

Product Sustainable Development: Education

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Abstract: This paper focuses on the sustainable development of educational products, with particular emphasis on the characteristics of educational resources and their importance for the development of educational products. Educational resources should have the characteristics of universality and equity, diversity and inclusiveness, quality and sustainability, technological innovation and adaptability, and accessibility and manageability. These resources can be developed and used through cross-sectoral cooperation mechanisms, social participation and international cooperation to promote the sustainable development of education. Also, the links and differences between educational product development and sustainable development, as well as the challenges and solutions. The sustainable development of educational products requires making full use of and integrating various resources, innovating teaching and learning methods, improving the quality of teachers, strengthening community cooperation and overcoming challenges such as technological dependence and the pressure to update.

Keywords: Educational Products, Sustainability, Educational Resources, Accessibility, Equity, Diversity, Inclusiveness, Quality, Technological Innovations, Adaptability

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1 Historical Development of the Industry

Since the end of the Second World War, the world has experienced many political, economic and social changes, but peace and development have always been the two major themes of the present era.

In the area of peace, the international situation after the Second World War has been generally stable, with the growth of the peace factor outpacing the growth of the war factor, which has made it possible to strive for an international environment of peace for a longer period of time. However, hegemony and power politics still exist, and local conflicts and hot-spot issues arise one after another, which shows that the people of the world still have an arduous task in striving for and maintaining lasting peace in the world.

In terms of development, the world economy has grown considerably since the Second World War, with the scale and speed of development surpassing that of previous history. With the rise of the knowledge-based economy, the world's economic development tends to focus on improving quality, and sustainable economic development is receiving increasing attention. However, today's world is still a world of disparity between the rich and the poor, with the gap between the developing and the developed countries growing wider and wider. The unjust and unreasonable old international economic order is still jeopardizing the interests of developing countries. One of the most prominent

problems of global development is the imbalance in resources highlighted by the issue of education.

1.1 The Historical Development and Philosophy of Education in China

Ancient education: In ancient China, education was mainly undertaken by families and private schools. Confucianism was the dominant ideology of ancient education, emphasizing the cultivation of moral values such as "benevolence, righteousness, propriety, wisdom and trust". The imperial examination system was the main way of selecting officials in ancient China, and was also an important part of the education system.

Modern education: In modern times, China has undergone a number of educational reforms. Among them, the "abolition of the imperial examinations and the establishment of academies" at the end of the Qing Dynasty laid the foundation for modern education. During the Republican period, Cai Yuanpei and other educators advocated "new education", emphasizing science, democracy and pragmatism. After the founding of New China, China gradually established a socialist education system, emphasizing that education should serve the proletariat politically and be integrated with productive work.

Modern education: Since the reform and opening up of China, education has made remarkable achievements. The nine-year compulsory education system has been popularized, and the scale of higher education has been

expanding. The concept of education has also gradually shifted towards quality education, emphasizing the cultivation of students' innovative spirit and practical ability.

1.2 Historical Development and Philosophy of Education in the World:

Ancient education: In the ancient world, different civilizations had distinctive educational systems. Ancient Greece emphasized philosophical and civic education, Ancient Rome focused on legal education, and Ancient Egypt and Ancient India emphasized religious and vocational education.

Medieval education: Education in medieval Europe was mainly controlled by the Church and was dominated by religious education. At the same time, secular education also emerged in some cities, such as the "humanist" education of the Italian Renaissance.

Modern Education: In modern times, Western education has undergone a number of changes. Among them, the naturalistic concept of education advocated by Enlightenment thinkers such as Rousseau has influenced educational reforms worldwide. After the Industrial Revolution, pragmatism and popularization of education became the dominant trends. Dewey's Progressivist philosophy of education emphasized student-centeredness and focused on students' interests and experiences.

Contemporary education: Since the late twentieth century, world education has gradually shifted to the concept of lifelong learning and education for all. Countries have introduced educational reform measures to adapt to the development of the knowledge-based economy and the trend of globalization. International organizations such as UNESCO are also promoting cooperation and development of education on a global scale.

