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ON EDUCATIONAL AND SCIENTIFIC PROBLEMS OF UNIVERSITIES: HUMANISM, MORALITY, ARTIFICIAL INTELLIGENCE AND POSSIBLE CONSEQUENCES OF IGNORING THEM

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ПРО ОСВІТНІ ТА НАУКОВІ ПРОБЛЕМИ УНІВЕРСИТЕТІВ: ГУМАНІЗМ, МОРАЛЬ, ШТУЧНИЙ ІНТЕЛЕКТ ТА МОЖЛИВІ НАСЛІДКИ ЇХ ІГНОРУВАННЯ

Андрушків Б., Череп А., Кирич Н., Грушко В., Погайдак О., Якимук П.
Тернопільський національний технічний університет імені Івана Пулюя*(Scientific and journalistic essay on the search, in wartime, for means to increase the efficiency of using the existing scientific and human resources of universities by improving management).**From contempt for one's own kind, from...hypocrisy innated in behavior, arrogance, overestimation of one's capabilities and knowledge begin. From your achievements that are used for violence, we set foot on the threshold of self-destruction and oblivion.
(Bohdan Andrushkiv)*

Relevance of the problem. Today, regional science, due to the circumstances and the opportunities available, implements the main areas of its activities under conditions of war and looks hopefully forward to the nearest post-war, European perspective. Currently, an educational reform is underway, which is not always understandable not only to ordinary citizens, but also to scientists themselves. Meanwhile, all management efforts are aimed at achieving positive results in the development of such an important for our state social and humanitarian sphere. All scientists, and especially specialists with extensive life and professional experience, should participate in the state plan implementation.

Currently, among the most important frontal educational and scientific trends for the application of scientific potential the following are identified:

- increasing the efficiency of the use of scientific personnel in reconstruction and educational processes;
- systematic scientific assistance to the effective use of available labor, energy and natural resources in the context of solving the multifaceted environmental problems caused by the war, etc.;
- search for the latest (innovative and technological) military and defense means with an expansion of the range of using non-traditional energy sources;
- activation of the use of the experience of scientific schools, and in particular universities etc., in these processes (in the fields of education and science).

Actually, public expertise of the usefulness and effectiveness of these areas has confirmed their relevance and

timeliness, and necessitates the development of appropriate organizational and economic mechanisms for their introduction. One of the most important tools for their implementation at the local level, in many cases, is the organization of the effective functioning of scientific schools, which have been established in almost all universities of Ukraine and which, as it is known, are of a cross-sectional nature. They can be used to increase the effectiveness of involving the existing scientific and personnel potential in educational processes by directly transferring the experience of veterans, higher-education teaching personnel to students and young scientists.

Analysis of the literature on the topic of the study. Quite a number scientific works is devoted to the topic of transferring teaching experience, especially in the educational and scientific sphere. V. V. Kaplinskyi, N. I. Lazarenko, in their article: “Scientific Laboratory of Pedagogical Skills of a Teacher of a Higher Educational Institution as a School for the Formation of Professional Competence” / V. V. Kaplinskyi, N. I. Lazarenko // Scientific proceedings of Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University. Series: Pedagogy and Psychology. – 2016. – No. 48. – pp. 59-64. – Available at: http://nbuv.gov.ua/UJRN/Nzvdpu_pp_2016_48_14, [8], reveal the content and peculiarities of the arrangement of the work of the educational institution teaching staff, share the experience of finding ways to improve professional activity, etc.



Currently, a book on the experience of scientific schools: “Regional, Interregional Aspects of Supporting

Socio-Economic Reform, Innovative Contexts of Entrepreneurship development” has been published by the publishing house of individual entrepreneur Palanytsia V. A., authored by Vice-rector of I. Puliui Ternopil National Technical University, Roman Sherstiuk, (general editorship: Doctor of Economics, Prof. Kyrych N. B.), (“Bohdan Andrushkiv’s Scientific School: Phenomenon, Milestones, Achievements, Philosophy” (2023, 310 pp.) [9].

