

*Education: Theory & Practice
Науката за образованието: теория и практика*

GENDER ISSUES OF UKRAINIAN HIGHER EDUCATION

H.H.Petruchenia, M.I.Vorovka

Melitopol State Pedagogical University named after Bogdan Khmelnitsky, Ukraine

Abstract. Due to miscalculations of innovation and educational policies, the higher school and science in Ukraine have been driven out of the government priorities sphere, becoming a low-status and low-income area of professional activity. In such circumstances, there is an active involvement of women in science, which center has moved to a higher education, focused in it the two-thirds of the country's scientific potential. In formal statistical parity of higher educational scientific and pedagogical personnel, there exists a gender gap in the branch, official and status distribution. The author has revealed the trends in the development of gender asymmetry in the formation of Ukrainian Higher School scientific and pedagogical staff analyzed the features of horizontal display and vertical occupational segregation. The influence of scientific and teaching staff gender asymmetry as a measurement of higher education hidden curriculum on the formation of the student gender culture.

Keywords: gender asymmetry, women in science, scientific and teaching staff of higher school, hidden curriculum, gender culture.

In 2013, according to the gender gap index, Ukraine took the 64th place out of 136 countries of the world. Having moved 16 positions down in comparison with 2006, it found itself behind a number of former socialist countries and union republics—specifically, Cuba, Slovenia, Serbia, Bulgaria, Baltis states, etc. In Ukraine we can observe a considerable difference in some gap indices: in the educational—the 27th (Schwab et al., 2013). This difference is particularly significant as education is the most influential factor, determining the direction and prospects of the society's economic, political and cultural development. It is an important instrument of widening people's rights and possibilities, a basis for forming and realizing gender equality in society.

As a human capital component education is an important indicator of global competitive ability of a country. Ukraine keeps the most competitive advantage in drawing its people in higher education, taking the 10th place in the world in this rating (Schwab, 2013).

Higher school of Ukraine gives training at three educational and four educational and qualification levels: incomplete higher education provides gaining the educational

and qualification level of "junior specialist" (it corresponds to the level of "branch specialist" in Bulgaria); the first cycle of higher education - the level of Bachelor (it corresponds to the analogical level of training in Bulgaria); the second cycle of higher education-the level of "specialist" and Master (it corresponds to the level of Master in Bulgaria). The second cycles of higher education (level 5A according to the International Standard Classification of Education) are diver by higher education in Ukraine.

In accord with the official site data of all-Ukrainian census of the population (<http://www.ukrcensus.gov.ua>) in the age group of 25-59 years old higher education is received by 19.2 per cent of women and 18.0 per cent of men; and what is more, there is a distinct tendency in increasing the number of women with a higher school diploma. It is not astonishing, since the largest rating of women's employment coincides with such a level of training (Лібанова, 2012). Nevertheless, both the most essential gender gap in women's incomes and the biggest problems in making their careers are typical this level. Among the owners of higher school diplomas women are localized below men at professional (class) stages-they are almost a third less in the staff of legislators, officials and managers of the highest link, but they are a third more among experts and junior specialists (Оксамитна et al., 2010).

Thus, the factor of erudition growth as a way of reducing gender inequality does not work in Ukraine. It enables to assume that higher school does not use its potential of an agent in forming gender culture of an egalitarian society. In the lack of open discrimination experience gender stereotypes and values are transmitted though the concealed higher school curriculum. We'll consider how it shows itself, for example, in the gender staff of higher school scientists and teachers.

Unlike teachers of higher school of I-II level of accreditation, teachers of higher educational institutions of III-IV level of accreditation combine teaching and scientific activities. Scientific activity is an integral part of the educational process in universities and academies. As a rule, persons having scientific degrees and ranks are elected as professors and lecturers of universities and academies on a competitive basis.

In Ukraine there is a two-level system of scientific degrees – Candidate of Sciences and Doctor of Sciences. These degrees are conferred by specialized scientific boards of higher educational institutions, scientific institutions and organizations in the order, established by the Cabinet of Ministers of Ukraine, according to the results of defensing dissertations. A scientific degree, provided scientific and teaching activity continuing after defensing a dissertation and availability of corresponding length of service, gives higher school teachers chances to receive the scientific ranks of Associate Professors (for Candidates of Sciences) and Professors (for Doctors of Sciences). A considerable contribution to science enables higher school scientists and teachers to receive the academic ranks of Members (Academicians) and Corresponding Members of the National

Academy of Sciences and home branch academies of sciences of Ukraine (they are all state scientific organizations of the state property).

