

Research on the Transformation and Development of Higher Education from the Perspective of Lifelong Learning: Mission and Direction

Xian Zhang*

Shenzhen Polytechnic University, Shenzhen, Guangdong, 518055, China

*Corresponding author

Abstract: This article summarizes the relevant research on the transformation and development of higher education from the perspective of lifelong learning by experts and scholars. It explores the mission and role of higher education, and sorts out multiple directions for the transformation and development of higher education from the perspective of lifelong learning. This research aims to cultivate students' awareness of lifelong learning and employment through the formulation of lifelong learning policies and institutional tools, teaching reform and curriculum innovation based on lifelong learning, social services and cooperation, openness of higher education, work learning and professional development, lifelong learning of teachers, application and empowerment of digital technology. It analyzes the value and inspiration of its research methods, theoretical framework, and research content for lifelong learning research in higher education.

Keywords: lifelong learning, higher education, development

1. Introduction

Lifelong learning has been widely recognized as an inevitable demand to adapt to the rapid changes of modern society and the development of knowledge economy, and has increasingly become a hot topic in the field of education. UNESCO's report *Learning: A Global Agenda for the Future* points out that lifelong learning is a key factor in improving individual development, enhancing social cohesion and promoting economic growth. The *European Lifelong Learning Indicators Report*, published by the European Commission in 2018, shows that lifelong learning has become a central issue in EU education policy and is widely recognized as an important tool to combat current and future challenges. According to the report, lifelong learning can improve employment opportunities, increase personal income, promote social inclusion and improve work efficiency. The 2019 World Economic Forum also highlighted the importance of lifelong learning in its *Future of Jobs Report*. The report noted that a rapidly changing technological and economic environment requires individuals to have the ability to continuously learn and adapt, while lifelong learning provides ongoing opportunities to develop new skills and cope with change.

Against the backdrop of this era of change, there are great challenges and opportunities for higher education. Social changes such as the efficiency and quality of information access in the digital age, globalization of human activities, continuous technological change, and diversified needs of student groups have contributed to the transformation of higher education. Scholars represented by Slowey and Schuetze proposed that higher education should pay attention to the diversified social needs, especially the needs of lifelong learners, so that the university campus can enter the "lifelong learning mode"[1]. Higher education should shift from traditional knowledge transfer and degree orientation to emphasize the cultivation of students' lifelong learning ability, so as to realize the transition to lifelong education. So, in the process of higher education transformation and development, what are the key themes of lifelong learning explored by Chinese and foreign scholars? Clarifying this issue has important theoretical significance and practical value for promoting the collaborative innovation of higher education, vocational education and continuing education, and promoting the sustainable and healthy development of higher education.

In view of this, based on the concept of lifelong learning, this paper studies the relevant journal articles and books on the transformation and development of higher education, and sorts out the mainstream views on the mission of higher education and its transformation and development from the

perspective of lifelong learning [2]. On the one hand, these research results can help us predict the trend of higher education transformation and development from the perspective of lifelong learning; On the other hand, it can help us give full play to the advantages of higher education to promote the construction of learning society and learning big country. This research is based on a systematic review of relevant literature at home and abroad, and uses Google Academic, Web of Science, CNKI and other databases to identify relevant articles, books and chapters, obtain the texts, and conduct qualitative analysis and summary of the texts.

2. Mission of higher education from the perspective of lifelong learning

Human lifelong learning is called "lifelong learning". According to Jarvis (2014) 's explanation of lifelong learning, lifelong learning is the process by which individuals with a wide range of interests, regardless of age, continuously improve themselves by acquiring new knowledge and skills. It can be seen that lifelong learning is a continuous process that does not end in formal school education, but runs through one's life. Lifelong learning is inclusive, learning is not limited to any particular age group, and learning is accessible whether a person is just starting their education or is already in their professional life; Lifelong learning has a diversity of learning purposes, which can support personal development, career transition, or the pursuit of new hobbies and interests, among others.

