Open Access **Environmental Education and Sustainable Development**

2025, 13(4): 157-171 DOI: 10.30473/EE.2025.72436.2781

REVIEW ARTICLE Empowering Growth: A Systematic Review of Education's Role in Enhancing Human Capital and Advancing National Development

*Monireh Mokhtarzadeh¹, Mohtasham Mokhtarzadeh²

1. Ph.D. Student, Applied Languages and Intercultural Studies, Faculty of Humanities and Social Sciences, Dublin City University, Dublin, Ireland 2. M.A. Student, English Language Teaching, Faculty of Humanities and Social Sciences, Payame Noor University, Tehran, Iran

Correspondence: Monireh Mokhtarzadeh Email: monireh.mokhtarzadeh2@mail.dcu.ie

Received: 9.Dec.2024 Received in revised form: 24.Feb.2025 Accepted: 14.Jun.2025

How to cite:

Mokhtarzadeh, M., & Mokhtarzadeh, M., (2025). Empowering Growth: A Systematic Review of Education's Role in Enhancing Human Capital and Advancing National Development. Journal of Environmental Education and Sustainable Development, 13(4), 157-171. (DOI: 10.30473/EE.2025.72436.2781)

ABSTRACT

Education plays a pivotal role in shaping societal development, influencing economic growth, social stability, governance, and individual well-being. By enhancing skills, abilities, and individual competencies, education contributes to the accumulation of human capital at both the individual and societal levels. It expands personal freedoms by increasing capabilities, which in turn fosters democratic participation and social resilience. There are two primary theoretical approaches to understanding education's impact on human capital: the productivity approach and the capability approach. While the productivity approach views education as a means to enhance workforce productivity, the capability approach emphasizes broader cultural and social advancements, seeing increased productivity as an intermediate rather than an ultimate goal. Adopting a systematic qualitative literature review (SQLR) methodology, this study synthesizes peer-reviewed journal articles, policy reports, and scholarly books from reputable sources such as Google Scholar, JSTOR, Scopus, and institutional reports from UNESCO and the World Bank. A thematic analysis was conducted following Braun and Clarke's (2006) six-step framework, identifying key themes such as education's role in economic mobility, governance, and global competitiveness. Findings highlight that nations with well-designed educational systems, such as Japan and China, have achieved sustainable economic growth by leveraging high-tech and knowledge-based production. The study concludes that an appropriate educational system is a primary prerequisite for any country's development, as it determines its position in the global economy. This review underscores the importance of contextspecific educational policies that align with broader societal needs. It offers insights for policymakers seeking to bridge the development gap through strategic investments in education.

KEYWORDS

Education, Sustainable Development, Human Capital, Developmental Education.

Copyright © 2025 The Authors. Published by Payame Noor University

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International license (<u>https://creativecommons.org/licenses/by-nc/4.0/</u>). Non-commercial uses of the work are permitted, provided the original work is properly cited.

آموزش محيطزيست و توسعه پايدار

سال سیزدهم، شماره چهارم، تابستان ۱۴۰۴ (۱۷۷–۱۷۱) DOI: 10.30473/EE.2025.72436.2781

«مقاله مروری»

توانمندسازی رشد: یک بررسی نظاممند از نقش آموزش در ارتقای سرمایه انسانی و پیشرفت توسعه ملی

أموزش نقش اساسی در شکل دهی به توسعه اجتماعی ایفا می کند و بر رشد اقتصادی، ثبات اجتماعی،

حکمرانی و رفاه فردی تأثیر می گذارد. با ارتقاء مهارتها، تواناییها و شایستگیهای فردی، آموزش به

انباشت سرمایه انسانی در سطح فردی و اجتماعی کمک میکند. این امر با افزایش قابلیتهای افراد،

آزادیهای شخصی را گسترش داده و مشارکت دموکراتیک و تابآوری اجتماعی را تقویت مینماید.

دو رویکرد نظری اصلی برای درک تأثیر آموزش بر سرمایه انسانی وجود دارد: رویکرد بهرموری و رویکرد قابلیتی. درحالیکه رویکرد بهرموری، آموزش را ابزاری برای افزایش بهرموری نیروی کار

میداند، رویکرد قابلیتی بر پیشرفتهای فرهنگی و اجتماعی وسیعتر تأکید دارد و بهرموری را نتیجهای

میانی، نه هدف نهایی، تلقی می کند. این مطالعه با بهره گیری از روش شناسی مرور نظاممند کیفی منابع

(SQLR) به تلفیق مقالات علمی داوریشده، گزارشهای سیاستی و کتابهای دانشگاهی از منابع معتبری مانند گوگل اسکالر، Scopus ،JSTOR و گزارشهای نهادهایی چون یونسکو و بانک جهانی

پرداخته است. تحلیل تماتیک بر اساس چارچوب ششمرحله ای براون و کلارک (۲۰۰۶) انجام شد که

موضوعات کلیدی همچون نقش آموزش در تحرک اقتصادی، حکمرانی و رقابتپذیری جهانی را

شناسایی کرد. یافتهها نشان میدهد کشورهایی با نظامهای آموزشی مطلوب، مانند ژاپن و چین، با استفاده از تولیدات دانش بنیان و فناوری پیشرفته، به رشد اقتصادی پایدار دستیافتهاند. این مطالعه نتیجه می گیرد که برخورداری از یک نظام آموزشی مناسب، پیش شرط اصلی توسعه هر کشور است،

چراکه جایگاه آن را در اقتصاد جهانی تعیین میکند. این مرور بر اهمیت سیاست گذاری آموزشی متناسب

با بافت اجتماعی و نیازهای گستردهتر جامعه تأکید دارد و بینشهایی را برای سیاستگذاران جهت پر

کردن شکاف توسعهای از طریق سرمایه گذاریهای راهبردی در آموزش ارائه میدهد.