The salary of scientists and teachers consists of their post pays, bonuses, additional pays for scientific degrees and ranks, extra pays for scientific and teaching length of service, additional pays and money rewards for scientific and teaching activity. Thus, the additional pay for Doctor of Sciences is 25%, for Candidate of Sciences is 15%, for Professor is 33%, for Associate Professor is 25% of the post pay. The life pay for an academic rank is noticeably higher than the middle salary in this country, the hour-to-hour pay of holders of academic ranks is 25% more. All this makes receiving scientific degrees and ranks attractive for higher school teachers and causes a considerable gap in incomes within a scientific society even without taking into account the post localization of personnel.

In comparison with 1995 the numbers of higher educational institutions of the III-IV levels of accreditation of different property forms in Ukraine are now a third more, and the numbers of students are twice as much. In this country there are 334 higher schools of the corresponding level today, 217 are state ones among them. The total quota of students is 1.8 million, 89% of them are in the second cycle of higher education in state higher educational institutions (Калачова, 2013a). The staff of scientists and teachers was 131.1 thousand people at the beginning of 2012-2013's academic year in Ukraine (Калачова, 2013a).

Ukrainian higher school more and more accumulates the scientific potential of the country. For the period of 1995-2012 the part of the highest qualification scientists (Candidates and Doctors) in the higher school sector has increased from 58.1% to 73%, but in the branch sector it has decreased from 34.1% to 17% (Калачова, 2011). On the one hand, it testifies to the fact that the balance between research and education functions of scientific intellectuals in Ukraine has been displaced in the direction of education function. On the other hand, it shows that in the conditions of systemic reducing the number of research organizations, higher school is becoming the main center of researching and scientific personnel. It enables us to extrapolate the Ukrainian science gender staff data to higher school with some assumption.

Today state financing of education and science realizes in accord with the remaining principle. The budget of education fluctuates in the gross domestic product (GDP) according to the law (Калачова, 2013a), but the budget of science is much lower not only than 1.7% of the GDP in accord with the law but even than the surviving level of 0.9% of the GDP. Only 0.3% of the GDP was allocated for science in 2012 (Калачова, 2013b). It testifies to the fact that higher education and science in Ukraine are in the backyard of state interests.

No wonder that, according to the national sociological monitoring data, only 5.9% of adults think that science in Ukraine is at the world level, although 37.4% are sure that it essentially lags behind. In addition, 24.4% of respondents think that the scientist

profession prestige has considerably dropped, 21,9% - notconsiderably, 29,5% of respondents have not any answer, 13,1% think that the prestige has not changed, 9% of people with higher education are ready to work in science (Головаха&Паніна, 2008).

Education, like science, found itself among the least attractive spheres in provision of employment for Ukrainian young people – 14% of them consider teaching profession attractive, and only 4,6% consider it a profession that gives chance to achieve a success in life. Thus, out of rather prestige and quite high-paid sphere of professional activity, higher school science is turning into insufficiently prestige, underfinanced and then-low-paid.

Because of lack of the gender balance data among scientists and teachers in Ukrainian higher educational institutions, on the basis of the results in former union republics, we may suppose that nowadays it is formally and statistically approaching the gender parity. In Russia the number of women among higher school teachers is 56per cent, in Latvia – 58per cent, in Lithuania – 55%, etc. (Schwab et al., 2013a). Since there are $\frac{3}{4}$ higher qualification scientists in universities and academies, Ukrainian women may come to 45.4%, and in the age group under 60 – 53% (cf. Головаха&Паніна (2008)).

The gender analysis of the higher school scientists and teachers staff enables to find out some tendencies causing the concealed curriculum influence:

1. Rapid feminization of qualified scientific workers from 1995 till 2012 the total number of Doctors of Sciences in Ukraine has increased to 60%; and women among them – to 90%, the indicators for Candidates of Sciences are correspondingly 53% and 137% (Калачова, 2011). As you can see in the histogram, in spite of higher dynamics of increasing women among Doctors of Sciences, feminization is quantitatively caused by the growth of women among Candidates of Sciences. The greatest numerical superiority of women among the holders of Candidate of Sciences diplomas fits the age of 31-40, and this numerical superiority is preserved to the age of 50.