At the beginning of the twenty-first century, there was an expectation of an end to the culture of war and violence of the previous century and a shift towards a culture of peace. The United Nations declared the year 2000 as the International Year for the Culture of Peace, and subsequently designated the period 2001-2010 as the International Decade for a Culture of Peace and Non-Violence for the Children of the World. However, it was not long before we found ourselves in a culture of challenge, uncertainty and danger, reflecting an age of greed and corruption. At the same time, the planet and its biodiversity face serious threats from continuing global warming, climate change, increasing pollution, the spread of disease and widespread poverty. Despite the recognition that the planet is in crisis, we have not been able to respond forcefully to this global catastrophe. Dramatic changes in human lifestyles compel us to take action to protect the planet and create a more sustainable future for future generations.

Chinese education and world education are unique in

their historical development and philosophy. Chinese education has gone through the transformation of ancient Confucianism, modern educational reforms and modern quality education, while world education covers the educational systems of ancient civilizations, the rise of religious and secular education in the Middle Ages, the development of the modern concepts of naturalism, pragmatism and progressivism in education, and the contemporary promotion of the concepts of lifelong learning and education for all. These historical developments and philosophies are intertwined and together they form a rich and diverse picture of education.

Since 1945, the United Nations has made unremitting efforts in sustainable education policy and practice in countries around the world. In terms of policy, the United Nations has issued a number of important documents to promote the development of sustainable education. For example, the Universal Declaration of Human Rights, adopted in 1948, emphasized the right to education and laid the foundation for sustainable education. Since then, the United Nations has issued documents such as the Recommendation on Education and Economic Development and the Education 2030 Framework for Action, which set out the goals and strategies for promoting sustainable education. These policy documents emphasize the centrality of education in promoting sustainable development and call on countries to integrate the concept of sustainable development into their education systems and to nurture a new generation equipped with the knowledge, skills and values necessary for sustainable development.

In practice, the United Nations supports the implementation of sustainable education in countries around the world through a number of projects and programs. For example, the United Nations Educational, Scientific and Cultural Organization (UNESCO) has set up a number of educational projects, including support for developing countries in improving the quality of education, promoting literacy, promoting technical and vocational education and training, and protecting the right to education. In addition, the United Nations Children's Fund (UNICEF) has carried out a number of educational projects for children and adolescents with a view to guaranteeing their right to education and improving the quality of education.

Education for life is at the heart of UNESCO's mission to build peace, eradicate poverty and promote sustainable development. It is a human right for all people throughout their lives. The organization is the only United Nations agency with a mandate that covers all aspects of education. It has been entrusted with leading the global Education 2030 agenda through Sustainable Development Goal 4.

UNESCO provides global and regional leadership in the field of education, strengthening global education systems and addressing contemporary global challenges through education with gender equality as a fundamental principle. Its work encompasses the development of quality education from preschool to higher education and beyond.

In national practices, many countries have responded positively to the call of the United Nations to incorporate sustainable education into national policies and development planning. For example, some countries have promoted the implementation of sustainable education in their countries by reforming their education systems, formulating curriculum policies and strengthening teacher training. At the same time, other countries are promoting the in-depth development of sustainable education through the establishment of cross-sectoral cooperation mechanisms, the encouragement of social participation and international cooperation.

However, there are still many challenges to overcome, such as the uneven distribution of educational resources, the uneven quality of education and the need for innovation in educational concepts. In the future, the United Nations will continue to be committed to promoting the development of sustainable education and contributing to the realization of the global sustainable development goals.

2 Characteristics of Educational Resources

Sustainability resources for educational product development do cover a wide range of tools, methods, and practices to promote sustainability in education globally. Depending on the type of resources you provide, we can further analyze the characteristics of these resources and their importance for educational product development.

Resource type: Teaching materials and curriculum design that integrate the concepts of sustainable development, environmental education and global citizenship into educational content to ensure that learners acquire relevant knowledge and skills in different cultures and contexts. By integrating the concepts of sustainable development, educational products can develop a global perspective and a sense of responsibility in learners, enabling them to address current and future global challenges.