Institutions of higher education have an important role to play in promoting lifelong learning. Universities are the creators and designers of the lifelong learning culture in society [3]. It is an important responsibility of higher education to inherit the attitude and way of lifelong learning [4]. Jarvis believes that institutions of higher education play two major roles in the field of lifelong learning. On the one hand, higher education institutions cultivate talents with lifelong learning ability [5]. Colleges and universities integrate the concept and goal of lifelong learning into their curriculum design, focusing on cultivating students' critical thinking, inquiry and problem-solving abilities, information literacy, and awareness of independent learning, so as to ensure that students graduate with more than just an academic degree, but with the necessary skills for continuing learning throughout their lives. Institutions of higher education, on the other hand, provide resources and technologies for lifelong learners. Colleges and universities offer short-term training programs, skills certificate programs, academic continuing education specialty programs, etc. specifically designed for lifelong learners to help learners continue their professional development and meet the needs of working adults or job seekers. Colleges and universities offer extended education courses to provide learning opportunities for community residents and senior citizens at large. This format becomes a way for individuals to explore new interests, develop new skills, or participate in academic communities outside of formal degree programs [6]. In addition, colleges and universities provide digital resources and technical support, online courses, digital libraries and virtual learning environments that can break geographical, economic or time constraints and meet lifelong learners' needs for flexible access and learning anytime, anywhere.

Higher education that serves lifelong learning has an important mission, that is, to promote the free and all-round development of people; To lead economic and social development; Stimulate the vitality of change with the dividend of information technology [7]. In its 1996 report to UNESCO, the International Commission on Education in the 21st Century, chaired by Jacques Delors, pointed out that "in order to be compatible with its overall mission, education should be structured around four basic types of learning." The four basic learning, namely the four pillars of learning -- learning to know, learning to do, learning to live together and learning to survive -- provide a comprehensive framework for the promotion of lifelong learning in higher education [8]. Learning to know means that higher education focuses on the development of cognitive skills and the enhancement of the ability to acquire knowledge, providing lifelong learners with the skills to continue to seek and absorb new information throughout their lives. Learning to do things means that higher education institutions provide experiential learning opportunities that develop the skills lifelong learners need to adapt and innovate in their professional and personal lives. Learning to live together means that higher education institutions develop students' ability to work together and participate in the development of a diverse society by encouraging collaborative learning and promoting cultural awareness and citizenship. Learning to be means that institutions of higher education foster a love of learning and support the development of individual interests and talents by encouraging critical self-reflection, self-analysis and social skills.

To sum up, scholars' literature shows that higher education not only serves professional learning and formal learning, but also serves lifelong learning and becomes an important part of lifelong education, so the mission of higher education has been expanded and extended to lifelong education.

3. The transformation and development direction of higher education from the perspective of lifelong learning

Through qualitative analysis of domestic and foreign literature, this study sorts out eight directions for the transformation and development of higher education from the perspective of lifelong learning:

3.1 Focus on the formulation of lifelong learning policies and institutional tools

Higher education focuses on the development of lifelong learning policies and institutional tools to promote equity in education, increase employment and enhance social inclusion. The European Conference of Ministers of Higher Education, held in Bologna, Italy, in 1999, promoted the harmonization and harmonization of European higher education systems in terms of learning objectives, credit systems, degree systems, etc., and the promotion of student mobility and sustainability of learning through the mutual recognition of credits and degrees. It advocated improving the quality of higher education, enhancing student participation, and promoting career development and lifelong learning. Baptista believes that the Bologna Conference promoted the reform of higher education systems in various European countries [9]. After the Bologna conference, Portuguese higher education institutions established a network of academic pathways that students could use to enter higher education institutions, allowing credit swaps for academic courses and even movement between higher education institutions. Research by Souto-Otero points to the challenges that an accreditation system can present [10]. If the accreditation process is complex or opaque, or unfair to certain groups, then it may exacerbate existing inequalities without achieving its purpose of promoting equity in educational opportunities. Therefore, certification systems must be designed and implemented with potential issues of inclusion and exclusion in mind. Wen et al. found that in terms of institutional tools for lifelong learning, Singapore has established a labor skills qualification framework, quality assurance system, credit certification and other supporting systems, which has improved the separation of the original education diploma and labor ability certification [11].

