ISSN No:-2456-2165 https://doi.org/10.5281/zenodo.14613821

Transforming Education: Some Issues in Learning

Oyuntsetseg. L.
Ph.D. Assistant Professor,
Head of Department of Information Technology,
School of National Engineering and Technology, Ikh Zasag International University
Otgonchimeg.Ch. Head of Foreign Language Department, Ikh Zasag International University

Abstract:- The changes in society, economy, and environment, along with the rapid development of science and technology, necessitate a reevaluation and redefinition of educational policies and learning issues. It is crucial to reconsider knowledge, skills, and attitudes of graduates in relation to the future labor market.

Keywords:- *Transforming Education, Digital Transformation, Education Policy, Digital Learning.*

I. INTRODUCTION

In the era of fifth industrial revolution, characterized by artificial intelligence, big data, and digital transformation, is marked by rapid and unpredictable changes occurring in science technology, society, economy, and environment. In response to these changes, it is essential to redefine educational policies, rethink future education, accelerate the implementation of "Vision 2050: Mongolia's Long-Term Development Policy," and the achievement of Sustainable Development Goal 4, as well as address the issue of educational disparities through the involvement of all stakeholders. In today's society, transitioning to a knowledge-based economy, there is an increasing demand for educational institutions and organizations in every country to prepare graduates with competitive knowledge, skills, creative mindset, critical thinking, and high communication abilities to thrive in the global arena.

II. THEORETICAL PART. EVOLVING EDUCATIONAL POLICY AND LEARNING APPROACHES

The education sector plays a unique and irreplaceable role, as it is the intellectual industry and service that significantly impacts the knowledge, skills, humanity, and development of the workforce in all sectors of a country's society and economy. (Batkhuyag.S. , 2020)[1] In 1996, UNESCO and the organization for economic cooperation and development (OECD) defined the trend of educational development in the 21st century as lifelong learning, and the United Nations adopted the "Sustainable Development Goals." (SDGs, 2016)[2] , The "Sustainable Development Goal 4" of Mongolia states, "Goal 4: To ensure inclusive and equitable quality education and promote lifelong learning opportunities for all," and within the framework of the "Education 2030" program, it emphasizes that information and communication technology (ICT) is a key lever for improving the quality of education.

“In the "Vision 2050: Mongolia's Long-Term Development Policy," the ultimate goal is to "Develop a country with healthy, strong, educated, patriotic, adaptable, intellectual, and creative citizens." The policy also defines "Goal 2.1: To ensure equal opportunities for everyone to receive quality education, strengthening a lifelong learning system that serves as the foundation for individual development, family well-being, and the country’s progress." (Vision 2050, 2020)[3].

In the context of digital transformation of the 21st century, it is essential for policymakers, school leaders, and teachers at all levels to consider the need for curriculum choices that allow students to develop their talents, critical thinking, problem-solving abilities, creative thinking, foreign language skills, communication skills, teamwork skills, and professional orientation for future labor markets. This consideration is vital for the development of education policies, as students will need to acquire these competencies to meet the demands of the changing world (Figure 1). (Ichinhorloo, 2016)[4]

[1] Batkhuyag,S. (2020). Philosophy of education: Contemporary ideology. –UB., Soyombo printing LLC. ISBN: 978-9919-23-294-8. page 32;

[2] Mongolian sustainable development goals. (2016). http://sdg.gov.mn/Home/About

[3] Vision 2050. Mongolia’s long term development policy. (2020). 52nd Resolution of Mongolian state great khural in 2020. -UB., Cabinet Secretariat of Government of Mongolia. https://legalinfo.mn/mn/detail?lawId=211057&showType=1

[4] Ichinhorloo.Sh. (2016). “Some thoughts from research on education policy” scientific article. -UB., Scientific journal "lavai".№17, 2016.

