Learning Webs and Digital Education: An Illich Perspective

Virender Singh Saini

M.Ed. 4th Semester

Dr. Anshu Mathur

Associate Professor, Amity Institute of Education, Amity University, Noida

ARTICLE DETAILS	ABSTRACT
	Traditional teaching and learning methods have undergone tremendous change as a result of the 21st century's explosive growth in digital education. Access to information has changed beyond socioeconomic and geographic borders because to online platforms, Massive Open Online Courses (MOOCs), artificial intelligence-based applications, and open educational materials. Digital education presents questions about commercialization, credentialism, and technical control even as it offers flexibility, accessibility, and learner autonomy. In Deschooling Society (1971), Ivan Illich criticized institutionalized education, claiming that it perpetuates social inequality and encourages reliance on credentials over real learning. This study revisits his arguments. Illich suggested "Learning Webs" as learner-centred, decentralized networks that facilitate open access to educational materials, peer interaction, and skill sharing. This paper's goal is to investigate whether modern digital education replicates institutional structures in new technology forms or reflects Illich's concept of learning webs. Illich's framework and current digital learning ecosystems are critically compared in the study using a theoretical and analytical technique. The results indicate that digital platforms are still primarily institutionalized, market-driven, and algorithmically managed, even though they partially support Illich's theories by expanding access and

enabling self-paced learning. The study comes to the conclusion that while digital education has the potential to be transformative, structural changes are necessary to fully realize Illich's vision of decentralization, autonomy, and democratic access.

1. Introduction

Digital education has grown at an unprecedented rate in the twenty-first century, changing the face of teaching and learning everywhere. Access to knowledge has been greatly increased by Massive Open Online Courses (MOOCs), educational technology (EdTech) businesses, online learning platforms like Coursera, SWAYAM, BYJU'S, and AI-driven teaching tools. This change was further expedited by the COVID-19 epidemic, which forced educational institutions to embrace hybrid learning approaches and digital platforms. As a result, learning has increasingly taken place in virtual, networked settings rather than the traditional classroom.

Flexible, technology-mediated learning systems have replaced traditional schooling, which is defined by set curricula, standardized tests, and teacher-centred instruction. More accessibility and learner autonomy are promised by hybrid models, self-paced courses, and open educational resources. But along with these advancements, worries about data surveillance, digital inequality, commercialization, and the persistence of certification-oriented learning have surfaced.

It becomes especially pertinent in this light to revisit Ivan Illich's criticism of institutionalized education. Illich made the case in Deschooling Society (1971) that formal education does not promote true learning but rather social stratification, reliance, and credentialism. He suggested "Learning Webs," decentralized networks that would enable people to interact with peers, exchange skills, access educational materials, and study on their own without interference from institutions.

A crucial point is brought up by the quick development of digital education: Does modern digital learning actually embody Illich's vision, or is it only a technological replication of institutional structures? Digital platforms are frequently controlled by corporate interests, algorithmic control, and market-driven logics, despite their seeming promotion of openness and connectedness.

1.1. Problem Statement

Despite claims that digital education democratizes learning and decentralizes knowledge, it remains unclear whether these systems genuinely align with Illich's concept of Learning Webs or whether they

reinforce new forms of institutionalization and control. There is a need for a critical theoretical analysis of digital education through an Illich lens to assess its transformative potential.

1.2 Research Questions

1. What are Learning Webs according to Ivan Illich?
2. Does digital education fulfil Illich's vision?
3. Is digital learning truly decentralized?

2. Objectives of the Study

The goal of this study is to use Ivan Illich's idea of learning webs as a philosophical framework to critically analyse modern digital education. The particular goals are:

- To examine Ivan Illich's idea of learning webs as it was presented in Deschooling Society (1971), paying special attention to learner autonomy, peer interaction, decentralization, and skill sharing.

- To investigate the main components of digital education, such as MOOCs, EdTech platforms, Open Educational Resources (OER), hybrid learning models, AI-based learning systems, and online courses focused on certification.

- Finding areas of overlap (like accessibility and flexibility) and difference (like commercialization, credentialism, and algorithmic control) between digital education and Illich's educational philosophy.

- To assess if modern digital platforms actually support student autonomy, self-directed learning, and democratic access to information, or if they serve as a technical reproduction of institutional hierarchies.

By achieving these goals, the research hopes to offer a critical theoretical understanding of whether digital education is a reorganized form of institutional schooling or a realization of Illich's ideal.

3. Review of Literature

The debate surrounding institutional schooling, technology, and alternative learning systems has evolved significantly over the past five decades. The following review traces this intellectual development chronologically.

1. Illich (1971)

Ivan Illich, in *Deschooling Society*, critically argued that institutionalized schooling perpetuates inequality, credentialism, and dependency. He introduced the concept of "Learning Webs," decentralized networks enabling peer matching, skill exchange, and open access to learning resources. Illich laid the foundational theoretical framework for rethinking education beyond formal institutions.