The publishing house of individual entrepreneur Osadets Yu.V. also published a similar book on the scientific school: “Effectiveness of Economic Entities, Regions and the State Activities” (editor: Doctor of Economics, Prof. Alla Cherep) under the intriguing title: “The Paradigm of a Scientist in the Formation of the Social and Economic Development of Ukraine in the Post-War Period (Literary and Psychological Essay on the Life and Creative Work of the Honored Scientist and Engineer of Ukraine A. V. Cherep: Achievements and Losses, Philosophy of Achievements and Effectiveness of Implementations” (2023, 380 pp.). [1], which, meanwhile, ranked the 1st for the best publication in the competition announced by the National Academy of Sciences of the Higher Education of Ukraine.



In the book abstract, it is noted that these informational, scientific and methodological publications are prepared by the experience of the life-sustaining activity of scientific schools, improving the management of economic departments, etc. The books generally reveal the features of the functioning of scientific schools, their formation within the framework of the development of departments under university conditions. The experience of solving problems against the background of “lack of money” is highlighted, and in particular the issues of the improvement of material, technical and educational, and methodological bases of the departments, the complexity of training not only students, and what is more, highly qualified scientific personnel. The organization of scientific and research work, publishing activities and education of the future generation of the state are considered.

Many books, scientific and journalistic articles by members of scientific schools on this topic [1-9], were published marked by the classification code of the NAS of Ukraine. Peculiarly, they include the identification of parallels between the activities of scientific schools and sub-structural scientific public associations. The studies focused on the need to address this issue.

Meanwhile, the range of problems of using and transferring of life and professional experience to young scientists by so-called “old professors” under the conditions of the university in a systematic manner and using scientific schools for this, were left out of the view of domestic scientists.

Statement of the Main Provisions of the Article. In fact, under the war conditions, spontaneous decisions negatively manifest themselves in the management of regional universities due to the chaos and uncertainty of social processes. Reform processes that are not always justified are ongoing: reductions and mergers of educational institutions. By the way, similar incomprehensible processes take place in other sectors of the national economy. Such circumstances appeal to scientists concerned to search for ways out of the situation. In fact, many of them are reasonable and for the benefit of the field of education and science. Actually, in order to prepare conclusions based on the analysis of the proposed ways dedicated to this topic, we want to summarize and reveal them for the reader of this article.

Literary digression from B. Andrushkiv. Recently, I accidentally met a colleague who retired from science at the respectable age of 82. Such cases happen in science. He looks a little better than me, although I am several years younger. I remember that at our informal meetings he marvelously recited poems, which were always appropriate to the topic, he is witty, sings beautifully, drives a car, etc., to cut a long story short, he is a person of keen intellect.

He explained the true reasons for his conduct. He noticed that recently his colleagues have begun to less frequently greet him, they somehow do not notice him, as if they are passing through an empty place. Previously, they smiled from afar. It seemed that there were no more loyal friends. He wanted to communicate with them. It seemed that they were womb to tomb friends, but it turns out that they were not. He was not interesting to them any longer. At the department, they gossiped in the corridors, “You see, he does not want to deal with information computer processing.” It’s good that our morality is like this – it doesn’t allow us to put everything where it belongs. By the way, those who do this are still insincerely honored with a smile. They remember that a knife, even if it’s rusty and old, can still hurt, even fatally. When a person is “soft”, you can trample him or her. Nowadays, in Ukraine, the words “What a burnt-out man!” have become fashionable. I made the decision to retire and I retired! No one really held me back.

Of course, it’s a pity to hear such words addressed to a young scientist who spoke like this to his senior colleague and vice versa.

You can agree with such conclusions, or you can oppose them and even protest them. By the way, precedently, people with such a status and track record as him should have had a decent salary and could have (even at their own expense) a secretary who knows computer technology and not only prepares reports, but also writes down interesting ideas and projects. The long and the short of it, in such cooperation talented scientific works are prepared, excellent scientific personnel are “forged”...