Digital educational resources, such as online learning platforms, e-books and educational applications, should provide learners with easy access to global learning resources, breaking down geographical and social barriers. Digital educational resources can expand the reach of education, enable more learners to access high-quality educational resources and learning opportunities, and promote equity and inclusiveness in education. Teaching Methods and Strategies, Teaching methods and strategies should focus on practice, collaboration, problem solving and critical thinking in order to enhance students' awareness and capacity for sustainable development. Through innovative pedagogical approaches, educational products can develop learners' practical skills and innovative thinking, enabling them to cope with complex realities and promote sustainable development.

Teacher training, where teachers should be trained in sustainable development goals and methods to improve the quality of their teaching and educational leadership and to ensure the quality and effectiveness of education. By training teachers, educational products can ensure that they have the knowledge and skills needed to teach sustainable development and thus effectively communicate these concepts to learners.

Campus practices and management, sustainable practices on campus, such as energy conservation, waste management and green campus initiatives, should be promoted and supported. Through campus practices and management, educational offerings can create a culture of sustainability in the school environment and immerse learners in it, deepening their understanding and practice of sustainability.

Community cooperation and participation with communities, families and non-governmental organizations can facilitate the establishment of educational communities and achieve resource sharing and social participation. Through cooperation and participation with the community, educational products can be more closely tailored to the actual needs and cultural backgrounds of learners, and the relevance and effectiveness of education can be improved.

These resources have the characteristics of universality and equity, diversity and inclusiveness, quality and sustainability, technological innovation and adaptability, and accessibility and manageability. These characteristics ensure that educational product development meets the needs of different regions, social groups and learners, while adapting to future educational challenges and developments. By fully utilizing these resources, educational product development can make a positive contribution to the sustainable development of education worldwide.

Resources for sustainable development of educational products refer primarily to the elements necessary to support the development of a long-term, healthy and equitable educational ecosystem. These resources include, but are not limited to, educational content, educational technology, educator professional development, educational facilities and financial inputs. In order to ensure the sustainability of these resources, they need to have the following characteristics:

Accessibility: Ensure that the resources are available to all learners, without geographical, economic, social or any other form of restriction. High quality: Resources should be accurate, relevant, timely and based on the latest research findings and educational philosophies. Adaptability: resources should be adaptable to different learning styles and contexts and meet the needs of different learners. Sustainability: Resources should be developed and maintained with long-term use and environmental impact in mind.

There are strong links between educational product development and sustainable development, but there are also

some differences.

Linkages between the two: Long-term development orientation: Both educational product development and sustainable development aim at a long-term development orientation. Educational product development aims to provide lasting, effective learning solutions, while sustainable development focuses on long-term economic, social and environmental sustainability. Human centrality: Both place people at the center. Educational product development aims to meet the needs of learners and enhance their skills and competencies, while sustainable development emphasizes meeting current human needs without compromising the ability of future generations to meet their own needs. Social impact: Both educational product development and sustainable development have far-reaching social impacts. High-quality educational products can contribute to social progress and personal development, while sustainable development focuses on social equity, environmental protection and shared prosperity.

Differences between the two: Areas of focus: Educational product development focuses primarily on the field of education, covering aspects such as educational content, technology and facilities. Sustainable development, on the other hand, is a broader concept that covers a wide range of areas such as economic, social and environmental. Target Audience: The target audience of educational product development is mainly learners, educators and so on. Whereas the target audience of sustainable development is governments, businesses, social organizations and individuals globally. Solution: Educational product development provides learning solutions, such as courses, platforms, tools, etc.. Sustainable development, on the other hand, requires comprehensive policies and measures to address economic, social and environmental issues, including energy transition, poverty reduction, ecological protection, etc. Time scale: Educational product development usually focuses on current and future learning needs, while sustainable development focuses more on intergenerational equity and future sustainability. There are strong links between educational product development and sustainable development, especially in terms of long-term development orientation, centrality of the human person and social impact. However, there are some differences between the two in terms of areas of focus, target audiences, solutions and time scales.