جكىدە

*منیره مختارزاده' ២ ، محتشم مختارزاده ٔ ២

۱. دانشجوی دکتری زبانهای کاربردی و مطالعات بین فرهنگی، دانشکده علوم انسانی و اجتماعی، دانشگاه شهر دوبلین، دوبلین، ایرلند ۲. دانشجوی کارشناسی ارشد آموزش زبان انگلیسی، دانشکده علوم انسانی، پیام نور، تهران، ایران

نویسنده مسئول: منیره مختارزاده رایانامه: monireh.mokhtarzadeh2@mail.dcu.ie

> تاریخ دریافت: ۱۴۰۳/۰۹/۱۹ تاریخ بازنگری: ۱۴۰۳/۱۲/۰۶ تاریخ پذیرش: ۱۴۰۴/۰۳/۲۴

استناد به این مقاله:

مختارزاده، منیره. و مختارزاده، محتشم. (۱۴۰۴). توانمندسازی رشد: یک بررسی نظاممند از نقش آموزش در ارتقای سرمایه انسانی و پیشرفت توسعه ملی، فصلنامه علمی آموزش محیطزیست و توسعه پایدار، ۱۲(۴)، ۱۵۷–۱۷۱. (DOI: 10.30473/EE.2025.72436.2781)

واژههای کلیدی

آموزش، توسعه پایدار، سرمایه انسانی، آموزش توسعهگرا.

حق انتشار این مستند، متعلق به نویسندگان أن است. ۱۴۰۴ ©. ناشر این مقاله، دانشگاه پیام نور است.

این مقاله تحت گواهی زیر منتشرشده و هر نوع استفاده غیرتجاری از آن مشروط بر استناد صحیح به مقاله و با رعایت شرایط مندرج در آدرس زیر مجاز است. (/Creative Commons Attribution-NonCommercial 4.0 International license (https://creativecommons.org/licenses/by-nc/4.0



Introduction

One of the key dimensions in designing public policies for economic growth and human development is addressing education. Education impacts economic growth and development through various mechanisms. Some view the most significant mechanism of education's effect on economic growth as its role in enhancing research and development, technological advancement, and innovation (Hanushek & Woessmann, 2020). Others argue that the most important mechanism lies in the external effects of education, whereby individuals in an educated society, by living and working alongside one another, enhance each other's work and social skills (Aghion et al., 2019). Many scholars also regard education as a driver of human capital formation, examining its influence on economic growth through this lens. This focus has grown especially prominent with the rise of endogenous growth models in the 1990s (Lucas, 2015).

Moreover, knowledge has become a key determinant in the modern international division of labor. It can be confidently claimed that the difference between developed and second-world nations lies more in knowledge production than in industrial or agricultural output (Altbach & De Wit, 2018). After World War II, former industrialized nations shifted towards high-tech goods and services. outsourcing the production of industrial and consumer goods to developing countries, particularly in East Asia (Siyami, 2012; Fagerberg, 2018). This review article synthesizes existing research on education and development, with a particular focus on its and theoretical foundations practical implications for human capital formation and sustainable progress.

Education and Sustainable Development

Education plays a crucial role in fostering human capital, promoting social mobility, and sustainable development. Various approaches have been proposed to explain the relationship between education and societal progress, including the productivity approach and the capability approach (Sen, 1999). The productivity approach views education as a means to increase labor productivity, which, in turn, contributes to economic growth (Hanushek & Woessmann, 2020). Conversely, the capability approach, as conceptualized by Amartya Sen, emphasizes the role of education in expanding individual freedoms and capabilities beyond economic outcomes (Nussbaum, 2011).

The role of education in sustainable development is further emphasized in the United Nations' Sustainable Development Goal 4 (SDG 4), which advocates for inclusive and equitable quality education to promote lifelong learning opportunities for all (UNESCO, 2016). However, critiques suggest that SDG 4 often overlooks local contextual challenges, particularly in crisis-prone regions (Tikly, 2019; Robertson, 2022).

Comparative studies of countries such as Japan and China demonstrate that robust educational systems have been instrumental in their economic transformations. In Japan, post-war educational reforms prioritized vocational technological and training, aligning with the country's industrial needs (Marginson, 2016). Similarly, China's investment in human capital has led to significant advancements in high-tech industries and global economic positioning (Liu & Dunne, 2020). In developing countries, challenges such as economic instability, political unrest, and resource limitations hinder the effectiveness of education systems (Pritchett, 2014; Glewwe & Muralidharan, 2016). The resilience of educators and institutions is a key factor in sustaining educational progress in such contexts (Gu, 2014).

Building on these insights, this review seeks to examine the role of education in fostering human capital and national development through a structured synthesis of existing literature. Given the diverse theoretical perspectives and empirical studies education's impact, a systematic on methodological approach is essential to critically analyze and compare findings from various contexts. The following section outlines the methodology employed in this review, detailing the criteria for article selection, data analysis strategies, and thematic categorization. By adopting a rigorous approach, this study aims to provide a comprehensive understanding of how education systems contribute to national advancement, particularly in the face of socioeconomic and political challenges.

Research Methodology

This study employs a systematic review methodology to synthesize existing research on the relationship between education, human capital development, and economic progression. Articles were selected from peerreviewed journals published between 2014 and 2024, ensuring a contemporary analysis of educational trends (Table 1).

The selection process followed these steps:

Database Search:

Articles were retrieved from Scopus, Web of Science, and Google Scholar using keywords such as "education and human capital," "capability approach," "education and economic growth," and "education in developing countries."