We began to notice all these and other things after the dismissal of old professors here and there one by one. It is clear that there is no academic workload... it is clear that there is the war, but it is not clear where young “green” teachers will get production, scientific, educational and professional experience if they drive out old professors from the educational processes, because as you know, everything is built on it, on experience, everything is based on practice. What will happen if we interrupt this chain of life-giving connections for science and education. Now it is urgent to form the latest educational programs taking into account the transfer of experience of veterans of science and education not only to students, but also to young teachers, not many of them have only entrepreneurial experience. Of course, we are not talking about those who are not healthy, etc. *Perhaps, in this situation, it would be worth developing relevant regulations, officially recommending the formation of special public organizations in universities that would function under the motto along the lines of: “We will transfer the experience of science veterans to young scientists, for the sake of the European future of Ukraine”. It is possible to organize an “Intellectual Center for Transferring Knowledge and Experience of Science Veterans to the Young Generation under University Environment in the Post-War Period”,* which would include the most experienced scientific specialists to organize discussions on production issues, etc. At present, TNTU and ZNU have already gained some experience in this area as a result of cooperation with the ASU, NAS of Higher Education of Ukraine, MADKU, Scientific Technical School, etc.

If we lose it (this experience), then, as it follows from the proverbial wisdom, “It does not worth a plugged nickel.” The Academy of Social Management non-governmental association studied public opinion on this topic:

Results of veterans of science sociological survey on working conditions: *...I want to call, to consult on how to present in a best way another scientific and journalistic study that I am preparing for publication. It turns out that there is no one to talk to. Some have gone to a better world, leaving all the worries of life to their descendants. Others survived in an excellent environment and cannot do it, or rather do not really want to evaluate certain processes that they have experienced. And still others, young people, those who float in ephemeral, computer-Internet clouds and what we have experienced does not seem worth their attention.*

Well, today times change..., but the old problems remain from ancient times and if you do not consider the blunders of the past, you will not have a successful future.

Results of a veterans of science sociological survey on the attitude to the awards of a scientific veteran. *All the numerous certificates of merit, letters of acknowledgment, order cards, certificates of distinctions, medals, “jackets” of diplomas certifying the belonging to certain scientific public organizations and associations, at my venerable age could be thrown into the trash as unnecessary.... Young people do not appreciate this “junk jewelry” but this is the history of my life, the life of my department, my university, which I and my colleagues, peers, created. First*

of all, a young scientist should see behind them the efforts of a person who strives to realize his opportunities during his life, to enhance a career, receive recognition, and prosperity in a righteous way. We experienced anguishes and emotional upheavals when achieving higher purposes and solving small tasks and problems behind each of “slip of paper”, “medal”. Joy from achieving a goal, suffering from failures and disappointments.

There is triumph and sorrow of victories and failures behind them. To cut a long story short, there is hard work behind them, which is difficult to understand, and maybe some of the young people will not understand it without certain explanations, because I did good to people even to those who did not deserve it and when it was possible not to do it.

It is probably not possible for a scientific veteran to admit this, open his heart in front of the general public today. He addresses the scientific youth, “Come when you are having a hard time, or maybe just in a free moment, sit down nearby, distance yourself from worries and rueful feelings, and think. How would he solve your problems. Meanwhile, for him, life was also rich, full of events... experiences, he was more than once in a hopeless situation, but there is always a way out...and he found it. Use his experience....

Whatever he did, he tried to make his work for the benefit of his family, his native land. His homeland.

Reminiscences by Prof. B. Anrushkiv. *I recall that my former academic advisers were of venerable age. I kept in touch with them until their deaths (this is what my parents taught me). At the end of their lives, they bequeathed to me to complete and publish their scientific developments... I tried to fulfill their wills. The question was not about money or priority... Publishing was carried out by decision of the academic council of the university.*

Nowadays, not only our old professors, but also young scientists publish their papers at their own expense, in a small printing run, despite the importance of the subject matter. Meanwhile, we wrote about this to the interested authorities of the Ministry of Education and Science and the media about the need to found a special commission to determine the importance of the subject matter and develop recommendations on the expediency of mass circulation of the book. Veterans of science should be there.

