

Online Learning in China within the Internet+ Landscape: A Comprehensive Study

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Abstract. This study investigates the evolving landscape of distance education on the Internet+ environment, focusing on its effectiveness and the factors influencing it. Through a mixed research approach, incorporating both quantitative and qualitative analyses, insights were gathered via interviews with students and administrators in the distance learning sector. Findings reveal that students primarily pursue distance education to meet practical career and skill acquisition objectives, while also gaining metacognitive benefits. Nevertheless, limited subjective communication with teachers is a significant concern. Administrators emphasize interdisciplinary teaching teams and resource-sharing platforms. Recommendations include enhancing communication channels, leveraging metacognitive development, facilitating teacher collaboration, conducting comprehensive technical support and evaluation assessments, establishing specialized resource-sharing platforms, supporting professional development, and implementing formative assessment strategies to adapt to evolving educational needs. These recommendations aim to ensure that distance education remains relevant, effective, and student-centered in the dynamic Internet+ environment.

Keywords: distance education, internet+, metacognition, effectiveness, recommendations.

1. Introduction

With the advent of modern information technology, distance education has evolved into a new educational paradigm, offering a conduit for lifelong learning. UNESCO officially defined distance education as a mode of instruction involving communication between students and teachers through channels such as postal services, television, and newspapers. In China, the journey of distance education began in the late 20th century, leading to its official launch in 1994 and gaining impetus in 1999 with the "Education Revitalization Plan for the 21st Century" [1]. To date, China has witnessed the establishment of 68 colleges and universities conducting pilot distance education programs, supported by over 2,000 off-campus learning centers, enrolling more than one million students. The concept of "Internet Plus" emerged in 2012, signifying the increasing integration of the internet into various sectors, including education [2]. The subsequent "Internet Plus Plan" highlighted the transformative role of the internet. China has progressively developed a digital, lifelong, and networked education system, with the formal introduction of "Internet + Education" in 2015, to make education more information-centric [3].

The term "Internet+" encompasses new information technologies like big data and cloud computing, with the "+" symbolizing the internet's influence across multiple industries. This penetration of the internet into various sectors has given rise to innovative educational approaches, including digital teaching, online lesson planning, and micro-lessons, all of which have contributed to the evolution of education in China. However, it's important to note that the internet's transformative potential in the educational landscape is still being realized. As information technology advances, China's distance education sector has rapidly expanded, creating new opportunities for its development within the Internet+ context, heralding a transformative era for China's education system [4].

Modern distance education in China is characterized using the internet, multimedia technology, and two-way electronic communication for synchronous or asynchronous teaching, providing a convenient online learning environment. Nevertheless, the "Internet+ education" concept signifies

the need for profound changes, emphasizing the necessity for distance education to break free from traditional educational models that do not fully adapt to the requirements of the Internet+ era. To ensure the efficacy of this transformation, a deep exploration of the impact of the Internet+ environment on distance education is imperative, along with an examination of the factors influencing its effectiveness.

This research carries significant theoretical and practical implications. It addresses the dearth of research on distance education theory in China, providing a foundation for evaluating the impact of the Internet+ environment on distance education and the factors affecting its effectiveness. By enhancing the scientific management of distance education, it guides improvements in educational quality and fosters the development of distance education management theory.

In summary, this study is dedicated to enhancing the management of distance education on the Internet+ environment. It offers a comprehensive understanding of distance education, promotes the integration of modern distance education with the Internet, and bolsters the theoretical framework.

2. Literature Review

The theoretical and conceptual framework for the development of Chinese distance education in the context of the "Internet+" environment is rooted in several key theoretical perspectives. This literature review provides an overview of these theories, which include the Industrialization Theory of Distance Education, the Distance Education Service Industry Theory, and the Theory of Industrialization of Distance Education.