Inclusion Criteria:

- Published between 2014 and 2024
- Empirical or theoretical studies focusing on education, economic growth, and development
- Studies that discuss educational policies, challenges, and reforms

Exclusion Criteria:

- Studies with outdated policy discussions
- Articles focusing solely on developed countries without comparative analysis

A 41 ()/				
Author(s)/ Organization	Year	Title/ Focus	Key Findings	
Sen	1999	Development as Freedom	Introduced the capability approach, linking education to personal and social freedom.	
Robeyns	2006	The Capability Approach: A Theoretical Survey	Expanded on Sen's theory, applying it to education policy.	
Nussbaum	2011	Creating Capabilities	Advocated for education as a means to enhance human dignity and social justice.	
Pritchett	2014	The Rebirth of Education	Argued that schooling does not necessarily translate into learning, particularly in developing countries.	
Gu	2014	Resilient Teachers, Resilient Schools	Focused on teacher resilience and coping mechanisms in crises.	
Marginson	2016	Higher Education and the Global Knowledge Economy	Analyzed Japan's post-war educational reforms and their role in economic transformation.	
Glewwe & Muralidharan	2016	Improving Education Outcomes in Developing Countries	Identified effective policies for improving teacher quality and student performance.	
Tikly	2019	Education for Sustainable Development in the Global South	Criticized SDG 4 for overlooking contextual challenges in low-income countries.	
Hanushek & Woessmann	2020	The Role of Education in Economic Growth	Argued that Higher cognitive skills lead to long-term economic growth.	
Liu & Dunne	2020	Education, Innovation, and China's Rise	Highlighted China's investment in human capital for technological advancements.	
UNESCO	2020	Global Education Monitoring Report: Inclusion and Education	Identified barriers to inclusive education and recommended strategies for equitable learning.	
UNESCO	2021	Reimagining Our Futures Together: A New Social Contract for Education	Called for rethinking education to address global challenges such as climate change and inequality.	
Robertson	2022	Global Education Policy and Inequality	Examined how international education policies can reinforce social inequalities.	

Table 1. Key Articles and Reports Used in the Review (2014–2024)

Author(s)/ Organization	Year	Title/ Focus	Key Findings
UNESCO	2022	Education in a Post-COVID World	Explored the impact of the pandemic on learning and the digital divide in education.
UNESCO	2023	Education Finance Watch	Analyzed declining education investment, particularly in low-income countries.
UNESCO	2024	Global Education Monitoring Report: Leadership in Education	Highlighted the need for strong leadership in education reform and policy implementation.

Research Findings

The findings from the literature and UNESCO reports (2020–2024) converge on several critical themes regarding the role of education in national development and human capital enhancement.

Education as a Driver of Economic Growth

Both Hanushek & Woessmann (2020) and UNESCO (2023) emphasize that cognitive skills and educational quality are directly linked to economic performance. Countries that invest in strong education systems, such as China (Liu & Dunne, 2020) and Japan (Marginson, 2016), have successfully leveraged human capital for technological and industrial advancements. However, UNESCO's 2023 Education Finance Watch warns that reduced education spending in lower-income nations threatens long-term economic growth.

The Capability Approach and Human Development

Expanding on Sen's (1999) capability approach, UNESCO's Reimagining Our Futures Together (2021) argues that education should go beyond workforce preparation to cultivate critical thinking, social cohesion, and environmental awareness. This perspective aligns with Nussbaum's (2011) emphasis on education as a foundation for personal and societal empowerment.

Challenges of Inclusion and Equity

The 2020 UNESCO Global Education Monitoring Report highlights persistent barriers to inclusive education, particularly for marginalized communities. This finding is consistent with Robertson (2022) and Tikly (2019), who critique SDG 4 for failing to address contextual inequalities in education. Ensuring equitable access requires targeted policy reforms, teacher training, and financial investment in underprivileged schools.

Impact of COVID-19 on Education and Digital Learning Gaps

COVID-19 The pandemic exposed weaknesses in global education systems, as documented by UNESCO (2022). Over 1.6 billion students faced disruptions, with lowincome countries suffering the most due to limited digital infrastructure. This crisis underscores the urgency of investing in technology-enabled resilient, education models, a theme echoed by Pritchett (2014), who argues that schooling does not always translate into learning, especially in resourceconstrained settings.

The Role of Leadership and Policy Implementation

UNESCO's 2024 Global Education Monitoring Report underscores the importance of educational leadership, revealing that many school principals in middle-income countries lack time for instructional leadership due to administrative burdens. This finding aligns with Gu (2014), who stresses the importance of teacher resilience and institutional support in sustaining educational progress.

The Future of Education: A Call for Transformation

The UNESCO Futures of Education initiative (2024) advocates for reimagining education to meet 21st-century challenges. It calls for integrating sustainability, equity, and digital transformation into education systems, a perspective that aligns with the broader literature on education and development (Hanushek & Woessmann, 2020; Liu & Dunne, 2020).

Discussion

Sustainable development was once envisioned as a process through which various societies would progress from initial states of underdevelopment by passing through more or less uniform evolutionary stages, eventually transforming into developed societies. This ideological perception of development faced numerous critiques, especially in the 1990s, and eventually reached an impasse (Escobar, 1995). By then, decades of international efforts for development had passed without bringing about substantial changes in people's lives around the world. Nyoni, a prominent African researcher, stated, "The erroneous results stem from flawed foundations, assumptions, and misguided policies," a point that attracted significant attention from scholars during the 1990s (Nyoni, 1998; Bebbington & Unerman, 2018).

According to the Brundtland Report (World Commission on Environment and Development), sustainable development is defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It posits that sustainable development is "the mutual relationship between humans and nature worldwide" (UNESCO, 1997, p. 13). The World Commission on Environment and Development defined sustainable development as "a process of change in the use of resources, direction of investments, orientation of technological development, and institutional changes consistent with current and future needs" (UNESCO, 1997). In the late 20th century, sustainable development emerged as a central global debate, influencing nearly all areas of human life, including poverty, inequality, education, health, the environment, human rights, and international cooperation. It introduced a new dimension to address critical issues that threaten the life cycle, nature, and humanity in the modern era (Le Blanc, 2015; Sachs, 2015).

As Wolfgang Sachs has stated, "From now on, there will be no development without sustainability, and no sustainability without development," highlighting a new connection between the two. Through this link, development has regained vitality and dynamism. As stated in the Rio Declaration of 1992, the human being is the focus of sustainable development. They deserve to live a healthy, productive, and harmonious life in harmony with nature. Development is a right that must cover present and future generations equally (United Nations, 1992).

Dimensions of Development

Economic Development: Economic development is a process where the economic and social foundations of society are transformed, leading primarily to a reduction in economic inequalities and shifts in areas such as production, distribution, and consumption patterns. Today, economic development is not viewed solely within the framework of pure economic theory. As Gunnar Myrdal suggests, economic growth and development are also socio-political and cultural issues (Todaro & Smith, 2020).

