LI CHEN: INTERSECTIONALITY BETWEEN THE MATILDA EFFECT AND ANGLO-DOMINATED KNOWLEDGE PRODUCTION

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ABSTRACT

The purpose of this paper is to highlight the work of Li Chen and emphasize–for English-speaking audiences–the depth and breadth of Chen's contributions to the distance education narrative. Li Chen is a visionary in distance education research and an influential advocate for the modernization of China's higher education system. However, it is understandable that readers of English-based distance education publications might be unaware of her contributions. We find Li Chen at the crossroads of the Matilda effect (the absence of women's voices from artistic, literary, and scientific narratives; Rossiter, 1993) and Anglo-dominated knowledge production. The Matilda effect and the absence of non-English speaking researchers from global discussions (Swale, 2004) are unfortunately well-established trends in distance education research. Finding oneself a casualty of either one of these phenomena might resign even the most prolific researcher to obscurity; even worse, finding oneself at the intersectionality of these would all but assure one's absence from the research narrative. Chen's research contributions have touched almost all areas of distance education including its epistemological and ontological underpinnings, the type and necessity of supporting ecosystems, and the importance of quality assurance. Chen's work in connectivism and interaction have also served to further our philosophical and pragmatic understanding of distance education in practice. While Chen's pioneering contributions are integral in Chinese distance education academia, her work has much to offer to other parts of the world as well. Diminishing the language barrier can assist in mitigating the Matilda effect on this outstanding academic.

Keywords: Matilda effect, women researchers, distance education, connectivism, anglophone knowledge production, intersectionality

INTRODUCTION

In *The Encyclopedia of Female Pioneers in Online Learning* (2023), Bainbridge and Wark used the interviews of 30 women who have had a pioneering impact on the trajectory of distance education to highlight the historical and current influence of the Matilda Effect on the discipline of distance education. A key feature of the women represented in this publication was their ability to communicate in English, a decision based on the notion that the "inception and expansion of the Internet and the expansion of the World Wide Web occurred in American institutions, spreading across North America and into other English-speaking countries, before expanding into the rest of the world" (p. 5). Li Chen is a distance education visionary from China and one of the pioneers representing "the rest of the world" (p. 5). Her research contributions include over 300 publications spanning across almost three decades; only a fraction of these are found in English language publications.

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A deeper dive into Chen's research narrative shows that, even though educational technologies may have come later to China than the English-speaking world, the depth and breadth of her contributions have the capacity to influence, and in some cases direct, the work of her English-speaking counterparts. Conducting research outside an Anglophone ideology has allowed Chen to explore areas of distance education research and ask research questions that are not necessarily a dominant part of the Anglo "knowledge production process" (Mazenod, 2018). Concerns about the visibility of non-English-based publications, the research that they contain, and the inequalities in gaining access to participate and contribute to the global discussion are documented (Swales, 2004). In addition, when non-Anglophone contributions do break the veil of English-language research, the context and concepts they contain are often filtered through the dominant knowledge production ideology, thus far typically shaped by the world of English-speaking academia (Marginson, 2008).

It should be noted that the narrative below is constructed from the Google- and Microsoft-translated abstracts of Chen's work published in the leading education journals in China. Although flawed, the digital ability to translate these abstracts made it possible to introduce the broad scope of Chen's work to an English-language publication. However, the limitations of this approach are likely obvious and significant. The reality of these barriers represents an interesting intersectionality between the Matilda effect, globalization, and the affordances of the digital age when it comes to accurately capturing the contribution of distance education pioneers.

BIOGRAPHY

Li Chen's influence on the development and expansion of distance education in China can be evidenced by her participation on numerous national and international committees and working groups dedicated to the development and advancement of distance education. Chen's work as a consulting expert on the lifelong education system and mechanism construction group of the National Education Advisory Committee, a member in the Fifth Council of China Adult Education Association and the Academic Committee of the China Educational Development Strategy Society, the director of the Professional Committee of Distance Education in Colleges and Universities of China Society of Educational Technology, and the chairman of the Professional Committee of Computer Education for Primary and Secondary Schools of the Chinese Society of Education are just a few examples of her demonstrated commitment to changing and advancing the distance education landscape in China (Bainbridge & Wark, 2023).