2. Freire (1972)

Paulo Freire, in *Pedagogy of the Oppressed*, critiqued the "banking model" of education and advocated dialogical, participatory learning. Although not focused on digital education, Freire's emphasis on learner empowerment complements Illich's vision of non-hierarchical education.

3. Bowles and Gintis (1976)

In *Schooling in Capitalist America*, Bowles and Gintis argued that schools reproduce capitalist social relations. Their correspondence principle aligns with Illich's critique of institutional structures reinforcing inequality.

4. Apple (1982)

Michael Apple analyzed how educational institutions transmit dominant ideologies through the hidden curriculum. His work highlights how institutional control extends beyond curriculum into cultural reproduction.

5. Castells (1996)

Manuel Castells introduced the concept of the "Network Society," emphasizing how information technologies restructure social and economic systems. His work provides a theoretical foundation for understanding digital learning environments as networked systems.

6. Illich (Revisited Studies, 2000s)

Scholars in the early 2000s revisited Illich's ideas in light of internet expansion, suggesting that online learning environments could potentially embody Learning Webs through open connectivity.

7. Selwyn (2011)

Neil Selwyn critically examined digital education, arguing that technology often reinforces institutional and corporate power rather than democratizing education. His critique resonates with Illich's concerns about institutional dominance.

8. Siemens (2012)

George Siemens proposed the theory of Connectivism, which views learning as network formation in digital environments. Connectivism shares similarities with Illich's idea of decentralized knowledge networks.

9. MOOC Expansion Studies (2012–2015)

Research during the rise of MOOCs (e.g., studies by Daniel, 2012) emphasized accessibility and mass participation but also highlighted low completion rates and continued reliance on certification, questioning claims of democratization.

10. Nambissan (India, 2013)

Geetha B. Nambissan examined inequality in Indian education, focusing on marginalized communities. Her work highlights how structural inequities persist despite policy reforms, raising concerns about digital divide in online education.

11. Kumar (India, 2014)

Krishna Kumar analyzed the commercialization of education in India, arguing that market-oriented reforms reshape schooling priorities. His critique parallels concerns about EdTech corporatization.

12. Government of India – Digital India Initiative (2015)

Policy documents under the Digital India initiative emphasized technology integration in education, aiming at digital inclusion. However, implementation challenges exposed infrastructural disparities.

13. NEP 2020 (India)

The National Education Policy (2020) strongly advocates digital learning platforms such as SWAYAM and DIKSHA. While promoting accessibility and flexibility, it also institutionalizes digital certification frameworks.

14. Sriprakash et al. (2021)

Sriprakash and colleagues critiqued global education technology reforms, arguing that digital solutions often align with neoliberal governance rather than community empowerment.

15. Post-Pandemic Digital Education Studies (2020–2023)

Recent studies on COVID-19–induced online learning in India (e.g., Azim Premji University Report, 2021) reveal issues of digital divide, learning loss, and technological dependency. These findings question whether digital education truly decentralizes learning or reinforces systemic inequalities.

- **Synthesis of Literature**

Chronologically, the literature shows a transition from critiques of institutional schooling (Illich, Freire, Bowles & Gintis) to analyses of digital networks (Castells, Siemens) and contemporary evaluations of EdTech systems (Selwyn, Sriprakash). Indian scholarship highlights structural inequality and commercialization within the national context.

While early digital theorists suggested the internet could realize Illich's Learning Webs, contemporary research indicates that digital education often remains centralized, market-driven, and certification-oriented. Thus, a critical Illich re-examination of digital education is both relevant and necessary.

4. Theoretical Framework

Ivan Illich's educational theory, especially his groundbreaking book Deschooling Society (1971), serves as the foundation for this investigation. Illich presented an alternative concept of decentralized, learner-driven networks known as Learning Webs and made a harsh critique of institutionalized education. To evaluate modern digital education via an Illich lens, one must comprehend his main ideas.

4.1 The Main Ideas of Ivan Illich

1. Education Institutionalization

According to Illich, schooling is synonymous with education in contemporary civilizations. He claims that formal institutions that specify what constitutes legitimate knowledge, who is qualified to teach, and how education should be accredited have monopolized learning. Because of this institutionalization, education becomes a regimented, bureaucratic process that is controlled by hierarchical authority, age grading, standardized curriculum, and mandatory attendance.

Institutional education, according to Illich, breeds reliance. Students are conditioned to think that professional supervision and formal processes are the only ways to acquire information. As a result, education stops being a natural, lifelong human activity and instead becomes a commodity provided by institutions.

He also argued that social inequity is perpetuated by institutional education. Socioeconomic background frequently determines admission to elite schools, and education legitimizes social inequality by framing uneven results as merit-based accomplishments.

2. Curriculum Hidden

Illich's criticism suggested that schools teach implicit social values in addition to formal curriculum, even if he did not employ the phrase "hidden curriculum" as methodically as later researchers. These include accepting bureaucratic control, conformity, competitiveness, authority, and timeliness.