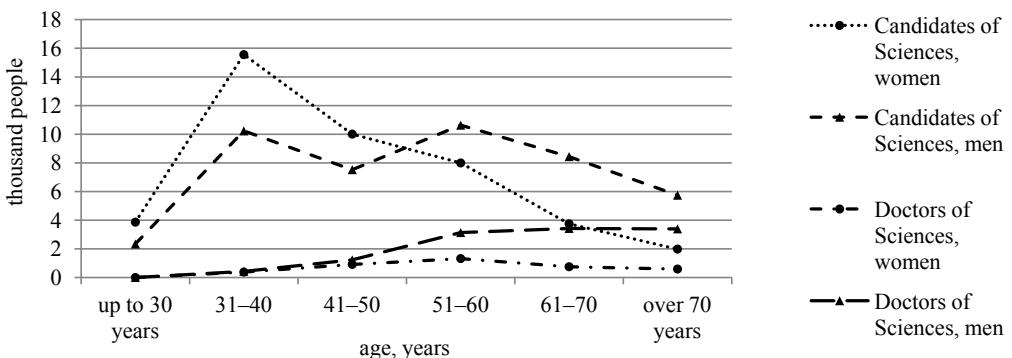


Fig. 1. Sex and age complement of higher qualification scientists

Feminization of science could be established positively as an evidence of active women involvement in social production, in the spheres of highly skilled labour and scientific creative work. But such estimation is legitimate only in the conditions of economic stability, when social production widens and science develops, when there is sufficient need in manpower, including scientific personnel (Мирская & Мартынова, 1993). The situation in Ukrainian science, as it was shown before, is far from stability.

Attention should be paid to falling off the number of men with the rank of Candidate of Sciences at the age of 41-50. This is the generation whose scientific formation fell on the first years of independence, when our country underwent protracted economic crisis. Perhaps, it forced men to look for an activity, capable of providing more stable and higher incomes. This tendency is not traced among Doctors of Sciences, perhaps, because of those advantages and profits, given by this level of scientific qualification. It should be accepted, that increasing the number of women in the scientific circles of Ukraine is not so caused by their active involving in scientific circles of Ukraine is not so caused by their active involving in scientific creative work, is considerably by men's leaving science as an unpromising and unprofitable sphere of professional activity. Moreover, feminization manifests itself more considerable at low stages of scientific hierarchy.

2. Gender distribution of scientists according to knowledge branches, expressing accepted ideas of feminine and masculine sciences and professions, having global tendency character. In accord with the data presented in Table 1, the most feminized sciences are the humanities and social sciences, the most masculinized sciences are technical ones.

Table1. Distribution of women scientists according to science branches and scientific degrees

branch of science	per cent of women among	
	Candidates of Sciences	Doctors of Sciences
the humanities, among them	62,8	35,4
art	81,3	58,8
philology	74,4	45
philosophy	44,4	12,5
social sciences, among them	58,1	40,5
economy	54,5	36,3
pedagogics	69,8	56
sociology	62,3	50
natural sciences, among them	46,1	23,9
physics and mathematics	25,1	9,4

chemistry	49	16,7
medicine	66,1	42,3
technical sciences, among them	21,2	9
transport	14,1	10
construction and architecture	29,7	11,6

The stratification is also observed within the branches. Thus, in the feminized humanities, the highest pro sent of women is represented in art and philology and the lowest one – in philosophy; in the natural sciences, the largest number of women is among physicians, and the least one – in physics and mathematics (Калачова, 2013b).

Such a division, reflecting just the current situation of representing women in sciences, being interpreted in the public mind, forms quite stable and rather wide-spread idea of knowledge branches, corresponding or incompatible to the “feminine/masculine mind” and suitable or unsuitable occupations for women and men. As a measure of the concealed curriculum such a distributing to the reproduction of gender barriers, termed “glass walls”.

3. Intensification of gender asymmetry with rising scientific degrees in favour of men. In 2012 there were 49 per sent degrees in favour of women among Candidates of Sciences. According to the histogram, the number of women with the Doctor’s degree in any age groups is less than the number of men with the same degree, achieving the maximum rating of 43.8% in the small age group of 31-50 year olds.

As the scientific qualification increases, the gender balance in all fields and sciences changes in favour of men. In the greatest feminized humanities women come to two thirds of Candidates of Sciences and only one third of Doctors of Sciences, in technical sciences – the fifth and the tenth parts correspondingly. Only in art-criticism and pedagogics the number of women among Doctors of Sciences exceeds the number of men, and in sociology both sexes are represented equally (Калачова, 2013b).