Li Chen is currently the Vice President of Beijing Normal University and the Director of the National Engineering Laboratory of Internet Education, Intelligent Technology and Application, the Executive Director of the Capital Learning Society Research Institute, and the Chair of the National Natural Science Foundation of China, which is currently researching Educational Reform and Innovation Management in the Internet + Era. In addition, Chen is the winner of the 15th Beijing Philosophy and Social Science Outstanding Achievement Award for her work on the Principles and Strategies of Teaching Interaction in Distance Learning; work that she completed with Wang Zhijun, from Beijing Normal University, and her Anglo-counterpart, Terry Anderson, from Athabasca. Having spearheaded the development of China's only education program for distance education, she continues as a professor in the undergraduate (Basics of Distance Education), postgraduate (Distance Education), and doctoral (Theory and Practice of Distance Education) streams of the program. She also continues to supervise doctoral students in the Department of Education (Bainbridge & Wark, 2023).

High-quality education has interested Li Chen since her earliest time as a student. As she moved through her academic pathway, she found support for her interest in ensuring high-

quality education in her Master's supervisor.   Finding this supportive environment encouraged her to shift her academic focus from electronics (satellite technology) to educational technology. Chen completed a Master's degree (1992) and a Doctorate degree (2003) in educational technology at Beijing Normal University. As the world of educational technology developed around her, Chen remained on the cutting edge of distance education research, exploring the impact of the Internet on transforming the entire educational system, including teaching structures, management structures, supply structures, and even the fundamental philosophy and principles underlying high-quality distance education (Bainbridge & Wark, 2023).

RESEARCH AREAS

China has the world's largest population of connected Internet users. Over 1.05 billion Internet users represent 74.4% of the population. (State Council Information Office People's Republic of China, 2022) Given those statistics, there is a great opportunity for distance education to play a key role in the reform of China's education system. A project Li Chen has tirelessly advocated for through her committee participation and supported through her research efforts.

Chen has driven the reformation of education projects in China with her work investigating the innovative and systematic spaces of the distance education frontier.   These investigations centered on exploring the epistemological foundations of knowledge, connectivism (Siemens, 2005) as a driving theory of learning and knowledge (in particular, the emphasis on interaction), and the importance of quality assurance to the success of distance education efforts. The summary below of her work in these research areas only begins to highlight her contributions. The limitations of exploring her research through Google-translated abstracts do only minimal justice to capturing the complexity, reach, and ideological and epistemological variance of her research narrative.   This limitation highlights the need for better cross-cultural, cross-linguistic, and cross-geographical efforts in research dissemination that do not rely on the *privilege* of English-language publication.

TOWARDS A NEW ONTOLOGY, EPISTEMOLOGY, AND PEDAGOGY

Pursuing a modern education system in China must begin with a reconceptualization of knowledge and how we can come to know it. In *Reconstructing the Epistemological Basis: A New Concept of knowledge for Lifelong Learning in Adults* (2023), Chen et al. posit that the view of knowledge is directly related to the ways in which we can conceptualize and understand education.   The limitations of traditional knowledge concepts, how it's organized, valued, produced, and disseminated, restrict innovation in educational theories and practices. In addition, the introduction of the Internet and big data to teaching and learning practices allows us to measure teaching and learning behaviours in ways more amenable to a natural sciences approach to knowledge opening the epistemological potential of developing foundational laws and principles (Chen, 2019).