ISSN No:-2456-2165 https://doi.org/10.5281/zenodo.14613821

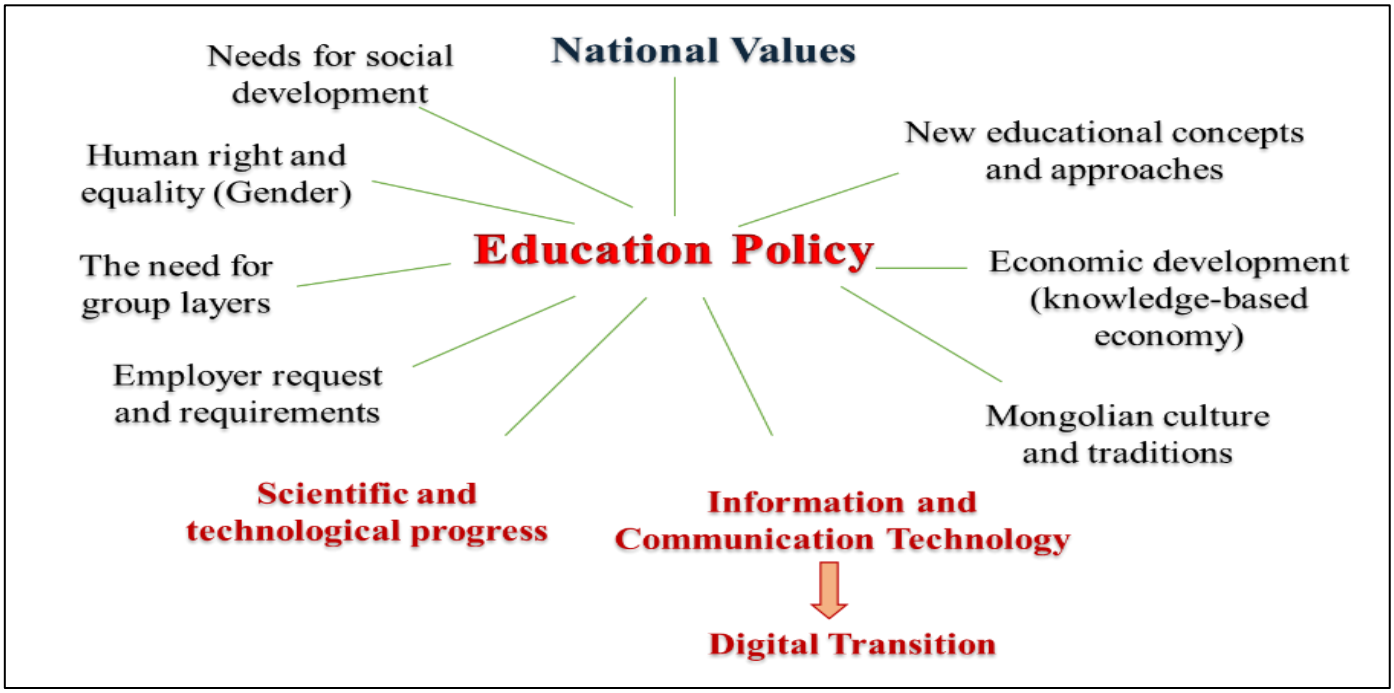

Fig 1: Trends in Education Policy

One of the key foundations for implementing education policies is training. Today, it is essential to implement a comprehensive system that supports both online (digital) and in-person teaching, as well as curricula that promote collaboration between teachers and learners. The advancement of science and technology and the digital transformation are already clearly set to occupy a significant space in the future of the education sector. (Ariunbold & Basbayar, 2021)[5] Therefore, today, forms such as blended, hybrid, and flipped learning, which combine advantages of both classroom and online education, are rapidly developing. Programs that these methods are being implemented at both national and international levels. (Table 1).

Table 1: Comparison of Learning Formats

Some educational activities	**Classroom based learning**	**Blended learning (Classroom and Online combined pearning)**			**Online Learning**
		Flipped	**Blended**	**Hybrid**	
Learning environment	**100% classroom based**	**Classroom, Online**	**Class room 75% Online 25%**	**Classroom 50% Online 50%**	**100% online**
Forms of student participation	The student will participate under the guidance of the teacher in the learning activities.	The student will receive the course materials in both printed and digital formats, study independently in advance, and participate in classroom training through practical exercises, discussions, and debates.	Tasks that require in-person participation will be completed in the classroom; however, most exercises and assignments are to be studied independently within the given time frame and submitted in both printed and soft formats..	50% of the course content will be studied in online format, while the remaining 50% will be studied in the classroom. The student will participate in the online lessons regardless of time and location.	100% of the course content will be studied independently. The student will participate in the learning activities without being restricted by time and location.

[5] Ariunbold.J., Basbayar.B. (2021). The link between future employment and education policies. -UB., Incom print LLC. p 347 . ISBN: 978-9919-24-599-36. p 155

ISSN No:-2456-2165 https://doi.org/10.5281/zenodo.14613821

Feature	- Socialization -Interact in person -Real tangible tools - Flexible assessment - Collaborative learning environment	Independent learning skills - opportunity to deepen knowledge - Opportunity and ability to share knowledge - Direct interaction	- Flexible Time and location Conditions -Independent learning skills -Opportunity to deepen knowledge -Ability and opportunity to share knowledge -Real-time interaction -Creativity -Economic efficiency	- Flexible Time and location Conditions -Independent learning skills - Opportunities for creative thinking - Ability to share knowledge - Responsibility -Economic efficiency -Environmentally friendly learning	- Free choise of location and timing - Independent creativity - Economic efficiency - Environmentally friendly learning

Although the implementation of blended learning has significant advantages, there are also challenges and difficulties encountered during the integration process. For example, the three challenges identified by the faculty of the College of Engineering at Midwestern University — time consumption, a lack of teacher-student interaction, and technical issues — are also present in our case.

