Mode Characteristics and Path Selection of Distance Education in Digital Age

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Abstract: With the acceleration of a new round of scientific and technological revolution and industrial change, distance education has been endowed with new momentum and new digital modes, and distance education is facing new demands for goals, methods, contents, paths and evaluations. Based on the modal characteristics of distance education in the digital age, this paper explores the turning demands of distance education in educational ideas and practices. When carrying out distance education teaching, it is necessary to pay attention to the digital construction of course knowledge based on majors, the intensive integration of teaching resources based on interaction, and the integration and empowerment of data based on application, to meet learners' demands for digital knowledge construction, teaching interaction, and data integration and application.

Keywords: Distance Education; Digital Modality; Mode Characteristics; Pathway; Selection

1. The Question Raised

In the context of exploring the significance of education, education reform and sustainable development of education, teachers have always been a very important factor. The complexity and diversity of education, teaching and management tasks undertaken by distance education teachers need to pay more attention to their growth research. The growth of teachers needs to be adapted and cultivated with the changes of educational environment, the needs of educational objects for educational goals, the iterations of educational methods and means, and the differences in educational content and paths. With the acceleration of a new round of scientific and technological revolution and industrial transformation, the huge potential contained in digital technology is being released at an accelerated pace, and human society has entered a digital era characterized by large-scale data and large-scale computing. In February 2023, the Ministry of Education's World Cooperation Initiative for the Development of Digital Education further stressed that "there is an urgent need to transform education to fully harness the power of digital transformation to ensure that quality education and lifelong learning are available to all as a common good" [1]. With the continuous development of technical education means, methods and open education contents and forms, distance education plays an increasingly important role in the construction of lifelong education system and learning society.

Distance open education has evolved from initial degree compensation education, so far, it has expanded to multi-level and multi category educational and teaching practices such as adult continuing education, community education, elderly leisure education, and academic skill training community education, leisure education for the elderly and academic skills training. The team of distance education teachers not only undertakes face-to-face teaching of various courses with academic qualifications and non-academic qualifications, we also carry out large-scale remote teaching such as live streaming and recorded broadcasting. The target educational group includes extracurricular learning courses for school-age students, various educational and non-educational courses for adults, as well as education and teaching for elderly sunset school courses, and tasks such as learning resource construction, educational evaluation, and learning support. The development of the digital age, Issues such as reshaping educational concepts, With the rapid development of the digital age, distance

education teachers are faced with such problems as reshaping education ideas, updating knowledge, interleaving education and teaching modes, and various ways of teacher-student communication and teaching interaction. Postmodernism advocates the transition from teacher authority to equal dialogue, from knowledge imparts to learning promotion, from habit unification to advocating diversity, which provides a kind of educational concept support and guidance for the professional growth of distance education teachers [2]. Based on the modal characteristics of distance education in the digital age, this paper explores the turning demands of distance education teachers in educational ideas and practices.

2. The Modal Characteristics of Distance Education in the Digital Age

With the advent of education 5.0 [3] in the digital age, distance education has spread from traditional radio and TV one-way to face-to-face teaching, online learning platforms, smart phones, readers and other online and offline multi-media, multi-environment integrated multi-modal aggregation and integration. Because distance education is not limited by age and pre-qualification, and with the characteristics of technology, digitalization and remote service, it expands the educated group, facilitates the education channel, and facilitates the interaction of education, and has been given a more important role in the construction of the lifelong learning system and the construction of a learning society.

2.1 Multi-modal Integration of Educational Needs

The quasi-separate teaching support feature of distance education has been widely recognized by the society at the early stage of its establishment, especially in the stage of academic qualification compensation education, which fills some gaps for the popularization of higher education. With the increasing popularization of higher education, the functional positioning of distance education has also undergone some times changes. In the digital era, the construction of a learning society is becoming more and more extensive, and the educated groups of distance education are more extensive, gradually expanding from adult learners aged 20-40 years old to all-weather learners of the whole life cycle. In order to meet the demand for academic qualifications and subject knowledge in employment and production, all kinds of groups need to improve their academic qualifications and subject knowledge. Social learners of different ages, occupations and levels of learning ability have widely released their needs for re-education. The strong support of resources in the digital age has satisfied the educational needs of different groups for different disciplines, types and paths.

2.1.1 Young and middle-aged workers

These learners pay more attention to academic qualification compensation education and vocational post skills improvement. They mainly acquire systematic subject knowledge and on-the-job professional skills and knowledge through face-to-face teaching and skill training. They have relatively strong awareness of active learning and relatively strong online and offline learning ability, and their learning time is relatively concentrated.