The sustainable development framework is complemented by the World Education Forum held in May 2015 in Incheon, South Korea. World Education Forum adopted by some 1,600 participants at the World Education Forum in Incheon, South Korea, in May 2015 Incheon Declaration. The Declaration represents a strong commitment by countries and the global education community to a single, renewed education agenda. In November 2015, UNESCO, together with Member States, adopted the 2030 Framework for Action on Education which outlines how global commitments can be translated

into practice at national, regional and global levels.

The fourth goal (SDG 4) of the UN 2030 Sustainable Development Goals (SDGs) focuses on education. SDG 4 covers a wide range of education topics, with key elements including: Inclusive and equitable education: Ensuring that all people have access to high-quality, equitable, and inclusive education, including access to education, equitable learning environments, and outcomes. Promoting learning opportunities for all: emphasizing the importance of lifelong learning, including the full range of learning from early childhood to adult education. Improving the quality of education: focuses on improving the quality of education, including content enrichment, teacher training and assessment of learning outcomes. Promoting vocational skills training: Promoting vocational skills training and technical education to meet job market demands and development needs. Promoting global citizenship: Fostering the concepts of global citizenship, sustainable development and a culture of peace through education. Strengthening educational institutions and facilities: Ensure that educational facilities are safe, inclusive and accessible, and promote the use of technology and ICTs. Strengthening educational policies and planning for sustainable development: supporting the development and implementation of integrated educational policies and plans for sustainable development. SDG 4 aims to enhance global education in a holistic manner, ensuring access, equity and quality, and promoting global citizenship and sustainable development.

Goal 4.1: Ensure that all girls and boys complete primary and secondary education that is free, equitable and of good quality, with corresponding learning outcomes. Ensuring the equitable distribution of resources is a major challenge in many Eastern countries, particularly in some developing countries. China, for example, is endeavoring to extend quality educational resources to rural and remote areas and to narrow the gap between urban and rural education through technical and financial support. Western countries such as the United States and Canada are also trying to address inequities in educational resources, especially among some ethnic minorities and low-income families. They rely more on data analysis and policy guidance to ensure equitable distribution of resources.

Goal 4.4: By 2030, significantly increase the number of youth and adults with relevant skills to enable them to find decent work and full employment. Countries in the East, such as India and South-East Asia, are investing heavily in vocational education and training to meet the needs of rapidly growing industries. They are focusing on collaboration with industry to ensure that the content of education matches the needs of the market. Western countries are focusing more on lifelong learning and skills renewal. For example, Germany's dual education system ensures that students gain practical experience in vocational skills during their studies.

Goal 4.7: By 2030, ensure that all learners acquire the

knowledge and skills needed to promote sustainable development, including education for sustainable development and sustainable lifestyles, human rights, gender equality, the promotion of a culture of peace and non-violence, global citizenship and the ability to take action for sustainable development. Both East and West are emphasizing topics such as environmental education, climate change, resource management and sustainable lifestyles. Finland, for example, has included education for sustainable development in its new curriculum; and China has emphasized ecological civilization and green development in its educational planning.

The development of sustainable resources for educational products is key to ensuring that the 2030 education sustainable development goals are realized. From an Eastern and Western perspective, while the challenges and strategies differ, at the heart of it all is the need to ensure the equity, quality and adaptability of resources to create a better future for all learners.

3 Analysis of Sustainability Aspects of Leading Companies in the Global Educational Products Market

The global market for educational products is characterized by excellent performance in terms of sustainability by both Western and Chinese companies. Below is a brief analysis of a few of the leading companies and their sustainability aspects, as well as their specific initiatives in sustainability.

U.S. Company: Google for Education (Google for Education): Sustainability Performance: Google for Education reduces carbon emissions by providing cloud-based services that reduce reliance on traditional hardware facilities. They partner with non-profit organizations and governments to make their products available to learners globally, promoting equality in education. At the same time, they focus on user privacy protection to ensure the security and compliance of student data. Specific measures: development of energy-saving technologies and equipment, participation in education equalization projects, and enhanced user data protection measures.