People are socialized into consumer roles and prepared for hierarchical workplaces via the hidden curriculum. Schools frequently emphasize passive acceptance of institutional authority rather than encouraging critical thinking or self-reliance. According to Illich, this process of implicit socialization keeps people dependent on institutions for the rest of their lives.

3. Credentialism

The credentialism culture, which holds that official degrees and certificates are essential markers of proficiency, was harshly condemned by Illich. In institutional systems, credentials rather than real abilities or knowledge are linked to social and professional prospects.

Instead of fostering meaningful learning, credentialism turns education into a contest for degrees. Additionally, it minimizes informal learning experiences and self-taught people. According to Illich, this is a significant distortion of human potential in which certification takes precedence over education.

Although they may seem novel in modern settings, digital badges, online certificates, and micro-credentials frequently reproduce the same credential-based hierarchy that Illich criticized.

4. Webs of Learning

Illich suggested Learning Webs open, decentralized networks that allow people to access materials, interact with peers, and share skills without being subject to bureaucratic control as an alternative to traditional educational institutions.

Learning Webs seek to:

- Encourage volunteer involvement

- Facilitate peer-to-peer communication

- Encourage self-directed education

- Distinguish education from institutional authority

Even in the 1970s, Illich saw technology as a potential instrument for building these networks, so long as it remained open and uncommercialized.

4.2 Four Learning Web Types

Illich determined that the establishment of a deschooled society required four interrelated elements.

1. **Educational Object Reference Services**

Open access to educational resources and materials is referred to in this component. Books, labs, libraries, museums, instruments, and other resources required to acquire particular abilities are examples of educational items.

Illich suggested a network or directory that was open to the public so that people could find information that was pertinent to their interests. Through these programs, students might pursue information on their own without having to sign up for official classes.

These days, this concept is similar to digital libraries, online repositories, YouTube tutorials, and Open Educational Resources (OER). Illich did stress, though, that access must not be restricted by institutional gatekeeping or economic exploitation.

2. **Exchange of Skills**

Establishing a system that allows people to declare their abilities and make them available to others is known as skill exchange. Anyone who wanted to master a particular talent might get in touch with a teacher directly.

This concept acknowledges that expertise exists across society and challenges the monopoly of credentialed instructors. Instead of being hierarchical, learning becomes community-based and reciprocal.

For instance, someone with carpentry skills might instruct others without a formal teaching degree. They could pick up another talent from someone else in exchange. This reciprocal interaction fosters equality, cooperation, and dignity.

This concept is somewhat reflected in digital platforms like community-based learning applications, coding forums, and peer-learning groups, but frequently inside for-profit frameworks.

3. Peer-Matching

Peer matching allows students with have interests to interact and work together. Instead of being assigned to groups based on age or in a classroom, people choose to join others who share their learning objectives.

Peer contact, in Illich's opinion, promotes more motivation and involvement. Learning stops being teacher-cantered and instead becomes dialogical. This framework supports constructivist and collaborative methods of knowledge generation.

Peer-matching systems are similar to online discussion boards, study groups, and cooperative digital communities. On the other hand, platform moderation and algorithmic management may restrict true autonomy in these settings.

4. Professional Educators as Facilitators

Illich did not support the complete eradication of teachers. Rather, he reinterpreted their function. In bureaucratic systems, educators should serve as mentors or facilitators rather than as commanding teachers.

Among their duties would be:
- Directing students to available resources
- Encouragement of critical thinking
- Promoting self-directed research
- Linking students to pertinent networks

This approach encourages collaboration in learning and lessens hierarchical power. Instead of controlling the curriculum and assessment, teachers take on the role of advisers and co-learners.

- **Conceptual Importance of the Structure**

Three widely held beliefs are contested by Illich's theoretical framework:
- That education is same to schooling
- That having a qualification equates to being competent
- That learning requires institutions

According to his Learning Webs paradigm, social ties are cooperative rather than hierarchical, knowledge flows freely, and learning is choice.

Approach offers a critical lens through which to evaluate whether online platforms actually decentralize learning or just digitize institutional control in the context of digital education. There are still issues with commercialization, monitoring, credentialism, and algorithmic governance, even if digital networks seem to architecturally resemble Learning Webs.

As a result, Illich's theory is still quite applicable when examining the benefits and drawbacks of modern digital learning platforms.

5. Concept of Digital Education

The utilization of electronic materials, internet-based platforms, and digital technology to support teaching and learning is known as "digital education." It includes open-access knowledge bases, interactive multimedia material, virtual classrooms, online education, and AI-powered systems. Digital education allows for flexible, remote, and frequently self-paced learning experiences, in contrast to traditional in-person instruction. But it also brings with it new commercialization, technical mediation, and governance systems.

The following elements make up the main aspects of digital education:

5.1 MOOCs, or massively open online courses

Large-scale online courses created to offer open access to educational information were known as Massive Open Online Courses (MOOCs) in 2012. MOOCs gained popularity thanks to platforms like Coursera, edX, and Udacity, which provide university-level courses to audiences throughout the world.

