

<https://doi.org/10.5281/zenodo.20737780>

Role of Open and Distance Learning in Promoting Lifelong Education: Opportunities and Challenges



Muhammad Athar
Hussain

Associate Professor, Distance, Non-formal and Continuing Education
Department, Allama Iqbal Open University Islamabad
Muhammad.athar@aiou.edu.pk

Abstract: *Lifelong education has become increasingly important in enabling individuals to continuously update their knowledge and skills in a rapidly changing world. Open and Distance Learning (ODL) offers flexible educational opportunities that support learners in pursuing education throughout their lives. This study examined the role of Open and Distance Learning in promoting lifelong education, with a particular focus on the opportunities and challenges experienced by distance learners. A quantitative survey design was employed. The sample comprised 100 postgraduate distance learners enrolled at Allama Iqbal Open University. A structured questionnaire was developed to collect data on key dimensions of ODL and lifelong learning, including accessibility, flexibility, self-directed learning, professional development, and learning challenges. The data were then analysed and processed statistically using SPSS program based on mean, standard deviation. The findings indicated that ODL significantly contributes to lifelong learning by providing flexible learning schedules, wider access to educational resources, and opportunities for continuous personal and professional growth. The respondents reported that ODL enabled them to balance their educational pursuits with work and family responsibilities. However, challenges such as inadequate internet connectivity, limited interaction with instructors, technological issues, insufficient academic support and lack of psycho emotional support were also reported. The study concludes that ODL is an effective means of promoting lifelong learning among postgraduate learners. It is recommended that ODL institutions strengthen technological infrastructure, enhance learner support services, and adopt more interactive teaching strategies to improve learning outcomes and learner engagement.*

Keywords: Open and Distance Learning, Lifelong education, Postgraduate Learners, Educational Access, Flexibility, Challenges

Introduction

The twenty-first century has witnessed unprecedented changes in knowledge production, technological innovation, labor market requirements, and social development. In response to these transformations, lifelong learning has emerged as a central principle for individual growth, professional advancement, and national development. Lifelong learning

refers to the continuous acquisition of knowledge, skills, attitudes, and competencies throughout an individual's life, enabling people to adapt to changing personal, social, and economic circumstances (European Commission, 2000). It extends beyond formal education and encompasses all learning activities undertaken throughout life for personal fulfillment, active citizenship, social

inclusion, and employability.

Open and Distance Learning (ODL) has become one of the most effective mechanisms for promoting lifelong learning by providing educational opportunities beyond the limitations of time, place, age, and socio-economic status. ODL enables learners to access educational resources while balancing family, work, and social responsibilities. Through flexible admission policies, self-instructional materials, online learning platforms, and learner support services, ODL institutions facilitate educational participation among diverse learner groups, including working adults, women, rural populations, and marginalized communities (Bandalaria, 2007). The relationship between ODL and lifelong learning has gained increasing attention worldwide. UNESCO (2015) recognizes lifelong learning as a key strategy for achieving inclusive and equitable quality education and promoting learning opportunities for all. Similarly, ODL institutions have evolved from correspondence-based systems to technology-enhanced learning environments that support continuous learning through digital platforms, mobile technologies, and virtual learning communities. These developments have expanded access to education and created new opportunities for lifelong learners.

Scholars have emphasized that lifelong learning is not merely a continuation of education but a comprehensive philosophy that promotes continuous intellectual and professional development. Jarvis (2007) argues that lifelong learning supports individuals in responding effectively to social and economic changes. In the context of ODL, lifelong learning enables learners to acquire new competencies and update existing knowledge throughout their lives. Open universities around the world have embraced this philosophy by offering flexible learning opportunities designed to meet the needs of adult learners and working professionals.

