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## Lifelong Learning's Contribution to Sustainable Development: An Indian Viewpoint in the 21<sup>st</sup> Century

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### ABSTRACT

The importance of lifelong learning in advancing sustainable development, especially in poor nations, is emphasized in this research. Even though sustainable development is a key idea in international discourse, both technocrats and regular people frequently misunderstand it, which emphasizes the need for educational initiatives to demythologize the idea. Lifelong learning, according to the research, is necessary for raising awareness of resource depletion and the significance of preserving vital resources for coming generations. A lack of information and skills, along with the speed at which technology is advancing, impedes social and economic improvement in many developing countries. Environmental deterioration, poverty, and resource depletion are all exacerbated by a lack of knowledge in important fields like economics, politics, and society. According to the research, these gaps can be filled by lifelong learning, which will help people adopt sustainable development techniques and adjust to the changing world. The UN's 2030 Agenda for Sustainable Development, which highlights the value of inclusive education in accomplishing the Sustainable Development Goals (SDGs), is another topic covered in the article. A crucial framework for incorporating lifelong learning into national development goals is SDG 4, which promotes "inclusive and equitable quality education and lifelong learning opportunities for all." Additionally, lifelong learning helps achieve other SDGs, including SDG 5 (gender equality), SDG 8 (decent work and economic growth), SDG 3 (health and well-being), SDG 12 (responsible consumption and production), and SDG 13 (preventing climate change). Because of this, lifelong learning is portrayed as both a vital instrument for personal growth and a calculated way to accomplish equitable, inclusive, and sustainable development in the 21<sup>st</sup> century.

**Keywords:** Sustainable development, lifelong learning, development, 21<sup>st</sup> century, SDGs, education, conservation, sustainability

### 1. Introduction

Several international goal-setting exercises throughout the years have highlighted the value of lifelong learning as essential to progress, thus the concept is not new. The Sustainable Development Goals agenda was already alluded to by earlier agendas such as the Millennium Development Goals (MDGs) and Education for All (EFA) (WEF 2000), which acknowledged the need for a lifelong learning strategy in addressing social and environmental challenges. Lifelong learning can assist address issues like excessive consumerism and unsustainable resource usage by equipping citizens with the knowledge, attitudes, and skills they need. Hauntological techniques are learner-centred strategies that emphasize self-directed learning. They can be used to educate individuals and encourage local change and sustainable practices. In 2017, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) adopted the UN's new agenda, which included lifelong learning as a prominent element (UNESCO, 2017). Since then, UNESCO has worked to increase lifelong learning's inclusion in the SDGs. The United Nations 2030 Agenda purposefully names education as one of the particular development goals, increasing the number of goals from eight in the Millennium Development Goals (MDGs) set for 2000–2015 to seventeen SDGs for the next 15 years (United nations statistics division, 2019). It shifts the emphasis from education to lifelong learning, incorporating technical education, adult education, and higher education into the range of approaches that the global society is adopting to achieve sustainability (Morton et. et. 2017). Nonetheless, it required extensive preparation and negotiation to designate SDG 4 as a distinct education target. The World Education Forum (WEF), which took place in May 2015 in Incheon, Republic of Korea, was the result of a thorough two-year consultation process that involved Member States and stakeholders in order to set the future education agenda. The Framework for Action (FFA) stated above and the Incheon Declaration are part of the Forum's result document, Education 2030, which aims to support the implementation of SDG 4 (Akin et al., 2023). Goal to be achieved by 2030 are addressed by the education goal's ten specific targets. With adequate consideration for national and cultural differences, global indicators have also been developed to gauge progress in every nation. A commitment to SDG 4 is signalled by the Incheon Declaration, which also assigns UNESCO the responsibility of leading and guiding the education target (Akin et. al. 2023; Le Blanc, 2015). The goal of lifelong learning throughout one's lifetime has long been a focus of the UNESCO Institute for Lifelong Learning (UIL), which has implemented many programs to support literacy, policy development, adult learning, and education. UIL is the only United Nations organization with a global mandate for lifelong learning. It is in charge of categorizing and gathering national policies and strategies for lifelong learning, carrying out global research on the subject, and supporting nation states in their efforts to

advance education. Its online Collection of Lifelong Learning Policies and Strategies is one example of the institute's distinctive effort to provide leadership on this important issue. The publication series on lifelong learning policies and initiatives published by UIL provides an additional forum for discussion (Le Blanc, 2015; Tanjung, 2020).