Important attributes:

- Open enrolment with low prerequisites

- extensive involvement (thousands of students)

- Discussion boards, tests, and video lectures

- Options for certification (typically pricey)

- Time-bound or self-paced structures

MOOCs were once hailed as democratizing higher education by enabling global access to esteemed academic courses. However, studies show that certification frequently necessitates money, and completion rates are generally poor. MOOCs encourage adaptability and a worldwide audience, but they may also strengthen platform dependence and credentialism.

5.2 Online Learning Platforms (Coursera, SWAYAM, BYJU'S, etc.)

Online platforms serve as organized digital ecosystems that include carefully chosen classes, tests, and certification routes.

- **The Coursera:** An international platform that offers degrees, specializations, and courses in collaboration with businesses and institutions. It blends paid certification methods with free content access.

- **India's SWAYAM:** Study Webs of Active Learning for Young Aspiring Minds, or SWAYAM, was introduced by the Indian government with the goal of offering free online courses that are in line with national curriculum requirements. It demonstrates India's commitment to digital inclusion at the policy level through programs like NEP 2020 and Digital India.

- **BYJU'S**: A private EdTech business that focuses on competitive exams and schoolchildren by providing interactive video-based learning. It stands for the commercialization of online learning.

Features of Internet-Based Platforms:

- Curriculum that is structured
- Mechanisms for certification and assessment
- Freemium or subscription-based business models
- Data-driven monitoring of students' development
- These platforms improve scalability and accessibility, yet they frequently function inside frameworks that are determined by the market.

5.3 Learning on Social Media

Social media sites like LinkedIn, Facebook, Instagram, Telegram, and YouTube have evolved into unofficial learning environments. Peer communities, subject matter experts, and educational influencers exchange lectures, tutorials, and informative materials.

Characteristics:

- User-generated and informal material
- Interaction between peers via discussion threads and comments
- Quick information sharing
- Accessible without charge (with automated curation)

YouTube tutorials, for example, enable learners to acquire skills ranging from academic subjects to vocational competencies. However, content quality varies, and algorithms shape visibility and access to information. Thus, social media learning offers decentralization but remains governed by corporate platform structures.

5.4 AI-Based Learning

Artificial Intelligence (AI) has significantly transformed digital education through personalized and adaptive learning systems.

Examples:
- Intelligent tutoring systems
- Chatbots for academic support
- Adaptive testing platforms
- Automated grading systems

AI-based learning systems analyze learner data to customize content according to performance levels, learning pace, and preferences. This personalization enhances engagement and efficiency. However, it also raises concerns about data surveillance, algorithmic bias, and reduced human interaction.

From a critical perspective, AI may shift authority from teachers to algorithms, introducing new forms of technological governance.

5.5 Open Educational Resources (OER)

Open Educational Resources (OER) are freely accessible teaching and learning materials that can be reused, revised, and redistributed without cost. These include open textbooks, lecture notes, research articles, multimedia content, and digital repositories.

Characteristics:
- Free access

- Open licensing (e.g., Creative Commons)
- Adaptability and redistribution rights
- Global knowledge sharing

OER initiatives aim to democratize education by removing financial barriers. They align closely with the principle of open knowledge and potentially reflect Illich's idea of reference services to educational objects. However, sustainability, funding, and digital access remain challenges.

- **Analytical Reflection**

Digital education represents a complex ecosystem combining openness and control, flexibility and standardization, autonomy and surveillance. While MOOCs and OER promote accessibility, commercial platforms and AI systems introduce new institutional frameworks. Social media enables peer interaction but remains algorithmically governed.

Thus, digital education is not inherently decentralized; rather, it exists within a dynamic interplay of technological innovation, market forces, and policy interventions. This complexity necessitates a critical theoretical evaluation, particularly through frameworks such as Illich's Learning Webs.

6. Comparative Analysis: Learning Webs vs. Digital Education

To critically evaluate whether contemporary digital education reflects Ivan Illich's vision, it is necessary to compare his conceptual model of **Learning Webs** with the operational realities of digital platforms.

- **Comparative Table**

Illich's Idea	Digital Reality	Similarity / Difference
Decentralized learning	Platform-controlled systems (Coursera, SWAYAM, BYJU'S) governed by institutional or corporate structures	**Partial** – Access is widened, but control remains centralized
Peer matching	Online discussion forums, social media groups, collaborative tools	**Limited** – Interaction exists, but often moderated and algorithmically filtered
Skill exchange	Structured courses with paid certification and standardized evaluation	**Commercialized** – Skills linked to credentials and monetization
Learning	AI-driven recommendations, adaptive	**Restricted** – Personalization

freedom	algorithms, data tracking	exists, but autonomy is shaped by algorithmic control

Critical Analysis

1. Decentralized Learning vs. Platform Control

Illich envisioned a system free from institutional monopolies, where learners could independently access resources and networks. Digital education appears decentralized because it removes geographical barriers and enables remote access. However, most platforms are governed by centralized authorities—universities, corporations, or government bodies.

The architecture of MOOCs and EdTech platforms determines curriculum design, content visibility, and certification standards. Thus, while physical centralization is reduced, digital centralization persists. Control shifts from school buildings to platform infrastructures.