Despite its considerable potential, ODL faces numerous challenges in promoting lifelong learning effectively. Lockwood and Latchen (2004) observed that many distance education institutions rely heavily on academic staff trained in conventional face-to-face teaching

systems. Consequently, instructors often encounter difficulties adapting to the pedagogical requirements of ODL environments, which may affect educational quality. Continuous professional development and lifelong learning among academic staff are therefore essential for improving instructional effectiveness and learner outcomes. Technological advancements have significantly influenced the evolution of ODL systems. Information and Communication Technologies (ICTs) have transformed instructional delivery, learner support services, communication processes, and assessment practices. The role of educators is increasingly shifting from knowledge transmitters to facilitators of learning within technology-supported environments. Similarly, Mishra and Panda (2007) found that positive attitudes toward e-learning are associated with greater utilization of computers and digital communication tools. However, technological integration also presents challenges related to infrastructure, digital literacy, internet accessibility, and institutional readiness.

In Pakistan, ODL plays a critical role in expanding educational access and supporting lifelong learning opportunities. Allama Iqbal Open University (AIOU), established in 1974, is the country's largest distance education institution and serves learners across diverse geographical and socio-economic contexts. Through its flexible learning system, AIOU provides educational opportunities to individuals who may otherwise be unable to pursue higher education through conventional institutions. The university serves working professionals, women, adult learners, and residents of remote areas, thereby contributing significantly to the promotion of lifelong learning.

Although ODL has enhanced access to education in Pakistan, learners continue to encounter various challenges, including technological barriers, limited interaction with instructors, inadequate learner support mechanisms, and varying levels of digital competence. Understanding learners' perceptions regarding the opportunities and

challenges of ODL is therefore important for strengthening lifelong learning initiatives. This study seeks to examine the role of Open and Distance Learning in promoting lifelong learning among postgraduate learners at Allama Iqbal Open University and to identify the opportunities and challenges associated with this educational mode.

Statement of the Problem

Lifelong learning has become an essential requirement for individuals seeking to remain competitive and productive in knowledge-based societies. Open and Distance Learning offers a flexible and accessible pathway for lifelong learning, particularly for adult learners, working professionals, and geographically dispersed populations. In Pakistan, Allama Iqbal Open University serves as a major provider of distance education and lifelong learning opportunities. Despite the growing significance of ODL, learners often face challenges related to technological infrastructure, learner support services, interaction, motivation, and access to digital resources. Furthermore, empirical evidence regarding how effectively ODL promotes lifelong learning among postgraduate learners in the Pakistani context remains limited. Therefore, there is a need to investigate the role of Open and Distance Learning in promoting lifelong learning and to identify the opportunities and challenges experienced by postgraduate distance learners at Allama Iqbal Open University.

Objectives of the Study

- To examine the role of Open and Distance Learning in promoting lifelong education among postgraduate learners at Allama Iqbal Open University.
- To identify the opportunities provided by Open and Distance Learning for supporting lifelong education.
- To investigate the challenges faced by postgraduate distance learners in pursuing lifelong education through ODL.
- To explore learners' perceptions regarding the effectiveness of Open and

Distance Learning in facilitating continuous personal and professional development.

Literature Review

Lifelong learning has emerged as a dominant educational paradigm in the twenty-first century, reflecting the need for continuous acquisition of knowledge, skills, and competencies throughout life. The European Commission (2000) defines lifelong learning as all learning activities undertaken on an ongoing basis with the aim of improving knowledge, skills, and competence. The concept extends beyond formal education and includes non-formal and informal learning experiences that contribute to personal, social, and professional development.

The philosophy of lifelong learning is rooted in the belief that learning is a continuous process rather than a one-time event confined to formal schooling. According to Jarvis (2007), lifelong learning enables individuals to adapt to changing societal conditions, technological developments, and labor market demands. UNESCO (2015) further emphasizes that lifelong learning promotes social inclusion, active citizenship, employability, and sustainable development. As knowledge economies continue to evolve, lifelong learning has become a necessity for individuals seeking to remain relevant and productive in their personal and professional lives.