## 2. Lifelong learning and Sustainable development goals (SDG)

In this special issue of the International Review of Education, Journal of Lifelong Learning (IRE), the articles not only advocate for the inclusion of lifelong learning in the Sustainable Development Goals, but also examine how lifelong learning is conceptualized, implemented, and monitored in the 21st century. In order to support policy discourse and enable strategic action toward the development and implementation of SDG 4 and its ten targets, UIL relies on this special issue to provide a forum for analysis and to provide space for practice and policy. Insinuating that education is crucial to accomplishing several SDGs that address poverty, inequality, social development, and economic growth, the contributions centre on the connection between education and development (Akin et. al. 2023; Le Blanc, 2015). Supporting lifelong learning is obviously necessary, especially in light of some of the global challenges we face at the end of this decade and, in fact, in this millennium, including population displacement, illiteracy, economic inequality, and the demand for new credentials and skills. Theorizing and analysing their notion of lifelong learning, participants to this issue consider the increasing focus on assessing implicit connections between development and domains such as education (SDG 4), gender (SDG 5), and health (SDG 3). The significance of lifelong learning in accomplishing these objectives is underscored by the SDGs' recognition of it as the organizing principle of education and the central idea for educational policies. Drawing from the increasing global focus on lifetime learning, this special issue of IRE analyses and interprets the 2030 Agenda in light of the importance and implications of lifelong learning for everyone to live a full and abundant life. In their argument for lifelong learning's advantages beyond schooling and learning, the writers question accepted ideas about it. How governments and policymakers perceive and apply lifelong learning in many circumstances is at the centre of their conversations. This work is important, as evidenced by the requests made by member states for assistance in addressing the SDGs and in updating and creating their own policy action and lifelong learning agenda for 2030 (Tanjung, 2020). The topic of lifelong learning has received a lot of attention in this magazine throughout the years, as we guest editors are well aware. An earlier special issue about the future of lifelong learning serves as one illustration (Singh & Singh, 2023). Drawing from those earlier talks, the current special issue addresses the contemporary need for practical policies and strategies for lifelong learning in light of the UN 2030 Agenda. We believe that this present conversation will help practitioners, researchers, and politicians move forward with the achievement of SDG 4 and other targets (Akpoviroro and Adeleke 2022). The authors, who are policy experts and foreign scholars, were selected based on their proficiency in a range of lifelong learning domains. Their works expand our understanding and practice of lifelong learning, contribute to the ongoing conversation on education and development in the twenty-first century, and advance the conversation on the 2030 Agenda and the SDGs. The journal's contribution to global initiatives in lifelong learning is strengthened by this special edition. But as writers and editors, we know there are a lot of holes that we are unable to address (Chentukov et. al. 2021).

For example, the role of popular education and informal learning, both components of an all-encompassing lifelong learning platform, is noticeably missing. For a long time, popular education has been the main focus of lifelong learning in many countries, both in the Global South and in regions where civil society is most in threat. Future research on this topic might focus on SDG target 4.7, which aims to guarantee that by 2030. Learning about sustainable development and sustainable lifestyles, human rights, gender equality, fostering a culture of peace and non-violence, global citizenship, and appreciating cultural diversity and its role in sustainable development are some of the ways that all students gain the knowledge and abilities necessary to advance sustainable development (Singh and Singh 2024). The readers of this special issue are encouraged to explore the works of scholar activists Shirley Walters and Astrid Von Kotze, who have written about popular education and lifelong learning in the esteemed magazine *Studies in the Education of Adults*. This special issue includes five essays that emphasize different aspects of lifelong learning and how it relates to the SDGs (Sinha et al. 2020).

The recommendation on adult learning and education serves as the foundation for the consideration of two articles that we begin by reviewing. Leona English and Peter Mayo wrote the first piece, "Lifelong learning challenges: Responding to migration and the Sustainable Development Goals." It focuses on migration, which is one of the biggest problems impacting many nations globally, both within and between nations. People on the move, whether they are migrants, refugees, or temporary employees, are extremely vulnerable and require a response to lifelong learning in order to grow and lead fulfilling lives (Lenzen et. al. 2022). The "disposability" and precocity of migrants are issues that English and Mayo contend calls for procedures to solve. Mendez and Karaulova (2019) critique the neo-liberal tendencies that fuel resistance to inclusion while also presenting the possibility of genuine inclusion in receiving countries. Asylum seekers are to be assisted in learning the language and assimilating into Swedish society through the government initiative.

To bolster his arguments, Fejes expertly applies Foucauldian theory to the analysis of policy reports and interviews with study circle leaders and project managers. Fejes can critically examine the consequences of this ostensibly benign program, which could really make the asylum seeker less than a complete citizen of the receiving nation, by applying the Foucauldian perspective. Fejes' criticism enables the reader to consider programming from a more nuanced perspective. Language and presumptions on literacy and numeracy are also examined in the third article, "Examining the application of the lifelong learning principle to the literacy target in the fourth Sustainable Development Goal (SDG 4)." Ulrike Hanemann specifically examines SDG 4's reading and numeracy target 4.6 to assess how well it aligns with the lifelong learning tenet that underpins UNESCO's Education 2030 Framework for Action (FFA). The goal is to reach a minimal level of competency that is comparable to what is attained upon successfully completing basic school (Shmygol et. al. 2020). Using a framework that deconstructs "lifelong literacy," and based on her extensive experience as a program specialist at UIL, Hanemann distinguishes three closely related dimensions:

- (1) literacy as a process of lifelong learning;

- (2) literacy as a process of life; and
- (3) literacy as a part of sector-wide reforms to support lifelong learning systems.