2. Peer Matching vs. Moderated Interaction

Illich's peer-matching model emphasized voluntary association among learners based on shared interests, free from hierarchical grouping. Digital platforms provide discussion forums, Telegram groups, Reddit communities, and social media spaces where learners can interact.

However, such interactions are often:

- Moderated by platform rules

- Influenced by engagement algorithms

- Structured within course timelines

Peer communication exists, but it remains embedded within institutional or corporate ecosystems. The autonomy Illich imagined is therefore limited.

3. Skill Exchange vs. Commercialized Certification

Illich's skill exchange model rejected credential dependency. Skills were to be shared voluntarily, independent of formal qualifications. In contrast, digital education strongly links skill acquisition to certification.

Online platforms monetize:

- Course enrolment
- Certificates
- Specializations
- Micro-credentials

Learning is frequently pursued for employability and digital badges rather than intrinsic intellectual growth. This represents a continuation—if not intensification—of credentialism in digital form.

4. Learning Freedom vs. Algorithmic Governance

Illich advocated self-directed, voluntary learning paths. Digital education promotes flexibility through self-paced modules and personalized dashboards. However, AI-driven systems track user behaviour, recommend content, and shape learning trajectories.

Algorithms influence:

- Which courses are promoted
- What content appears in feeds
- How performance is evaluated

While personalization enhances efficiency, it also introduces subtle forms of control. Learner autonomy becomes technologically mediated rather than entirely self-determined.

- **Overall Critical Reflection**

Digital education reflects **structural similarities** to Illich's Learning Webs:

- Network-based connectivity
- Access to educational resources
- Potential for peer collaboration
- Flexibility in learning pace

However, fundamental differences remain:

- Institutional control is replaced by platform governance
- Market forces drive educational delivery
- Credentialism persists in digital formats
- Surveillance and data analytics regulate participation

Thus, digital education represents a **restructured institutional model rather than a fully deschooled system**. It digitizes schooling but does not entirely dismantle its hierarchical logic.

From an Illich perspective, contemporary digital platforms embody the *form* of Learning Webs but not fully their *spirit*. True decentralization would require open governance, reduced commercialization, and genuine learner autonomy beyond algorithmic mediation.

7. Critical Discussion

The relationship between Ivan Illich's concept of Learning Webs and contemporary digital education is complex and dialectical. While digital platforms appear to embody several elements of decentralization and openness, they simultaneously reproduce structural inequalities and institutional logics in new technological forms. This section critically examines both sides of the debate.

- **Arguments Supporting Alignment**

1. Availability

The extraordinary growth of educational access is one of the most compelling reasons in Favor of alignment. No matter where they live, students may access lectures, research materials, and skill-based training through digital platforms. The physical obstacles of conventional education have been lessened by MOOCs, OER repositories, and government programs like SWAYAM.

From an Illichian standpoint, this is similar to his concept of "reference services to educational objects," in which people have unrestricted access to educational resources without having to enrol in a formal school. Thus, his goal of making information freely accessible is partially realized through digital schooling.

2. Knowledge Democratization

Global engagement in the creation and sharing of knowledge has been made possible by digital education. Content from esteemed universities is accessible to students from a wide range of socioeconomic situations. People may participate in debates, exchange knowledge, and learn together through social media platforms and open forums.

Illich's focus on non-hierarchical learning networks is consistent with this horizontal interaction. Knowledge increasingly flows throughout digital networks rather than being restricted to classrooms or prestigious institutions. This democratization, in theory, undermines established academic monopolies.

3.   Open-Source Learning

The Open Educational Resources (OER) movement reflects Illich's ideal of freely accessible educational materials. Creative Commons licensing, open textbooks, and collaborative knowledge platforms such as Wikipedia support public ownership of knowledge.

Such initiatives reduce dependence on proprietary textbooks and institutional gatekeeping. When resources are openly shared and adaptable, they mirror Illich's call for dismantling monopolies over learning materials.

4.   Self-Paced Learning

Digital platforms allow learners to progress according to their own schedules and abilities. Unlike traditional classroom settings bound by rigid timetables, online courses offer flexibility and autonomy.

This aligns with Illich's belief that learning should be voluntary and self-directed rather than compulsory and standardized. Self-paced modules empower learners to assume responsibility for their educational journeys.

- **Arguments Against Alignment**

Despite these similarities, several structural contradictions challenge the claim that digital education fulfils Illich's vision.

1. Commercialization

Most digital education platforms operate within profit-oriented frameworks. Paid certifications, subscription models, premium content, and corporate partnerships dominate the EdTech ecosystem. Learning is commodified and packaged as a market product.

Illich opposed the treatment of education as a consumable service. The commercialization of digital learning represents a continuation—and intensification—of institutional dependency rather than liberation from it.

2. Platform Monopoly

Although digital education appears decentralized, control is concentrated in a few dominant platforms. Global corporations and state-sponsored portals regulate content, algorithms, assessment systems, and certification standards.