In the context of Open and Distance Learning (ODL), lifelong learning provides opportunities for learners to engage in educational activities regardless of age, geographical location, or socio-economic status. ODL institutions play a crucial role in facilitating lifelong learning by offering flexible and accessible educational pathways that accommodate diverse learner needs. Open and Distance Learning has undergone significant transformation over the past century. Initially, distance education relied heavily on correspondence-based instruction, where printed materials were delivered to learners through postal services. The emergence of radio, television, computers, and the internet subsequently expanded the scope and

effectiveness of distance education.

According to Moore and Kearsley (2012), modern ODL systems integrate multiple technologies to facilitate teaching, learning, communication, and assessment. Technological advancements have enabled educational institutions to provide interactive and learner-centered experiences that transcend geographical barriers. Today, ODL encompasses online learning, virtual classrooms, mobile learning, learning management systems, and digital collaboration platforms. The evolution of ODL has been driven by increasing demand for flexible educational opportunities and the growing recognition of lifelong learning as a societal necessity. Open universities worldwide have adopted innovative instructional approaches to meet the educational needs of adult learners, working professionals, and marginalized populations. The relationship between ODL and lifelong learning is inherently complementary. ODL provides the structural and technological mechanisms through which lifelong learning can be achieved. Lifelong learning emphasizes continuous educational engagement, while ODL creates opportunities for learners to access education throughout different stages of life.

According to Lockwood and Latchen (2004), ODL institutions are uniquely positioned to promote lifelong learning because they offer flexible learning opportunities that accommodate learners' varying circumstances. Through open admission policies, self-paced learning, and technology-mediated instruction, ODL enables learners to pursue educational goals without disrupting their personal or professional commitments.

UNESCO (2015) identifies distance education as a key strategy for expanding educational participation and promoting lifelong learning among diverse populations. By removing traditional barriers related to time, place, and age, ODL supports continuous learning and professional development. Consequently, ODL has become an essential component of lifelong learning systems worldwide. In Pakistan there is limited focus on promoting policy and practice to optimizing the use of technology to address

key education challenges. Education in Pakistan is going through a critical crisis with 26 million out of school children. Those children who attend schools face a critical learning crisis, with most young learners unable to achieve basic proficiency in mathematics and language skills, as the studies indicates that among grade five learners only 38% children are able to do simple division in math or comprehend a paragraph (World Bank, 2022; ASER Pakistan, 2023). In order to address the education challenges, an education emergency was declared by the Prime Minister of Pakistan in May 2024 to identify solutions and strategies to overcome the challenge. Pakistan has invested in the digital learning interventions significantly through policy reforms, creation of national platforms, and the creation of public-private alliances to enhance student learning, especially after the COVID-19 pandemic.

Open and Distance Learning offers numerous opportunities for lifelong learners. One of its most significant advantages is accessibility. ODL enables learners from remote, rural, and underserved regions to access educational opportunities that might otherwise be unavailable. Flexibility is another major strength of ODL. Learners can study at their own pace and schedule learning activities according to their personal and professional commitments. This flexibility is particularly beneficial for working professionals, parents, and adult learners who face competing responsibilities. ODL also promotes learner autonomy and self-directed learning. Adult learners are encouraged to take responsibility for their learning processes, develop independent study habits, and engage in reflective learning practices. Such experiences contribute to lifelong learning competencies and enhance learners' capacity for continuous professional development. Furthermore, ODL supports educational equity and social inclusion. Individuals who face barriers to participation in conventional education systems, including women, persons with disabilities, and economically disadvantaged populations, can access educational opportunities through distance learning programs. The integration of digital

technologies has further expanded learning opportunities by facilitating access to global knowledge resources, collaborative learning networks, and virtual communities of practice. These developments have strengthened the capacity of ODL institutions to promote lifelong learning on a large scale.