Social Development: Social development is closely tied to the quality and way of life of a society's members. In practical terms, it focuses on improving the general standard of living by creating favorable conditions for poverty alleviation, nutrition, healthcare, housing, education, and recreation (UNDP, 2019).

Political Development: Political development provides the foundation for institutionalizing political organization and participation. This results in increased capacity within the political system (Huntington, 1968; Taleghani, & Sola, 2024).

Human Development: Human development enhances human potential, emphasizing elements like dignity, human rights, and opportunities for creative and productive roles in society. This type of development prioritizes factors such as life expectancy, knowledge, and a decent standard of living (Sen, 1999).

Cultural Development: Emerging in the early 1990s through UNESCO's discourse, cultural development encompasses nonmaterial aspects of society, focusing on perceptual, cognitive, and value-oriented changes. Cultural development means evolving traditions based on the society's needs and conditions rather than breaking from them (UNESCO, 2012).

National Development: National development is a comprehensive process encompassing various dimensions such as social, political, economic, cultural, and security (defensive) development, and their mutual interactions. These dimensions continuously interact to form a cohesive entity known as national development (Pieterse, 2010).

Components of Sustainable Development

Educational System: Imagine society as a ship in motion; we can easily explain the components of sustainable development by this analogy. Unlike small boats, larger ships require the necessary training for their staff and officials. Similarly, in the journey toward national development, after establishing security and an efficient administrative and management system, a well-designed and efficient educational system can be implemented to fulfill this essential task (Todaro & Smith, 2020).

Human Focus: Sustainable development is human-centered and, due to its vast scope and capabilities, has swiftly become one of the most important debates and challenges of the 21st century. By the end of the third millennium, growth and development were revitalized within the framework of sustainability. Sustainable development places humans at the center of progress, deserving of education, healthcare, a productive life, and harmony with nature, reflecting the principles outlined in the Rio Declaration (United Nations, 1992).

Children and Youth: The Brundtland Commission defines sustainable development as "that meets the needs of the present without compromising the ability of future generations to meet their own needs." Sustainability is a pressing issue for children, youth, and young adults. Sustainable development theorists, given their focus on humanity in the 21st century, emphasize children's rights and the role of youth, advocating for creativity and engagement at all levels of development as essential in any program (UNICEF, 2018). **Women:** Women worldwide, especially in developing countries, face many inequalities. The issue of sustainable development also encompasses defending women's rights. Sustainable development advocates emphasize that development will not be achieved without the active participation of women (UN Women, 2015).

Environment: Focusing on the environment and nature has become a global benchmark. Munn (1993) suggests that sustainable development is only achievable when it is based on ecological principles (Munn, 1993).

Culture: In the past, development efforts sought to "Westernize" the world under the guise of cultural and political neutrality, often with ideological biases, presenting the West as an ideal. As a result, development was used by Western nations with advanced technology to undermine the culture and autonomy of other nations. Cultural development, however, should involve an evolution of traditions based on the needs and experiences of society rather than an outright rejection (UNESCO, 2012).

Value System: The value system serves as the "corridor" for national development, guiding leadership and governance in a way that aligns with fundamental principles and methodologies.

Security System (National Security): In the same way that the bow of a ship clears the waves and obstacles, national security plays a role in enabling calm and ensuring stability in national development.

Administrative and Management System: After ensuring the absence of threats and establishing security, the ship's officials, through an administrative and command system, plan the course and manner of movement. Similarly, in national development, after establishing general peace and security, a robust administrative and management system facilitates smooth development (Pieterse, 2010).

Research system: Research serves as a foundation, providing the scientific and logical force for academic and cultural advancement. In national development, it resembles the engine room of the ship, where the core driving forces are located.

Macro-level Leadership and management: The leadership and macrolevel management of the country, utilizing the value system (as the pathway), culture (as the foundation), and efficient systems in security, administration, management, education, and research, assume responsibility for the strategic guidance and control of the country's development—similar to a ship's captain (Sen, 1999).

Education for Development

"Education for Development" is a relatively new term that has recently attracted the attention of economists and thinkers. This interest arises from the need to find the missing link to achieve economic development and fulfill the objectives of economic science. In recent decades, human development theory has gained prominence, and leading economists have regarded human resource training as the key to development success (Todaro & Smith, 2020).

Schools and Universities: Education relies on the tools, resources, and institutions that have underpinned learning throughout history (McGrath, 2010; Siyami, 2012). Today, most nations strive for universal compulsory schooling to equip individuals for (OECD, improved livelihoods 2021). reflecting education's indispensable role regardless of one's worldview (UNESCO, 2022). Its primary purpose is the dissemination of knowledge, whether through practical skill instruction or cultivating critical thinking (Darling-Hammond et al., 2017). Education's contribution to productivity can be understood in three key areas.

Working Effect: This refers to the abilities developed through formal education or onthe-job training that allow workers to perform assigned tasks more efficiently and with better quality (Harris & Jones, 2021).

 Allocative Ability: This is the skill of selecting optimal variables, requiring cognitive skills, knowledge, expertise, and judgment (Becker, 2023). Such abilities can only be achieved through formal education in institutions like schools and universities. Allocative ability significantly enhances productivity (Obeng-Odoom, 2019)

Innovative Ability: Innovation can significantly improve productivity (Schumpeter, 2019). Although the connection between education and innovation might not be immediately apparent, it is clear that educated human resources form the foundation of national wealth. In contrast, capital and natural resources play more marginal roles (Mankiw, 2021). Governments unable to expand the skills and knowledge of their people cannot achieve development (Lastra, 2013).

Furthermore, education preserves the spiritual, scientific, literary, legal, and artistic heritage of society and teaches the youth to shape traditional intellectual systems for advancing both material and non-material aspects of modernization (Banks, 2015).

