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A Comparison of Education for Sustainable Development in East Asian Countries

- Take China and Japan as Examples

Xinyuan He[1,a,*]

[1]*The Education University of Hong Kong, Hongkong, China*
a. hexyfreya@163.com
**corresponding author*

Abstract: In recent years, Education for Sustainable Development (ESD) has emerged as a prominent topic of discourse within the United Nations and among various nations worldwide. The primary objective of these discussions is the establishment of a sustainable society, with ESD playing a crucial role in attaining this goal. This paper undertakes a comparative analysis of ESD-related policies and curricula in two East Asian countries, namely Japan and China. Through a detailed examination of their respective approaches, the paper identifies key strengths and areas for improvement in both nations' strategies. Additionally, the paper offers several constructive recommendations designed to enhance the effectiveness of ESD initiatives in these countries. It is also hoped that this paper will not only contribute valuable insights to the ongoing ESD efforts in Japan and China but also inspire innovative approaches and strategies in other countries seeking to advance their ESD agendas.

Keywords: Education for Sustainable Development, Policy, Curriculum Provision

1. Introduction

Education for Sustainable Development (ESD) aims to transform and enhance the educational system to promote sustainable actions and thoughts across generations, ultimately achieving a sustainable environment, economy, and society. Education not only increases theoretical knowledge but also instills new thinking patterns that influence behavior, thereby addressing issues that arise in the course of sustainable development. The United Nations Sustainable Development Goals (SDGs) specifically include a goal for ESD, which supports the achievement of other SDGs. Globally, countries face interconnected environmental, social, and economic challenges. ESD is recognized as an effective approach to addressing these issues. Consequently, UNESCO and individual countries are developing policies to advance ESD, with UNESCO providing leadership and specific goals[1]. Despite challenges like the recent global pandemic, the commitment to promoting ESD remains strong. Countries implement ESD through curricula and school programs, tailored to their unique contexts[2]. This trend is evident in Asia, known for its rapid economic development and diverse political, financial, and cultural landscapes. East Asian countries, particularly China and Japan, are prominent in academic research and are actively addressing educational challenges with scientific policies[3]. This paper examines the implementation of ESD in China and Japan, comparing their policies and

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curricula to highlight similarities and differences. Both countries have nine years of compulsory education, with most students continuing beyond this due to societal norms[4]. In Japan, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) develops the curriculum and authorizes textbooks, allowing for school-specific adaptations within a national framework[5]. In China, ESD is integrated into existing curricula, such as language, biology, and geography courses. While some research exists on ESD in China and Japan, comparative studies between the two countries are limited. Given the significant achievements in ESD in both China and Japan, this comparative analysis is of profound significance.

2. Literature Review

2.1. Current Status of Research on ESD

UNESCO has been working to achieve the Sustainable Development Goals (SDGs) since 1990. In order to achieve the SDGs on a global scale, UNESCO issued the "2030 Framework for Action on Education" as a guide for global SDG achievement. Education is critical to the achievement of the SDGs and plays an important role in this agenda. To date, a sizable proportion of countries around the world have incorporated ESD into their formal school curriculum. Almost a quarter of countries believe that ESD schools should be specifically established to promote sustainable development programs. Many countries now have a diversity of curriculum topics in ESD. In many countries, ESD curricula include not only environmental education, but also other topics, such as education on earth resources, gender equality, and ethics education. This indicates that the concept of sustainable development is moving in a deeper direction. The process of promoting education for long-term development is well underway.

2.2. The Current State of ESD Research in China

Due to China's remarkable achievements in sustainable development, many scholars have so far conducted systematic studies on ESD for China. Huai-xin and Dillon mentioned that China has not written specific textbooks and curricula for ESD, but has integrated the concept and content of sustainable development into relevant curricula, such as: mathematics, language and, social and biological courses. Some high schools have set up elective courses related to the environment to be included in the syllabus[6]. In 2000, Mr. Wang Zhan, Vice Minister of Education, mentioned that environmental education is an innovative point for future basic education. This indicates that China will invest a lot of human, physical and financial resources in environmental education. According to Han, Q. , after UNESCO made the concept of EFS(Education for Sustainability) more explicit, China responded quickly by developing a series of related policies, strategies and plans[7]. Hallinger and Chatpinyakoop mention that at first China made environmental education a development priority and developed a number of The Chinese Ministry of Education has also introduced relevant teaching and learning programs. The Chinese Ministry of Education also introduced a syllabus, "Thematic Syllabus for Environmental Education in Primary and Secondary Schools", which set specific objectives, content, and course hours for students at the elementary, middle, and high school levels. Later, the Chinese government responded to UNESCO's call for sustainable development. Environmental education has been integrated into ESD, and policies and programs have been developed according to the national context. At the same time, the implementation of ESD in China usually takes a whole-school approach and often involves cross-sectoral collaboration. Finally, the Chinese government hopes that students will, on the one hand, incorporate their own learning to promote ESD and, on the other hand, show teachers and students that ESD is not just about environmental issues[8].