These data by no means show that modern women appeal to scientific activity more seldom than men, less strive for improving their scientific gualification. However, owing to the fact that the promotion on the scientific hierarchy stages is rather a prolonged process, in the scientific word the most skilled personnel is localized in older age groups, in which the percentage of women is the lowest. Therefore, one can consider that the similar tendency by no means reflects actual spirits of scientific intellectuals in the whole and particularly their young generation. Not having any neuro-biological pre-conditions, the similar gender gap is socially and culturally limited, it is the result of a long (lasting for decades) process of the scientific elite formation. Nevertheless, the similar current situation consolidates the gender stereotype, ascribing lesser ability for intense intellectual labour and scientific creative work to women. Through today quite a definite tendency

to increasing the number of women among higher qualification scientific personnel is observed. To put an end to the gender gap and overcome the stereotype time and special efforts will be needed.

4. Increase of the vertical gender gap among holders of scientific and academic ranks. According to Table 2 among men with the scientific degree of Candidate of Sciences professors are four times, corresponding members – five times academicians – eight times more than among women. At the same time among men with the degree of Doctor of Sciences there are half as many associate professors, but twice as much corresponding members and three times as much academicians (*cf. Калачова (2011)*).

This phenomenon could be explained by lesser scientific rank, but the similar supposition is contradicted, for example, by the fact that Ukraine belongs to five countries of the world, in which among the authors of published works, taken into the international citing base of Web of Science, women predominate. The average common world rating of women's published works is less than 30% (Larvière et al., 2013).

Table 2.Distribution of scientists and academic ranks among Candidates and Doctors of Sciences of a certain sex

	Candidates of Sciences		Doctors of Sciences	
	women	men	women	men
Associate Professors	39,80 %	43,1 %	25,50 %	13,0 %
Professors	0,70 %	2,7 %	68,90 %	53,5 %
Corresponding Members	0,30 %	1,5 %	4,10 %	8,5 %
Academicians	0,20 %	1,6 %	8,10 %	20,5 %

The gender asymmetry of science shows itself most vividly on the example of holders of higher academic ranks – Members (Academicians) and Corresponding Members of academies of sciences. Since the foundation of the National Academy of Sciences of Ukraine in 1918, there have been 602 scientists, and among them - only 10 women (i.e. 1.7%) have been elected academicians.

The Academy of Pedagogical Sciences¹⁾ – one of the five branch national academies, has today 62 academicians, and only 9 women are among them (14.5%), and 86 corresponding members and 21 women are among them (24.4%). On 26 academicians, elected since 2000, there are only two women. Besides, in pedagogical sciences women represent the majority of higher academic personnel – 56.0% of candidates of Sciences and 69.8% of Doctors of Sciences.

Since academic ranks are conferred for the most significant contribution to the development of science, the lesser representation of women among academic elite forms their

“invisibility” in “great science”, belittles their scientific activity weight, pushing them aside for executive posts. This fact, like lesser presence of women at the highest stages of scientific qualification is the result of the phenomena of “glass ceiling” and “sticky floor”, being available in higher school science, and so being an important aspect of the concealed higher school curriculum. A vicious circle, reproducing gender stereotypes in the higher school environment, is forming.

5. Higher school “glass ceiling” and “sticky floors” lengthen women’s career path in science and restrict their access to management and posts, connected with responsibility and making decision. Owing to imperfection and imbalance of the system of statistic indicators of science personnel potential, accepted in Ukraine, the information about post distribution of higher school scientists and teacher in accord with sex is hardly available. Nevertheless, the data of ten years’ standing testify that among rectors and vice-rectors there are only 4,3% of women, among deans and deputy deans – 19,9%, among heads of departments - 18,1%. There are no reasons to think that the situation has changed to a great extent since then. According to the data of an electronic reference book “Higher Educational Institutions of Ukraine”²², nowadays among rectors of 217 state higher educational institutions of the III-IV levels of accreditation there are only 12 women, i.e. 5.5%.

All the mentioned gender disproportions are the result of both longer women’s career paths in science and in higher school, a difference in social prestige of scientific and official posts, held by women and men, and quite material and rather appreciable difference in incomes depending on sex. With the average salary of 3143 hryvnias in this country, 23.9% of men and only 12% of women have incomes above 4500 hryvnias, but half women lectures and 41,3 per cent of men lecturers receive below 3000 hryvnias.³⁾

Thus, in higher school and its science there are all the phenomena of professional segregation: (i) “glass walls”, providing stratification still during the choice of an sphere of professional activity and a field of researches according to different ideas of occupations, “suiting” a certain sex and of sciences, ostensibly “corresponding” to the specific features of female/male mentality; (ii) “glass ceiling”, connected with the restriction of opportunities in scientific, teaching and administrative careers as well as rise of professional status for women; (iii) “sticky floor”, manifesting itself in the fact that at the equal level of scientific qualification women in comparison with men are longer delayed in the initial positions of the post hierarchy.