The first challenge is the considerable time required to prepare and develop suitable content, which takes at least half a year. The second challenge is the failure to establish effective feedback and communication with students. In order to avoid overwhelming students, the time allocated for online exercises reduces the time available for direct interaction with them, which can be a disadvantage for some students who prefer a more organized and structured teaching approach. The third challenge is the need for a highly skilled team to handle the technical aspects of preparing new course designs, developing online content, editing video lectures, and creating quizzes and tests.

III. RESEARCH PART. INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) ENVIRONMENT, USE, AND FUTURE TRENDS IN THE EDUCATION SECTOR

Due to the rapid advancement of science and technology, including artificial intelligence, big data, block chain, and simulation, stemming from the fifth industrial revolution, digital transformation is accelerating. In today's world, the leadership, teachers, and students at all levels of education institutions are provided with diverse opportunities to access information, utilize sources, conduct research, and, through the use of open and free platforms for online learning, reinforce their knowledge. Additionally, they can explore and acquire in-demand skills. Currently, the edx.org platform is one of the most widely used, offering opportunities to study at top universities around the world, serving as an example of this trend.

The safe and appropriate use of scientific and technological advancements at all levels of education has a positive impact on learning methods. However, it is increasingly required for both teachers and students to continuously develop their knowledge and skills in working with digital information in a virtual environment.

The global COVID-19 pandemic negatively impacted all sectors of society and the economy in countries around the world, leading to economic crises, poverty, and food shortages. The pandemic also created an educational crisis in worldwide. In Mongolia, during the 2019-2021 academic years, the transition of educational institutions at all levels to online formats led to a reduction in students' school hours by half, resulting in learning delays and gaps. At the same time, the high level of inequality in access to quality education further exacerbated the gap between rural and urban areas and between low-income and high-income households. The education sector in Mongolia was not adequately equipped with information and communication technology (ICT) infrastructure, and the system was not fully prepared to address the challenges posed by the pandemic. (UNESCO, 2021)[6]

- *The Environment of Information And Communication Technology in the Education Sector*

Education is a key factor in supporting and ensuring the quality of life for every citizen throughout their lifetime, as well as being the foundation for the development of a country's society, economy, science, and technology. It is also a guarantee of national sovereignty and security[7]. Therefore, the policy of this sector should be one of the most important parts of the national policy.

"Policy is explained as a method that is carefully thought out and developed" in the Mongolian dictionary. (Dambajav, 2010)[7]

[6] UNESCO. (2021). Review and Analysis of the Information and Communication Technology Policy in the Education Sector of Mongolia. Page 1 ;

[7] Dambajav., I. (2010) The Melody of Enlightenment: A Treasure of beautiful mongolian words." Mongolian

ISSN No:-2456-2165 https://doi.org/10.5281/zenodo.14613821

The "Transforming education" initiative, presented by the UN Secretary-general during discussions with the heads of state of member countries in 2021 on supporting "Our Common Agenda," was widely recognized as the foundation for achieving the Sustainable Development Goals.[8]

The main goal of "Education 2030," known as the "Incheon Declaration," which focuses on "**equitable and inclusive quality education, and promoting lifelong learning opportunities for all,**" as well as the goals outlined in Mongolia's long-term development policy, "Vision 2050" (approved by the Mongolian state great khural 2nd resolution, in 2020), Goal 2.1, the General Education Law, and the Medium-Term Development Plan for the Education Sector (Ministry of Education, Culture, Science, and Sports, 2020), highlight the essential role of information technology in achieving the educational policy objectives of Mongolia. (Table 2, 3).