3.2 Focus on the cultivation of students' awareness of lifelong learning and employability

Higher education emphasizes the cultivation of students' lifelong learning awareness and employability, so as to meet the needs of industry development and realize individual pursuit of happiness and life value. Gao Jing believes that the awareness of independent learning is the value basis of lifelong learning, and Japanese higher education promotes the awareness of independent learning of college students through the PDCA cycle of "goal setting, teaching guarantee, result feedback, and goal adjustment". Shi Qiheng et al. believe that higher education is committed to embedding the ideals and beliefs of "lifelong learning" and "skill transfer" in students, enhancing the flexibility of education paths at all levels, meeting the actual needs of the whole society for lifelong learning, and helping everyone to realize the pursuit of happy life and life values. Renee R. Boburka et al. believe that higher education should instill the value of lifelong learning in students, and students' belief in lifelong learning can be strengthened by listening to career biographies. Teachers showed students the professional biographies of faculty members describing their personal career paths, including how to learn from experience and how to adapt to changing circumstances, and found that students who had listened to the professional biographies had significantly stronger beliefs about lifelong learning than those who had not been exposed to the professional biographies.

3.3 Focus on teaching reform and curriculum innovation based on lifelong learning

Higher education emphasizes teaching reform and curriculum innovation, and uses blended learning as an important means to promote the development of students' lifelong learning skills and meet the challenges of future careers. Bdon Wing et al. believe that the teaching reform of higher education should incorporate the cultivation of lifelong learning literacy into the teaching objectives[12]. College students must have the enterprising spirit, motivation for continuous learning and the ability to learn on the job, and master the technology of informatization, big data and artificial intelligence. Teachers should pay more attention to the lifelong learning literacy education of college students in their teaching goals, especially strengthen the education of information technology and artificial intelligence technology, and make more use of and impart information technology and artificial intelligence technology in the actual teaching process, so as to cultivate college students' literacy of advancing with The Times and lifelong learning. Christopher K. napper mentioned in his monograph that the curriculum action criteria under the background of lifelong learning should be student-centered to

determine the teaching objectives from the vertical and horizontal perspectives [13]. Vertically, through teaching activities, students can acquire the self-image of lifelong learners, generate positive motivation for further learning, realize that learning is a continuous process, gain experience in the learning plan, take the initiative to evaluate their own learning and determine the necessary steps for the next action. Horizontally, through teaching activities, students realize the relevance of learning in life and formal learning, so that they can learn in a variety of places, realize that other learners are valuable sources of knowledge, can integrate materials from different fields to solve problems, and can use broader social standards to evaluate their own progress. Higher education should innovate curriculum content to enhance students' lifelong learning ability. The course content should have the following characteristics: it provides a systematic introduction to a particular field; It places the content in an overall context; It emphasizes universal knowledge; It is flexible; It promotes self-directed learning.