2.1.2 The elderly leisurer

These learners pay more attention to the course learning in the aspects of cultivation improvement and life ability expansion, and meet their educational needs through collective activities and learning platforms. They have diversified courses, fast applicability and update, intuitive and convenient content presentation, and need more comprehensive learning support services, and their learning time is relatively scattered.

2.1.3 Special group learners

Some overseas learners who cannot obtain education opportunities locally through their mother tongue, and some learners who need more remote help because of mobility difficulties, use the media for independent learning most of the time, and have strong demand for the interactivity and diversity of online courses, while collaborative learning is relatively weak.

The powerful digital interaction characteristics [4], resource supply capacity and convenient digital service network of distance education in the digital era provide the basic guarantee for the realization of these needs, and to truly promote the effective realization of these needs, there is also a team of distance education teachers who are good at integrating

different educational needs.

2.2 Multi-modal Construction of Educational Scenarios

Educational situation refers to a specific educational situation composed of the environment, media and interactive relations that produce educational behavior. Distance education uses multimedia and network technology as the medium to gradually optimize and change the teaching mode, which meets the needs of different classified learners and different layers of learning, and conforms to the educational needs of social learners who can learn at all times, everywhere and everyone. The teaching environment, educational content resources and teaching objects of distance education have obvious multi-modal characteristics.

2.2.1 Multi-dimensional communication of teaching environment

Using digital technology to cross the boundaries of traditional education, it can harmoniously interconnect with various learning platforms and intelligent terminals, and create a suitable teaching environment to meet diverse learning needs, such as skill needs and spiritual needs, compensation needs and promotion needs, personality needs and public needs.

2.2.2 Multi-product supply of teaching resources

Using multiple combinations and decentralized learning content design bias, through text, sound, video and other information modes as one of the rich learning resources, is no longer linear, one-way receiving teaching, can be point-and-click, jump, interactive all-weather education practice.

2.2.3 Flexible personalization of learning experience

Through offline and online, artificial and intelligent omni-channel services, differentiated teaching and personalized training are carried out, and an education scene of "wrong time, autonomy, individuality and multi-dimensional interactive transformation" is constructed to enable distance learners to construct knowledge meaning more intuitively and actively.

Focusing on the construction of education scenarios that integrate multiple modes, such as learner classification and hierarchical learning needs, promotes learners to meet various learning needs more intuitively and proactively, which puts forward new requirements for the professional growth of distance education teachers.

2.3 The Multi-modal Presentation of Educational Supply

The supply of education must change around the change of educational demand. How can the service supply of distance education better match the needs of social learners to achieve accurate supply? Some studies have analyzed educational supply from the perspective of learners' learning conditions, cognition, development, emotion and self-actualization [5]. Some studies have put forward suggestions on education supply from the perspectives of individual-environment and individual-organization matching from the three dimensions of individual, organization and society, and from learning motivation, interpersonal interaction and social support [2]. In the digital age, distance education should not only pay attention to the needs of learners at five levels, but also deconstruct the service needs of individuals, organizations and society.

Distance education uses digital technology to provide various forms of teaching resources, promotes the inclusive sharing of good resources and high-quality resources, integrates multi-path teaching channels such as digital teaching environment and intelligent terminals, and presents multi-modal characteristics. Multi-modal learning resources, pay attention to the types, disciplines, levels, and regions of intercommunication, agglomeration and circulation and digital presentation of resources, pay attention to innovation, co-construction and sharing of common dimensions of the all-media resource supply. The multi-modal learning environment creates a ubiquitous, green, intelligent, convenient and inclusive learning environment, promotes the integration of people, technology and things, the collaboration of home, school and community, and guarantees the physical, virtual and social digital distance learning environment. Multi-modal learning support, the use of big data dynamic modeling, collection processing and cross-reuse, to achieve teaching and learning, learning and education, teacher and student, student and student linkage innovation. To promote the

orderly expansion of education in the direction of inclusive, balanced and high-quality, build distance education fields in different regions, disciplines, time and space, and groups, and realize digital empowerments in teaching process reconstruction, education path reorganization and education resource reconstruction, distance education teachers need to establish educational concepts and practical abilities that match them.