- In-Service Training: Building on formal schooling, in-service training is crucial for translating academic theory into real-world practice 2020). (Guskey. Bv applying classroom learning on the job, trainees fill gaps left by traditional education and sharpen practical skills, complementing the analytical focus of schools and universities (Zeng, 2023; Timperley, 2021).
- Media and Publications: The twentieth century saw an unprecedented rise in media and specialized publications, which drive political, cultural, and professional advancement (Nagraj, 2013; Bennett, Todav's 2012). technical communities rely on targeted journals and online platforms to stay abreast of innovations (Prodnik & Vobič, 2024). Media not only heightens public awareness and reshapes cultural norms (Castells, 2009) but also redistribute influence across social groups (Herman & Chomsky, 2020).
- Educational and Specialized Media: In addition to mass outlets, niche media deliver expert content to professionals and decision-makers

(Bui et al., 2023). These channels accelerate technology transfer and disseminate the know-how needed to implement innovations (Ferguson, 2020; Katz & Rice, 2019). This global exchange of specialized knowledge underpins the "Information Age," in which nations trade expertise as much as material goods (Castells, 2009).

Characteristics of a New or Educated Society

Specialization, efficiency, and heightened public awareness drive cultural and intellectual shifts that dismantle traditional systems and foster modernism (Giddens, 2013). Butler (1994) calls this a behavioral evolution, as people grow more adept at discerning cause and effect. Technology, science, education, and mass media have historically been central to this process (Oldenziel, 2020), with innovations and cultural norms mutually reinforcing one another in a feedback loop so intertwined that causality is hard to untangle (Mokyr, 2020). Even small technological changes can spark major cultural transformations (Sumiyanti et al., 2025). Modern societies, in turn, are marked by rational thought, political engagement, scientific perspectives, social order, adaptability, and the rule of law, traits that set them apart from traditional cultures (Habermas, 2018).

Rational Thinking: Rationality is a crucial characteristic of the new society that emerged in the Western world during the Renaissance in the 12th and 13th centuries. This period marked a realization within Christianity that, alongside religious doctrine, reason could also function independently (Taylor, 2018). This recognition was fundamental to subsequent transformations, allowing human affairs to be understood through reason, with rationality becoming the primary basis for comprehending and analyzing human matters (Becker, 2023).

Public awareness of the responsibilities of educational and training centers, the press, and mass media is essential. Until this awareness is realized and a sense of responsibility is ingrained in society, one cannot expect that society will be able to adequately represent itself in political, economic, cultural, and international arenas (Oldenziel, 2020).

Political **Participation:** Political integral participation is to political development, driven by education that both raises public awareness and spurs social 2013). change (Giddens, As social mobilization heightens expectations and demands, unresponsive political systems risk legitimacy crises and instability (Mokyr, 2020). Conversely, systems that address these demands foster stability and system survival (Taylor, 2018). Political parties serve as the "nervous system" of a country, channeling deficiencies and citizen demands, so without them, systemic flaws remain hidden until collapse (Schwartz, 2014). Today's global development emphasizes open political spaces, competitive parties, and collective decision-making as foundations for economic growth (Butler, 1994). While some maintain that political development must precede economic progress to cultivate healthy competition, others, like Pye, argue that insufficient economic development undermines political stability (Sumiyanti et al., 2025). Thus, achieving a baseline of economic development is essential before meaningful political participation can begin.

Scientific Belief: Scientific belief is a cultural concept that differs from science itself. Science is part of human knowledge based on specific assumptions, established through a process of trial and error on a logical basis, and addresses daily human issues using tools and methods that improve human life (Becker, 1993). The reliance on modern sciences and technologies is a fundamental characteristic shared by all developed countries, while the lack of such reliance is a common trait among developing nations (Mokyr, 2020). The critical aspect here is not merely the concept of science but the dominance of a scientific perspective over the cultural beliefs of society, which is built on a system of convictions (Oldenziel, 2020). These beliefs determine nations' abilities to utilise science effectively.

Orderliness: Order not only lays the groundwork for development but, in developed societies, the complexity of tasks and extensive communications make the notion of disorder not just unlikely, but highly

improbable (Giddens, 2013). Belief in time and hierarchical structures results from an organized society. A person who does not recognize their rights and constantly feels they must be subservient cannot defend their individual and social rights (Schwartz, 2014). The stability and growth of a political system rely on the existence of intelligent, aware, and responsible individuals, and cultivating such individuals cannot be achieved in a closed and unhealthy environment (Mokyr, 2020). Legality is a characteristic of developed societies. Under the protection of the law and trust in its enforcers, individuals can feel freedom, security, and peace. If relationships overshadow regulations in a society, and the law is influenced by personal and group preferences, the environment for the growth and flourishing of talents and creativity will disappear (Becker, 2023).

Criticism Acceptance: Governance is a process of trial and error. If the elites in this process possess a high level of tolerance and culture, they will easily accept criticisms and admit their mistakes (Butler, 1994). The dominance of this culture in society will lead individuals to continuously put their actions, behaviors, and words to the test and take steps to correct their mistakes. More importantly, if they feel unable to perform a task, they will step back from responsibility to allow a more capable individual to take their place.

Regulatory Compliance: The existence and adherence to laws are a hallmark of modern society. Under the protection of the law and trust in its enforcers, individuals can feel freedom, security, and peace. If relationships overshadow regulations in a society, and the law is influenced by personal and group preferences, there will be no incentive for the growth of talents and creativity (Giddens, 2013). However, if individuals in society feel they can enjoy national benefits commensurate with their merits and competencies, their efforts to achieve success will double. Naturally, in this healthy atmosphere, talents will flourish, and the spirit of creativity, initiative, and selfconfidence will lead society towards development. This is only possible in the context of fostering a social culture, especially

the culture of political elites, who must first respect the law and provide the necessary education to society regarding legal compliance, while seriously addressing lawlessness (Mokyr, 2020). Voltaire stated, "The greatness of a nation is not in its military power but in the brilliance of its culture and laws" (Taylor, 2018).

Development and Its Indicators

Comprehensive security and social stability are fundamental to a developed society, providing the foundation upon which reliable social services, such as welfare, housing, and healthcare, are built (Fry, 2013). In contrast, underdeveloped contexts leave people struggling for basic needs despite their efforts (Ravallion, 2021). Robust unemployment benefits and social insurance further enable access to education and public welfare in advanced nations (Nussbaum. 2011). Freedom, though experienced differently by individuals, is institutionalized in developed societies through inalienable civil and political rights like voting and public participation. In developing regions, these rights often depend on state concessions rather than being treated as inherent entitlements (Sen, 1999). Justice likewise requires balance: while some regimes have restricted liberty to pursue a "just" order (e.g., Soviet-era Eastern Europe), Tocqueville (2000) argues that justice without freedom is meaningless, as true democracy demands equal opportunity for all.