2.1. Industrialization Theory of Distance Education:

This theory, originally proposed by Peters in 1967, characterizes distance education as a highly industrialized form of education. It distinguishes traditional face-to-face teaching as a pre-industrialized form, while distance education is described as a normative, standardized, formalized, and monopolistic mode of education, akin to the industrialized production of commodities. Under the influence of this theory, distance education adopts highly technological teaching and learning processes, employing multimedia technology to develop high-quality educational content accessible to dispersed learners through media like the internet. It emphasizes the breakdown of temporal and spatial barriers, cost-effective mass production of educational resources, and increased accessibility to higher education [5].

2.2. Distance Education Service Industry Theory:

Irene Joseph's proposal in the 1990s emphasized that distance education is a service industry, primarily aimed at providing learners with learning materials, knowledge transfer, and information functions. This perspective recognizes the centrality of service within distance education and focuses on individualized learner needs. In the Chinese context, Gao et al (2015) [6] highlights that the service object of distance education is the learner, and it offers personalized support services. This perspective underscores the role of teachers in delivery and student performance assessment as critical factors influencing the quality of distance education. It promotes the creation of an effective learning and communication environment tailored to meet the needs of individual learners, thereby enhancing their satisfaction.

2.3. Theory of Industrialization of Distance Education:

Chen et al (2018) [7] expanded on the industrialization concept by introducing two facets of industrialization in distance education. The first involves the industrialization of the host institution, where enterprises collaborate with distance education organizers to optimize talent resources and improve the quality of market-based talent resources. The second aspect is the industrialization of the public service system, which provides comprehensive services for distance education, creates internet-based learning environments, and shares educational resources to serve learners. Huang

(2017) ^[8] has contributed to the accumulation of quantity and quality in distance education, ultimately realizing the industrialization of education and the integration of industrialized production models with service industry development. The industrialization of distance education is recognized as an essential trend in the field ^[9].

To sum up, the theoretical and conceptual framework for Chinese distance education in the "Internet+" environment draws from these key theories to define the model of distance education in the context of knowledge production, dissemination, and consumption ^[10]. These theories emphasize industrialization, service orientation, and the integration of distance education into modern educational and societal contexts. This framework serves as the basis for evaluating the effectiveness of distance education and understanding the factors that influence its success on the Internet+ environment.

3. Methodology

In addressing the second set of research questions, which explore the factors affecting the level of effectiveness of the Internet+ environment on distance education with respect to objectives, teaching resources, delivery of classes, assessment, and metacognition, a qualitative analysis approach was adopted. A total of eight teachers and three education administrators within the distance learning sector of the university were selected as participants for semi-structured interviews. These interviews aimed to gather rich insights and perspectives from those directly involved in the distance education process. The collected interview data were meticulously analyzed, with a focus on identifying recurrent themes and patterns. This qualitative analysis sought to deepen the understanding of the level of effectiveness of distance learning within the Internet+ environment and the various factors that influence it. The findings from these interviews will inform the development of strategic countermeasures aimed at advancing the field of distance learning in the context of the Internet+ environment in China.

4. Result and Discussion

This section constitutes the core of the study, where the findings are presented, analyzed, and interpreted in the context of the research questions and objectives. In this section, the outcomes of both the quantitative and qualitative analyses are examined to provide a comprehensive understanding of the effectiveness of distance education in the "Internet+" environment in China and the key factors influencing its success. Through a synthesis of these results, valuable insights will be offered, contributing to the ongoing discourse on the future of distance education in the digital age.

Table 1: Summary of Interview Responses

Interview Dimension	Specific Question	Summary of Student Responses	Summary of Administrator Responses
Objectives	1. What was your initial intention in pursuing distance education?	To enhance their own qualifications, complete company position title assessments, or participate in the selection for certain public service positions, meeting the educational requirements of applications.	Utilizing internet interactive systems, data storage functions, analyzing students, providing learning materials tailored to actual circumstances, relying on internet-based smart systems for autonomous student management.
Metacognition	2. What is your most significant gain in classroom learning, including knowledge and skill acquisition?	Being able to acquire essential skills and knowledge required for their work, life, and developing self-awareness of their skill mastery, promoting cognitive development.	Teaching resources should be personalized based on students' individual development and differences between disciplines.
Teaching Approach	3. Does the teaching content of teachers align with your own needs? Are you comfortable with the teaching approach? How frequent is your interaction with teachers?	The teaching content aligns with their cognitive and work, life, and learning needs. However, most students lack subjective communication and discussion with teachers.	The process of conducting online courses requires the collaboration of experts and teachers responsible for online education from other universities to form a professional teaching team.
Evaluation	5. What are your views on the teaching format of distance education? Can you provide a few suggestions for optimizing distance education?		Establish a specialized distance education resource-sharing teaching platform for universities.