3. Pathway Choice for Distance Education

Educational concept is the rational cognition and subjective requirements of the subject of education on "educational should", including educational purpose, educational mission, educational goal, educational requirement, educational principle and so on. Gu Xiaoqing believes that "digital transformation of education refers to the use of digital technology to promote all-round innovation and change in teaching paradigm, organizational structure, teaching process and evaluation methods". Learning groups receiving distance education have more diversified pursuit of learning goals, diversified educational content and structure, professional growth as teachers, and characteristic development of distance education teachers. We believe that Whitehead's constructive postmodern educational thought of "emphasizing reflection and criticism, advocating pluralism and anti-center" is more instructive. This educational concept requires breaking unity, wholeness, closure and essence, emphasizing differences, pluralism, creativity, openness and equality, and advocating process, integrity, organic, open, ecological and sustainable development. In the digital age, how distance education teachers deal with the construction of knowledge of many subjects, the integration of multi-types of teaching modes, and the management of multi-path learning support services should be reconstructed in the aspects of value orientation, content organization, and teacher-student interaction.

3.1 Multiple Integration of Value Orientations

The orientation of postmodernism on the value of education reflects the importance of human subjectivity and creativity, and the diversity of educational goals. The purpose of education is not only for the self-development of individuals, but also to adapt to the development of social problems, educational situations and media. In the digital age, different from the one-dimensional linear communication or the binary opposition of simple interaction in the early stage of informatization, learners and learning media have undergone a dynamic evolution and development of co-evolution, which promotes the continuous construction and deconstruction of educational significance.

Distance education serves social learners in the whole life cycle, with diverse learning groups, distinctive learning methods, and great emphasis on the reconstruction of learning meaning. Facing continuing education learners with clear learning goals, distance education teachers should first change their training goals from definite knowledge view to critical knowledge view, and pay attention to in-depth learning of learners' situations. Focus on "from monistic cognition to multiple integration" [6] teaching process design; Secondly, in accordance with the characteristics of the development of the digital age, it should shift from one-way and simple knowledge teaching to two-way and mixed participatory practice, so as to promote the generation of "knowledge ability, technical ability, attitude and value orientation" matching the construction of a learning society [7] and realize lifelong learning.

3.2 Dynamic Generation of Content Organization

Postmodernism advocates that teachers should organize knowledge content through "new perspectives, new ideas and new ways" [8], and believes that the essence of education is generative, advocating "from static and stable to dynamic and generative". Distance education learners differ greatly in age, occupation and region. Recognizing the differences in knowledge acquisition among different learners, knowledge presentation should have the characteristics of construction, emphasizing "the commonality in personality, and paying attention to the combination and construction of learning content between different knowledge systems" [9], so as to meet different learning needs. The technological environment in the digital age has created conditions for the generation and

dynamic acquisition of teaching content in distance education, and created more opportunities for learners to participate in courses and teaching. In the process of educational practice, we attach importance to the dynamic development of learning group autonomy and creativity, establish the educational concept that learners' subjectivity is more important than objectivity, and diversified development eliminates the traditional one-sided and static education. It attaches importance to the meaning of understanding, dialogue, decentralization and interpretation, and realizes the cultivation of learners' multiple cognitive ability through the "construction and dynamic generation of meaning" of learning content.

3.3 Sustained Development of Teacher-student Interaction

The all-round, multi-angle and interactive relationship advocated by postmodernism promotes distance education to establish a new educational concept. How to promote the interaction and dialogue between teachers and students in distance teaching, and establish the process of knowledge, thinking and emotion imperceptibly, so as to build the sustainable development of various educational organizational structures?

Distance education teachers should establish new educational concepts in the establishment of educational objectives, the selection of educational resources, the organization of educational processes, and teacher-student interaction and guidance, change the single behavior of knowledge teaching to the allocation of knowledge innovation and the push of educational resources to meet the needs, and provide accurate support for distance learners and realize teaching interaction. The virtual space and time created by digital technology partially replaces physical space and time, and further derives the organic unity of model, education, technology and people through the existence of data resources, thus promoting the sustainable development of teaching interaction between teachers and learners.

4. The Practice Reform of Distance Education Teaching

In the context of the digital era, distance education teachers not only apply digital technology tools and resources, but also need to establish a balance and integration with digital technology in educational concepts and teaching practices, which are mainly reflected in digital education processing, visual education presentation and interactive education forms. In February 2023, the Ministry of Education proposed in "Teacher Digital Literacy" that teacher development should focus on " [10] digital awareness, digital technology knowledge and skills, digital application, digital social responsibility, professional development and other dimensions". The characteristics of distance education in the digital age, such as the "post-modernity" of educational concept and educational goal, the "digital" of educational form and educational technology, the "dynamic generation" of educational content and resource design, and the "interactivity" of teaching support and environmental maintenance, require distance education teachers to carry out corresponding educational practice reform.