After looking at this objective, she argues that there is still a lack of agreement on a more expansive definition of literacy. Before reading (and numeracy) are viewed from the perspective of lifelong learning, she concludes that much work needs to be done. This could have a big impact on how the SDGs are developed. An essay by Ellen Boeren titled "Understanding Sustainable Development Goal (SDG) 4 on "quality education" from micro, meso, and macro perspectives" draws attention to the worldwide focus of educational policy on analysing accomplishment via the narrow lens of indicators, benchmarks, and standards. Boeren shares Hanemann's opposition to using restrictive and limited frameworks to measure achievement and advancement. She uses structure and agency theory to analyse the ten targets that make up SDG 4 from a variety of macro, meso, and micro viewpoints (Mendez and Karaulova, 2019). By breaking down the targets, it shows how difficult it is to meet indicators, benchmarks, or targets the dominant approach in the current global education policy-making process. Boeren's analysis indicates that a more robust strategy is required, wherein individuals, educational and training institutions, and regulating governments in UN Member States share responsibility for achieving SDG 4. The issue lies in figuring out how to influence this paradigm (Shmygol et. al. 2020; Singh, 2024).

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### 3. Measurement of lifetime learning

In his article "Assessing the status of lifelong learning: Issues with composite indexes and surveys on participation," he draws attention to the growing concern around the world for accurate evaluation of lifetime learning. In addition to the now-defunct Canadian Composite Learning Index (CLI), Rubenson looks at the two most significant surveys on learning and education for adults: the Organization for Economic Co-operation and Development's (OECD) Programme for the International Assessment of Adult Competencies (PIAAC) and the European Union's Adult Education Survey (AES). We raise important questions about whether these assessments are measuring learning for work (i.e., the skills agenda) or lifelong learning (Singh, 2024). He also brings out difficulties such the measurements' lack of context and ambiguity of words. In order for countries to have a better knowledge and picture of lifelong learning, he contends that the limited parameters around the indicators used to assess it need to be expanded. He thinks that UIL may take the lead in implementing this (Singh and Singh, 2023; Singh, 2024). All things considered, these five publications bring up important concerns about achieving the SDGs, particularly SDG 4. Regarding the identification and measurement of education in local, national, and international contexts, the participating authors provide warning. The papers in this issue encourage us to keep asking concerns about how lifetime learning is conceptualized, implemented, and assessed, even though it is still a legitimate objective (Pradhan et. al. 2017).

As the phrase becomes more widely used and is positioned at the centre of new approaches to address our world's rapid change, lifelong learning may lose its impact and its capacity to change the world. We use it to combat industrial disruption, address new socioeconomic trends related to the fourth industrial revolution, which involves automation, artificial intelligence, and big data, and to promote social cohesion and the development of transversal skills (Kuzior et. al. 2022). As the global community turns its attention to the SDGs over the next ten years, we would be wise to continue to monitor and hone our critical thinking skills while producing solid evidence to back the advancement of possibilities for lifelong learning for everyone (Vidic, 2022).