Challenges of Open and Distance Learning in Promoting Lifelong Education

Despite its numerous advantages, ODL faces several challenges that may limit its effectiveness in promoting lifelong learning. One of the most frequently reported challenges is inadequate technological infrastructure. Limited internet access, unreliable connectivity, and insufficient access to digital devices can hinder learners' participation in online educational activities. Research studies identified poor internet access and inadequate training in online learning technologies as significant barriers to successful e-learning implementation. These challenges are particularly pronounced in developing countries where digital infrastructure remains unevenly distributed.

Learner motivation and retention also represent important concerns in ODL environments. Unlike traditional classroom settings, distance learners often study independently and may experience feelings of isolation. Without effective learner support services, some learners struggle to maintain engagement and complete their educational programs. Interaction between learners and instructors is another challenge. Limited opportunities for face-to-face communication may reduce learner satisfaction and affect the quality of educational experiences. Institutions must therefore develop effective communication strategies and interactive learning environments to support meaningful engagement. Quality assurance remains a critical concern as well. Rapid technological changes require continuous updating of instructional materials, teaching strategies, and assessment practices to ensure educational quality and relevance. Lifelong professional development programs contribute to improved teaching quality, enhanced learner outcomes, and stronger institutional

performance. Continuous training enables educators to remain informed about emerging technologies, innovative pedagogical practices, and evolving learner needs. Similarly, ODL promotes professional development among learners by providing opportunities to acquire new knowledge and competencies throughout their careers. Continuous learning enables individuals to remain competitive in rapidly changing labor markets and supports career advancement.

Open and Distance Learning in Pakistan and the Role of AIOU

Pakistan has made significant progress in expanding educational access through Open and Distance Learning. The leading institution in this regard is Allama Iqbal Open University (AIOU) to provide educational opportunities to populations unable to participate in conventional educational systems. AIOU serves learners across Pakistan through a flexible learning model that combines printed materials, tutorials, workshops, online learning platforms, and digital support services. The university has played a vital role in promoting literacy, teacher education, professional development, and higher education among diverse learner groups.

The adoption of ICT-based learning systems has further enhanced AIOU's capacity to support lifelong learning. Learning Management Systems, virtual classrooms, online assignments, and digital resources have expanded educational access and improved learner engagement. Nevertheless, challenges related to technological infrastructure, digital literacy, and learner support continue to influence the effectiveness of ODL programs in Pakistan.

Empirical Studies on ODL and Lifelong Education

Several studies have highlighted the positive contribution of ODL to lifelong education. Bandalaria (2007) emphasized the importance of quality assurance mechanisms and technology integration in ensuring effective learning outcomes within ICT-supported educational systems. The study concluded that carefully designed instructional processes and learner

support systems contribute significantly to educational quality.

Mishra and Panda (2007) found a positive relationship between technology utilization and attitudes toward e-learning. Learners who regularly used computers and digital communication tools demonstrated greater acceptance of online learning environments. Research conducted indicated that technological innovations are transforming the role of educators from information providers to facilitators of learning. This transformation has significant implications for learner-centered educational approaches within ODL systems. Similarly, studies by Braimoh (2008) emphasized the importance of psychological and emotional factors in influencing learning outcomes among distance learners. Their findings suggest that learner support interventions can positively affect motivation, engagement, and academic achievement.

Methodology

The study employed a quantitative descriptive survey design to investigate the role of Open and

Distance Learning (ODL) in promoting lifelong learning among postgraduate distance learners. The survey method was used because to collect data from the participants regarding their perceptions of the opportunities and challenges associated with ODL. The study focused on examining how ODL contributes to lifelong learning through accessibility, flexibility, self-directed learning, professional development, and technological support, while also identifying barriers that may hinder effective lifelong learning.

Population and Sample

The population of the study comprised postgraduate students enrolled in various academic programs at Allama Iqbal Open University (AIOU), Islamabad, Pakistan, during the academic year 2023–2024. A sample of 100 postgraduate distance learners was selected through simple random sampling to ensure equal representation and reduce selection bias. The participants represented male, female, age groups and employment status.

