

REVIEWER'S REVIEW  
of D.Sci in Economics, Professor of the Department of Marketing and Logistics  
Sumy National Agrarian University  
**Prof. Olena NIFATOVA**  
for **Zhang Wenxi's** dissertation  
**"Management of innovative development system of China citizenship higher  
education",**  
applied for the degree of Doctor of Philosophy  
from the field of knowledge 07 Management and administration  
in the specialty 073 Management

**Relevance of the topic of the dissertation.**

Improving the efficiency of the educational sector today requires the implementation of responsibility for the results of its activities, flexibility, entrepreneurship and adaptability of educational institutions in relation to changing conditions of the labor market, competitiveness; and most importantly, it requires strategic planning, a clear definition of the order of actions that would ensure the sustainable development of educational institutions.

Solving these and many other problems of the development of educational institutions is impossible without expanding their independence, creating a legislative basis for attracting additional financial resources, without actively applying in their practical activities as innovation management.

The dissertation work is devoted to the deepening of knowledge about the peculiarities of the application of the management of innovative development system of China citizenship higher education. There are a number of reasons that necessitate the strategic use of innovative development activity of higher education institutions. The innovations and development of China's higher education management system mainly include the following aspects: building a modern higher education system - the Chinese government has gradually created a modern higher education system with unique Chinese characteristics by improving the regulatory and legal framework, strengthening the vertical management, developing the globalization of education through the introduction international standards and other measures; promoting the

popularization of higher education among the population - through the system of training subsidies and expanding opportunities for access to higher education; improving the quality of education - through the implementation of international standards of integrity and improvement of innovative abilities of students; strengthening international cooperation and academic exchanges: China actively carries out exchanges and cooperation in the field of higher education with other countries, absorbs advanced international experience and ideas, and promotes the integration of Chinese higher education into the world educational and scientific society.

**Connection of work with scientific programs, plans, topics.** The dissertation was carried out in accordance with the directions of research work of the Department of Management named by prof. Mykhailova of the Sumy National Agrarian University: "Development of management in the context of international integration processes" 2019-2023 (state registration number 0119U001336, Ukraine), within by the author was carried out the topic of the management of innovation education development in comparison of Chinese and Ukrainian higher institutions. The dissertation research was also conducted within the research was carried out within the framework of the projects the Ministry of Education Industry University Cooperative Education Program 2019, Program No: 201901090003 (China).

**The scientific novelty of the obtained results is as follows:**

The scientific novelty of the obtained results lies in the development of a comprehensive system for ensuring the innovative development of Chinese civic education institutions through the continuous use of VR systems and applications in the educational process, for the accumulation of effective functioning and harmonious development of several main subsystems of the organization of higher education (state regulation, knowledge generation, innovative infrastructure, technology transfer), which determine the effectiveness of China's national innovation system of

higher education, the main purpose of which is the formation of a competitive, highly qualified specialist with professional and life skills that meet the needs of the modern development of the national economy.

**The practical significance of the obtained results** lies in their further use by institutions of higher education and education management bodies of various levels. The proposed practical and methodological recommendations are implemented in the activities of the Sumy National Agrarian University and the Henan Institute of Science and Technology. Employees of promotion departments use them to establish a system of communications with the main stakeholders.

#### **The main results obtained personally by the author**

In the course of the study, it was determined that any innovative teaching technology (including virtual) involves the art of mastering the process, a certain sequence of operations using the necessary means (materials, tools and an algorithm of actions), i.e. in a procedural sense, the technology must provide an answer to the question : "How to achieve the result of activity (using what and what means)?" . At the same time, the concept of technology reflects the focus of scientific or practical research on purposeful improvement of human activity, increasing its effectiveness, instrumentality, and technicality.

Thus, innovative educational technologies characterize the general strategy of the development of education as a whole and the educational environment in particular. The main purpose of educational technologies is to forecast the development of educational systems, their design, planning and determination of factors that meet educational goals.

A virtual learning community created through a variety of online platforms has advantages beyond the reach of conventional learning activities. Teaching activity in a regular classroom is limited by time, place and personnel, and the content of education is clearly regulated. Learning based on the virtual platform breaks the

limitations of time and place, makes full use of a variety of online resources and effectively enriches the learning content in the classroom, and provides a flexible and convenient learning space for students to make full use of their learning opportunities.