3.4 Focus on social service and collaboration

Higher education emphasizes the importance of social service and cooperation, and jointly promotes the innovation and improvement of the education ecosystem through inter-university cooperation, cross-field collaboration and global educational practices, so as to build a diversified and symbiotic lifelong education system. Knapper mentioned that Hayes and Travis carried out a cost-benefit analysis of cooperative education based on the concept of lifelong learning. The results show that the employment rate of cooperative education students is 13 times higher than that of graduates from ordinary institutions of higher learning, and the average employment cost of cooperative education graduates is much lower than that of graduates from other institutions of higher learning in recent years, and the number of former students promoted to management positions is higher and the time is shorter [14]. Lim et al. propose a framework and self-assessment tool for higher education to promote, sustain and expand its blended learning practices. They stress that blended learning is more than just the application of technology, it also involves educational philosophy, curriculum design, teacher training, learning support, resource allocation, policy development, partnership building, and ongoing research and evaluation. These dimensions are interconnected and together constitute a comprehensive blended learning ecosystem. By systematically focusing on these areas, higher education institutions can implement blended learning more effectively, thereby improving the quality of education and the engagement of learners. Gao Jing mentioned that Japanese universities will connect with the development needs of "government, industry, students and citizens" through regional cooperation platforms, and establish a diversified and symbiotic lifelong education system rooted in local areas from the two aspects of "construction of learning regions" and "construction of local practical teaching systems".

3.5 Pay attention to the openness of higher education

Higher education emphasizes its openness and aims to provide maximum inclusive and personalized education to meet the diverse learning needs of different members of society, promote continuous lifelong learning and professional development. Feng Xiaoling (2018) proposed that higher education should expand its openness in the context of lifelong learning. This openness includes at least two aspects: First, higher education should be open to all people to the maximum extent, allowing every member of society to have the freedom to repeatedly choose to interrupt and accept higher education; The second is to meet people's individual educational needs to the greatest extent, that is, the diversification of higher education. It is flexible and diverse in terms of study period, course selection, teaching organization and evaluation methods. Gao Jing (2021) mentioned that Japanese universities should establish a circular education system by adopting a multi-subject enrollment policy and an information and open teaching model to ensure the diversified career development needs of citizens. Kagan and Diamond (2019) believe that both universities and communities can expand participation in learning through effective policies and practices, accommodate the needs of diverse groups, and carry out continuous lifelong learning and professional development. Wen Wen et al. (2022) proposed that the educational resources of universities should be open to the society (community, country and world), and universities should break through discipline barriers, technical bottlenecks and identity restrictions, so as to form organic connections and interactions with society, government and industry.

3.6 Pay attention to work-oriented learning and professional development

The transformational development of higher education emphasizes the importance of work-based

learning and professional development, advocating informal learning experiences, integrated work learning strategies and flexible training forms to facilitate individuals to adapt to the rapidly changing professional environment and achieve professional growth and lifelong learning goals. Shi Qiheng et al. (2024) proposed the vocational and professional orientation of higher education, provided vocational skills education and professional ability development programs, applied micro-certificates, micro-certifications, digital badges and other new flexible training forms to enhance the effectiveness of on-the-job education for the labor force, and continuously delivered high-quality technical and technical talents for the economy and society. Through such transformation, it can better adapt to the needs of social development, meet people's demand for lifelong learning, promote the development of individuals and society, and realize the goal of more equitable and sustainable education. Knapper (2000) mentions that there are many differences between learning in the workplace and learning in schools. Learning in the school is characterized by propositional knowledge, out of the relevant background, problem-solving, personal and competitive, while learning in the workplace is the acquisition of process knowledge, which can be highly integrated into the work background, pointing to problem-solving, and focusing on cooperation and cooperation. Attention should be paid to establishing a link between the workplace and the education provider, and students, universities and employers should coordinate the course arrangement.

3.7 Focus on teachers' lifelong learning

Higher education emphasizes the importance of teachers as lifelong learners, requiring teachers to continuously enhance information literacy and educational technology capabilities, critically analyze educational innovations, and play an exemplary role in teaching practice to promote student learning progress and form a lifelong learning atmosphere. Britt Adams et al. (2023) propose that one of the roles of a university teacher is a lifelong learner. A university teacher who is familiar with educational technology and/or differentiated practices will help to design and activate teaching and assessment practices. Teachers need to critically analyze the educational innovations they learn about and how these fit (or don't fit) into their own teaching practices. Liu Feng et al. (2016) proposed that teachers' information literacy is significantly related to lifelong learning. The higher the information literacy of teachers, the better the teaching effect. Teachers should be regularly organized for on-the-job training, create a supportive teaching environment, effectively improve teaching efficiency, so as to promote students' learning progress. Knapper (2003) mentioned that in the context of lifelong learning, teachers should change from the role of experts to mentors and helpers, determine teaching content and teaching strategies, evaluate students' homework, play an exemplary role, and form an atmosphere of lifelong learning. Therefore, teachers themselves should become lifelong learners.