Table 1

Distribution of study sample according to variables: gender, age and employment status

Variables	Categories	Percentage %
Gender	Male	52
	Female	48
Age	Below 30 years	10
	31-40 years	22
	Above 40 years	68
	Total	100
Employment status	Employed	37
	Unemployed	63
Total		100

Research Instrument

A structured questionnaire was developed as the primary data collection instrument. The questionnaire was designed after reviewing relevant literature on Open and Distance Learning and lifelong education. It consisted of two sections. The first section gathered demographic information, while the second section contained statements related to the study

variables. Responses were recorded using a five-point Likert scale: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree.

The questionnaire included 32 items distributed across five dimensions:

- Accessibility of Open and Distance Learning (7 items)
- Flexibility of Learning Opportunities (6

items)

- Self-Directed Learning and Learner Autonomy (6 items)
- Professional and Personal Development (7 items)
- Challenges of Open and Distance Learning (6 items)

Validity of the Questionnaire

The questionnaire was reviewed by a panel of 04 experts comprising university faculty members specializing in distance education, educational research, and educational technology. The

experts evaluated the relevance, clarity, comprehensiveness, and appropriateness of each item in relation to the objectives of the study. Based on their suggestions, several items were revised, reworded, and refined to improve clarity and content coverage.

Reliability of the Questionnaire

To determine the reliability of the instrument, a pilot study was conducted on a group of 25 postgraduate distance learners who were not included in the final sample. The reliability coefficient was calculated using Cronbach's Alpha.

Table 2

Cronbach's Alpha Coefficients for the Questionnaire

No.	Dimensions	Number of Items	Cronbach's Alpha	Reliability Level
1	Accessibility of ODL	7	0.86	High
2	Flexibility of Learning Opportunities	6	0.88	High
3	Self-Directed Learning and Learner Autonomy	6	0.90	High
4	Professional and Personal Development	7	0.89	High
5	Challenges of ODL	6	0.85	High
Overall Questionnaire	30	32	0.88	High

The Cronbach's Alpha coefficients ranged from 0.85 to 0.90, while the overall reliability coefficient of the instrument was 0.88, indicating a high level of internal consistency and reliability.

Results

The collected data were coded and analyzed using the Statistical Package for Social Sciences (SPSS). Descriptive statistics, including frequencies, percentages, means, and standard

deviations, were used to describe participants' responses. Inferential statistical techniques, including independent sample t-tests and one-way ANOVA, were employed to examine differences in perceptions based on demographic variables where applicable.

Table 3

Means, Standard Deviations for the dimensions of the study

<i>Dimension</i>	<i>Mean</i>	<i>SD</i>
<i>Flexibility of Learning Opportunities</i>	4.21	0.68
<i>Accessibility of ODL</i>	3.08	0.71
<i>Professional and Personal Development</i>	3.95	0.74
<i>Self-Directed Learning and Learner Autonomy</i>	3.82	0.76
<i>Challenges of ODL</i>	2.35	0.87
<i>Overall Average</i>	3.92	0.74

Table 3 indicates that the overall mean score for the role of Open and Distance Learning in promoting lifelong learning was 3.92, Flexibility of Learning Opportunities ranked first with a mean score of 4.21, indicating a very high contribution to lifelong learning. This suggests that learners highly value the ability to study according to their own schedules and personal circumstances. The dimension of Accessibility of ODL with a mean score of 3.08, indicating that ODL effectively provides educational

opportunities. Professional and Personal Development ranked third ($M = 3.95$), followed by Self-Directed Learning and Learner Autonomy ($M = 3.82$). These findings indicate that ODL supports continuous professional growth and encourages learners to take responsibility for their own learning. The dimension of Challenges of ODL ranked fifth ($M = 2.92$) with challenges reported which hindered the opportunities to access and quality.