Post-Internet or Net-informed learning theories emphasize emergence and generativity, and are meant to include learning that occurs and is stored outside of the individual. With knowledge growing exponentially and technology impacting learning processes with an intensity not experienced in previous eras, many of the learning processes described in pre-Net theories are now increasingly provisioned by technology. The influence of the digital medium on the learner re-positions learning as an external event that emerges from the learning system and necessitates different engagement and navigational skills from the learner (Siemens, 2005).   The capability for far-reaching and cost-effective communications, the sudden shift to a large quantity of easily accessible information, and the real and automated agents that create, accrue, curate, and parcel information have

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produced a brand-new learning landscape that might require new theories to navigate. Connectivism grew quickly as a potential learning theory when technology became ubiquitous in teaching and learning spaces. Our relationship with information and knowledge changed as we entered what some have called the Fourth Industrial Revolution (Ally & Wark, 2020; Schwab, 2018). Although Connectivism's learning theory status is debated, it does exist within a unique ontological and epistemological space, which would give the emerging perspectives a distinct place among existing learning theories.

In terms of how knowledge is valued, Xu et al. (2020), and Chen, Xie, and Zheng (2022) promote a move to open lifelong learning as a guiding influence for systems-level educational decisions. A lifelong learning approach represents "个体层面满足生存和幸福需要、在组织层面激发创新能力、在社会层面实现可持续发展的价值体系 [a value system that meets the needs of survival and well-being at the individual level, stimulates innovation at the organizational level, and achieves sustainable development at the social level]" (Chen, Xie, & Zheng, 2022, p. 1). Modernization of the system should embrace the flexibility and personalization required to support learners across their lifespan; however, the momentum and innovation required to support equitable and lifelong learning must come from embracing a new concept of knowledge. Chen et al. (2023) and Chen et al. (2019) describe the three stages of knowledge conceptualization. First, the objective attribute perspective defines knowledge as facts, ideas, and other things to know. Second, the social attribute perspective defines knowledge as relational. It is created, revised, and transmitted through social interactions and is embedded in social relationships. Finally, the network attribute perspective defines knowledge as emergent and problem-driven. It evolves, is remixed, disseminated between nodes, and produced more efficiently as it makes contact with new groups and their subsequent networks.

In terms of how knowledge is organized, produced, and disseminated, Wang and Chen (2014) promote the adoption and further exploration of Connectivist learning theory. Connectivism aims to accept the complexity of the system rather than struggling to dismantle it (Siemens, 2005). It promotes using behavioural data, such as learning analytics and social network analysis, to determine the impact of the learning environment on learner behaviour and how the learner interacts with the learning environment. These large data sets provide insight into the complexity of the learning system and allow for a holistic, rather than a structural, understanding of that system (Moon & Blackman, 2014). Connectivism borrows from the principles of heutagogy, distributed cognition, activity theory, chaos theory, network theory, complexity theory, complex adaptive systems, and other self-organizing theories to position learning as an emergent and generative occurrence equally achievable by learners and organizations, specifically through their utilization of technology and digital affordances (Dron & Anderson, 2014; Siemens, 2005; Wark, 2018).

In Connectivism, learning is no longer positioned as an individual experience resulting in individual changes to their ability to act; instead, our knowledge and competencies exist in our connections with others. Others become the proxy for knowledge and competencies. Learning can exist outside the self and replicate and compound through the small efforts of many. As Lu and Chen (2019) describe "互联网时代的学习者群居而生。"互联网+"时代的课程观已然发生转变,课程不仅具有知识传播功能,还具有知识生产、关系网络和社区等属性。本 [Learners in the Internet age live in groups. The curriculum concept in the "Internet+ era" has undergone a transformation, and the curriculum not only has the function of knowledge dissemination, but also has the attributes of knowledge production, relationship network and community roots]" (p. 1). The goal of Connectivist learning is not about the transmission of information. Or the transformation of information into knowledge through

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meaning-making. Instead, the goal is to be able to identify, traverse, and generate connections between people, nodes, and networks (Anderson, 2010).