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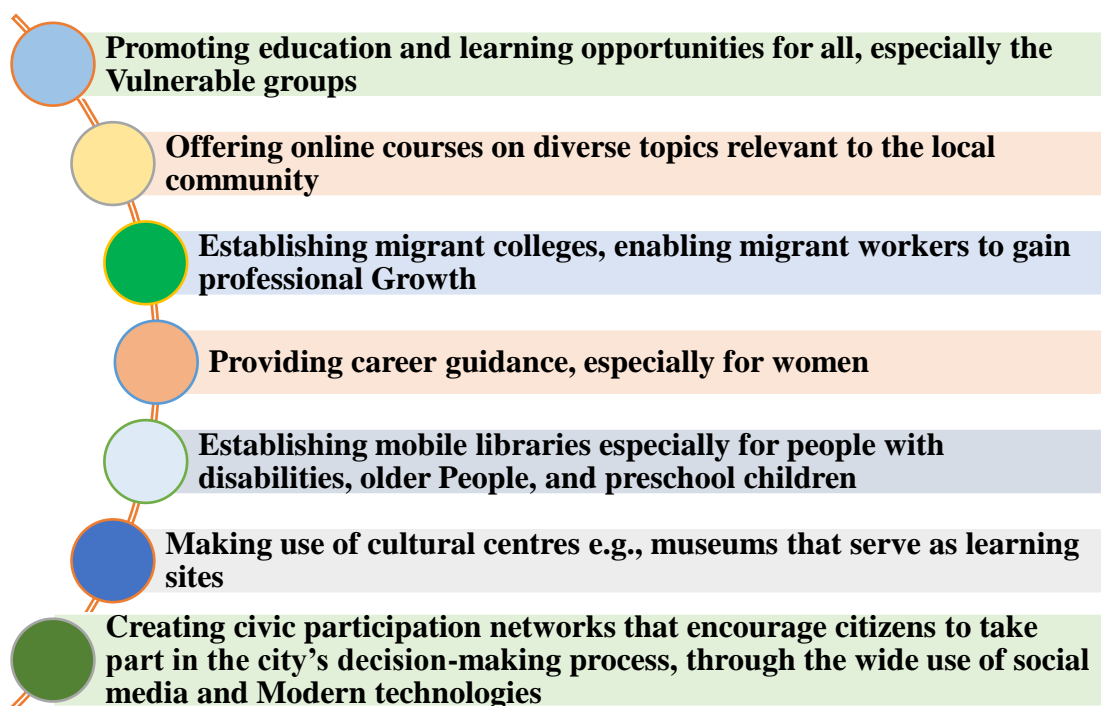
### 4. Discussion

The fourth sustainable development goal (SDG4) aims to guarantee inclusive, egalitarian, and high-quality education while also giving everyone the chance to study throughout their lives. Around 3.5 billion people, or more than half of the world's population, currently reside in cities. By 2030, it's expected to have increased to about 5 billion. What steps can our cities take to achieve the SDGs, particularly SDG4? Building facilities and infrastructure and encouraging the growth of lifelong learning for all citizens, regardless of age, gender, race, or religion, is one strategy to do this. There are now a number of activities in this regard that are supported by UN agencies, particularly UNESCO. UNESCO's Global Network of Learning Cities (GNLC) as of right now A global network, GNLC offers best practices, inspiration, and expertise for fostering learning cities worldwide. The success of all 17 Sustainable Development Goals (SDGs) is aided by this network, particularly SDGs 4 and 11 ("make cities inclusive, safe, resilient, and sustainable"). Through policy dialogue among member cities, link building, relationship nurturing, capacity building, and the development of tools to track progress in creating learning cities, GNLC encourages lifelong learning in cities around the world. A learning city is what? A city is considered a learning city if it encourages lifelong learning for all of its residents according to the criteria depicted in figure 1 below. What makes learning cities necessary? In the modern world, which is changing owing to technology advancements like artificial intelligence (AI), the whims of climate change, and the unexpected development of pandemics like COVID-19, lifelong learning (LLL) is becoming increasingly important. Numerous studies have shown that lifelong learners are better able to adapt to changes in their communities, culture, personal lives, and work environments.



**Figure 1: Reasons of encouragement the lifelong learning**

In order to empower citizens and guarantee a seamless transition to sustainable societies, LLL and the learning society are essential (Kharazishvili et. al. 2021). UNESCO envisions learning cities in both the developed and developing worlds as a means of fostering a learning society. How can inclusiveness and equity be fostered in learning cities? The following elements in figure 2 can help a learning city promote fairness and inclusion. In the GNLC, Indian Cities Of the 77 cities from 44 nations that joined GNLC in 2022, three were in India. They are located in Telangana's Warangal and Kerala's Nilambur and Thrissur. Among the other cities outside of India were Kyiv, Durban, and Sharjah. Currently, the Global Network of Learning Cities (GNLC) has 294 cities from 76 nations. It is imperative that we all coordinate our efforts to make Imphal a learning city and soon to be a member of the UNESCO GNLC. Learning needs to transcend time and location in the twenty-first century.

