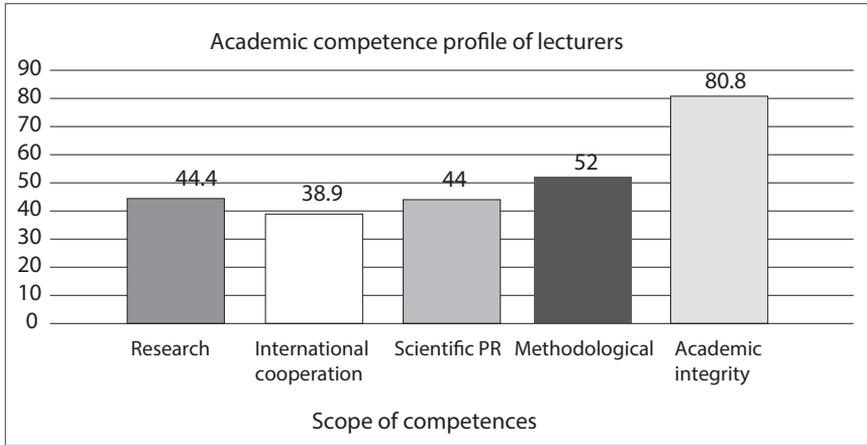
Academic competence profile of lecturers

Research 44.4	International cooperation 38.9	Scientific PR 44	Methodological 52	Academic integrity 80.8

Scope of competences

Chart 3. Dynamics of the lecturer's competence development in academic profile

Quantitative results obtained during surveys of the lecturers and students provide an opportunity to compare these results. He students turned out to be more demanding about these competences of lecturers, as presented in Table 4.

Table 4. Quantitative results of competence development in academic profile evaluated by lecturers and students (arithmetic mean)

№	Competence	Lecturers, %	Students, %
1.	Research	44.4	58.8
2.	International cooperation	38.9	57.3
3.	Scientific PR	44.0	60.8
4.	Methodological	52.0	63.9
5.	Academic integrity	80.8	61.7

The sequence of the pedagogical experiment phases, a sufficient number of its participants (students and lecturers), the reliability of research methods have become the most important conditions for defining and diagnosing of the complex of the higher school lecturer's competences, meeting the requirements of the time.

To further analyse the data, we used standardized statistical procedures, developed by specific functions in the program "Microsoft Excel".

In order to find out the real attitudes of the lecturers and students to the problems of research, well-known statistical criteria of Pearson χ^2 and Fisher φ^* were chosen.

First, the statistical data concerning groups of lecturers and students were compared using the Pearson correlation coefficient χ^2. The generalized data on three competence profiles was used.

The obtained empirical data χ_2^2 were less critical $\chi_1^2 = \begin{cases} 7,815, & \delta \leq 0,05 \\ 11,344, & \delta \leq 0,01 \end{cases}$ for the number of degrees of freedom $v = 3$, i.e., differences between the distributions (groups of lecturers and students) do not exist, where χ_2^2 the empirical value criterion χ_2^2 is the critical value criterion (Table 5), the p-level of significance. Therefore, it can be argued that the lecturers and students value the significance of the lecturer's competence in a similar way in different profiles.

So, we got a general attitude of groups of respondents to defining the higher school lecturer's competences. However, the most important thing for us was to find out how the groups differ within the established statement "Yes", which we see as an indicator of real readiness of the lecturers to change, defining of their own active professional position.

In order to find it out, calculations by the Fischer criterion were made φ^*. It was found out that there are the biggest differences regarding certain estimative statements of the lecturers and students on academic profile competences (Table 5).

Table 5. Summarized results of the academic competence profile evaluation by lecturers and students according to the Fisher criterion φ^*

Groups	"There is an effect", %	"No effect",%
Lecturers	48.2	51.8
Students	61.4	38.6

The table shows the results of the academic profile competences evaluated with a positive statement "Yes" by the lecturers and students.

We have $\phi_2^* = 1,88, \phi_1^* = 1,64, \phi_1^* < \varphi_2^*$, where ϕ_2^* is the empirical value of the criterion, and φ_1^* is the critical value of the criterion. Thus, the difference in the lecturers' and students' perception is statistically reliable.

The received statement necessitated researching an important question of detecting the difference between the lecturers and students in the above-mentioned competences filling different profiles. That is why the quantitative results of the respondents are compared using the Fisher criterion φ^* (Table 6).

Table 6. Comparison of lecturers' and students' attitudes towards the assessment of competences according to the Fisher criterion φ^* ("Yes" statement)

№	Competences	Lecturers, %	Students %	ϕ_2^*
	Professional and pedagogical profile			
1	Attitude to reforms	42.40	58.55	2.305
2	Professional self-development	67.47	44.15	3.345
3	Processing information and use of ICT	49.60	60.22	1.506
4	Interaction with students	64.80	67.1	0.346
5	Educational process management	44.80	58.15	1.057
	Social and personal profile			
1	Teaching culture and ethics	69.40	66.54	0.332
2	Making professional decisions and taking responsibility for the consequences	77.87	70.17	1.245
3	Leadership qualities	61.87	68.77	1.025
4	Civic position	56.40	68.77	1.817
	Academic profile			
1	Implementation of scientific research results into practice	44.40	58.73	2.029
2	Internationalization of education and science	38.93	57.37	2.63
3	Promotion of personal scientific research	44.00	60.78	2.39
4	Using scientific methodology and research tools	52.00	63.93	1.711
5	Academic integrity	80.80	72.49	1.386

Considering the critical value of the criterion $\varphi_1^* = \begin{cases} 1,64, & \eth \le 0,05 \\ 2,31, & \eth \le 0,01 \end{cases}$, where p is the level of relevance, we found out that the lecturers and students are ambiguous about the evaluation of the higher school lecturer's competences. Their request concerning the level of some of the lecturer's competences is much higher than the real state of these competences formation. This is most visible in the evaluation of the following competences of lecturers:

- professional self-development;
- internationalization of education and science;
- promotion of personal scientific research;
- attitude towards reforms (for the level of relevance p 0.01).