Coursera Sustainability Performance: Coursera provides flexible learning and access to learning on a global scale. They focus on partnering with higher education institutions to develop high-quality online programs that drive innovation and change in education. In addition, they focus on the career development and employability of their learners, providing them with practical skills and experience through partnerships with business and industry. Specific measures: promotion of online courses and degree programs, cooperation with higher education institutions, and career development programs.

Some Chinese companies such as NetEase Youtube Sustainability Performance: NetEase Youtube focuses on the fair distribution of educational resources and supports the development of education in impoverished areas through donations and public welfare programs. They focus on technological innovation and green development, and strive to reduce the energy consumption of their products and server emissions to promote the digital transformation of education. Their specific measures: participating in educational resource donation projects, adopting energy-saving technologies and equipment, and promoting the digital transformation of education. **Tencent Classroom Company Sustainability Performance:** Tencent Classroom focuses on equality and accessibility in education, lowering the threshold of learning by providing free online courses. They focus on the optimization and sharing of educational resources, and cooperate with educational institutions to develop high-quality course content and enhance the efficiency of education. Specific measures: providing free online courses, cooperating with educational institutions, and optimizing the sharing of educational resources.

Taken together, these leading companies excel in sustainability. Western companies such as Google Education and Kool promote the equalization and innovative development of education through technological innovation and cooperation; while Chinese companies such as NetEase Yudao and Tencent Classroom focus on the fair distribution and sharing of educational resources, and enhance the efficiency and quality of education through free courses and cooperation. Specific measures taken by these companies include the development of energy-saving technologies and equipment, participation in educational resource donation programs, and the provision of free online courses to promote sustainable development in education.

There are some other measures that are worth mentioning, partnerships: these companies are actively engaged in building collaborative relationships with a variety of partners, including educational institutions, non-governmental organizations, governments, etc., to promote the sustainable development of education. Through collaborative programs and initiatives with partners, they expand the reach of educational resources, improve the quality of education, and promote innovation and change in education. **Educational Equity and Inclusiveness:** These companies focus on educational equity and inclusiveness and strive to eliminate inequalities in educational opportunities. They launch educational projects and programs for disadvantaged groups, such as people with disabilities and students in poor areas, to provide them with equal access to educational opportunities and resources. **Teacher professional development:** These companies emphasize the important role of teachers in education and invest resources in their professional development. They provide teacher training and professional development programs to help teachers enhance their teaching skills and educational philosophy to better meet the challenges of modern education. **Environmental Sustainability:** In addition

to their sustainability efforts in education, these companies are also concerned with their own environmental sustainability. They have adopted a series of measures to minimize their environmental impact, such as reducing energy consumption, minimizing waste generation, and promoting electronic offices. They also advocate their employees and users to conserve energy and resources and work together to protect the environment.

Other sustainability initiatives by these companies demonstrate their diverse efforts and long-term commitment to education. Through innovation, collaboration and a focus on disadvantaged groups, they are making a positive contribution to the sustainable development of education.

4 Advantages and disadvantages of using specific educational resources for ESD product development

Textbook and curriculum design, digital educational resources, teaching methods and strategies, teacher training, campus practices and management, and community collaboration and engagement have certain strengths and weaknesses.

Advantageous aspects are content-rich and diverse: these resources provide a rich and diverse range of educational content and materials that can meet the needs of different learners. Teaching materials and curricula are designed to cover different cultures and contexts, digital educational resources provide global learning resources, and teaching methods and strategies encourage innovation and critical thinking, among others. This provides a wealth of material for the development of attractive and inclusive educational products. Promoting equality and inclusion: These resources are universal and equitable and can reach different regions and social groups, promoting equality and inclusion in education. Through resource sharing and community participation, inequalities in educational opportunities can be reduced, benefiting more learners. Cultivating awareness of sustainable development: These resources emphasize the concept of sustainable development, environmental education and global citizenship, which can help to cultivate learners' awareness of sustainable development and sense of responsibility. Through the educational products, learners can better understand and address global challenges and contribute to the promotion of sustainable development. Innovative teaching and learning approaches: These resources encourage innovative teaching and learning approaches and methods, focusing on practice, collaboration and problem solving, which can enhance learners' learning effectiveness and interest. By combining digital educational resources and innovative teaching strategies, more engaging and effective educational products can be developed.