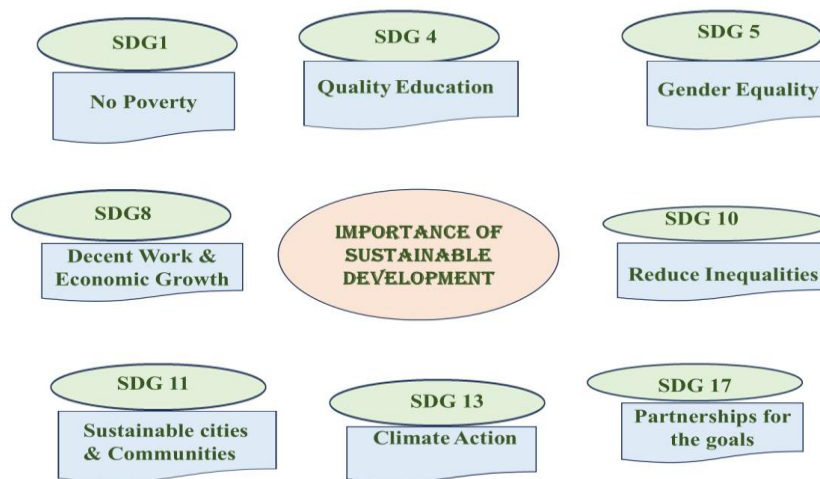


**Figure 2: Encouragement of equity and inclusion for lifelong learning**

In order to bring about a knowledge society, learning needs to become multimodal, asynchronous, and pervasive. Therefore, education must occur outside of classrooms, last a lifetime ("cradle to grave"), and be provided through a range of media, including as lectures, MOOCs, text, audio, video, animation, games, drama, and cultural events, among others. We cannot guarantee equitable, inclusive, and sustainable growth for our city's residents until we take this action. At the city's higher education institutions, including MU, DMU, MTU, NIT, and MUC, knowledge workers can assist the government in working with NGOs, CSOs, farmers' organizations, private companies, and citizens' groups, among others, to accomplish this goal (Kopnina, 2017).

## 4. Results

Through the promotion of an inclusive, empowered, and lifelong learning culture, lifelong learning is essential to reaching the Sustainable Development Goals (SDGs). Here are key aspects of its role:



**Figure 3: Key aspects of Sustainable Development Goals (SDGs)**

### 4.1 No Poverty (SDG 1)

People who pursue lifelong learning acquire skills that improve their employability and chances for earning money, which helps to reduce poverty. By encouraging financial literacy, entrepreneurship, and vocational training, it gives communities the tools they need to end the poverty cycle.

### 4.2 Quality Education (SDG 4)

The objective of guaranteeing inclusive, equitable, high-quality education is consistent with lifelong learning. It encourages a culture of ongoing skill development for individuals of all ages by supporting easily available and varied learning alternatives, such as formal schooling, career training, and community-based initiatives.

### 4.3 Gender Equality (SDG 5)

By addressing educational disparities, lifelong learning promotes gender equality. It empowers women socially and economically by promoting their involvement in a range of educational initiatives. Additionally, lifelong learning promotes a more inclusive society by challenging preconceptions and established gender roles.

### 4.4 Decent Work and Economic Growth (SDG 8)

Economic growth is facilitated by lifelong learning, which equips people for a dynamic workforce. It encourages entrepreneurship, skill development, and adaptation, making it possible for people to find fulfilling work in fields that are changing.

### 4.5 Reducing Inequality (SDG 10)

By offering underrepresented and vulnerable populations chances for education and skill development, lifelong learning helps to alleviate societal disparities. In addition to bridging educational gaps and empowering people to actively engage in social and economic life, it fosters social inclusion.

#### 4.6 Sustainable Cities and Communities (SDG 11)

Sustainable urban development and community resilience are promoted by lifelong learning. It promotes civic involvement, environmental consciousness, and the development of skills necessary for sustainable living. Communities that place a high value on social cohesiveness and environmental sustainability are facilitated by lifelong learners.

#### 4.7 Supporting Climate Action (SDG 13)

By encouraging sustainable practices and environmental education, lifelong learning helps to combat climate change. By reducing their ecological footprint and assisting communities in adapting to climate change, people who pursue lifelong learning become champions for environmental preservation.

#### 4.8 Strengthening Partnerships for the Goals (SDG 17)

Governments, academic institutions, corporations, and civil society organizations can work together more effectively when lifelong learning is promoted. The development and application of sustainable policies and practices are aided by the promotion of a culture of shared knowledge and expertise. All of the Sustainable Development Goals are essentially supported by lifelong learning, which is a cross-cutting instrument. It enables people to embrace change, adopt sustainable behaviours, and actively support the socioeconomic and environmental well-being of their communities, all of which are in line with the larger goal of attaining sustainable development on a global scale.

### 5. UN's 2030 Agenda

The establishment of an innovative economy and the objective need for the nation's competitive development presented a new set of criteria for an individual to be a link in the economy. Even seasoned professionals eventually realize that they must update their knowledge and broaden their professional horizons multiple times throughout their lives in order to continuously adjust to shifting socioeconomic circumstances, labour market conditions, and shifts in the knowledge-based economy. A person who has gotten an education may be satisfied with their professional training because knowledge quadrupled every 50 years in the middle of the last century. One was granted to him during his career (Kuzior et al. 2022). The so-called "competence half-life" is a unique unit for quantifying how outdated a specialist's knowledge is; it measures the amount of time after graduating from a professional educational institution that a specialist's competence declines by 50% due to the obsolescence of the knowledge they have acquired as new information becomes available. The comparison of various countries of GDP per capita and % share shown below in figure 4.