Table 4

Gender Differences in the role of ODL in promoting lifelong education

<i>Dimensions</i>	<i>Gender</i>	<i>n</i>	<i>Mean</i>	<i>SD</i>	<i>t-value</i>	<i>Sig.</i>
<i>Accessibility of ODL</i>	Male	52	4.04	0.69	0.81	0.421
	Female	48	4.12	0.73		
<i>Flexibility of Learning Opportunities</i>	Male	52	3.17	0.66	0.92	0.359
	Female	48	3.25	0.70		
<i>Self-Directed Learning</i>	Male	52	3.77	0.74	1.02	0.311
	Female	48	3.88	0.78		
<i>Professional Development</i>	Male	52	3.89	0.73	0.88	0.381
	Female	48	4.01	0.75		
<i>Challenges of ODL</i>	Male	52	2.53	0.83	0.61	0.542
	Female	48	2.59	0.79		

Table 4 indicates that there were no statistically significant differences at the level of significance ($\alpha = .05$) between male and female learners regarding any dimension of the role of ODL in promoting lifelong learning, as all significance values exceeded .05.

Discussion

The first research question sought to examine the role of Open and Distance Learning (ODL) in promoting lifelong learning among postgraduate learners at Allama Iqbal Open University. Referring to Table 3, the findings revealed that ODL plays a high role in promoting lifelong learning, with an overall mean score of (3.92). The results further indicated that all five dimensions obtained high or very high levels, reflecting the positive contribution of ODL to continuous learning and professional development among postgraduate learners. Among the dimensions, Flexibility of Learning Opportunities ranked first with a very high mean score (4.21). This finding can be

attributed to the inherent nature of ODL, which allows learners to study according to their own schedules and learning pace while balancing academic, professional, and family responsibilities. Most postgraduate learners enrolled in distance education are working professionals who value the flexibility offered by ODL systems. This finding supports the views of Jarvis (2007) and UNESCO (2015), who emphasized that lifelong learning depends significantly on flexible learning opportunities that enable individuals to engage in continuous education throughout different stages of life. The dimension of Accessibility of ODL with a high mean score (3.08), reflects the success of Allama Iqbal Open University in extending educational opportunities to learners residing in geographically dispersed and underserved areas of Pakistan. Through online platforms, digital resources, and flexible admission policies, AIOU has expanded educational access to populations that may otherwise face barriers to participation in conventional higher education.

This finding is consistent with Bandalaria (2007), who argued that ODL enhances educational access and supports lifelong learning through technology-enabled instructional delivery systems. The findings also revealed that Professional and Personal Development ranked third, indicating that learners perceive ODL as an important means of improving professional competencies, career prospects, and personal growth. The respondents acknowledged that participation in distance learning programs contributes to skill development and enhances their ability to respond to changing workplace demands. This result supports the lifelong learning perspective presented by the European Commission (2000), which emphasizes continuous learning for personal, social, and professional development. Similarly, the dimension of Self-Directed Learning and Learner Autonomy achieved a high level. This finding suggests that ODL encourages learners to assume responsibility for their own learning, manage their study schedules independently, and seek additional learning resources when necessary. Such characteristics are essential components of lifelong learning because they foster independent learning habits and continuous knowledge acquisition. The result is in agreement with Moore and Kearsley (2012), who emphasized that learner autonomy is one of the defining characteristics of successful distance education systems.

Although the dimension of Challenges of ODL ranked fifth, it still achieved a relatively high mean score, indicating that learners continue to experience obstacles that may affect their learning experiences. The most frequently reported challenges included internet connectivity issues, technical difficulties, limited interaction with instructors, and inadequate learner support services. These findings reflect the realities of many developing countries where technological infrastructure remains unevenly distributed. The results are consistent with the findings which identified poor internet access and insufficient technological support as major barriers to effective online learning.