4.1 Digital Construction of Professional Curriculum Knowledge

Constructivism is a theory about knowledge and learning, which has important guiding value for distance education to highlight the learning initiative of distance learners and the constructivism of knowledge and experience generation. In particular, distance education teachers are required to follow the core meaning of learners' cognition, application, construction and transfer of knowledge through their own digital construction. As the key to distance education is to provide multi-modal education products through multi-integration platforms and various resources, in order to meet the needs of distance education for different types of levels, learning abilities and target demands, distance education teachers need to firmly position their profession, course nature and teaching objectives. Using digital technology to present massive curriculum knowledge, learners can accumulate and reorganize knowledge according to their needs.

4.1.1 Digital construction of hierarchical classification from the perspective of knowledge presentation

In accordance with the requirements of professional training programs for talent

training and course teaching, based on the professionalism and accuracy of different majors, the course knowledge digital design and arrangement are carried out according to the course target positioning. Factual knowledge can be digitally transformed according to "universal standards" with the help of digital technology; for operation-oriented methodological knowledge, interactive human-computer interaction is built with the help of virtual reality and other ways to upgrade the teaching mode with more sense of presence and experience. The knowledge covered by both depth and breadth, at the same time taking into account the theory and practicability, in order to realize the practical application of knowledge benefits.

4.1.2 Digital construction of time-sharing and segmentation from the perspective of knowledge acquisition

Follow the professional characteristics and the cognitive development path of learners, and optimize the teaching process with the help of digital technology to ensure the accuracy and efficiency of knowledge transfer in the learning process. The professional-based curriculum knowledge content design stimulates the interaction and collaboration between teachers and students, has intuitive and easy-to-use operation functions and diversified forms of expression, improves the compatibility in different devices and environments, guarantees the coherence and consistency of learning, and facilitates learners to retrieve and acquire a variety of modern digital information to achieve active learning generation.

4.2 Intensive Integration of Teaching Resources Based on Interaction

In the digital age, distance education establishes an interactive teaching system through multi-platform integration and segmented mode, builds courses and teaching resources with structural design, high integration of content representation, strong interaction, easy update and good visualization effect, and provides relatively equal educational resources for educates at different levels and ensures quality level due to its breaking through regional restrictions and facilitating interaction. Achieve continuing education and lifelong learning.

4.2.1 Intensive integration from the perspective of teaching interaction

Distance education teaching resources include digital courses, platform resources, teaching tools, etc. Through digital technology to achieve intensive integration of resources. First of all, we should design multi-type, multi-level and diversified course resources based on the needs of learners, improve the practicality and attractiveness of course resources, and use open integrated interfaces to push massive resources to multi-level distance learners in the form of cloud services. Secondly, it integrates the resource-rich, flexible, convenient, open and shared teaching platform in related fields to meet the needs of large-scale social learners, uses digital technology to establish a teaching resource pool, uses interface technology push mechanism to aggregate learning resources, gives full play to the portability of educational resources, and improves learning efficiency. Third, establish intelligent interactive learning assistants, customize suitable learning paths for learners, and exert effective interaction between teachers and students through system functions.

4.2.2 Intensive integration from the perspective of learning interaction

Distance education learning interactive resources include discussions and exchanges between learners through the learning platform, uploaded learning materials, teaching evaluation, course guidance, Q&A replies between teachers and learners, and learners' browsing of learning resources through the teaching platform, document viewing, Posting consultation, etc. First of all, intensive integration of learners' learning interactive feedback can realize asking questions and getting instant answers at any time, improve learning efficiency, optimize learning experience, and enhance the pertinence of distance education teaching. Secondly, through the capture, aggregation and application of big data, learners' possible behaviors and tendencies are analyzed, learners' educational needs, cognitive characteristics and development rules are assessed, and learners are encouraged to dynamically adjust course learning resources during the interaction with digital situations, problems and inspiration, stimulate the drive of self-learning, and promote humanistic education that focuses on adaptive learning.