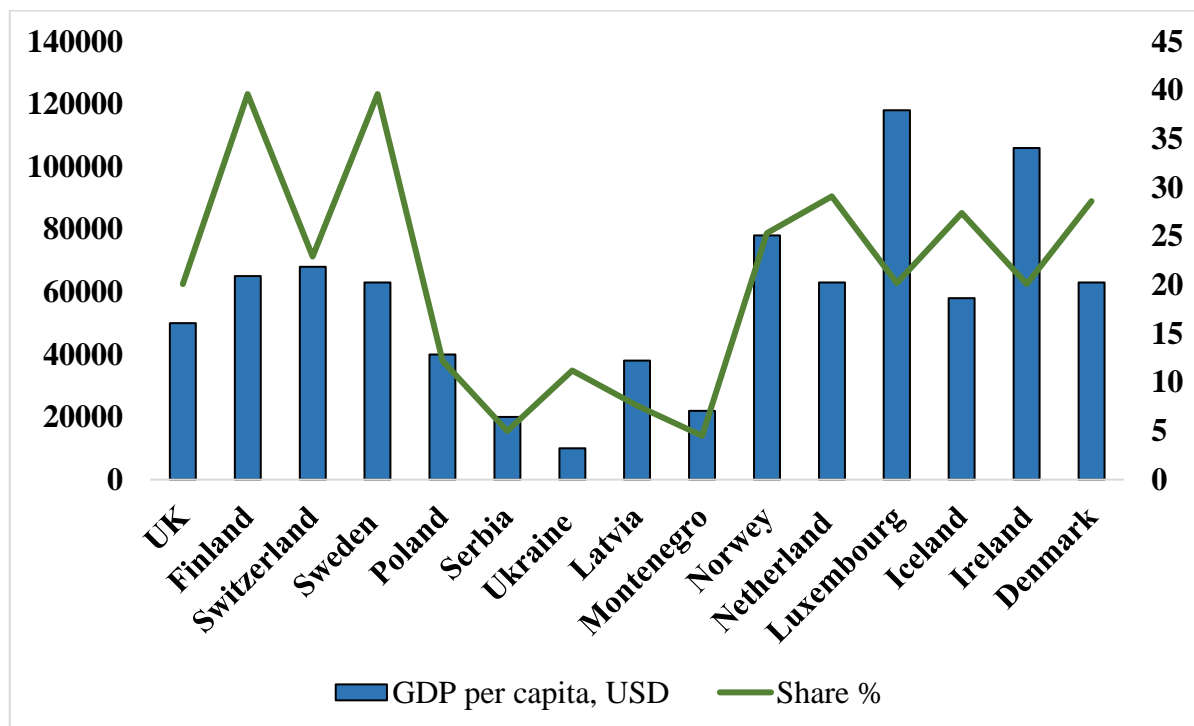


Figure 4: Comparison of various countries of GDP per capita and % Share

Experts now claim that information is doubling every three years and will double every eleven days in the years to come, contrary to the early 21st century when they said that knowledge needed to be updated every six years. Therefore, a person's ability to quickly satisfy the demands of the economy at a given stage determines the nation's competitiveness. Nowadays, practically every nation is seeing an aging population. In 2015, there were 901 million

people aged 60 and older; by 2030, the UN expects that number will have increased by 56%, to almost 1.4 billion people [20]. The number of senior people will overtake the number of children under nine by 2030 for the first time in history, and by 2050, teens and young adults between the ages of 10 and 24 will have to put in more hours at work than their forebears. Due to technology advancements and globalization, they will need to find methods to refocus their careers and develop their abilities in order to remain competitive. To enhance their professional and personal development, adults will also look for new educational options. As a result, the country needs to figure out how to educate people to be competitive and able to adjust to the shifting market. In comparison to other nations, the most inventive and competitive economies in Europe are also those with a high proportion of persons enrolled in school (Figure 3). Germany, the Netherlands, Finland, Sweden, Denmark, and Switzerland are examples of innovative nations with excellent adult education systems. The percentage of individuals (18–64 years old) enrolled in lifelong learning and GDP per capita figures for European countries in 2022. It was created by the authors. Their commonality lies in their strong knowledge-based economies. They are distinguished by having a robust R&D industry, strong international ties, and a large and continuously replenishing talent pool.

Considering that the GDP per capita indicates the economic progress of the country and that the proportion of adults in adult education varies in tandem with GDP, it is reasonable to assume that adult education and the nation's level of economic development are related (Figure 3). Realizing the importance of implementing lifelong education has been aided by a number of external factors, mainly documents and initiatives from the United Nations, UNESCO, the Council of Europe, and the European Commission, as well as resolutions, conventions, and recommendations acknowledged by numerous international and regional forums on lifelong education issues as an essential component of lifelong learning. 2015 saw the adoption of the 2030 Agenda for Sustainable Development by all UN members, providing a shared path toward global peace and prosperity in the present and the future. The 17 Sustainable Development Goals, which stand at the centre of it, are a pressing call to action for all nations, developed and developing, to work together in a global partnership. According to this approach, three forms of growth must be achieved: inclusive growth, which calls for a high-employment economy; smart growth, which describes the development of a knowledge-based and innovative society; and sustainable growth, which calls for the promotion of a resource-efficient, environmentally friendly, and competitive economy.