Weaknesses Technological dependency and pressure to

update: Digital educational resources and technological innovations place a certain amount of technological dependency and pressure to update on the development and use of educational products. Technology platforms, applications and educational resources need to be constantly updated and upgraded to meet changing educational needs and technological environments. Resource integration and management challenges: The diversity and breadth of educational resources pose challenges in resource integration and management. Resources need to be effectively integrated and managed to ensure their quality, accessibility and sustainability, and to avoid waste and duplication of resources. Teacher training and support needs: Teachers need to be trained in the SDGs and methodologies to improve the quality of their teaching and educational leadership. However, the need for teacher training and support may increase the complexity and cost of educational product development. Collaboration and participation challenges: Collaboration and participation with communities, families and non-governmental organizations (NGOs) is essential for successful educational product development. However, the establishment and maintenance of cooperation and participation may face certain challenges, such as the coordination of interests and the building of cooperation mechanisms. These advantages and disadvantages need to be taken into account when developing sustainable educational products, and strategies and measures need to be put in place to maximize the benefits of resources and overcome potential challenges.

Educational resources such as Google Education, Kool Corporation, NetEase Yudao, and Tencent Classroom have certain advantages and disadvantages in terms of sustainable education product development. On the pros side, these resources support a wealth of educational resources: these companies provide a large number of educational resources, including online courses, learning tools, educational content, etc., which provide a wealth of materials and references for sustainable educational product development. Developers can utilize these resources to create diverse and attractive educational products that meet the different needs of learners. Advanced technical support: With advanced strength and experience in technology, these companies can provide technical support and solutions for sustainable education product development. For example, they can use artificial intelligence, big data analysis and other technologies to optimize the learning experience, personalize recommended learning resources, and improve the effectiveness of educational products and user satisfaction. Wide user base: These companies have a large user base and can provide a wide user base and market opportunities for sustainable education product development. By partnering with these companies, developers can gain more exposure and promotion opportunities, attracting more learners to use and educational institutions to cooperate. Sustainability Philosophy: These companies are generally concerned with sustainable development and focus on environmental

sustainability, social responsibility, and long-term value in their educational product development. Their sustainability philosophies can provide guidance and lessons for developers to ensure that educational products have a positive impact on the environment and society during their use.

Disadvantageous aspect of relying on third-party resources: using the educational resources mentioned above means that developers need to rely on the resources and services of these third-party companies. If these companies change, adjust their policies or terminate their services, there may be some impact and risk to the developer's educational products. **Data security and privacy protection:** Working with these companies involves a large amount of learner and user data. Developers need to handle and protect this data carefully to ensure that data security and privacy protection are in compliance with relevant regulations and standards. **Collaboration and sharing model:** Collaboration with these companies usually requires following their collaboration and sharing model, and developers may need to engage in commercial negotiations and negotiation of collaboration terms with them. This may increase the developer's operating costs and business risks. **Competition and Challenges:** Due to the influence and competitiveness of these companies in the education market, developers face competition and challenges from other educational products and services. Developers need to continue to innovate and improve the quality of their products to stand out from the competition.

In summary, the use of the educational resources mentioned above has the advantages of rich educational resources, advanced technical support, a wide user base and the concept of sustainable development in the development of sustainable educational products. However, developers also need to be aware of the disadvantages of relying on third-party resources, data security and privacy protection, cooperation and sharing models, as well as competition and challenges, and take appropriate measures to address and overcome these challenges.