Conclusion

The role of education in development is significant in a general sense. In this regard, the dependence of development on human forces and factors has been demonstrated, highlighting how education can activate human potential to achieve developmental goals (Ojala, 2017; Liu & Dunne, 2020). In the realm of development, one cannot examine educational institutions without a clear connection between the educational system's structure and the economic and social characteristics of society (Meyer & Rowan, Educational institutions 1992). foster intellectual and cultural transformation.

efficacy, and the enhancement of social ultimately awareness, leading to а comprehensive transformation of society from traditional to modern (Wallerstein, 2011). New indicators have been mentioned, which, if realized and institutionalized within society, will lead to its development, where individuals initially acting as agents of development will become the targets of development, benefiting from security, social peace, welfare, freedom, and justice.

As the concept of development becomes increasingly globalized, and as the services sector diversifies, jobs become more specialized, leading to an increased need for awareness to engage with the modern world (Nussbaum, 2011; Sen, 1999; Rodrik, 2018). Education, through shaping participation private among various and public organizations, provides the necessary framework for advancement. Educationrelated indicators, such as aspirations for education, quality of education, and training during work, should encompass both formal and informal education (UNESCO, 2017). Education for sustainable development enhances and strengthens the capacity of individuals. groups, communities. organizations, and countries to act in favor of sustainable development in their choices and judgments (UNESCO, 2022, 2023, 2024). This requires that all schools and universities, teachers, researchers, educational trainers,

REFERENCES

- Aghion, P., Akcigit, U., Bergeaud, A., Blundell, R., & Hémous, D. (2019). "Innovation and top income inequality". *Review of Economic Studies*, 86(1), 1-45. https://doi.org/10.1093/restud/rdy027
- Altbach, P & de Wit, H. (2018). "Are We Facing a Fundamental Challenge to Higher Education Internationalization?". *International Higher Education*, 2(93), 2-4. <u>https://doi.org/10.6017/ihe.0.93.10414</u>
- Banks, J.A. (2015). "Cultural Diversity and Education: Foundations, Curriculum, and Teaching" (6th ed.). *Routledge*. <u>https://doi.org/10.4324/9781315622255</u>
- Bebbington, J. and Unerman, J. (2018)."Achieving the United Nations Sustainable Development Goals: An enabling role for

students, school managers, parents, and the entire community be prepared to discuss the best and most direct paths to contribute to sustainable development.

Limitations

This review offers a thorough analysis but has limitations: it may exclude grassroots efforts, relies heavily on Global North sources, and findings may not apply universally. Future research should include case studies or quantitative data for validation.

Acknowledgement

I would like to express my gratitude to my colleague, who assisted me in writing this article, and to my supervisor for their invaluable guidance and support throughout the research process.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

Originality Note:

The authors confirm that this manuscript is original, unpublished, and all referenced sources are properly cited to uphold ethical research standards and avoid plagiarism.

accounting research", *Accounting, Auditing & Accountability Journal*, 31(1), 2-24. <u>https://doi.org/10.1108/AAAJ-05-</u> 2017-2929.

- Becker, G. S. (1993). "Human capital: A theoretical and empirical analysis, with special reference to education" (3rd ed.), Chicago: University of Chicago Press. <u>http://dx.doi.org/10.7208/chicago/978022</u> 6041223.001.0001
- Becker, G. S. (2023). "The economic approach: Unpublished writings of Gary S. Becker". Chicago: University of Chicago Press.
- Bennett, W. L. (2012). "The Personalization of Politics: Political Identity, Social Media, and Changing Patterns of Participation".

The ANNALS of the American Academy of Political and Social Science, 644(1), 20-39.

https://doi.org/10.1177/000271621245142 8.

- Braun, V., & Clarke, V. (2006). "Using thematic analysis in psychology". *Qualitative Research in Psychology*, 3(2), 77–101. <u>https://www/doi/abs/10.1191/1478088706</u> gp063oa
- Brundtland, G.H. (1987). "Our Common Future: Report of the World Commission on Environment and Development". Geneva, UN-Dokument A/42/427. http://www.un-documents.net/ocf-ov.htm
- Bui, H. P., Ulla, M. B., Tarrayo, V. N., & Pham, C. T. (2023). Editorial: "The roles of social media in education: Affective, behavioral, and cognitive dimensions". *Frontiers in Psychology*, 14:1287828. <u>https://doi.org/10.3389/fpsyg.2023.12877</u> <u>28</u>
- Butler, C (1994). "The Dynamics of Change, Early Modernism: Literature, Music, and Painting in Europe", 1900-1918 (Oxford, 1994; online edn, Oxfordshire: Oxford Academic,

https://doi.org/10.1093/oso/978019811746 9.003.0001

- Castells, M. (2009). "The Rise of The Network Society: The Information Age: Economy, Society and Culture", Volume I. Oxfordshire: Wiley-Blackwell.
- Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). "Effective Teacher Professional Development". Palo Alto, CA: *Learning Policy Institute*. <u>https://doi.org/10.54300/122.311.</u>
- Day, C., & Gu, Q. (2013). "Resilient Teachers, Resilient Schools: Building and sustaining quality in testing times" (1st ed.). Taylor & Francis: *Routledge*. <u>https://doi.org/10.4324/9780203578490</u>
- Escobar, A. (1995). "Encountering Development: The Making and Unmaking of the Third World (STU-Student edition)." *Princeton University Press*. <u>http://www.jstor.org/stable/j.ctt7rtgw</u>
- Fagerberg, J. (2018). "Innovation, economic development and policy: Selected essays".