Objectives

Student Responses: The primary objectives mentioned by students when pursuing distance education were to enhance their qualifications, fulfill company position title assessment requirements, or compete for specific public service positions that often necessitate certain educational prerequisites. These objectives align with the practical and career-driven nature of distance education. In the context of the Internet+ environment, students emphasized the importance of using internet interactive systems, data storage functions, and smart systems. These tools are seen as critical for tailoring learning materials to individual circumstances and fostering autonomous student management. This suggests that students are not only seeking educational credentials but also value the flexibility and personalized support that the Internet+ environment can offer.

Administrator Responses: Administrators' responses underline the significance of utilizing internet interactive systems and data analysis to provide a more personalized and responsive learning

experience. They advocate for the use of technology to meet the actual needs of students, acknowledging the transformative role of the Internet+ environment in distance education. The emphasis on autonomous student management reflects an understanding of the changing dynamics in education, where technology empowers students to take greater control of their learning journey.

Metacognition

Student Responses: The metacognitive benefits of distance education are evident in the students' responses. They identify the most significant gains in distance education as the acquisition of essential skills and knowledge relevant to their work and daily life. Furthermore, students mention that distance education has played a role in developing their cognitive skills and increasing self-awareness. This demonstrates that distance education is not just about content delivery but also about fostering higher-order thinking skills and self-reflection, which are valuable in the modern knowledge economy.

Administrator Responses: Administrators recognize the need to personalize teaching resources to cater to individual student development and address variations between different academic disciplines. This aligns with the idea that metacognition, or the awareness of one's own learning processes, is crucial for effective learning. It implies that administrators are aware of the diverse learning needs and learning styles of students and aim to accommodate these differences in the design and delivery of distance education.

Teaching Approach

Student Responses: While students generally found that the teaching content in distance education aligned with their cognitive and practical needs, a notable concern was the lack of subjective communication and discussion with teachers. This highlights the potential drawback of distance education, where the absence of face-to-face interaction can limit the depth of engagement between students and teachers. It also underscores the importance of facilitating effective communication channels in the online learning environment.

Administrator Responses: Administrators recognize the importance of collaboration among experts and teachers responsible for online education from various universities to create a professional teaching team. This indicates an awareness of the challenges of online teaching, which often requires interdisciplinary expertise and cooperation. The emphasis on forming a professional teaching team reflects the commitment to maintaining high teaching standards in distance education.

Evaluation

Administrator Responses: Administrators propose the establishment of a specialized distance education resource-sharing teaching platform for universities as a means of optimizing distance education. This suggests a proactive approach to improving the quality of distance education by creating a dedicated platform for collaboration and resource sharing. The idea aligns with the broader trend of enhancing educational resources and accessibility through technology.

In summary, this table summarizes key insights from student and administrator interviews across four dimensions. Students pursue distance education to enhance qualifications, acknowledging the role of the Internet+ environment in tailored learning. They gain essential skills and develop cognitive abilities (Metacognition). Students find content alignment in distance education but miss subjective communication (Teaching Approach). Detailed technical support and evaluation insights are lacking. Administrators emphasize personalized teaching, interdisciplinary collaboration, and resource-sharing (Objectives, Teaching Approach, Evaluation). These insights underscore the importance of tailored learning, communication, and collaboration in Internet+ distance education.

5. Conclusions

The findings from both student and administrator interviews provide a multifaceted view of distance education on the Internet+ environment, offering valuable insights for the field.