This platform monopoly replaces traditional school bureaucracy with technological governance. Decision-making power remains centralized, contradicting Illich's call for genuinely decentralized networks.

3. Digital Divide

Accessibility remains uneven. Socio-economic disparities, lack of devices, poor internet connectivity, and limited digital literacy restrict participation for marginalized communities. Studies conducted during the COVID-19 pandemic in India revealed significant learning loss due to unequal digital access.

Illich's Learning Webs required universal and equitable access to resources. The persistence of the digital divide undermines claims of democratization.

4. Credential Obsession

Digital badges, certificates, and micro-credentials continue the culture of credentialism. Many learners enrol in courses primarily to enhance employability rather than pursue intrinsic intellectual growth.

This mirrors the institutional emphasis on diplomas that Illich criticized. Certification remains central to digital learning economies, reinforcing competitive hierarchies.

5. Surveillance Capitalism

AI-driven platforms collect and analyse user data to personalize learning experiences and optimize engagement. While personalization enhances efficiency, it also introduces surveillance mechanisms. Learner behaviour, preferences, and performance metrics are tracked and monetized.

This data-driven governance creates new forms of technological control, shifting authority from educators to algorithms. In this sense, digital education may represent not decentralization, but a transformation of institutional power into digital surveillance structures.

● **Overall Critical Reflection**

Digital education embodies a paradox. Structurally, it resembles Illich's Learning Webs through connectivity, flexibility, and expanded access. Ideologically and economically, however, it remains embedded within market logics, centralized governance, and credential-based systems.

Thus, digital education does not fully realize Illich's radical vision of a deschooled society. Instead, it represents a hybrid formation—partially decentralized in access, yet deeply institutionalized in control.

The critical challenge, therefore, is not whether digital education aligns with Illich's ideas in form, but whether it can transform its structural foundations to prioritize autonomy, equity, and community-cantered learning over commercialization and algorithmic governance.

8. Findings

Based on the theoretical analysis of Ivan Illich's concept of Learning Webs and the critical examination of contemporary digital education systems, the study presents the following key findings:

1. Digital Education Partially Reflects Learning Webs

Digital platforms structurally resemble Illich's concept of Learning Webs by providing network-based access to educational resources, enabling global connectivity, and supporting flexible learning environments. Open Educational Resources (OER), MOOCs, and social media learning spaces demonstrate the potential for decentralized access to knowledge. However, this resemblance is primarily structural rather than philosophical, as deeper systemic autonomy remains constrained.

2. Digital Education Remains Institutionalized

Despite appearing decentralized, digital education continues to operate within institutional frameworks. Universities, corporations, and state bodies regulate curriculum design, assessment standards, certification processes, and platform governance. The physical classroom has been replaced by digital infrastructure, but hierarchical structures and formalized learning pathways persist.

3. EdTech Promotes Market-Based Schooling

The expansion of EdTech has commercialized learning through subscription models, paid certifications, premium content, and corporate partnerships. Education is increasingly framed as an economic investment tied to employability and productivity. This market-oriented logic reinforces credential dependency and consumer behaviour, which contradicts Illich's critique of schooling as a commodified service.

4. True Peer Learning Remains Limited

While discussion forums, social media groups, and collaborative tools exist, peer interaction is often secondary to instructor-led or content-driven models. Platform moderation, course timelines, and algorithmic filtering restrict spontaneous, voluntary peer-matching. Thus, genuine reciprocal skill exchange, as envisioned by Illich, remains underdeveloped.

5. Algorithmic Control Replaces Institutional Control

A significant transformation observed is the shift from bureaucratic authority to algorithmic governance. Artificial intelligence systems personalize learning paths, recommend content, monitor engagement, and evaluate performance. Although these mechanisms enhance efficiency, they also introduce data surveillance and technological dependency. Institutional authority is not eliminated but reconfigured into digital control systems.

6. Democratization is Uneven Due to the Digital Divide

Although digital education expands theoretical access, socio-economic inequalities in device ownership, connectivity, and digital literacy limit equitable participation. Consequently, digital learning environments risk reproducing existing social hierarchies rather than dismantling them.

- **Overall Interpretation**

The findings suggest that digital education represents a technologically advanced extension of institutional schooling rather than a complete realization of Illich's deschooled society. While elements of Learning Webs are visible, the dominance of commercialization, credentialism, and algorithmic governance prevents full alignment with Illich's radical vision of decentralized and autonomous learning networks.

9. Implications for Policy (Linking with NEP 2020)

The findings of this study have significant implications for educational policy, particularly in the Indian context under the framework of the **National Education Policy (NEP) 2020**. While NEP 2020 strongly promotes digital integration, technology-enabled learning, and platforms such as SWAYAM and DIKSHA, it is essential to ensure that digital expansion aligns with principles of equity, autonomy, and decentralization. Drawing from an Illich perspective, the following policy implications are proposed:

1. Promote Open-Source Learning Ecosystems

NEP 2020 emphasizes digital repositories and e-learning platforms; however, policy must prioritize **open-source, non-commercial educational ecosystems**. Government-supported platforms should encourage free access, Creative Commons licensing, and community-generated content.