Cheltenham: *Edward Elgar Publishing*. <u>https://doi.org/10.1093/icc/dtaa019</u>

- Ferguson, N. (2020). "The Role of Media in Society: Implications for Education". *Education and Society*, 38(2), 91-106. <u>https://doi.org/10.1177/2056305118789</u>
- Fry, D. P. (Ed.). (2013). "War, peace, and human nature: The convergence of evolutionary and cultural views". Oxfordshire: Oxford University Press. <u>https://doi.org/10.1093/ACPROF:OSO/97</u> 80199858996.001.0001
- Giddens, A. (2013). "The Consequences of Modernity": *Stanford University Press*. https://www.perlego.com/book/1535427/t he-consequences-of-modernity-pdf.
- Glewwe, P., & Muralidharan, K. (2016). "Improving Education Outcomes in Developing Countries: Evidence, Knowledge Gaps, and Policy Implications". *Handbook of the Economics* of Education, 5, 653-743.
- Gu, Qing. (2014). "The role of relational resilience in teachers' career-long commitment and effectiveness". *Teachers and Teaching: Theory and Practice*. 20(5), 502-529.

https://doi.org/10.1080/13540602.2014.93 7961

- Guskey, T. R. (2020). "Professional Development and Teacher Change". *Teachers and Teaching*, 26(1), 1-16. <u>https://doi.org/10.1080/19415257.2025.25</u> 11174
- Habermas, J. (2018). "Philosophical introductions: Five approaches to communicative reason". Medford: *John Wiley & Sons*. No. 3 (Autumn, 1974), pp. 49-55. <u>https://doi.org/10.2307/487737</u>
- Hanushek, E. A., & Wößmann, L. (2020).
 "Education, Knowledge Capital, and Economic Growth". In S. Bradley, & C. Green (Eds.), *The Economics of Education* (2nd ed., pp. 171-182). AcademicPress. <u>https://doi.org/10.1016/B978-0-12-</u> 815391-8.00014-8
- Harris, A., & Jones, M. (2021). "COVID-19 and the Future of Education: Reimagining Schools." *Educational Management Administration & Leadership*, 49(1), 5-19. <u>http://dx.doi.org/10.1177/1478210320986</u>

<u>950</u>.

- Herman, E. S., & Chomsky, N. (2020). "Manufacturing Consent: The Political Economy of the Mass Media": Open Journal of Political Science. 14(3), July 22, 2024 https://doi.org/10.4236/ojps.2024.143025
- Huntington, S. P. (1984). "Will more countries become democratic?", *Political science quarterly*, 99(2), 193-218. <u>https://doi.org/10.2307/2150402</u>
- Lastra, R. M. (2013). "The globalization paradox: Review of Dani Rodrik, The globalization paradox: Democracy and the future of the world economy". *International Journal of Constitutional Law*, 11(3), 809–812. https://doi.org/10.1093/icon/mot031
- Le Blanc, D. (2015). "Towards integration at last? The sustainable development goals as a network of targets". *Sustainable Development*, 23(3), 176-187. <u>https://doi.org/10.1002/sd.1582</u>
- Liu, S., & Dunne, M. (2020). "Human capital and China's economic development". *Asian Economic Journal*, 34(1), 23-45. https://doi.org/10.1257/jep.31.1.25
- Lucas, R. E. (2015). "Human capital and growth". *American Economic Review*, 105(5), 85-88. https://doi.org/10.1257/aer.p20151065
- Marginson, S. (2016). "The Global Construction of Higher Education Reform". In The Handbook of Global Education Policy, 291-311. <u>https://doi.org/10.1002/9781118468005.ch</u> 16
- Meyer, J. W., & Rowan, B. (1992). "Institutionalized Organizations: Formal Structure as Myth and Ceremony". In W. Richard Scott (Ed.), Organization: Readings for a New Era (pp. 71-84). Sage. <u>https://doi.org/10.4236/psych.2022.13504</u> 9
- Mankiw, N. G. (2021). "Principles of Microeconomics (9th Ed.)".U.S: CENGAGE Learning Custom Publishing.
- McGrath, S. (2010). "The role of education in development: an educationalist's response to some recent work in development economics". *Comparative Education*, 46(2), 237–253. https://doi.org/10.1080/030500610037755

<u>53</u>

- Mokyr, J. (2020). "A Culture of Growth: The Origins of the Modern Economy", Princeton: *Princeton University Press*. 9780691180960
- Munn, R. (1993). "Environmental management and sustainable development". Seri Lanka: *Routledge*. https://doi.org/10.5296/EMSD.V4I2.7694
- Nagraj, A. (2013). Political Movements and Changing Media Environments. *Advances in Journalism and Communication*, 1, 13-17.
- Nixon, Richard. (1985). "Real War and Real Peace". Translated by Ali Reza Taheri. Tehran: *Information Publications*.
- Nazarpour, M. (2020). "Values and Development. Tehran: Research Institute for Islamic Culture and Thought", 1st edition. 43 (10-11), 1181-1196.
- Nussbaum, M. C. (2011). "Creating Capabilities: The Human Development Approach". Harvard: *Harvard University Press*.
- Nyoni, S. (1998). "African development perspectives: Critiques and alternatives". *Third World Quarterly*, 19(4), 723-738. <u>https://www.jstor.org/stable/i383043</u>
- OECD. (2021). "Education at a Glance 2021": OECD Indicators. London :*OECD Publishing*.
- Obeng-Odoom, F (2019). Critique of development economics. *The Japanese Political Economy*, 44, 59 - 81. <u>https://doi.org/10.1080/2329194X.2019.1</u> <u>617637</u>
- Ojala, M. (2017). "Hope and anticipation in education for a sustainable future". *Futures*, 94, 76-84. <u>https://doi.org/10.1016/j.futures.2016.10.0</u> 04
- Oldenziel, R. (2020). "Editorial. Technology and Culture". 61(3), ix-xii. https://dx.doi.org/10.1353/tech.2020.0089
- Pieterse, J. N. (2010). "Trends in development theory. In *Trends in development theory*" (2 ed., pp. 1-18). *SAGE Publications Ltd*, <u>https://doi.org/10.4135/9781446279083.n</u> 1
- Pritchett, L. (2014). "The Rebirth of Education: Schooling Ain't Learning". *Center for Global Development.* 28(2), 107-110.