For reference: *Currently, in the capital of Ukraine and the regions, hundreds of publishing houses produce thousands of books in small editions (20-100 copies), which no one analyzes for their usefulness to society. Meanwhile, in the “printing garbage there are golden pearls” that need to be selected and published in mass circulation. Our veterans of science have more than once officially informed of this the media and governmental agencies involved.*

Science is currently experiencing many problems, large and small. Not all of them can be solved now, but cases where no one pays attention to them are rare, even against the background of the aggression, war, and lack of will.

Once, the media and professional publications expressed the attitude of the scientific community to the recommendation to publish in Scopus and Web of Science. The instruction to reflect in reports the number of publications

in journals included in foreign scientometric databases such as: “Scopus” and “Web of Science”, according to the conviction of many Ukrainian scientists is incorrect, as it has all the signs of a commercial project of uncertain origin and has nothing to do with domestic science. What is more, the requirement to publish there, for one’s own money, to highlight creative ideas in ... periodicals, which are not domestic, but foreign ones, is absurd, although this also takes place being not very grateful thing to do from a government perspective. Meanwhile, in the opinion of scientists, accounting and reporting on publications in domestic publications, which, for example, are included in top 5 or 10 foreign scientometric databases;

The faked fight against plagiarism brings terrible harm to science, which scares young researchers, slows down research processes, repels and confuses scientific research, and discredits Ukrainian science.

From the speech of a participant in the discussion,
“The most annoying thing is that everyone knows about it, understands it, and no one wants to stop this nonsense, which is surprisingly effectively used by careerists in politics... to discredit their competitors, etc.

To cut the long story short, we are not looking for rational kernels, and if we do not confuse them as a result of the fight against windmills, then we will trample them irrevocably into the ground.

However, let’s return to the topic of our conversation, of life and professional experience, and its use under the conditions of continuous computerization. They say that certain species of monkeys memorize some technological operations very quickly too and successfully manipulate them, not really realizing their place in them.

The smart ones in that environment are making big money on this topic. The most striking example of this is Elon Musk – engineer, entrepreneur, inventor, investor, billionaire. The founder of SpaceX, PayPal, Neuralink and The Boring Company, the chief designer, CEO and chairman of the board of directors of Tesla Inc., which runs the Tesla plant, who, according to the experts, not fully realizing his place in the world (unlike the Greats: Nikola Tesla, our fellow countrymen members of Scientific Technical School Ivan Puliui, Myron-Nikolai Onufriiovich Zarytsky, etc.), in society began to actively manifest his role in politics and public life [Internet resource].

Undoubtedly, Elon Musk in all his actions and processes uses the broad capabilities of artificial intelligence, whose humanism is very far from human morality and ensures the achievement of the goal at any cost. Unwise examples sometimes have their followers. The principle proposed half a thousand years ago “the end justifies the means”, is fully implemented by our contemporaries. The former Machiavellianism as Western thought, as a mental trend that separates politics from moral and religion standards has been resurrected and now ignores all religious and moral norms and considers absolutely everything permissible to achieve the goal, without taking into account Christian morality or any other legal rules. The current war is a vivid example of the aforementioned cupidity, present not only in the bloodthirsty aggressor, but also in those world observers who, frankly speaking, are experimenting on Ukraine.

War has many facets of its negative essence. Threats to technogenic and ecological security (in Ukraine, the Kak-hovka Sea dam blowing up), a significant level of not only wear and tear, but primarily destruction of critical infrastructure facilities, in particular utilities, life support systems underperformance increase the risk of emergencies of natural and technogenic origin, the spread of epidemics of dangerous infectious diseases, and necessitate the provision, at this stage, of special functions to the educational and scientific content of the state.