Table 2: Policy Documents on ICT Issues in Education Sector

Scale	Policy Documents by Time Classification		
	Long-term	**Medium-term**	**Short-term**
On a global scale	- The concept of sustainable development-2030 - Incheon declaration. Sustainable education-2030	- The UN General Assembly Summit (Transforming Education)	
At the national level	- Vision 2050. Mongolian long-term education policy;	-Government action program and implementation plan (2016-2020, 2020-2024); - "Digital nation" Policy document and guidelines (2022-2027) - National E-Government program (2019)	-Policy on Overcoming the Social and Economic Challenges caused by the COVID-19 Pandemic -Relevant Government decrees and Decisions
At the sector level	-State Policy on Education (2014-2024) - State Policy on Information and Communication Technology Development (2017)	- National program on education for sustainable development (2018-2022); - Medium term development plan for the education sector (2021-2030);	Guidelines for conducting online education during Covid-19 pandemic, New curriculum for education, and guidelines for lifelong learning

Table 3: The Objectives Outlined in Policy Documents Related to Education and Digital Transformation

Policy Documents	Proposed Objectives
Sustainable development goals 2030. - Incheon declaration, Sustainable education-2030	-To build a lifelong learning system; - Expanding the scope of information technology and communication, installing high-speed internet networks in rural areas, and increasing their usage.
National Policy on Information Technology and Communications	- To engage citizens with digital literacy; - To develop education, knowledge, and skills of Mongolian people by utilizing advancements in information technology;
"Цахим үндэстэн" хөтөлбөр	i) Digital infrastructure; ii) E-government; iii)Information security; iv) Digital literacy skill; v) Innovation, industry; vi)National development accelerator.
Government's 2020-2024 Action Program and the Plan for its Implementation. Policy to Overcome the Social and Economic Challenges Caused by the COVID-19 Pandemic.	Establishing an online learning platform, developing and preparing digital content. Studying suitable formats and versions for online education. Providing access to online education for households and populations without access to television or the internet. Creating a legal and regulatory environment to support online education.
The five policy directions outlined in the Medium-term Development Plan for the Education Sector (2021-2030)	i) Lifelong learning; ii) green, smart, digital technology; iii)expansion to access to education; iv) capacity building for educators; v) Promoting inclusive and equal education.

language dictionary. Vol. I., Color Printing LLC., 1219 pages, 227. .

[8] UN, Mongolia. (2022). https://mongolia.un.org/mn/189005- Transforming education"-national summit

ISSN No:-2456-2165 https://doi.org/10.5281/zenodo.14613821

In conclusion, the alignment between the transforming educational reforms and the digital transition underscores the importance of embracing technology to enhance education in Mongolia, making it more accessible, inclusive, and effective for all learners.

- *Infrastructure and Usage of ICT in the Education Sector:*

Following the pandemic, the educational activities have increasingly shifted to digital formats, enriching traditional classroom learning. As a result, the learning environment has undergone significant changes. In response, the introduction and sustainable development of a management information system in the education sector have led to the digitalization of educational services, utilizing e-governance and innovations. This system also supports analytical analysis at the management level, assisting in optimal planning and decision-making. To further support this, the "Education Information Technology Center" has been established and is operational. The center not only develops the core system, esis.edu.mn, but also works on the development of several subsidiary systems.

By accelerating the digital transformation, significant progress has been made in delivering education services in a more equitable, inclusive, and high-quality manner. Processes such as enrollment registration, document requests, and scholarship programs have been digitized. For example, the MEDLE.MN open educational platform has been developed, where over 19,000 digital content resources, including electronic course materials, textbooks, televised lessons, interactive exercises, workbooks, interactive content, virtual laboratories, and simulations, are freely available for use.

Additionally, with the establishment of the MEDLE e-school in the 2022-2023 academic year, senior secondary elective courses previously designed for traditional classroom learning have been transitioned to "digital learning planning" and are now being implemented online. As of this academic year, 15,531 students from grades X and XI, distributed into 1,019 groups, are studying 16 subjects online. This shift allows the education program, which was previously classroom-based and supported by printed learning materials, to be delivered digitally, independent of location and time, relying on electronic resources and materials.

- *Trends in the Development of Educational Reform*

Future of the Labor Market and Trends in the Learning Process: According to the "Future of Jobs Report 2020," based on data from 15 sectors and 26 countries, by 2025, the allocation of labor between humans and machines is expected to change, with 85 million jobs potentially shifting between humans and machines. At the same time, 97 million new jobs could emerge, better aligned with the conditions of human, machine, and algorithmic labor. These new jobs will be based on cloud computing, artificial intelligence, content, data, and product development, with 63.1% of the in-demand skills focusing on digital marketing and human-computer collaboration skills. In response to these upcoming changes, schools will integrate cloud technologies into the learning process, which will influence the fundamental elements of the process, necessitating certain changes. In other words, students will need to acquire skills in communication, teamwork, creative thinking, and analytical skills, along with the knowledge, skills, and practices needed in the 21st-century labor market. The education system will aim to address the challenges students face in acquiring these skills. The Organization for Economic Co-Operation and Development (OECD) in its "Future of Education and Skills 2030" project highlights that 21st-century skills include foundational scientific knowledge (Figure 2) (OECD, 2018)[9]