Some differences are detected in assessing the real state of the following competences by the lecturers and students:

- civic position;
- implementation of scientific research results into practice;
- using scientific methodology and research tools (for the level of relevance p 0.05).

Discussion and conclusions

Generalization of the obtained results made it possible to identify problems that occur in the lecturer's professional activities and need further solutions. Variable processes occurring at global, regional and local levels in all spheres of life influence both constructively and destructively the activities of lecturers as "agents of change" in education and society in general. This conclusion influenced the determination of specific ways of improving the higher school lecturer's performance and development of their competences at different levels of education management: *institutional, national and European.*

Institutional:

- The organization of the system of continuous monitoring and assessing of core competences development of the higher school lecturer's profiles: professional and pedagogical, social and personal, and academic to determine tendencies, quality dynamics of their professional activity.
- The development of content and methodological provision of the lecturer's qualification extension and further advancement of their competences.
- The ability of managers of higher education institutions to assess the cumulative competence potential of scientific and pedagogical staff and determine further administrative steps to regulate the personnel policies of universities.

National:

- Monitoring and evaluation by the National Agencies of Education Quality Management, diagnosing by sociological services issues of the analysis of the interdependence of the degree of the lecturer's competences formation, sociocultural contexts that influence their activities in higher education: global, regional, and local.
- Using diagnostic matrix of the higher school lecturer's competence research for creating advisory conclusions and standardization of their professional activity by the National Agencies of Education Quality Management.
- Accepting by education authorities of a standardized benchmark of the higher school lecturer's competence system within the following profiles: professional and pedagogical, social and personal, academic.

European:
- Considering general (invariant) as well as variable characteristics in a standardized set of the higher school lecturer's competences reflecting variable processes in different spheres of society development and education in particular.
- The inclusion of the diagnostic tools developed within the project framework on the assessment of the higher school lecturer's competence development. It is regarded as one of the means of monitoring the effectiveness of modernization processes and higher education quality assurance in terms of its reformation to the system of diagnostics already implemented in the European educational space.

This research is done only in Ukraine. The next step will consist of the same research in other countries (Poland, the Czech Republic and Slovakia). And finally, a comparative analysis will be made of the lecturer's competences in different countries at the time of changes.

References

Beisheim, M., Young, O.R., & Finger, M. (2012). *Limits to privatization: How to avoid too much of a good thing: A report to the Club of Rome*. Earthscan.

Cohen, L., Manion, L., & Morrison, K. (2002). *Research methods in education*. Routledge. 446p.

Crosier, D., Birch, P., Davydovskaia, O., Kocanova, D., & Parveva, T. (2017). Modernisation of Higher Education in Europe: Academic Staff-2017. Eurydice Report. *Education, Audiovisual and Culture Executive Agency, European Commission*.

Development of key competences in education: some lessons from international experience. Access mode:http://www.ibe.unesco.org/cops/russian/IBE_Competences.pdf).

European Commission (2018). *Council Recommendation on Key Competences for Lifelong Learning*. Access mode: http://eur-lex.europa.eu/legal-content/EN/TXT/?-qid=1519558512590&uri=CELEX:52018DC0024

Glover, D., & Miller, D. (2001). Running with technology: the pedagogic impact of the large-scale introduction of interactive whiteboards in one secondary school. *Journal of information technology for teacher education*, *10*(3), 257–278. doi: 10.1080/14759390100200115

Halász, G., & Michel, A. (2011). Key Competences in Europe: interpretation, policy formulation and implementation. *European Journal of Education*, *46*(3), 289–306. doi:*10.1111/j.1465–3435.2011.01491.x.*

Holmes, L. (1992). Understanding professional competence: Beyond the limits of functional analysis. *Relating Skill and Learning*. Access mode: http://www.re-skill.org.uk/relskill/profcomp.htm

King, A., & Shnaider, B. (1991). The first global revolution. Report of the Club of Rome. Simon & Schuster. 340p.

Light, G. (2000). Lifelong learning: Challenging learning and teaching in higher education. *Policies, Politics and the Future of Lifelong Learning*, 213. pp. 175–213.

Raven, D. (1984). Competence in modern society: Its Identification, Development and Release. London. Lewis and C°. 251p.

Shelten, A. (1996). Introduction to professional pedagogy. Textbook. Yekaterinburg: Izdatelstvo UGPPU. 288p.

Tuning Education Structures in Europe Access mode: URL:http://tuning.unideusto.org

Walters, M. (1979). *A Guide to Supervisory Training*, London, Hotel and Catering Industry Training Board.