Undoubtedly, all of the above threats were realized primarily in the war and are the result of the greatest unfair challenges to Ukrainian society. A significant obstacle to their prevention is the limited capabilities of educators and scientists in these processes, the imperfection of current legislation, regulatory acts that do not make it possible to effectively change the management of this area of our society.

Summing up what has been said, even today experienced scientists and educators need to answer questions about the threats and challenges that will arise... after... the war and involve not only young scientists, but also ordinary people in solving problems.

We must proceed from the fact that the creators of the Ukrainian state were more than 28 million citizens who voted in the referendum on December 1, 1991 to approve the Act of Proclamation of Independence of Ukraine. In this regard, the explanatory and educational function of educational institutions should be strengthened, focusing on humanism, mutual understanding, and mutual tolerance of members of our society.

Meanwhile, veterans of Ukrainian science (this definition is increasingly used in the media) ranked the first in the world to draw attention to the necessity to solve this problem.

In fact, concerned politicians, the scientific community, and managers at various levels after the First and Second World Wars were looking for management tools to prevent aggressive manifestations and violations of International Peace Agreements by individual states. It should be recognized that currently under the management based on democratic principles of coexistence, it is extremely difficult to establish humanistic filters in the process of selecting and appointing managerial personnel to responsible positions. Meanwhile, the solution to the extremely complex issue of our time is obvious. In particular, elementary experience of successful use of human and artificial intelligence, organizational mechanisms in this area, including the “Polygraph” (Stress-Detecting Instrument), has already taken place in various states and branches of science and practice for a relatively long time.

The authors (veterans of science) of the creative initiative of the effective use of human and artificial intelligence in the search for ways to prevent the catalytic advance to the Third World War have been working on the study of this problem since the beginning of Russia’s treacherous attack on Ukraine in 2014. Their developments have been published in the media, professional publications, collections of Scientific and Practical Conferences, have been registered with the State Patent Authorities, and are not only a relevant, scientifically sound proposals, but also an urgent

requirement of the transformational state of Ukraine, the underlying participant in the global conflict that may escalate into the Third World War.

The stormy reaction of the domestic and international community to the Appeal of the scientific community of Ukraine initiated by them, on the use of human and artificial intelligence to improve the management of international institutions, the implementation of their coexistence into practice, could undoubtedly to some extent slow down the extermination of Ukrainians in the independent, legal, state of Ukraine, stop various hypocritical and illogical manipulations that are not perceived not only by conscious state leaders, scientific intellectuals, but also by the average population of our fragile planet.

In particular, at first glance, the accusation of Russia in supporting terrorism on the part of the USA, the European Community is very "tolerant", while it is actually a terrorist state in the true sense of these words, as it hypocritically violated international agreements and uses state armed forces to implement its aggressive goals in the war with Ukraine, under the pretense of "special operation". It finances hostilities out from the state budget, taking advantage of the impunity on behalf of international institutions, unblushingly violates the rules of war, etc.

The following studying of the behavior of leaders through the example of the aggressive state of Russia, etc., testifies to their inadequate behavior. Actually, they sanction depredation, violence, theft, murder, lies, falsification and distortion of the history, kidnapping of children, unreasonable destruction, etc. Meanwhile, the International Court of Justice in The Hague gave arrest warrant for Russian President Putin only for the fact of kidnapping children? You have to be blind not to see the above and other crimes, global destruction, facts of treachery, etc. Unbiased assessments of such actions among the population of Ukraine say that the territory of our state, with the tacit consent of partners (in agreement between world powers), has become a territory for experiments in testing weapons, manpower and the reaction of the long-suffering Ukrainian people to them.

It is commonly known that Russia has a significant contribution to the financial support of the UN activities and significantly manipulates this factor. The situation is similar with the activities of the International Red Cross and other administrative structures.

Effective, independent, impartial and fair functioning of administrative international structures can be ensured by the means proposed by the author's team using human and artificial intelligence.