Rather than relying heavily on private EdTech corporations, public policy should:
- Strengthen OER initiatives

- Support open digital libraries
- Encourage collaborative content development by educators
- Ensure transparency in platform governance

Such measures would align more closely with Illich's idea of "reference services to educational objects" and reduce monopolistic control over knowledge.

2. Reduce Over-Reliance on Certification

NEP 2020 promotes multidisciplinary education and skill development but still operates within a certification-driven framework. Policymakers should reconsider the excessive emphasis on degrees, digital badges, and micro-credentials as primary indicators of competence.

Reforms may include:

- Recognition of prior experiential learning

- Portfolio-based assessment models

- Skill validation through community projects

- Reduced dependency on standardized testing

Moving beyond credential obsession would shift focus from formal validation to meaningful learning, thereby addressing Illich's critique of credentialism.

3. Encourage Community-Based Peer Networks

To embody the spirit of Learning Webs, digital education policies must foster **peer-learning communities** rather than solely instructor-centered content delivery. NEP 2020 encourages collaborative and experiential learning; this can be operationalized through:

- Local digital learning hubs
- Community knowledge-sharing platforms
- Peer mentorship programs
- Skill-exchange directories at institutional and district levels

By promoting voluntary peer matching and reciprocal skill-sharing, digital education can become more participatory and less hierarchical.

4. Ensure Digital Equity

One of the most pressing challenges in India is the digital divide. NEP 2020 acknowledges disparities in access to devices and connectivity, but implementation requires sustained investment and monitoring.

Policy actions should include:

- Affordable internet access in rural and marginalized areas
- Public digital infrastructure in schools and community centres
- Digital literacy programs for students and teachers
- Assistive technologies for learners with disabilities

Without digital equity, the promise of democratization remains limited. Ensuring universal access is fundamental to achieving genuine decentralization of knowledge.

- **Concluding Policy Reflection**

While NEP 2020 provides a progressive framework for integrating technology into education, its transformative potential depends on how digitalization is implemented. If guided by market forces and certification priorities, digital education may reinforce institutional hierarchies. However, if grounded in open access, peer collaboration, and equity, it can move closer to the decentralized and learner-cantered model envisioned by Ivan Illich.

Thus, the policy challenge is not merely technological expansion but the creation of a **human-cantered, democratic digital learning ecosystem** that prioritizes autonomy, community participation, and social justice.

10. Conclusion

Ivan Illich's fundamental critique of institutionalized education must be revisited in light of the 21st century's explosive growth of digital education. Illich questioned the formal institutions' monopoly on education in Deschooling Society (1971) and suggested decentralized "Learning Webs" that would allow for resource-based, peer-driven, and voluntary education. Over fifty years later, digital technologies seem to provide the infrastructure needed to make such networks a reality. Access to information has changed in previously unheard-of ways because to online platforms, open educational resources, AI-driven technologies, and global connectedness**.**

This study shows that although digital education shares structural similarities with Illich's Learning Webs, it does not completely capture their spirit of emancipation. Although digital platforms provide accessibility and flexibility, they are nevertheless integrated within corporate, institutional, and algorithmic control mechanisms. Authority has not vanished; rather, it has moved from educational bureaucracies to data-driven algorithms and platform governance. Credentialism endures in the form of micro-credentials and digital certificates, which support ideas of competence based on the market. Furthermore, the democratizing potential of online education is still constrained by disparities in digital literacy, connection, and device availability.

Digital schooling is therefore paradoxical. While it concurrently reproduces commercialization, surveillance, and centralized systems, it also holds transformational potential for decentralization, peer cooperation, and open knowledge sharing. According to Illich theory, modern digital learning platforms are still limited by institutional logic even though they resemble Learning Webs.

Rethinking digital education beyond market expansion and technical efficiency is necessary for the future. Ethical governance, community involvement, autonomy, and fair access must be given top priority in a human-cantered digital learning environment. Important steps toward this change include open-source platforms, peer-driven networks, less reliance on credentials, and regulations guaranteeing digital fairness.

In the digital age, revisiting Illich is not only a theoretical exercise; it is very essential. His vision challenges educators, legislators, and technologists to develop truly democratic, decentralized, and liberated forms of learning in the twenty-first century rather than merely digitizing education.

11. Suggestions for Future Research

While the present study offers a theoretical and analytical examination of digital education through an Illich lens, further empirical and interdisciplinary research is necessary to deepen understanding of its practical implications. The following areas are recommended for future investigation:

1. Empirical Study on Student Autonomy in MOOCs

Future research may conduct qualitative or mixed-method studies to examine the extent to which MOOCs genuinely promote learner autonomy. Surveys, interviews, and learning analytics can be used to explore:

- Decision-making freedom in course selection

- Self-regulation and motivation levels
- Dependency on structured guidance
- Perceptions of autonomy versus algorithmic influence

Such empirical evidence would help assess whether MOOCs reflect Illich's principle of voluntary, self-directed learning or whether autonomy remains limited within structured digital environments.