The important tasks of the development of this subsystem should be: first, ensuring the innovative focus of the education system on the basis of large-scale computerization and activation of scientific, technical and innovative activities of higher educational institutions, creation of innovative structures in their system; reforming the education system taking into account the requirements of European standards and preserving cultural and intellectual national traditions. Secondly, increasing the effectiveness of the scientific research and development sector at the level of universities and colleges in order to strengthen its role in ensuring the innovative development of the national economy. Modern high technologies depend on the level of scientific research, efficiency and effectiveness of their introduction into production. Of course, the quality of scientific and technological developments depends on the qualifications of scientists and engineers, and they, in turn, are the total effect of the civic education system, especially higher education. Thirdly, ensuring the expanded reproduction of knowledge based on the integration of higher education institutions, scientific and research institutes by increasing the level of innovative activity of the public sector of scientific research and development; concentration of resources on priority areas of development of science, technology and innovative activity; stimulating lifelong learning, fostering a culture of innovative thinking.

For a long time, the traditional method of education was based on the authority of teachers, and students formed the habit of excessively relying on teachers, which affects the development of their independent ability to learn. The results showed that the overall score of independent learning ability and the score of each parameter of the experimental group were higher than those of the control group after the intervention, and the differences were statistically significant ( $P < 0.05$ ). It has been stated that the application of virtual reality technology in basic teaching for medical

college students can improve the self-learning ability of future nurses. At the same time, the teacher allocates 20-30 minutes for students to independently study the content of autonomous learning in virtual software. In this case, the teacher acquires the function of a mentor who prompts, prompts and directs students to study, finds and solves problems, shares experience in a timely manner, and also improves their ability to self-improvement.

The study also aimed to examine the application effects and perspectives of immersive VR learning in basic nursing training. Using the convenience sampling method, 120 students of a four-year full-time nursing course in the third semester of 2021/2022 were selected at one of the universities in China. There were 60 people in two groups, the control group received traditional teaching and experimental materials, and the experimental group underwent a virtual classroom and group discussion. The scores of the classroom test, theory test, and skill test in the experimental group were significantly higher than those in the control group ( $P < 0.05$ ). It appears that virtual reality immersion learning in teaching basic nursing skills can fully mobilize students' enthusiasm, greatly improve students' practical ability, autonomous learning ability and teaching effect, help students master clinical knowledge, and has good application prospects.

At the same time, with the rapid development of information technology and the mobile Internet, more and more industries and the mobile Internet have begun to integrate, which has forced these industries to break through the bottleneck and find new opportunities for development. The same is true for the education industry, and the integration of the mobile internet and the education industry has contributed to the overall growth of the online education industry.

It was carried out an analysis of the plagiarism check report for the presence of textual borrowings (Strike plagiarism program). The reviewers came to the conclusion that Zhang Wenxi's dissertation work on the topic "Management of innovative development system of China citizenship higher education" is the result of the applicant's independent research and does not contain elements of plagiarism and

borrowing in accordance with the Resolution of the CMU dated 12.01.2022 No. 44, Clause 9. Used ideas, results and texts of other authors are linked to the corresponding source.

**Completeness of presentation of the dissertation material in scientific publications.**

*Articles in scientific publications included in the list of specialized scientific publications of Ukraine*

1. Lozynska, I., Wenxi Zhang, Zhijiang Yu, Hongmin Yang. A case study on international education cooperation in colleges & universities under the belt and road initiative (Henan institute of science and technology). *Bulletin of Sumy National Agrarian University*, Vol. 2 (80), 2019. Pp. 49-51. <https://doi.org/10.32845/bsnau.2019.2.9>

2. Lozynska, I., Wenxi Zhang (2023). Ten-year review on the effect and prospect of postgraduate education reform in one Chinese University, *Bulletin of Sumy National Agrarian University*, Vol. 1 (93), p. 12-16. DOI: <https://doi.org/10.32782/bsnau.2023.1.3>

3. Zhang Wenxi, Inna Lozynska (2023) The residential college system: innovation and practice of student education management mode (take Sanquan College of Xinxiang Medical University as an example), *Bulletin of Sumy National Agrarian University*, (2 (94), 8-12. <https://doi.org/10.32782/bsnau.2023.2.2>