According to polar testing of their behavior using artificial intelligence, the leaders of such a state should be identified as terrorist criminals and would undoubtedly deserve for their actions not only hiring, but also severe punishment under international agreements, and not dominance in these structures as financial donors.

The testing of the basic provisions of the formation of organizational mechanisms and tests for the use of human and artificial intelligence took place at a number of All-Ukrainian and International scientific and practical conferences, round table meetings, discussion clubs, etc., among them:

– XI All-Ukrainian Scientific and Practical Conference in Memory of Honorary Professor of Ivan Puliui Ternopil National Technical University, Academician of the National Academy of Sciences of Ukraine M. H. Chumachenko: "Science, Innovation, Business: Current Development Trends" (Ternopil, May 26, 2023, FP Palanytsia V. A., 2023, 137 pp.;

– 1st International Scientific Conference: "Mechanisms of Adaptation, Integration and Assimilation of Ukrainians in Conditions of Forced Migration", April 5, 2024, Paris, (France);

– IV International Scientific Conference, "Military Conflicts and Man-Made Disasters: Historical and Psychological Consequences" April 18-19, 2024, Ternopil – Poland;

– 6th Scientific Conference, organized by the State Professional University named after Prof. Edward F. Szczepaniuk in Suwalki (Poland) on the topic: "Assessment of the Current Course of the War in Ukraine and Possible Scenarios of the Perspective Operational Actions for Planning the Implementation of the Main Political and Imperial Institutions of Russia" on May 16-17, 2024.

This topic was discussed at other university and regional events, round tables ("Hot Spot with Mykola Davydiuk"), various discussion clubs under professional periodicals, etc.

Based on the results of scientific research, relevant publications were prepared in the media and in professional periodicals. The general summary states: "Appeal of the Ukrainian scientific community to the world intelligence and all institutions of international influence, including the United Nations Organizations, on organizing the protection of Ukrainians from extermination in Ukraine." The document was forwarded to the President of the Ukrainian Scientific Diaspora in France, the Head of the Organizing Committee and the participants of the 1st International Scientific Conference "Mechanisms of Adaptation, Integration and Assimilation of Ukrainians in Conditions of Forced Migration", to the European and World Diaspora. The appeal was successfully discussed at the meetings of the above-mentioned Domestic Public Associations and received a certain resonance both among the Ukrainian Diaspora and the International Community. However, hidden manifestations of Machiavellianism in this process certainly take place.

For reference: *Machiavellianism is an idea in the field of political philosophy, put forward by the Italian thinker and politician Niccolò Machiavelli, who lived between 1469 and 1527.*

The human intelligence notes that Machiavelli's inhumane and immoral ideas, under the guise of "progressive claims" of any nature whatsoever applied today after five hundred years, are... truly a disgrace to humanity.

Many scientists are frankly afraid of the possibilities of uncontrollable use of artificial intelligence. After all, we do not know what such individuals who are far from humanistic principles, Christian morality, will do for our society. The most unfortunate thing is that here, in the regions, there are their young followers. One fool makes many. How useful the experience of old professors..., veterans of science would be here.

From the speech of a participant in the discussion.

I once had a friend, Lord bless his soul, who, although he himself did not have very deep knowledge, liked to test it in others by asking awkward questions. He himself had previously read up literature source and believed that his interlocutor should know the answers to these questions. In this way, he tried to put himself up at the level of his friends.

Once, instead of answering the next questions, he was told that out of curiosity, perhaps it would not be worth asking Jesus Christ about His knowledge of the rules of using a logarithmic line or a computer and, finally, artificial intelligence? Doubting the Lord's ability is the evidence of intellectual inferiority. We, people, will never understand his plan. It is a great honor to be a grain of sand under his feet, not to mention the role of a cog in his machine... The one who would modestly realize himself as a grain of sand in the implementation of God's purpose, can bring more benefit by his obedience than the authors of nuclear developments, who after their implementation, registration insincerely demonstrated their repentance.