5 Future prospects and challenges for sustainable development in education

Achievement of global education goals and the challenges faced. Even before the COVID-19 pandemic in late 2019, the world is already off track to achieve its education goals. Without additional measures, only one in six countries will be able to achieve SDG4 (i.e. ensuring inclusive and equitable quality education with lifelong learning opportunities for all) and universal quality education by 2030. It is estimated that 84 million children and young people will be out of school, and some 300 million more students will remain without the basic numeracy and literacy skills they need to succeed.

United Nations Educational Goals for Education for Sustainable Development and their realization:

Goal 4.1: Between 2015 and 2021, increase completion rates from 85% to 87%, from 74% to 77%, and from 54% to 58% in elementary, middle, and high schools, respectively. But even before the COVID-19 outbreak, these rates of progress have slowed compared to 2010-2015. An in-depth analysis of reading levels at the end of elementary school (covering 34% of children globally) shows no progress in global learning levels between 2015-2019. In addition, learning losses due to COVID-induced school closures have been documented in 4/5 of the 104 countries where relevant studies have been conducted.

Goal 4.2: Participation in organized learning activities in the year prior to formal enrolment in elementary school has stagnated at about 75 per cent since 2015 and remains well below the target of ensuring that all girls and boys have access to quality pre-primary education by 2030.

Objective 4.3: On average, about one in six young people and adults aged 15-64 years in the 131 countries with data available from 2017 onwards have recently participated in formal or non-formal education and training. Compared to 25-55 year olds (only 5% in most regions), participation is significantly higher among 15-24 year olds (40%-50%).

Goal 4.a: Basic school facilities are far from universal. in 2020, about a quarter of elementary school globally will not have access to basic services such as electricity, drinking water and basic sanitation.

Sustainable development in education is an important issue of global concern, especially in these times of change and challenge. Globally, education has made remarkable progress, but at the same time, we are faced with many challenges. The future is bright, but there are also some clouds.

Future prospects for sustainable developmentFuture prospects include the spread of digital education: as technology continues to advance, digital education is expected to spread globally. This will provide equal access to education for more students, wherever they are. Online courses and distance learning will become mainstream, allowing for more efficient use of educational resources. **Skill-based education:** In the future, education will focus more on the development of practical skills rather than just the transfer of theoretical knowledge. This is closely related to current job market demands, which require students to acquire practical skills to cope with the ever-changing work environment. **A culture of lifelong learning:** With the accelerated rate of knowledge updating, people need to learn new knowledge and skills continuously. This promotes the formation of a lifelong learning culture, so that education is no longer confined to school, but continues throughout one's life. **Optimized allocation of educational resources:** Through international cooperation and public policy guidance, educational resources are expected to be allocated more rationally on a global scale. This will reduce inequalities in

educational opportunities and raise the overall level of education.

Inadequate resources for education in terms of challenges: Despite national efforts to increase investment in education, the shortage of resources for education remains a global problem. Particularly in some developing countries, the lack of school infrastructure, educational materials and qualified teachers is a serious constraint to the development of education. Uneven quality of education: Globally, there are huge variations in the quality of education. Even within the same country, the quality of education can vary widely between different regions and types of schools. How to improve the overall quality of education and ensure that all students have access to quality education is a huge challenge. The existence of a digital divide: While digital education offers unlimited possibilities, the existence of a digital divide makes this vision not easy to realize. In some areas, especially remote and poor areas, Internet access and the penetration of digital devices are still very low. This makes it difficult for students in these areas to enjoy the benefits of digital education. Disconnect between education and the job market: With the rapid changes in the economy, some traditional modes and contents of education can no longer meet the needs of the modern job market. How to better connect education with the job market and ensure that students can find suitable jobs after graduation is an important issue facing the sustainable development of education. In many regions, especially developing countries, there is a relative lack of educational resources due to multiple economic, social and cultural constraints, resulting in many children being unable to receive basic education, let alone quality education. In some developed countries, although there are abundant resources, there are also problems of unequal educational opportunities caused by factors such as race, gender and socio-economic status. The disconnect between the content of education and actual needs is also a problem that cannot be ignored. In an era of rapid change, we need to cultivate talents with comprehensive qualities such as innovation, critical thinking and teamwork. However, the traditional education model often pays too much attention to the transmission of knowledge and neglects the cultivation of students' comprehensive ability. This makes many graduates feel overwhelmed when facing actual career challenges. Emergencies such as the COVID-19 pandemic have also had an unprecedented impact on education. School closures, isolation of teachers and students, and stagnation of educational activities all of these have had a serious impact on students' academic performance, physical and mental health, and future development. This has also exposed the vulnerability and inadequacy of our education system in responding to public health emergencies.