[9] Organization for Economic Co-operation and Development. Future of Education and Skills 2030: Conceptual Learning Framework Education and AI: preparing for the future & AI, Attitudes and Values 8th Informal Working Group (IWG) Meeting 29-31 October 2018 OECD

ISSN No:-2456-2165 https://doi.org/10.5281/zenodo.14613821

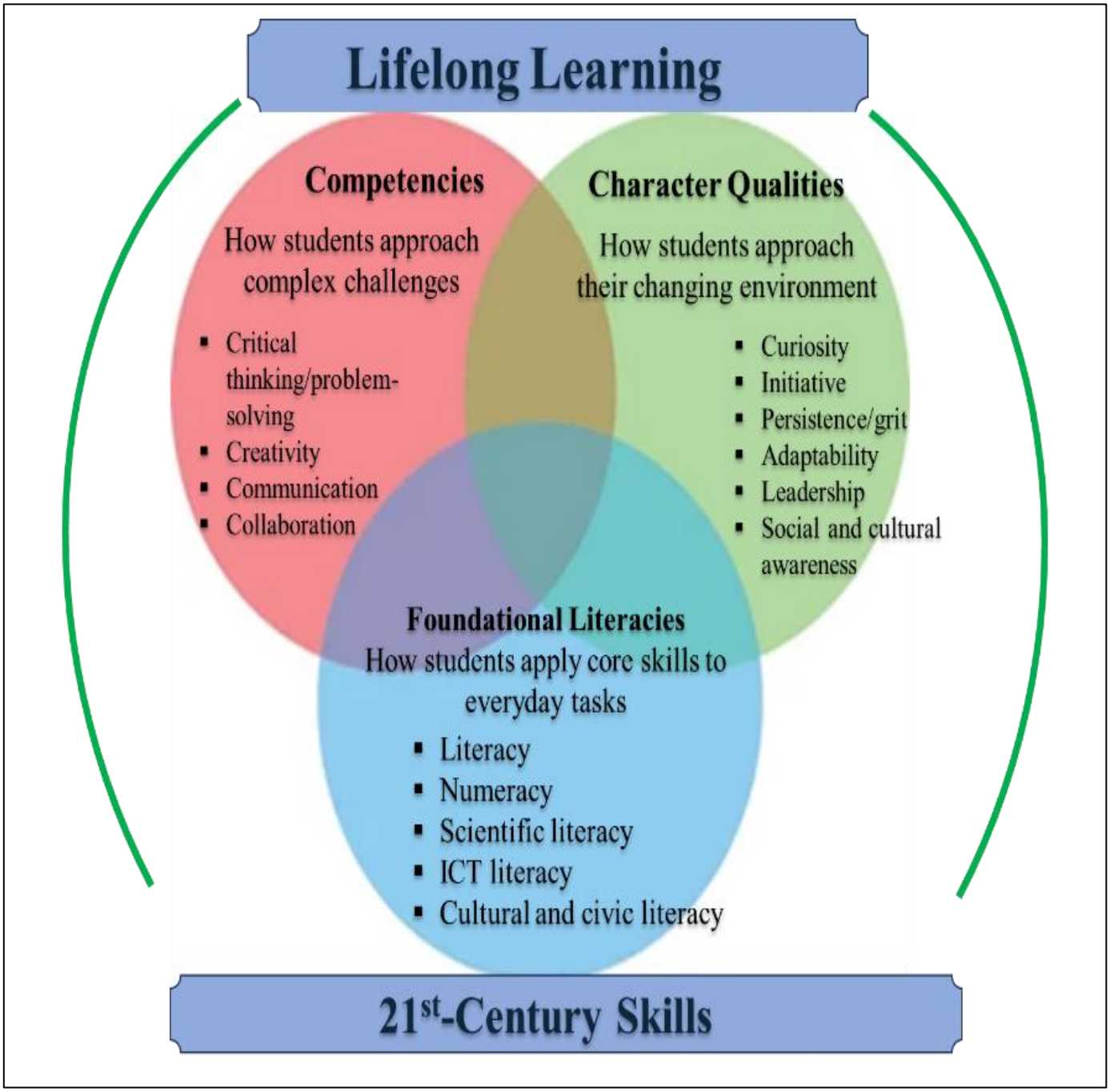

Fig 2: The 16 Skills Included in the 21st Century

The development trends of educational units. Both teachers and learners are increasingly using social media platforms and digital tools to engage in learning activities, communicate with others, and complete assignments. This trend indicates that teachers will continue to share their experiences, while students will share information, content, and topics of interest. The future of work is rapidly changing, with artificial intelligence and robotics advancing across all sectors, accelerating the fifth industrial revolution. In this era, education must align with the development trends of future business sectors and address the challenges that the future workforce will face. This can be achieved by utilizing internet environments, connecting devices, and testing and implementing innovations, ensuring the successful application of future technological practices (Figure 3).