Overall, the findings demonstrate that Open and

Distance Learning serves as an effective mechanism for promoting lifelong learning among postgraduate learners. However, maximizing its potential requires continuous efforts to improve technological infrastructure, learner support services, and interactive learning opportunities. The objective investigated whether statistically significant differences existed in learners' perceptions of the role of ODL in promoting lifelong learning according to demographic variables. The absence of significant gender differences also suggests that ODL provides equitable learning opportunities for both male and female learners. This is particularly important in the Pakistani context, where distance education has played a significant role in expanding educational access for women who may encounter social, geographical, or economic barriers to participation in conventional higher education institutions. These findings are consistent with previous studies that reported minimal demographic differences in perceptions of ODL effectiveness and lifelong learning opportunities. The results support the notion that the benefits and challenges of distance learning are experienced similarly across different learner groups when educational opportunities and institutional support systems are uniformly available.

Recommendations:

In the light of the study results, the following may be recommended:

1. Strengthen technological infrastructure by improving internet connectivity, learning management systems, and digital learning resources to enhance learners' educational experiences.
2. Enhance learner support services through timely academic guidance, online counselling, mentoring programs, and responsive technical assistance.
3. Increase opportunities for interaction between learners and instructors by incorporating more synchronous online sessions, discussion forums, webinars, and collaborative learning activities.

4. Provide continuous training in digital literacy to enable learners to effectively utilize online learning platforms and emerging educational technologies.
5. Promote lifelong learning awareness programs that encourage individuals to engage in continuous education and professional development throughout their lives.
6. Strengthen partnerships between ODL institutions and employers to ensure that academic programs remain aligned with labor market needs and emerging professional competencies.
7. Invest in faculty professional development programs to enhance instructors' competencies in online teaching, learner support, instructional design, and educational technology integration.
8. Conduct further research on emerging challenges and opportunities in Open and Distance Learning, particularly in relation to technological innovations, learner engagement, and lifelong learning outcomes in Pakistan.

References

- Bandalaria, M. D. P. (2007). Impact of ICTs on open and distance learning in a developing country setting: The Philippine experience. *International Review of Research in Open and Distributed Learning*, 8(1), 1–15. <https://doi.org/10.19173/irrodl.v8i1.334>
- European Commission. (2000). *A memorandum on lifelong learning*. Commission of the European Communities. Brussels, Belgium.
- Fung, Y. Y. H. (2004). Collaborative online learning: Interaction patterns and limiting factors. *Open Learning: The Journal of Open, Distance and e-Learning*, 19(2), 135–149. <https://doi.org/10.1080/0268051042000224743>
- Jarvis, P. (2007). *Globalisation, lifelong learning and the learning society: Sociological perspectives*. Routledge.
- Liaw, S. S., Huang, H. M., & Chen, G. D. (2007). Surveying instructor and learner attitudes toward e-learning. *Computers & Education*, 49(4), 1066–1080. <https://doi.org/10.1016/j.compedu.2006.01.001>
- Lockwood, F., & Latchem, C. (2004). Staff development needs and provision in Commonwealth countries: Findings from a Commonwealth of Learning training impact study. *Distance Education*, 25(2), 159–173. <https://doi.org/10.1080/0158791042000262102>
- Mishra, S., & Panda, S. (2007). Development and factor analysis of an instrument to measure faculty attitude towards e-learning. *Asian Journal of Distance Education*, 5(1), 27–33.
- Moore, M. G., & Kearsley, G. (2012). *Distance education: A systems view of online learning* (3rd ed.). Wadsworth Cengage Learning.
- Panda, S., & Mishra, S. (2007). E-learning in a mega open university: Faculty attitude, barriers and motivators. *Educational Media International*, 44(4), 323–338. <https://doi.org/10.1080/09523980701680854>
- Rosenberg, M. J. (2001). *E-learning: Strategies for delivering knowledge in the digital age*. McGraw-Hill.
- Simpson, O. (2004). The impact on retention of interventions to support distance learning students. *Open Learning: The Journal of Open, Distance and e-Learning*, 19(1), 79–95. <https://doi.org/10.1080/0268051042000177863>
- UNESCO. (2015). *Rethinking education: Towards a global common good?* UNESCO Publishing. Paris, France.