Using indices developed by international organizations, nations are ranked and measured on a number of factors, including competitiveness. The World Economic Forum's Global Competitiveness Index serves as the foundation for its approach for assessing economic competitiveness. The 12 competitiveness pillars are used to track an economy's level of competitiveness. The ultimate value of the index, which is computed in the same manner for all economies, is a straightforward average of the 12 components. Such indicators are:

1. Institutions
2. Appropriate infrastructure
3. Stable macroeconomic framework
4. Good health and primary education
5. Higher education and training
6. Efficient goods markets
7. Efficient labour markets
8. Developed financial markets
9. Ability to harness existing technology
10. Market size, both domestic and international
11. Production of new and different goods using the most sophisticated Production processes
12. Innovation

Since all competitiveness criteria are thought to have an equivalent impact on an economy's competitive position regardless of income level as the Industrial Revolution 4.0 progresses, each pillar may be prioritized. Nonetheless, the WEF reports' examination of the foundations of competitiveness makes it abundantly evident that the primary causes of slow development and growth in many nations are the incapacity to take advantage of the new opportunities brought about by the fourth industrial revolution, which include cutting-edge technologies and modern information, as well as the "old" issues of social development, which include "poor" infrastructure, skilled labour, and institutions. Information and cutting-edge technologies and skills are the primary forces behind competitiveness, as was previously stated. The degree of innovation and the growth of human and physical capital, which are the primary causes of income disparity (GDP) in nations, are also significantly influenced by the quality of the institutional environment. It should be noted that the dominant scientific opinion is that the educational system is crucial to socioeconomic development and is a major contributor to the modern economy's competitiveness.

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## 6. Conclusion

This study emphasizes the contribution that lifelong learning makes to sustainable development, especially in poor nations. The public and technocrats alike frequently misunderstand sustainable development, despite it being a key idea in international discourse. The findings suggest that lifelong learning

is necessary to raise awareness of resource depletion and the significance of preserving vital resources for coming generations. Rapid technological advancement and a lack of knowledge and skills hinder social and economic progress in many emerging countries. Inadequate knowledge in crucial domains like politics, economics, and society makes poverty, resource depletion, and environmental degrading conditions worse. Lifelong learning can help people close these gaps and adapt to a changing world by assisting them in adopting sustainable development practices. The UN's 2030 Agenda for Sustainable Development, which highlights the value of inclusive education in accomplishing the SDGs, is another topic covered in the piece. SDG 4, which promotes inclusive, equitable, high-quality education and opportunities for lifelong learning for all, makes it simpler to include lifetime learning in national development goals. Other SDGs, including SDGs 13, 12, 3, 8, and 5, are also aided by lifelong learning. As a result, lifelong learning is both a crucial instrument for individual growth and a calculated way to achieve equitable, inclusive, and sustainable development in the twenty-first century.