ISSN No:-2456-2165 https://doi.org/10.5281/zenodo.14613821

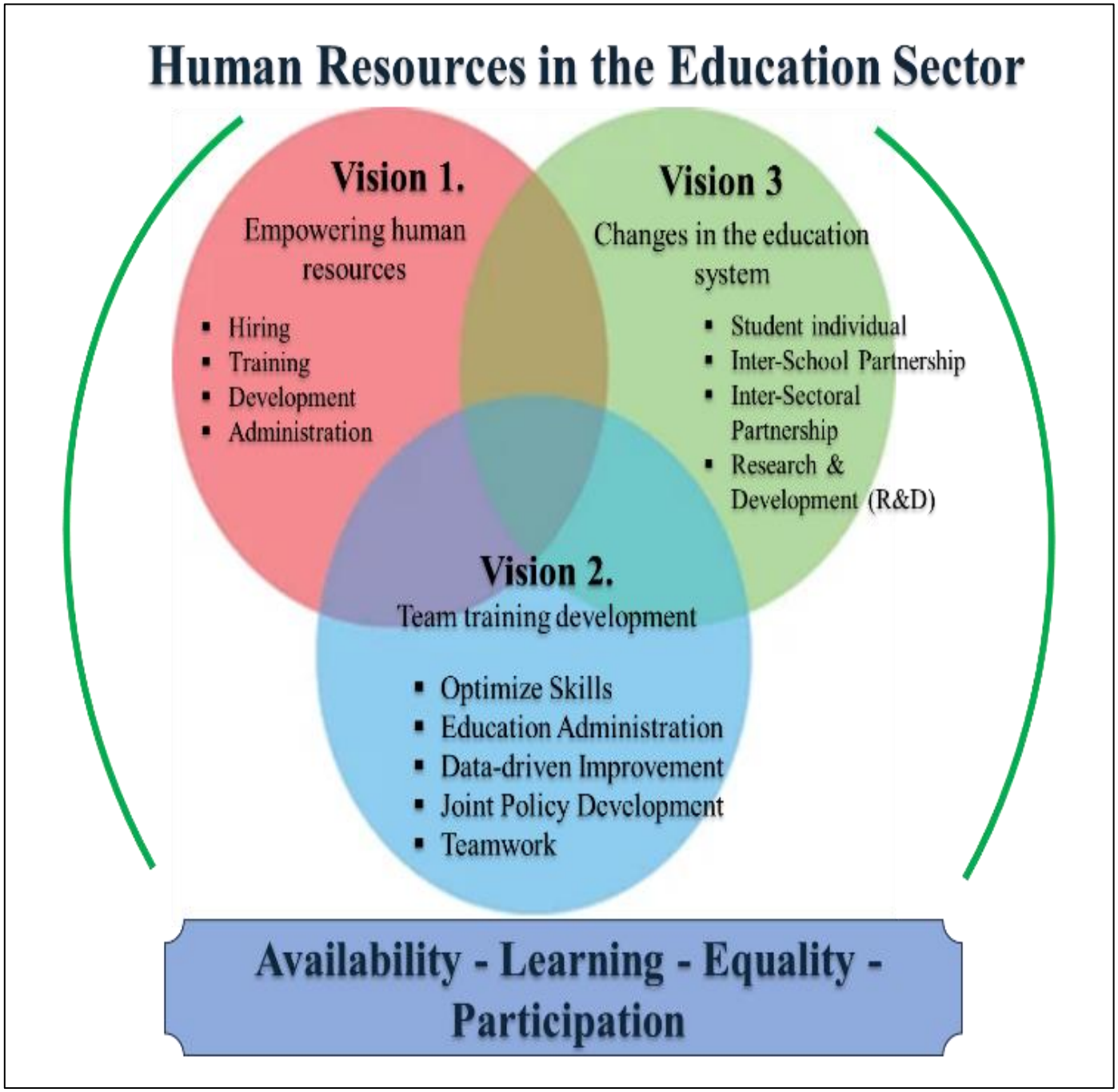

Fig 3: Three Interrelated Visions for Human Resources in the Sector that will Lead to Education System Reform [10]

In terms of human resources in the education sector, it is important to ensure accessibility, learning, equity, and participation.