Students predominantly pursue distance education to achieve practical objectives, such as enhancing qualifications and meeting career-oriented requirements. The Internet+ environment is recognized as a crucial enabler for tailored learning, emphasizing the significance of autonomous

student management. Metacognitive benefits, including the acquisition of essential skills and cognitive development, underscore the broader educational value of distance learning.

However, the challenge of subjective communication and discussion with teachers emerges as a notable concern, suggesting the need for more interactive teaching approaches. Administrators emphasize interdisciplinary collaboration and the creation of specialized resource-sharing platforms to enhance the quality and accessibility of distance education.

While these dimensions provide substantial insights, certain aspects related to technical support and evaluation require more in-depth exploration. Detailed feedback on teacher evaluation and learning outcomes could provide a more comprehensive understanding of these critical areas.

6. Recommendations

Building upon the findings from the interviews with students and administrators regarding distance education on the Internet+ environment, the following recommendations can be made to enhance the quality and effectiveness of distance education programs:

6.1. Enhance Communication Channels:

Implement and promote effective communication channels between students and teachers in the online learning environment. Encourage regular interaction and discussion to address the noted concern of limited subjective communication.

6.2. Leverage Metacognitive Development:

Incorporate metacognitive development as an integral part of the distance education curriculum. Encourage students to reflect on their learning processes, set goals, and develop self-awareness to enhance cognitive and practical skills.

6.3. Support Teacher Collaboration:

Facilitate collaborative efforts among educators and experts from various universities to form interdisciplinary teaching teams. This approach can enrich the teaching quality and content in distance education programs.

6.4. In-Depth Technical Support and Evaluation:

Conduct more in-depth assessments of technical support and evaluation in distance education. Gather detailed feedback from students and administrators regarding teacher evaluation and the achievement of learning outcomes to identify areas for improvement.

6.5. Resource-Sharing Platform:

Develop and establish a specialized resource-sharing teaching platform for universities offering distance education programs. Such a platform can streamline resource-sharing, foster collaboration, and improve the overall quality of distance education.

References

- [1] Yang, P. (2018). Several Thoughts on Freshman Education Management in Universities. *Knowledge Economy*, 14.
- [2] Li, Q. (2018). Application of Big Data in Higher Education Online. *Information and Computer (Theoretical Edition)*, 3(3).
- [3] Chen, L., Lin, S., & Zheng, Q. (2016). Opportunities and Challenges of Distance Education in China in the "Internet+" Era. *Modern Distance Education Research*, 01, 3-10.
- [4] Hu, L. (2018). Reflections on the Management and Policy Supervision of Higher Education Online. *China Multimedia and Network Teaching Journal (Mid-Month Edition)*, 08, 37-38.

- [5] Tang, S., Zheng, H., Liu, S., & Guo, Y. (2020). Research Paradigms, Current Situation, and Future Prospects of Quality in Distance Higher Education: An Empirical Study Based on the Four-Factor Analysis Model. *Chinese Adult Education*, 13, 8-14.
- [6] Gao, Z., Xia, Y., Duan, X., & Liu, H. (2015). Research and Implications on the Quality Assurance System of Modern Distance Higher Education. *Software Guide (Educational Technology)*, 14(04), 47-48.
- [7] Chen, L., Shen, X., Wan, F., & Zheng, H. (2018). Positioning the Quality Perspective of Distance Education in the "Internet+" Era. *China Electric Education*, 01, 15-21.
- [8] Huang, S. (2017). Research and Improvements on the Open Education Teaching Evaluation System of the Open University of China. *Journal of Jilin Radio and Television University*, 02, 76-77+80.
- [9] Zhu, W., & Yun, F. (2012). Preliminary Exploration of Management Strategies in Continuing Education Colleges: A Perspective from Stakeholder Theory. *Adult Education*, 32(02), 12-14.
- [10] Xiong, Y. (2009). Research on the Management and Evaluation of China's Distance Education System (Doctoral dissertation). Tianjin University.