## References

1. Akin, M., Eydurán, S.P., & Krauter, V. (2023) Food Packaging Related Research Trends in the Academic Discipline of Food Science and Technology: A Bibliometric Analysis. *Clean. Circ. Bioeconomy* 5, 100046. <https://doi.org/10.1016/j.clcb.2023.100046>
2. Akin, M., Eydurán, S.P., Rakszegi, M., Yıldırım, K., & Rocha, J.M. (2023) Statistical modelling applications to mitigate the effects of climate change on quality traits of cereals: A bibliometric approach. In *Developing Sustainable and Health Promoting Cereals and Pseudocereals; Academic Press: Cambridge, MA, USA*, pp. 381–396. <https://doi.org/10.1016/B978-0-323-90566-4.00009-6>
3. Akpoviro, K.S., & Adeleke, O.A.O. (2022). Moderating Influence Of E-Learning on Employee Training and Development (A Study of Kwara State University Nigeria). *Socio Economic Chall.* 6, 83–93.
4. Chentukov, Y., Omelchenko, V., Zakharova, O., & Nikolenko, T. (2021) Assessing the impact of higher education competitiveness on the level of socio-economic development of a country. *Probl. Perspect. Manag.* 19, 370–383.
5. Kharazishvili, Y., Kwilinski, A., Dzwigol, H., Liashenko, V., & Lukaszczuk, Z. (2021) Identification and Comparative Analysis of Ukrainian and Polish Scientific-Educational and Innovative Spaces of European Integration. In *Proceedings of the 37th International Business Information Management Association (IBIMA), Cordoba, Spain, 30–31 May 2021*, 3707–3721. <https://doi.org/10.14595/CP/02/035>
6. Kopnina, H. (2017) Teaching Sustainable Development Goals in The Netherlands: A critical approach. *Environ. Educ. Res.* 24, 1268–1283. <https://doi.org/10.1080/13504622.2017.1303819>
7. Kuzior, A., Arefieva, O., Kovalchuk, A., Brozek, P., & Tytykalo, V. (2022) Strategic Guidelines for the Intellectualization of Human Capital in the Context of Innovative Transformation. *Sustainability* 14, 11937. <https://doi.org/10.3390/su141911937>
8. Kuzior, A., Kettler, K., & Rąb, Ł. (2022) Digitalization of Work and Human Resources Processes as a Way to Create a Sustainable and Ethical Organization. *Energies*, 15, 172. <https://doi.org/10.3390/en15010172>
9. Lenzen, M., Geschke, A., West, J., Fry, J., Malik, A., Giljum, S., Milà, I., Canals, L., Piñero, P., & Lutter, S., et al. (2022) Implementing the material footprint to measure progress towards Sustainable Development Goals 8 and 12. *Nat. Sustain.* 5, 157–166.
10. Le Blanc, D. (2015) Towards integration at last? The sustainable development goals as a network of targets. *Sustain. Dev.* 23, 176–187. <https://doi.org/10.1002/sd.1582>
11. Mendez, S., & Karaulova, A.D. (2019) Internationalization of higher education as a factor of competitiveness. In *Innovative Development of Regions: The Potential of Science and Modern Education*; pp. 136–138.
12. Morton, S., Pencheon, D., & Squires, N. (2017) Sustainable Development Goals, and their implementation: A national global framework for health, development and equity needs a systems approach at every level. *Br. Med. Bull.* 124, 81–90. <https://doi.org/10.1093/bmb/ldx031>
13. Pradhan, P., Costa, L., Rybski, D., Lucht, W., & Kropp, J.P. (2017) A Systematic study of Sustainable Development Goal (SDG) interactions. *Earth's Future* 5, 1169–1179. <https://doi.org/10.1002/2017EF000632>
14. Shmygol, N., Galtsova, O., Solovyov, O., Koval, V., & Arsawan, I.W.E. (2020) Analysis of country's competitiveness factors based on inter-state rating comparisons. *E3S Web Conf.* 153, 03001. <https://doi.org/10.1051/e3sconf/202015303001>
15. Singh, B., & Singh, V., (2024) Present Scenario and Major Challenges of Girls Education in India: An Overview, *International Journal of Modernization in Engineering Technology and Science*, 6(5), 2029-2036.
16. Sinha, A., Sengupta, T., & Alvarado, R., (2020) Interplay between Technological Innovation and Environmental Quality: Formulating the SDG Policies for Next 11 Economies. *Munich Personal Repec Archive*. Available online: <https://mpra.ub.uni-muenchen.de/104247/> (accessed on 23 August 2023). <https://doi.org/10.1016/j.jclepro.2019.118549>
17. Singh, B., (2024) Impact of Pattern of Educational Teaching Skills and Personality Traits after Globalization, *International Journal of Progressive Research in Engineering Management and Science*, 4(5), 1395-1403.



18. Singh, B., (2024) Higher Education in India: Recent Progress and Current Challenges Ahead, *International Journal for Innovative Research in Multidisciplinary Field*, 10(6), 77-83.
19. Singh, B., & Singh, V., (2023) Digital Learning Technology: Higher Education Transforming Pedagogical Style, 24-40. (ISBN No. 978-93-94424-40-1)
20. Singh, B., (2024) A new paradigm shift: Online-learning Environment Transformation in Higher Education, *International Journal of Research Publication and Reviews*, 5(6), 2295-2301.
21. Singh B., & Singh V (2023) Role of NAACcreditation on Quality of Higher Education Institutions, *International Journal of Multidisciplinary Educational Research*, 12(9), 6-14.
22. Tanjung, E.F. (2020) Impact of Public Wellness, Competitiveness, and Government Effectiveness on Quality of Education in Asian Countries. *Cypriot J. Educ. Sci.* 15, 1720–1731.
23. UNESCO. (2017) Education for Sustainable Development Goals: Learning Objectives; UNESCO: Paris, France.
24. United Nations Statistics Division. SDG Indicators Metadata Repository. 2019. Available online: <https://unstats.un.org/sdgs/metadata?Text=&Goal=4&Target=4.7> (accessed on 17 February 2020).
25. Vidic, F. (2022) Knowledge asset as competitive resource. *Socio Economic Chall.* 6, 8–20. [https://doi.org/10.21272/sec.6\(4\).8-20.2022](https://doi.org/10.21272/sec.6(4).8-20.2022)