3.8 Pay attention to the application and empowerment of digital technology

Higher education transformation emphasizes the application and empowerment of digital technologies, and promotes the innovative application of educational technologies through the integration of open technology support and intelligent and open learning environments to improve the quality and accessibility of education and meet the needs of lifelong learning. Volungevii et al. (2020) propose that in the context of the increasing popularity of digitalization and networking, higher education courses need to be transformed, and should focus on open technology-supported learning and better integrate the application of technology in education. Higher education should adopt open and online learning methods to change traditional course design and integrate educational technologies, such as online learning management systems, collaboration tools and open educational resources, into the curriculum to improve the quality and accessibility of education. Open technology platforms and tools can provide more flexible ways of learning to adapt to the needs of different learners. Open technology-enabled learning helps to promote the idea of lifelong learning, where learning is not limited to traditional educational Settings, but continues throughout an individual's career. Shi Qiheng et al. (2024) believe that higher education should pay attention to building an intelligent and open lifelong learning environment, providing learners with more convenient learning opportunities and resources, and igniting the "new engine" of lifelong education development under the digital economy. Wen Wen (2022) believes that universities, on the one hand, make use of modern educational technology to realize the open teaching mode of parallel online and offline, synchronous and asynchronous integration. On the other hand, they should give full play to the potential of information technology and enrich the forms of providing higher education content and services, such as micro-credits, digital badges, micro-certifications, etc.

4. Conclusion and contribution

The transformation and development of higher education from the perspective of lifelong learning is a complex and multi-dimensional issue. Higher education plays an important role and undertakes an important mission in the process of promoting lifelong learning. The researchers have conducted in-depth studies on the subjects (institutions, teachers), objects (students, learners), social cooperation, educational reform, information technology empowerment and other aspects of higher education, preliminarily drawing the development direction of higher education from the perspective of lifelong learning, and providing practical guidance for higher education to realize its sustainable development in the context of lifelong learning. This study lays a theoretical foundation for further deepening the research on the transformation and development of higher education. Researchers pay great attention to the transition from higher education to lifelong learning, which fully shows that lifelong learning has been attached importance by the higher education sector, and higher education has entered an important stage of high-quality development based on the concept of lifelong learning. The implications for future domestic research are as follows:

In terms of research methods, foreign research adopts a variety of research methods, such as interview, literature, qualitative analysis, quantitative analysis, and the combination of qualitative and quantitative methods, to study the formulation of lifelong learning policies and institutional tools, the cultivation of students' lifelong learning awareness and employability, and the teaching reform and curriculum innovation based on lifelong learning. Each of these approaches has its own advantages and can reveal the transformation and development of higher education in the context of lifelong learning from different perspectives. In contrast, domestic research is relatively simple in methodology, relying more on theoretical analysis and case analysis, lacking the support of empirical research, thus limiting the depth and breadth of research. In order to improve the quality and influence of research, more diversified methods should be adopted in future domestic research. This includes but is not limited to case method, quasi-experimental method, survey method and so on. In addition, interdisciplinary research methods can also provide new perspectives for the development of higher education based on lifelong learning.