In the post and qualification gender distribution of higher school sciences five important tendencies were discovered: (1) rapid feminization of science, caused by men’s mass leaving it as an unworthy and underpaid sphere of professional activity; (2) uneven distribution of women and men among various branches of sciences; (3) the increase of men’s quota among scientists in improving qualification levels (scientific degrees), ob-

served both within each individual branch and in science in the whole. The two-stepped system of scientific degrees causes additional bars for professional promotion of women; (4) with the same scientific and qualification level women are noticeably oftener delayed among holders of lower scientific ranks and they are less represented among holders of higher scientific and academic ranks; (5) women are much less represented at the highest stages of administrative and managing staff on higher educational institutions, mainly concentrating on executive posts.

All the mentioned tendencies and phenomena, being important aspects of the gender complement of scientists and teachers as a dimension of the concealed higher school curriculum, transmit gender stereotypes of female/male occupations and sciences, of the existence of genetically caused distinctions of mentality and intellectual activity, of women's lesser ability for intense intellectual labour and scientific creative work, of men's greater ability for leading activity and making decisions and women's ability for executive activity, etc.

Reflecting in public and individual mind, these stereotypes, on the one hand, set an expectation level from a girl-student/a young female-researcher; on the other hand, they determine a level of her claims in qualification and career plans. At the same time, with the lack of obvious discriminative practical experiences, a vicious circle, reproducing the gender asymmetry both of science and professional and public activity, is arisen. Revealing the peculiarities of such a reproduction will enable to show the ways of achieving gender equality in the national higher school taking into account historic, social, economic and cultural special features of its development.

NOTES

1. <http://naps.gov.ua/ua>
2. <http://ru.osvita.ua/vnz/guidel>
3. <http://kvit.ukma.kiev.ua/wp-content/uploads/2013/08/CSR-teachers-report-final1.pdf>

REFERENCES

Larvière, V., Ni, C., Gingras, Y., Cronin, B. & Sugimoto, C.R. (2013). Bibliometrics: global gender disparities in science. *Nature*, 504. 211 – 213.

Schwab, K. (Ed.). (2013). *The global competitiveness report 2013 – 2014: full data edition*. Geneva: World Economic Forum.

Schwab, K., Brende, B., Zahidi, S., Bekhouche, Y., Guinault, A., Soo, A., Hausmann, R. & Tyson, L.D. (2013a). *The global gender gap report. 2013*. Geneva: World Economic Forum.

Головаха, Є. & Паніна, Н. (2008). *Українське суспільство 1992 – 2008 : соціологічний моніторинг*. Київ: Національна Академія Наук України. Інститут соціології.

Калачова, І.В. (2011). *Наукова та інноваційна діяльність в Україні у 2010 році: статистичний збірник*. Київ : Інформаційно-видавничий центр Держкомстату України.

Калачова, І.В. (ред.). (2013а). *Основні показники діяльності вищих навчальних закладів України на початок 2012/13 навчального року: статистичний бюллетень*. Київ: Державна служба статистики України.

Калачова, І. В. (2013b). *Наукова та інноваційна діяльність в Україні у 2012 році: статистичний збірник*. Київ: Держкомстат України.

Лібанова, Е.М. (2012). *Аналітичне дослідження участі жінок у складі робочої сили України*. Київ: Фонд народонаселення ООН.

Мирская, Е.З. & Мартынова, Е.А. (1993). Женщины в науке. *Вестник РАН*, 63, 693 – 700.

Оксамитна, С., Виноградов, О., Малиш, Л.& Марценюк, Т. (2010). *Молодь Україн: від освіти до праці*. Київ: ВПЦ НаУКМА.

✉ **Ms. Hanna H. Petruchenia, senior lecturer**
E-mail: ganzia@meta.ua

✉ **Dr. Margaryta I. Vorovka, Assoc. prof.**
Department of Pedagogy and Pedagogical Skills
Melitopol State Pedagogical University named after Bogdan Khmelnitsky
20, Lenin Str., 72312 Melitopol, Zaporizhzhya region, Ukraine
E-mail: olga_vorovka@ukr.net