Pedagogical approaches focus on building systems and connecting networks where learning can emerge. Learners develop the skills to continually expand these networks. This skill set positions learners to exponentially grow, without biological limits, their capacity to know more than they currently do (Anderson, 2010). The learning environment for connectivists is developed across three distinct contexts. First, the group likely gathers in a familiar closed environment, such as the online classroom or Learning Management System (LMS).   There is a hierarchical structure of leader (teacher) and followers (students); participation in the group only occurs while actively engaged within its organizing system (course, semester).   Participants are engaging with learning, independently and collectively. Second, the network extends learning beyond the closed system to a voluntary community where membership changes often and is less temporally bound. Community members are typically purpose-focused and engage the network when there are specific problems or challenges that they are trying to solve (for example, in a Community of Practice).   However, rather than accessing this community upon some mastery of knowledge or skills, the learner connects with this network to build their knowledge and skills. The community then becomes an extension of the learner. Third, the collective, which represents the largest and loosest connections, gathers and integrates activities across the Internet to solve problems, and to form new nodes and pathways to facilitate easier connections and foster dialogue (Anderson, 2010; McHugh, et al., 2016).

A Connectivist pedagogy designs environments in which learners participate simultaneously in each of these contexts, creating a dynamic system that supports learning and strengthens knowledge and understanding through the extension of personal networks (McLoughlin & Lee, 2008). Chen's work on interaction serves to highlight mechanisms by which interaction, a foundational component of all distance education, and cognitive engagement occur in teaching and learning environments that embrace the generative and emergent design elements of Connectivism. Chen's early interaction research highlights the need for a more defined language set to allow for a systematic investigation of the nuances of interaction, and a call for the literature to more precisely define their interaction variables. Chen argues for the inclusion of a structural analysis (teacher, student, student-teacher, teacher-content, student-content, student-student, and so on), a functional analysis (operational interactions, informational interactions, and concept interactions), and a complexity analysis (simple-complex or concrete-abstract) in any investigation of interaction concepts (Chen, 2004a).

To assist in understanding this more nuanced definition of interaction, Chen (2004b), developed a conceptual framework.   Extending Laurillard's (1999) conversational framework, Chen developed the hierarchical model for instructional interaction (HMII). This framework summarizes the different meanings, and highlights the interdependence of each level of teaching interaction. By describing teaching interaction, Chen also provides key insights into the mechanisms of distance learning.

This conceptual framework was furthered in the work by Wang et al. (2014), when Chen and her colleagues extended the framework to include the networked nature of Connectivist learning environments and the kinds of cognitive engagement that occur at each level. This updated framework defines the supporting and influencing function of each level and the iterative nature of the overall framework.

Wang and Chen (2015) argue for the need to understand the interaction and engagement phenomena in Connectivist learning theories in order to better develop pedagogical practices. The frameworks attempt to capture the complexity of the Connectivist learning environment and its emphasis on both the individual and the learning system. At the individual level, learners are supported to achieve self-identified learning goals by helping

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them identify social and physical structures, and influences that may act as support or barriers to the emergence of effective adaptive behaviour. This ability to navigate the learning environment equips and empowers learners to survive and influence the learning system. Shaping Connectivist learning environments is done through creating, sharing, mixing, and remixing the knowledge stored in the nodes and networks of the Internet. This change in outlook and approach ensures learners develop and practice the skills needed to survive and thrive in the knowledge society.

In addition to using connectivism to reimagine knowledge and how we come to know it in the digital age, Chen proposed using connectivism to shape a modern education system. Wang and Chen (2019) discuss the transformation of education in the information age and point out that education is a complex system that might be better understood and influenced from the place of complexity theory. Wang and Chen (2019) highlight the need for an educational ontology and posit that connectivism is just that ontology. If we adopt this ontological starting place, then a modern distance education system embraces three core ideas. The first is connectivity at the learning level, reflected in the integration of cognitive, conceptual, and social networks. The second is connectivity at the teaching level, reflected in resource sharing, open universities, and blended learning. The third is connectivity at the organizational level, reflected in new educational ecologies such as self-organization and community-based education. It is at this final level that Chen has directed her most recent research efforts, exploring the innovative potential for connectivism to inform educational reform in China (Chen et al., 2023).