However, it is not possible to count participation in formal education as the development of an individual's skills unless they acquire basic competencies. Therefore, basic skills should be provided starting at the general education level. In order to equip individuals with skills that meet the demands of the labor market, it is necessary to offer short-term modular training, courses, work experience, and involve them in new projects and programs. Additionally, opportunities for lifelong (environmental) education should be considered and integrated (Figure 4).

[10] Ariunbold.J., Basbayar.B. (2021) The link between future employment and education policies UB., Incom print LLC. p 347. ISBN: 978-9919-24-599-36. 163

ISSN No:-2456-2165 https://doi.org/10.5281/zenodo.14613821

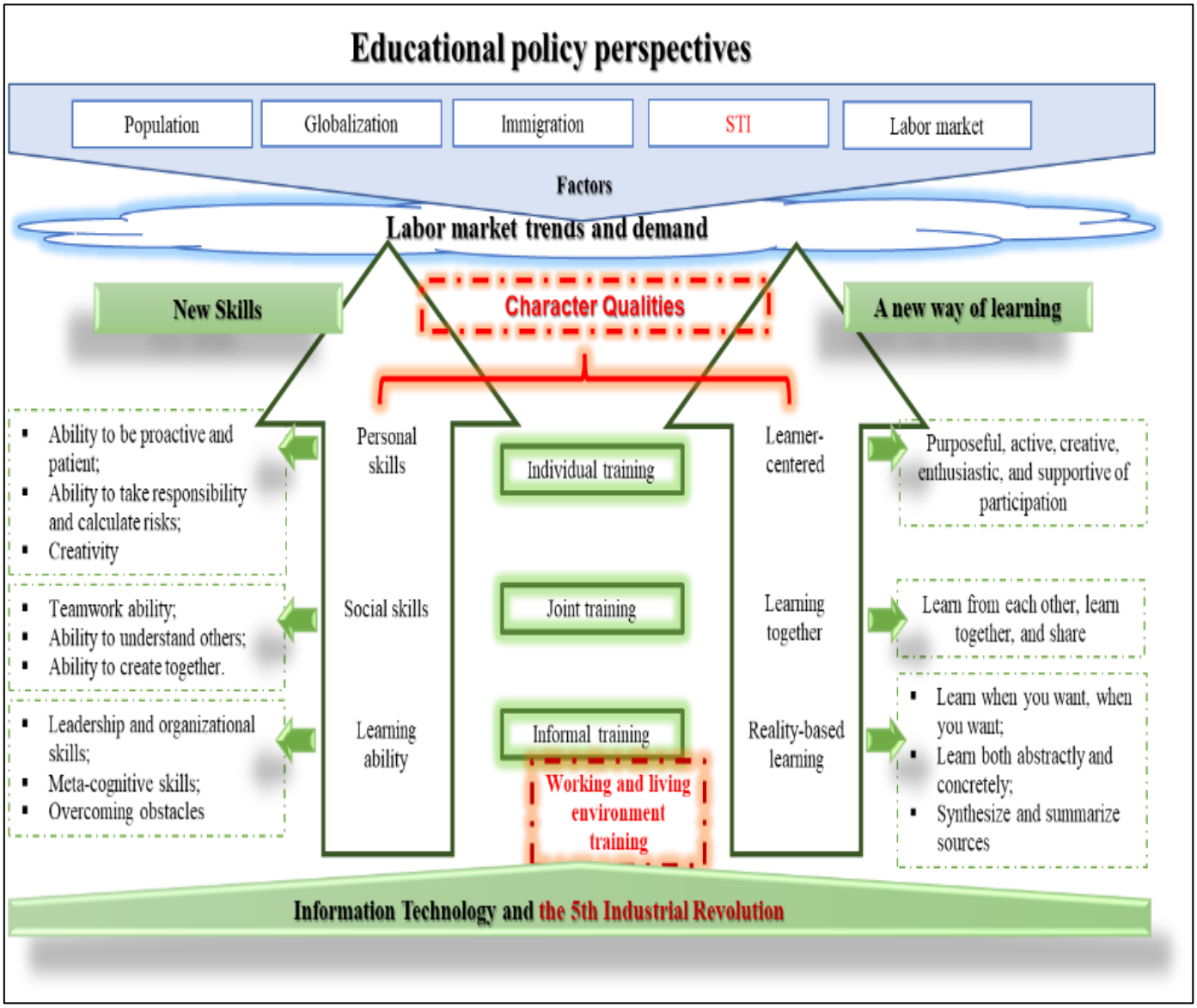

Fig 4: Further Prospects of Educational Policy11
Abbreviation: * STI – Science, Technology, Innovation

Additionally it is necessary to address the learning gap caused by the pandemic and develop essential skills for working and living in a rapidly changing society through educational activities. These include:

- Thinking about thinking;
- Learning to learn;
- Emotional regulation;
- Goal orientation;
- Perseverance;
- Empathy.