- Prodnik, J. A., & Vobič, I. (2024). "News Sources in the Sociology of the Media: A Critical Re-Examination". Critical Sociology, 50(4-5), 795-812. <u>https://doi.org/10.1177/089692052312173</u> 06
- Ravallion, M. (2021). "The Economics of Poverty: History, Measurement, and Policy", Oxfordshire: Oxford University Press. <u>https://doi.org/10.1093/acprof:oso/978019</u> 0212766.001.0001
- Robertson, S. L. (2022). "Guardians of the Future: International Organisations, Anticipatory Governance and Education". *Global Society*, 36(2), 188–205. <u>https://doi.org/10.1080/13600826.2021.20</u> 21151
- Robeyns, I. (2006). "Three models of education". *Theory and Research in Education*, 4, 69 - 84. <u>https://doi.org/10.1177/147787850606068</u> <u>3</u>
- Rodrik, D. (2018). "Straight Talk on Trade: Ideas for a Sane World Economy". *Princeton University Press*, 2018. World Trade Review, 19(3), 485– 488.

https://doi.org/10.1017/S14747456200002 21

- Sachs, J.D. (2015), "The Age of Sustainable Developmen"t. New York: *Columbia University Press*. https://doi.org/10.7312/sach17314
- Schumpeter, J. A. (2019). "Capitalism, Socialism and Democracy", New York: *Harper & Brothers*. <u>https://doi.org/10.4236/crcm.2022.118046</u>
- Schwartz, S. H. (2014). "Rethinking the concept and measurement of societal culture in light of empirical findings". *Journal of Cross-Cultural Psychology*, 45(1), 5–13. https://doi.org/10.1177/002202211349083
- Sen, A. (1999). "Development as Freedom", Oxfordshire: Oxford University Press.
- Siyami, Zahra. (2012). "Why We Did Not Become Industrialized?" Tehran: *Amir Kabir Publications*, 1st edition.

Sumiyanti, & Syaifurrohman, Amir & Alfina,

& Salimu, Salman. (2025). Trasformasi budaya di era digital. Jurnal Pendidikan Teknologi Informasi (J-Diteksi). 4. 26-31. <u>10.30604/diteksi.v4i1.1931</u>.

- Taleghani, M. & Sola, M. (2024). "Sustainable Development Goals (SDGs) and their Consequences on Iran's Economic Strategy". Journal of Business and Management Studies. 1. 88-95. https://doi.org/10.62207/xfs4vv68
- Taylor, C. (2018). "A Secular Age". Cambridge: *Harvard University Press*. https://doi.org/10.1017/9781108278195
- Tikly, L. (2019). "Education for sustainable development in Africa: a critique of regional agendas". Asia Pacific Education Review, 20, 223 - 237. <u>https://doi.org/10.1017/j.ijedudev.2018.06</u> <u>.001</u>
- Tikly, L., & Barrett, A. M. (2011). "Social justice, capabilities and the quality of education in low-income countries". *International Journal of Educational Development*, 31(1), 3-14. <u>https://doi.org/10.1016/j.ijedudev.2010.06</u> <u>.001</u>
- Timperley, H. (2021). "Realizing the Power of Professional Learning".U.K: McGraw-Hill Education *Press*. <u>https://doi.org/10.4236/oalib.1103508</u>
- Tocqueville, A. de. (2003). "Democracy in America", *Chicago: University of Chicago Press.* Translated from the French by James T. Schleifer. (Indianapolis: Liberty Fund, 2012). Vol. 1.
- Todaro, M. P., & Smith, S. C. (2020). "Economic development". U.K: Pearson Education. Thirteenth Edition. <u>https://doi.org/10.4236/jmmce.2011.1080</u> <u>54</u>
- UNESCO. (1997). "Educating for a Sustainable Future: A Transdisciplinary Vision for Concerted Action. United Nations Educational, Scientific and Cultural Organization". Paris: UNESCO Publishing
- UNESCO. (2012). "Culture: A driver and an enabler of sustainable development. United Nations Educational, Scientific and Cultural Organization." Paris: UNESCO Publishing

- UNESCO. (2017). 'Education for Sustainable Development Goals: Learning Objectives''. Paris: UNESCO Publishing.
- UNESCO. (2020). "Global education monitoring report 2020: Inclusion and education – All means all" (Global Education Monitoring Report), Paris: UNESCO Publishing
- UNESCO. (2021). "Reimagining our futures together: A new social contract for education". Paris: UNESCO Publishing
- UNESCO. (2022). "Education for Sustainable Development: A Framework for Action". Paris: UNESCO Publishing.
- UNESCO. (2022). "Education in a post-COVID world: Nine ideas for public action". Paris: UNESCO Publishing. Flagship reports.
- UNESCO. (2023). "Education Finance Watch 2023. UNESCO & World Bank". Flagship reports, Paris: *UNESCO Publishing*
- UNESCO. (2024). "Global education monitoring report: Leadership in education". Flagship reports, Paris::UNESCO Publishing.
- UNESCO's Culture and Development Collection. (2020). "The Cultural Dimension of Development: Towards a Practical Approach". Translated by Saleh

al-Din Mahallati. Tehran: *Shahid Beheshti University*, 1st edition.

- UNICEF. (2018). "The State of the World's Children 2018: Children in a Digital World". United Nations Children's Fund.
- United Nations. (1992). "Rio Declaration on Environment and Development. United Nations Conference on Environment and Development". Rio de Janeiro.
- UNDP. (2019). Human Development Report 2019. United Nations Development Programme.
- UN Women. (2015). Progress of the World's Women 2015-2016: Transforming Economies, Realizing Rights. United Nations Entity for Gender Equality and the Empowerment of Women. ISBN 978-1-63214-015-9
- Wallerstein, I. (2011). "The Modern World-System I: Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century" (1st ed.). Los Angeles: University of California Press.
- Zeng, J. (2023). "A theoretical review of the role of teacher professional development in EFL students' learning achievement". *Heliyon*, 9(5), e15806. <u>https://doi.org/10.1016/j.heliyon.2023.e15</u> <u>806</u>