*Articles in periodical scientific publications indexed in the Web of Science Core Collection and/or Scopus databases*

4. Wenxi Zhang, Inna Lozynska, Wei Li, Nana Cai, Hongmin Yang, "Benefits and Barriers of Holistic Nursing Training by High-Fidelity Simulation in Obstetrics", *Computational and Mathematical Methods in Medicine*, vol. 2022, Article ID 1848849, 5 pages, 2022. <https://doi.org/10.1155/2022/1848849>

5. Dovhan, V., Blishchuk, K., Kanova, L., Maslov, A., & Zhang, W. (2023). Paradigma digital do desenvolvimento da política educacional da ucrânia no contexto

da integração europeia: Da teoria à prática. Revista on Line De Política E Gestão Educacional, 27(esp. 2), e023040.

***Scientific works certifying the approval of the dissertation materials:***

6. Inna Lozynska, Wenxi Zhang (2019). An analysis of promoting co-construction of education action (PCEA) under the Belt and Road initiative in China. Сучасний рух науки: тези доп. VI Міжнародної науково-практичної інтернет-конференції, (4-5 квітня 2019 р.). – Дніпро, 2019. – С. 362-366.

7. Wenxi ZHANG, Inna LOZYNSKA, Yanjun FU and Hongmin YANG, “Research on The Contribution of Higher Education to Economic Growth in The Silk Road Economic Belt...,” Proceedings of the 37th International Business Information Management Association (IBIMA), ISBN: 978-0-9998551-6-4, 30-31 May 2021, Cordoba, Spain, p 2821-2832.

8. Zhang Wenxy (2022). The concept of educational innovation: historiographical review, Матеріали Всеукраїнської наукової конференції студентів і аспірантів, присвяченої Міжнародному дню студента – (14-18 листопада 2022 р.). – Суми, 246 с.

9. Lozynska I., Yang H., Zhang W., Fu Y. An analysis of 2017 China’s education statistics. Інновації партнерської взаємодії освіти, економіки та соціального захисту в умовах інклюзії та прагматичної реабілітації соціуму: матеріали III міжнародної науково-практичної конференції. м. Кам’янець-Подільський, Подільський спеціальний навчально- реабілітаційний соціально-економічний коледж. – 2019. – 219-221 с.

**Remarks and wishes to the content.**

By characterizing the dissertation work of Zhang Wenxi as a whole, it should be noted that it certainly has relevance, scientific and practical significance. During the review of the work, some issues of a debatable nature, comments and suggestions arose:

1. Point 2.2 would be expedient to present with the help of graphic objects, which would add a winning type of information.

2. I see that some data is updated to 2022 and some data is updated to 2021, can you explain why?

2. As a researcher in educational management, why do you study educational topics in the medical field and rural areas?

3. I think the online education you show in your paper is interesting, is there a huge prospect for online education in China now, as you have shown?

4. Can you explain the difference between simulation teaching and use simulators in medical teaching?

However, the indicated comments and wishes do not fundamentally affect the overall positive assessment of the dissertation work, are not fundamental and do not reduce its rather high overall assessment.

**Correspondence of the dissertation to the specialty and profile of the board:**

The dissertation work of Zhang Wenxi "Management of innovative development system of China citizenship higher education", which was submitted for defense to the specialized academic council for obtaining the degree of Doctor of Philosophy in the field of knowledge 07 Management and administration in the specialty 073 Management according to its relevance, scientific and theoretical level, the main results of validity, the main provisions and results published in professional publications, the novelty of the formulation and the practical significance meet the requirements of the order of the Ministry of Education and Science of Ukraine No. 40 of January 12, 2017 "On approval of requirements for the preparation of a dissertation" and the Resolution of the Cabinet of Ministers of Ukraine of January 12, 2022. No. 44 "On the approval of the Procedure for awarding the degree of Doctor of Philosophy and the cancellation of the decision of the one-time specialized academic council of the institution of higher education, scientific institution on awarding the



degree of Doctor of Philosophy" with changes introduced in accordance with Resolution of the Cabinet of Ministers No. 341 dated 03.21.2022. The content of the dissertation corresponds to the passport of the specialty.

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