IV. CONCLUSION

The biggest change in education is the shift from teaching to learning. The development of modern neuroscience emphasizes the importance of fostering critical thinking skills and teaching learning strategies to develop intellectual capabilities from an early age. Therefore, it is necessary to focus on systematically teaching the key skills of the 21st century, starting from general education schools.

As the future job market undergoes drastic changes with artificial intelligence and robotics rapidly entering various sectors, the Fifth Industrial Revolution is gaining momentum. In this context, education must equip the future workforce to overcome numerous challenges by aligning with the development trends of future business sectors. To do so,

[11] **Oyuncetseg, L., Rinchinbazar, R. (2022).** "The 4th Industrial Revolution: Changes in Education Policy and Future Outlook" Presentation. - Ulaanbaatar, National University of Mongolia, "University Development: Issues and Solutions" International Scientific Conference. December 15, 2022.

ISSN No:-2456-2165 https://doi.org/10.5281/zenodo.14613821

education should enable the successful application of future technological practices by exploring and implementing innovations in internet environments and connecting devices.

When determining the future prospects of education policy, it is essential to include the possibilities for the integration of scientific advancements, technology development, and innovation.

In accordance with global trends in educational development, one form of education that should be implemented to achieve lifelong learning goals is creating conditions that support learning from the environment.

REFERENCES

[1]. "Transforming Education" compiled works of national summit. Ministry of education, Institute of Education, Culture, and Arts - Ulaanbaatar, "Sodpress" LLC., ISBN: 978-9919-9714-7-2., page 54.

[2]. Bathuyag, S. (2020). Philosophy of Education: Contemporary Ideas. –ISBN: 978-9919-23-294-8. Soyombo Printing LLC, Ulaanbaatar.

[3]. Sustainable Development Goals of Mongolia. (2016). http://sdg.gov.mn/Home/About

[4]. Vision 2050. Mongolia's Long-Term Development Policy. (2020). Resolution No. 52 of the State Great Khural of Mongolia, in 2020. - Legal Information Unified System: https://legalinfo.mn/mn/detail?lawId=211057&showType=1 Government of Mongolia, Ulaanbaatar,

[5]. Policy on Education by the Government. (2015). Government Resolution No. 12 of 2015. Legal Information Unified System: https://legalinfo.mn/mn/detail?lawId=206661&showType=1

[6]. Ichinkhorloo, Sh. (2016). "Some Thoughts from Research on Education Policy," Scientific Article. - Ulaanbaatar, "Lawai" Scientific Journal. 2016. No. 17.

[7]. Ariunbold, J., Basbayar, B. (2021). The Link between Future Employment and Education Policies. - Ulaanbaatar, Incom Print LLC. 347 pages. ISBN: 978-9919-24-599-36.

[8]. UNESCO. (2021). Review and Analysis of the ICT Policy in Mongolia's Education Sector. Page 1.

[9]. Dambajav, I. (2010). "The Melody of Enlightenment: A Treasure of Beautiful Mongolian Words." Mongolian Language Dictionary. Vol. I., Color Printing LLC., 1219 pages, page 227.

[10]. Medium-Term Development Plan for the Education Sector. Minister of education in 2021-2030. Minister of Education and Science Order No. A/96, in 2020. ADB's Technical Assistance Project “MON 51103-001: Support for Developing a Master Plan for the Education Sector.”

[11]. Organization for Economic Co-operation and Development. Future of Education and Skills 2030: Conceptual Learning Framework, Education and AI: Preparing for the Future & AI, Attitudes and Values. 8th Informal Working Group (IWG) Meeting 29-31 October 2018 OECD.

[12]. Oyuncetseg, L., Rinchinbazar, R. (2022). "The 4th Industrial Revolution: Changes in Education Policy and Future Outlook" Presentation. - Ulaanbaatar, National University of Mongolia, "University Development: Issues and Solutions" International academic Conference. December 15, 2022.