2. Comparative Study of SWAYAM and Coursera

A comparative analysis between India's government-supported platform **SWAYAM** and global private platforms like **Coursera** would provide valuable insights into institutional versus corporate models of digital education. This study could examine:

- Governance structures
- Accessibility and affordability
- Certification frameworks
- Pedagogical approaches
- Inclusivity and digital equity measures

Such research would contribute to policy discourse by identifying which model better aligns with decentralized and democratic learning principles.

3. Illich and Artificial Intelligence in Education

Artificial Intelligence represents a significant shift in educational governance. Future research could explore the compatibility between Illich's philosophy and AI-based learning systems. Key questions may include:

- Does AI enhance or limit learner autonomy?
- How does data surveillance impact freedom of learning?
- Can AI be designed ethically to support decentralized education?

A philosophical and critical-technology analysis would help understand whether AI serves as a tool for empowerment or as a mechanism of digital control.

4. Community-Based Digital Learning Models

There is scope for action research and case studies focusing on community-cantered digital learning initiatives, particularly in rural and marginalized contexts. Such research may investigate:

- Peer-led digital literacy programs
- Local knowledge-sharing networks
- Hybrid community learning hubs
- Integration of traditional knowledge with digital platforms

These models could offer practical pathways toward realizing Illich's vision of Learning Webs in localized, participatory forms.

- **Concluding Note on Future Directions**

Future research should move beyond purely technological evaluation and engage with broader questions of equity, governance, autonomy, and ethics. Interdisciplinary studies combining sociology, philosophy of education, digital policy analysis, and empirical fieldwork will be essential in determining whether digital education can evolve from a digitized extension of schooling into a genuinely decentralized and democratic learning ecosystem.

References

- Apple, M. W. (1982). *Education and power*. Routledge & Kegan Paul.

- Azim Premji University. (2021). *Loss of learning during the pandemic*. Azim Premji University Press.

- Banerjee, A. V., & Duflo, E. (2011). *Poor economics: A radical rethinking of the way to fight global poverty*. PublicAffairs.

- Bowles, S., & Gintis, H. (1976). *Schooling in capitalist America: Educational reform and the contradictions of economic life*. Basic Books.

- Castells, M. (1996). *The rise of the network society*. Blackwell.

- Daniel, J. (2012). Making sense of MOOCs: Musings in a maze of myth, paradox and possibility. *Journal of Interactive Media in Education, 2012*(3), 1–20. https://doi.org/10.5334/2012-18

- Freire, P. (1972). *Pedagogy of the oppressed*. Penguin.

- Government of India, Ministry of Education. (2015). *Digital India initiative: Vision and objectives*. Government of India.

- Government of India, Ministry of Education. (2020). *National education policy 2020*. Government of India.

- Illich, I. (1971). *Deschooling society*. Harper & Row.

- Jayaram, N. (2004). Higher education in India: Massification and change. *Indian Journal of Social Work, 65*(4), 501–516.

- Kingdon, G. G. (2007). The progress of school education in India. *Oxford Review of Economic Policy, 23*(2), 168–195.

- Kingdon, G. G. (2020). The private schooling phenomenon in India: A review. *IZA Discussion Paper Series*.

- Kumar, K. (2005). *Political agenda of education: A study of colonialist and nationalist ideas*. Sage Publications.

- Nambissan, G. B. (2013). Between exclusion and inclusion: The challenge of education in India. *Indian Journal of Social Development, 13*(2), 1–18.

- Pratham. (2022). *Annual status of education report (ASER) 2022*. Pratham Education Foundation.

- Sadgopal, A. (2016). Education for social transformation: Critical perspectives on privatization and policy reforms in India. *Social Scientist, 44*(5–6), 3–18.

- Selwyn, N. (2016). *Education and technology: Key issues and debates* (2nd ed.). Routledge.

- Sen, A. (1999). *Development as freedom*. Oxford University Press.

- Sen, A. (2005). Human capabilities and education. In *The idea of justice* (pp. xx–xx). Oxford University Press.

- Siemens, G. (2012). Learning analytics: Envisioning a research discipline and a domain of practice. In *Proceedings of the 2nd International Conference on Learning Analytics and Knowledge* (pp. 4–8). ACM.

- Sriprakash, A., Tikly, L., & Walker, S. (2021). The erasures of racism in education and international development: Re-reading the 'global learning crisis'. *Compare: A Journal of Comparative and International Education, 51*(5), 676–692.

- Tilak, J. B. G. (2018). Education and development in India: Critical issues in public policy and development. *Journal of Human Development and Capabilities, 19*(3), 1–18.

- Velaskar, P. (2004). Caste, gender and education: Dalit girls in Indian schools. *Economic and Political Weekly, 39*(39), 4313–4320.

- Wiley, D., Bliss, T. J., & McEwen, M. (2014). Open educational resources: A review of the literature. In J. M. Spector et al. (Eds.), *Handbook of research on educational communications and technology* (pp. 781–789). Springer.