Such conduct, such specific behavior (setting aside individuals), testifies to the limitations of human thinking. The proposed projects of flight to other planets with the purpose of developing its resources, etc. (cannot be condemned), but we can't guarantee them to be rational and, moreover, real. All the more, to look at the distant horizons, not knowing what lies under your feet, not understanding what our rich and generous land, seas and oceans can give us, is not reasonable. (Russia has a large territory, unlimited energy resources, fertile land, and grossly, treacherously encroached on someone else's belongings).

I am tormented by the question of whether it is worth writing about such things, whether it is worth speaking on this topic at SPC meetings and seminars? Probably it worth.

From the speech of a participant in the discussion.

We must talk about the fact that fire can burn. No, there is no need to consult with anyone and hesitate. From contempt for our own kind, from...hypocrisy inherent in behavior, arrogance, overestimation of our capabilities and knowledge begins. In its turn, from your achievements that are used for self-affirmation in a leadership role, domination over our own kind, use of violence, we step on the threshold of self-destruction and oblivion...

A significant role in these educational processes can, again, be played by scientific schools, which successfully function in almost all universities of Ukraine.

Apropos, this article is also based on the experience of the functioning of scientific school "Regional, Interregional Aspects of Supporting Socio-Economic Reform, Innovative Contexts of Entrepreneurship Development" founded in 2007 by the Honored Scientist and Technology Worker of Ukraine, Vice-President of the National Academy of Sciences of Ukraine, President of the Academy of Social Management (ASM), B. M. Andrushkiv at Ternopil Ivan Puliui National Technical University, and scientific school: "Efficiency of the Activities of Economic Entities, Regions and the State", headed by Vice-President of the National Academy of Sciences of Ukraine, Head of the

Department of Finance, Banking and Insurance of Zaporizhzhia National University Cherep A. V.

For reference: Co-author of the article Andrushkiv B. M., working at TNTU first as a head of the department, and then as a professor at the Department of Management of Innovative Activities and the Service Sector with the participation of members of the scientific school, created the Museum of Management Tools and Economic and Managerial Literature of the Totalitarian Period, a special council for the defense of candidate and doctoral dissertations, the first at that time in Western Ukraine, scientific professional electronic periodical "Social and Economic Problems and the State". She is a member of the editorial board of a number of scientific, artistic and popular science collections and magazines, a member of the editorial boards of TNTU periodical "Socio-Economic Problems and the State" and "Galician Economic Bulletin".

A. V. Cherep has many years of work as the dean of the Faculty of Economics, editor-in-chief of a professional periodical, Chairman of the University Specialized Council for the defense of candidate and doctoral dissertations, etc.

With the assistance of the heads of scientific schools (veterans of science), a number of new specialties, laboratories, etc. were opened. To facilitate the educational processes, exhibits were collected and the "Museum of Management Tools and Economic Literature of the Totalitarian Period" was opened. To cut the long story short, there is a lot to say about schools. With the assistance of scientific schools, today the economic sector of the University is quite powerfully provided with scientific personnel, information means, we have decent educational and methodological support.

In addition to numerous textbooks, training and methodological manuals (the exhibition of which we practice to demonstrate at seminars and conferences), in cooperation with scientific schools we have "established" a number of fundamental research areas. Among them:

- "Tourism of Ukraine: Economic and Organizational Mechanisms of its Development" – Ternopil, "Ternograf" – 2008 – 976 pp. (enlarged format), was presented for the State Prize of Ukraine in the field of science and technology);

- "Narratives on the Problems of Forming the Institutional Foundations of the Formation of the Economic Constitution of Ukraine (Institutional Foundations of the Basic Economic Law of the State)" Ternopil, "Ternograf" – 2013 – 552 pp.;

- "Complete Regional System of Business Accountability – a Way to Increase the Efficiency of a Territorial Unit, Ensuring its Sustainable Development – Ternopil: Ternograf LLC, 2014 – 680 pp.,

- "Innovative Means of Developing Non-traditional Energy Sources and Organizing Resource Use in the Social and Humanitarian Complex of Ukraine: Ternopil: Ternograf LLC, 2016 – 804 pp. et al. [9],

Against the background of scientific cooperation of scientific schools, when organizing planned (or spontaneous) events, we always comprehensively discuss the progress of solving scientific and everyday problems, develop recommendations that we use in preparing decisions or

conclusions at general university, All-Ukrainian or even International scientific and practical conferences, which are usually called Scientific Schools as a Tool for Solving Scientific and Applied Problems in Higher Education in the Post-war Period”.