4.3 Application Based Data Integration and Empowerment

In his keynote speech at the World Digital Education Conference, Minister of Education Huai Jinpeng mentioned that "Developing digital education and promoting the digital transformation of education are the general trend of The Times, the needs of development and the direction of reform, and it is also the aspiration, responsibility and contribution of educators". Distance education has great energy in serving lifelong learning for the whole people and building a lifelong education system. Not only does the all-round supply of distance education highlight the epochal and technical nature, but also contains multi-dimensional functions such as aggregation and application of lifelong learning results.

4.3.1 Data application from the perspective of teaching two-way promotion

Distance education meets and realizes the various needs of social learners through the integration of multi-platforms and multi-windows. At the same time, it also comprehensively and completely records the learning data of "always, everywhere and everyone", which contains a large number of real information such as learner learning behavior information, the use validity of distance learning resources and the trend of distance education needs. Distance education teachers should establish the ability of data management, integration and application, and use data integration to create a new mode of intelligent interaction and complete function of distance education. Through the collection, aggregation, calculation and analysis of a large number of learning behavior data, the course content setting and teaching organization environment are reflected, the learning needs of learners are learned according to their learning paths and search traces, and the interaction and personalized and precise learning support and service of distance learning are improved. Through data processing, processing and analysis of the information platform, education and teaching services and management such as early warning of learning behavior, intelligent push of teaching resources and assessment of learning effects are provided for learners, so as to better promote the development of two-way teaching in distance education.

4.3.2 Data empowerment from the perspective of learning society construction

The digital reform and practice of distance education has created conditions for promoting the co-construction and sharing of all kinds of learning outcome data at all levels, and a large number of integrated learning data has laid the foundation for the gradual storage, certification, conversion and application of lifelong learning results, and has written an important note for the construction of a learning society with open collaboration, multiple levels, full time and space coverage and inclusive sharing, and the digital reform of enabling education.

The digitization of distance education resources expands the educational audience of distance education, the digitization of technology facilitates the educational channel of distance education, the digitization of service facilitates the educational interaction of distance education, and the digitization of results brings together the learning accumulation of distance education. Distance education teachers should clearly understand and strive to integrate into the transformation of distance education in this digital era. Establish digital education concept, digital teaching innovation ability, regional digital education resources construction, personalized teaching and management based on data analysis, and use advanced education concepts to reflect on and build their own professional growth road.

5. Conclusion

In summary, with the development and transformation of distance education from one-way dissemination to the digital media era, it is promoting the establishment of distance education practices that integrate multiple values, dynamically generate content knowledge, and continuously interact, better serving the needs of learners for digital knowledge construction, intensive teaching resource interaction, and convenient data integration applications.

Reference

[1] Wang Xiufeng, Zhao Guodong. Research on Influencing Factors of Need-Supply fitting of Service under the Field of Online Education. Modern Distance Education, 2023, 3(3):48-56.

[2] Bi Lei, Zhu Zulin, Liu Shengfeng, Guo Yunjian& Tang Shihua. 2020 Annual Review on Distance Education Research of China. Journal of Distance Education, 2021, 9(4):4-12.

[3] Zhu Xiaochuan, The Analysis of Internal Logic in Development of Distance Education and Open Universities. Journal of Distance Education, 2012, 8(4):52-60.

[4] Zhang Jin. The Evolution and Logic of Open and Distance Education Policy from the Perspective of Historical Institutionalism. Theory and Practice of Education, 2022, 7(14):21-29.

[5] Gao Shang. Research on the Construction and Practice of ESP Teaching Mode with Open Education in Digital Era. Journal of Hubei Open University, 2024, 4(4):23-29.

[6] Li Xiangyu. The Multiple Logics and Action Strategies of Education Digital Governance Capacity Enhancement. Modern Education Management, 2024, 2(2):53-61.

[7] Jiang Wen. Rationale, Risk and Direction of Digital Transformation of Continuing Education in the Era of Information 3.0. Adult Education, 2024, 3(3):6-11.

[8] Shuang Li, Xueping Tang, Wenmei Zhang, Li Chen and Hong Zhao. An analysis of public awareness of and attitude to on line higher education. Chinese Journal of Distance Education2023, 8(8):26-31.

[9] Li Weimin, Wang Di, Chen Liping, Chen Wenjing, Yang Ling. Misconception and Orientation of Modern Distance Education in China. Adult Education, 2019, 12(12):17-23.

[10]Li Xiang. Design of university distance education system based on ASP technology under background of the Internet. Modern Electronics Technique, 2023, 12(23):178-181.