TOWARDS A NEW EDUCATIONAL ECOSYSTEM

In *The Opportunity and Challenges for Distance education in the Era of Internet+*, Chen et al. (2016) identify a gap between the direction of educational reform (influenced by the Internet) and the direction of distance education. The direction of distance education emphasizes strengthening and improving the traditional education system through access to enhanced hardware and software and increased technical support. Chen et al. (2016) use the term, *Internet + Education*, to signify that they are referring to reforming the entire educational ecosystem, including infrastructure, supply, governance, resources, and professional development. The Internet has not only promoted innovation in distance education, but has also ushered in a new business model, which is impacting the changes in the education system. Chen (2018) argues that this is a historic opportunity for the modernization of China's education system, but if it is not approached with intention, it might be an opportunity missed. Chen (2018) emphasizes that "教育信息化的价值取向不是技术应用,而是破解教育问题,使教育更符合社会及人的发展需要 [the value orientation of education informatization is not the application of technology, but to solve the problem of education and make education more in line with the needs of social and human development]" (p. 1), and that ensuring these values are embedded in the evolving system is an important part of educational reform. While maintaining these values, the education system must shift from simple to diverse, from standardized to individualized, from integrated to fragmented, and from centralized delivery to flexible delivery (Bai et al., 2021). These shifts require that the "专项行动计划的核心内容,全面构建以学习者为中心的教育服务体系,建立基于数据的多元主体共治体系和消费驱动的教育教学服务与评价体系,建设高质量的开放教育制度体系。[The core content of the special action plan is to comprehensively build a learner-centered education service system, establish a data-based multi-subject co-governance system, and a consumption-driven education and teaching service and evaluation system, and build a high-quality open education system]" (Bai et al., 2021, p. 1).

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Chen's work promoting educational reform was accelerated during the COVID-19 pandemic. By summarizing the practical experiences of large-scale deployment of online learning, Chen, Zheng, and Xu (2022) demonstrated that China's education system has, in fact, begun to move into a new stage of development and implementation. This new stage has introduced new areas of emphasis for educational governance by promoting educational equity, developing an evaluation system to measure high-quality education, enriching the supply of educational programming, and improving managerial decision-making strategies (Chen, 2022). The reformation of the educational system would not be complete without some discussion of the changes required in teaching practice and the subsequent innovations in teacher training methods. Using case analysis, Gao et al. (2022) demonstrate that "创新教学方式与教学组织形式、创新教学评价方式、创新教师培育方式、建设终身学习新体系是深化教学改革的重要着力点，同时认为创新教育服务供给新单元   [innovative teaching methods and teaching organization forms, innovative teaching evaluation methods, innovative teacher training methods, and the construction of a new lifelong learning system are important points for deepening teaching reform]" (p. 1), positioning teaching reform as the final pillar of a reformed educational ecosystem (Yaqian et al., 2022).

The essence of a high-quality education system is one that encourages and supports lifelong learning. For lifelong learning to be of value, a qualifications framework must be established at the national level (Chen, Zheng, Xie, et al., 2013). As it currently stands, the Higher Education Law sets out the length of full-time study required for each credential level, and many institutions have adopted the credit system to increase choice and flexibility as they adapt to a more market-driven and knowledge economy. In addition, introducing tuition fees to the previously-funded system has also opened institutions up to the potential of a consumer-oriented qualification system. China has over 2000 higher education institutions offering either educational qualifications or academic degrees. Higher education institutions are classified as either Regular institutions and Adult institutions (the majority of which are public), or Private (Minban) institutions, which are often viewed as lesser quality (International Qualifications Assessment Service, 2020). The complexity of the structure of the higher education system is one reason why a national qualification framework remains an incomplete project in China's educational reform efforts.