To improve the functioning of scientific schools within the framework of transferring experience and knowledge of the so-called old professors to young scientists and increasing their efficiency, in our opinion, it is advisable:

- to determine state priorities in the implementation of programs for the post-war reconstruction of Ukraine, to direct the activities of these scientific associations, which include old professors, who are now ignored in many cases, to their implementation;

- to provide justification for developing special benefits and priorities for members of the scientific school in obtaining state budget orders, etc.;

- to make proposals to the Department of Certification of Higher Qualification Personnel of the Ministry of National Education and Science on the optionality of publications in Scopus and Web of Science. Applicants who have publications in professional journals, which entered top 7 foreign scientometric databases under these conditions, their registration and reporting are more justified.

- to develop mechanisms of material and moral incentives in work not only by team methods, but primarily by economic ones.

Conclusions. Summing up the results of discussions on theoretical and practical research on increasing the efficiency of using personnel scientific potential, searching for directions for the development of scientific schools as a tool for solving scientific and applied problems against the background of a local university, regional higher school in the post-war period, taking into account the reports and speeches of the participants of the meetings, we confirm the need to activate members of the scientific school in determining social and economic vectors of innovative development of business structures and improving economic, organizational and economic mechanisms for the development of industries of the post-war national economy and have the opportunity to present the following conclusions and recommendations:

1. To support the creative activity of scientific schools operating at universities and, taking into account the social and economic effects, to initiate certain activation measures before the Ministry of Education and Science of Ukraine. In particular, to increase their efficiency, it is advisable:

- to provide justification for the development of special benefits and priorities for members of the scientific school in obtaining state budget orders;

- to develop order of state priority in the implementation of programs for the post-war reconstruction of Ukraine, to direct efforts of scientific schools towards their implementation, activating cooperation of regional state administrations and regional councils not only with all-Ukrainian charitable and humanitarian funds such as “Renaissance of Ukraine”, but also with public scientific associations, taking into account the initiatives and experience of highly qualified scientific personnel of the old formation, etc.;

2. As things stand now, it is advisable to organize a scientific study of modern adaptive-transformational processes and approaches to the formation of innovative principles of management of production enterprises and service enterprises, united territorial communities according to the requirements and standards of the EU;

3. Reforming the national economy in the post-war period should provide for the legitimacy and expediency of applying world experience in Ukraine, and primarily European experience, including in the areas of education, science, management, production and services.

4. To recommend that state administration bodies always promote priority development, implementation of achievements in education, science and technology, and scientific and technological progress within the framework of the implementation of the Enterprise Management Development Program in the context of Ukraine’s accession to the European Union and the NATO Defense Alliance.

5. Educational institutions, institutions, enterprises and organizations should study the possibilities of implementing management through a consistent transition from direct administration to economic influence on scientific, educational and economic work. To study the relevant mechanisms of material and moral incentives.

6. The organizational and economic mechanisms proposed in the discussions, improving educational processes, scientific and research work, implementing innovative principles for the formation of a modern post-war Ukrainian society, ensuring the sustainable and stable functioning of industrial enterprises and the service sector.

The practical implementation of the conclusions and recommendations will undoubtedly raise the authority of scientists, scientific schools of Ukraine, create the prerequisites for improving their work, effective development of education, science, management both at the state level, branches of the national economy, and regions.

Really and truly, scientific schools may become a tool in the implementation of a social strategy to increase the efficiency of using highly qualified scientific personnel in the development of our state in the post-war period.

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