In terms of theoretical framework, most of the current research focuses on the phenomenon description and policy document analysis of the transformational development of higher education in the context of lifelong learning, mainly exploring the reform of higher education system and its practical attempts. However, the construction of the theoretical framework of higher education reform is still insufficient, and the theory of pedagogy, psychology, sociology and other related disciplines is not enough. Future studies should comprehensively apply educational philosophy, curriculum theory and teaching methodology in pedagogy, social structure theory, social capital theory in sociology, cognitive development theory and motivation theory in psychology, etc., to analyze various dimensions of higher education transformation and expand research perspectives to achieve a more comprehensive and in-depth discussion.

In terms of research content, it will place the issue of higher education transformation and development at an important historical stage of collaborative innovation and development of higher education, vocational education and continuing education under the background of the digital intelligence era, and carry out mesoscopic and microscopic research and exploration. The advent of the digital intelligence era, marked by the rapid development of information technology, has put forward new requirements for education methods and learning models, and brought new opportunities for the development of higher education under the background of lifelong learning. The report of the 20th National Congress of the Communist Party of China put forward "coordinating the collaborative innovation of vocational education, higher education and continuing education". In the context of the collaborative innovation of the three education sectors, studying the transformational development of higher education for lifelong learning can help build a more flexible and inclusive education system to meet the diverse learning needs of different groups, and the collaborative innovation model promotes the sharing of educational resources and experiences to provide continuity and consistency for lifelong learning, thereby improving the overall quality and efficiency of education.

References

- [1] Baptista, A. *Revisiting lifelong learning in light of the Bologna process and beyond*[J]. *Lifelong learning: Concepts, benefits and challenges*,2016(1).17-35.
- [2] Kagan,C.,& Diamond, J. *Massification of Higher Education and the Nature of the Student*

- Population[J].*In University-Community Relations in the UK*(2019).51–76.
- [3] Lim, C.P., & Wang, T. *A framework and self-assessment tool for building the capacity of higher education institutions for blended learning*[J].*In Blended learning for quality higher education*, 2016, (15):1-38.
- [4] Souto-Otero, M. *Validation of non-formal and informal learning in Europe: Research, policies, legitimacy and survival*[J]. *Education policy*,2016,(12):1-12.
- [5] Volungeviciene, A., Tereseviciene, M Ehlens, U.D. *When is open and online learning relevant for curriculum change in higher education? Digital and network society perspective*[J].*Electronic journal of e-Learning*.2020, (8):1-9.
- [6] Liu Feng et al. *Effects of Teachers' Information Literacy on Lifelong Learning and School Effectiveness* [J].*Eurasia Journal of Mathematics, Science & Technology Education*, 2016, 12(6): 12-19.
- [7] Britt Adams et al. *University teachers as versatile masters: Evaluating the effectiveness of a professional development programme on student-centred teaching competencies*[J]. *Studies in Educational Evaluation*.2023,(77):12-19.
- [8] Renee R. Boburka et al. *An assessment of the effectiveness of a classroom activity designed to teach the value of lifelong learning*[J]. *Studies in Continuing Education*.2014(1):15-18.
- [9] Christopher K. Napper. *Lifelong Learning in Higher Education*[D].Christopher Knapper and Arthur Cropley ,2000:16-25.
- [10] Gao Jing. *Autonomy, Circulation and Symbiosis: An analysis of Japanese higher education Reform under the concept of lifelong Learning in higher Education* [J]. *Exploration of Higher Education*. 2021,(1):1-15.
- [11] Shi Qiheng et al. *The path dependence and reform direction of promoting "three integrations" in higher education*[J]. *Chinese Higher Education Research*.2024,(5):16-26.
- [12] Wen Wen et al. *Building a new higher education system oriented towards lifelong learning*[J]. *Higher Education in China*.2022, (4):11-21.
- [13] Beton Jung et al. *University teaching reform from the perspective of learning literacy*[J]. *Higher Education Research*.2020,(6):55-65.
- [14] Feng Xiaoling. *On the special advantages and development direction of higher education in the lifelong education system*[J]. *Journal of Southwest Jiaotong University (Social Science Edition)*. 2018, (7): 29-36.