The official launch of open education in China was marked in 2012 by the approval of the state to establish the Open University of China, Beijing Open University, Shanghai Open University, Guangdong Open University, Jiangsu Open University, and Yunnan Open University from their respective Radio and Television Universities (Zhang & Li, 2019). The permission to operate was only the first step to establishing open education as a viable option. Now there was the very pragmatic question of how to break into the higher education system and ensure open education was viewed as a high-quality option for lifelong learning. In *The Responsibility on Improving the Quality Reputation of Distance Education for China Open University* (2013), Chen, Zheng, and Yin outlined the challenges faced by the Open University and recommended that they focus on reforming the quality reputation before increasing their offerings. The pursuit of quality was challenged by a research and practical landscape riddled with contradiction, competition, and general disorganization. Systematic research on what dimensions or key points should be included in a quality-assurance model was lacking, and so far, no institution has developed a comprehensive quality-assurance model (Li et al., 2021).

Chen and colleagues propose what they call an "*internal driving force*" perspective on quality assurance, which highlights the need to develop a culture of quality within an institution. In this perspective, the driving forces of quality assurance should come from quality awareness by institutional leadership, student demand, and policy development. However, external forces, such as industry requirements and institutional competitiveness,

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cannot be overlooked and should be controlled for in any comprehensive quality assurance model (Li et al., 2021). Survey work by Shuang et al. (2021) looked at questions and answer responses from over 25,000 people between 2011 and 2021 and highlighted some of the concerns that online education (and therefore, open universities) must address. Most significantly, the participants continued to identify online education as not being as good as other forms of education, making the key issue for online education and open universities a public relations one. In an article to celebrate the 10th anniversary of the open education movement, Chen reiterates that the direction of the Open university should always be towards a lifelong public service system that opens up high-quality education for all (Wei et al., 2022). She remains invested in the research and committee work that strives to make it a reality.

CONCLUSION

Chen's research narrative over the last two decades has supported education reforms in China. Modernizing education in China has required an ideological shift that stems from the philosophical underpinnings of knowledge. Chen's research—that builds towards a new ontology, epistemology, and pedagogy—redefines learning as a lifelong process, and embraces and promotes a Connectivist view of knowledge. *Knowledge* is newly defined as generative, emergent, and uniquely embedded in the digital affordances of the information age. This view of knowledge has allowed for a reconceptualization of learning and the establishment of new rules of learning (such as the fore-fronting of interaction in distance education design and delivery). The second avenue of educational reform requires a move towards a new educational ecosystem that can incorporate and support new perspectives on learning and modern pedagogies. Chen's research in these areas has highlighted the importance of infrastructure, supply, governance, resources, and professional development to the modernization and reform of the educational system. Finally, the maintenance of education reform requires a focus on quality assurance. Chen has been a strong advocate for a nationwide qualifications framework and quality assurance best practices that support institutional and course-based quality mechanisms for distance education.

The overview of Li Chen's work provided in this article is only a sampling of her research contributions. Her other contributions and research oversight in cMOOC development, artificial intelligence in education, and the use of data analytics, such as social network analysis, are of equal impact on the advancement of distance education. Given the depth and breadth of Chen's contributions to the education literature base, the geographic and language barriers reinforce the challenges and bias outlined by the likes of Mazenod (2018), Swales (2004), and Marginson (2008). The absence of Chen's work from the English-dominated narrative on distance education, and the gap that leaves in our construction of knowledge in this area, is an example of just how important the "rest of the world" (Bainbridge & Wark, 2023, p. 5) voices are to a fulsome understanding of any research area. As Bainbridge (2016) highlights, "by following the colonial view from a western perspective and assuming that all *important* research is published in English, then according to current world population statistics academic research is serving approximately 15% of the earth's people" (para. 5). While it is true that digital affordances have increased access through digital archiving, digital publishing, and readily available language translation services, their flaws and inaccuracies in representation, nuance, and context keep non-English publications from being fully embraced by English-speaking researchers. The solution to these issues is beyond the scope of this article. However, when considering the impact of the Matilda effect on our understanding of the distance education research narrative, we must not forget the complexities of the intersectionalities that are also present and often unaccounted for.

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