In order to address the challenges to the sustainable development of education, we need to take a series of concrete actions. Among them, we could launch a project called "Equalizing Education", which aims to equalize educational opportunities globally. In developing countries,

we could work with local governments and non-governmental organizations to build new schools, especially in remote areas, to ensure that every child has access to basic education. In addition, we can set up scholarships or provide financial subsidies to alleviate the burden of education on economically disadvantaged families, so as to ensure that they will not be deprived of the opportunity to receive education because of poverty. At the same time, we should also pay attention to the development of school infrastructure, such as the provision of a reliable electricity supply, clean water sources and sanitation facilities, so as to create a good learning environment.

In addition to ensuring equity in education, we should also strive to improve the quality of education. Through the implementation of the Education Quality Enhancement Program, we can introduce modernized educational contents and teaching methods, and pay more attention to the cultivation of students' practical skills and innovative spirit. At the same time, we should establish a mechanism for regular assessment of the quality of schools and publicize the results to encourage competition among schools and continuous improvement. In addition, we should pay attention to the professional growth of teachers and set up a specialized teacher retraining programme to provide training and support, so as to improve the quality of teaching and the ability of teachers in education and teaching.

In the digital age, universal access to digital education is essential to achieving sustainable development in education. We can launch an initiative called "Digital Education for All", which will work with technology companies to provide free Internet access and digital equipment to schools that need them to ensure that students can make full use of online resources for learning. At the same time, we should train teachers to use digital technology to support teaching and learning, such as using online platforms, e-textbooks and other tools to create a more interactive and personalized learning experience. To meet the needs of different students, we should also actively develop courses and resources suitable for online learning.

In addition, the establishment of the "Bridging Education and Employment" project is one of the keys to solving the education challenge. We can work with enterprises and trade associations to keep abreast of current and future job market needs, and adjust school curricula accordingly to ensure that students are equipped with the skills and knowledge required by the market upon graduation. In addition, we can set up internship programs to help students accumulate practical work experience and increase their competitiveness in employment. This will not only increase the employment rate of students, but also better meet the needs of enterprises for talents.

At the same time, strengthening international cooperation in education is also an important way to address educational challenges. We can work together to promote educational innovation by establishing partnerships with education departments and research institutions in other

countries to share successful education models, teaching methods and resources. In addition, we can provide training and support to educators in developing countries to help them improve the quality of education. By strengthening international exchanges and cooperation, we can learn from each other's experiences, complement each other's strengths and work together to address global education issues.

The construction of a "lifelong learning platform" is also one of the important initiatives to promote the sustainable development of education. We can develop an online learning platform that provides a variety of courses and resources to meet the learning needs of different people. This platform can provide enterprises with online training and certificate courses to help people upgrade their vocational skills and personal qualities. At the same time, we should encourage communities, libraries and other public places to provide people with learning spaces and resources, so as to create a social environment of learning for all and lifelong learning.

Finally, paying attention to the educational needs of special groups is a part of sustainable development in education that cannot be ignored. We should provide specialized educational resources and support for special groups, such as the establishment of special education schools and the provision of teaching materials and auxiliary equipment adapted to their needs. At the same time, we need to train special education teachers to improve their professionalism and teaching quality. By increasing our attention to and support for the education of special groups, we can build a more inclusive and equal educational environment.

included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Author Contributions

Not applicable.

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