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2.3. The Current State of ESD Research in Japan

ESD is an important concept developed by UNESCO for the purpose of developing a sustainable society and planet. Each country has developed ESD concepts and practices that are unique to each country. ESD in Japan has gone through a total of three stages. Tanaka, H. stated that initially, ESD in Japan was not a separate course, and it was carried out under the general framework of environmental education and development education[9]. However, as the concept and scope of ESD became clearer. Japan began its "Decade of EFS", and a series of policies were developed to integrate the concept of ESD into the educational framework and to guide schools in their practices. Through time and practice, Japan has discovered the great potential of education in achieving ESD. In 2008, Japan shifted ESD to schools to deepen and expand practices in Japan and abroad[10], and after 2015, ESD in Japan has increased collaboration among stakeholders with different identities, such as communities, NGOs, and businesses, among others. In addition, the collaboration mechanism has been continuously improved to form the whole society working together to promote ESD.

3. Research Methods and Aims

This paper aims to assess ESD in East Asia by comparing and analyzing the policies and curricula in China and Japan regarding the development of sustainable education. The research objectives include identifying the current status and specific policies of ESD in the two countries, comparing the similarities and differences in their ESD policies and curricula, applying effective approaches to a wider range of regions, and exploring future innovations in ESD.

Although there are many things to learn from ESD in China and Japan, there are still some undesirable practices in both countries that need further improvement. At the same time, we also hope that other countries can get some inspiration from this paper for solving problems in ESD. This essay is mainly an interpretivist philosophical research. Since the two countries, China and Japan, have different education systems, historical backgrounds and cultural differences, among other factors way. Interpretivism allows the researcher to see the essence through the phenomenon, not just the surface, but also in the context of history, culture, and the characteristics of the thing being analyzed. This allows for a more comprehensive understanding of the nature of the thing being studied. Once the nature of the thing is understood, efficient solutions can be developed. In other words, interpretivism can be very useful in studying this paper.

The main body of this paper is divided into two sections. The first section summarizes and analyzes the policies on EFS in the two countries using extensive literature and education-related documents from both countries. Despite the fact that both countries are from East Asia, each has its own distinct national context, education system, and historical background. As a result, the ESD contexts, policies, and related national curricula in both China and Japan are described in three stages: primary education, secondary education, and higher education. The majority of the literature in this section is sourced from Google Scholar, school libraries, and ESD-related documents from both countries' ministries of education. The second part focuses on the similarities and differences between the two countries' ESD-related policies. In four ways, I will compare the ESD in these two countries. First, the historical context of ESD; second, both countries' investment in ESD; third, the prevalence of ESD; and fourth, what the two countries have accomplished in ESD. In this section, I will compare the extensive literature on ESD, the human, material, and financial resources allocated to ESD by both nations' governments and departments of education, the percentage of ESD courses, and the progress of ESD in both countries.

Some problems remain unresolved in this stage of the analysis phase, for example, some internal data are not precisely available and can only be analyzed with the material available to the authors.

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4. Findings and discussion

4.1. Policies related to ESD in China

Since the UN released the 2030 Agenda for Sustainable Development, the Chinese government has had its own national and local policies under the broad framework of ESD recommended by the UN, and has made some good achievements. First, ESD has been incorporated into national planning with clear action goals. In accordance with the concept of coordinated and green development, the construction of ecological civilization will be the focus of national development planning. Second, revise curriculum materials and deeply integrate them into the teaching process. Incorporate the basic national policies of food, water and energy conservation and environmental protection into the teaching materials of the compulsory courses of character, geography and biology, with emphasis on explaining the concept of green water and green mountains are the silver mountains of gold and the harmonious coexistence of human beings and nature, so that all students can master the concept and basic knowledge of sustainable development. Third, improve the incentive mechanism to ensure effective implementation. Offer courses related to ecological civilization in compulsory public courses in teacher training colleges and universities to improve the ecological civilization literacy of teachers. Select model ecological civilization construction areas to serve as bases for students' study tours. Carry out the selection of national-level teaching achievements and reward and promote outstanding ecological civilization education and teaching achievements.

After the United Nations Conference on Humanity in 1972, the Chinese government held the first national conference on environmental protection in 1973, and has so far developed a number of environmental education policies. In addition, many environment-related activities have been carried out, such as "Green Schools", "Green Education Initiative for Chinese Primary and Secondary Schools" etc. Throughout China's primary and secondary school levels of ESD. We can divide it into three broad stages: the start-up stage, the development stage, and the expansion stage[11].

4.1.1. The Stage of Beginning

In August 1973, the First National Environmental Conference formulated the document "Certain Provisions on Environmental Protection and Environmental Improvement", which marked the beginning of environmental protection in China. It also marked the beginning of the environmental education. In December 1978, the Central Committee of the Communist Party of China (CPC) issued the "Essentials of Environmental Protection Reporting", which required Chinese primary and secondary schools to incorporate environmental protection knowledge into their regular teaching. Since then, environmental protection has been included in the syllabus of related subjects in primary and secondary schools in China. In September 1979, China's first environmental protection law was promulgated, the "Law of the People's Republic of China on Environmental Protection (for Trial Implementation)", which proposed to promote and popularize the knowledge of environmental protection throughout the country. In May 1980, the "Draft Plan for the Development of Environmental Education" was formulated, formally incorporating environmental education into China's national education program. In February 1982, the "Decision on Strengthening Environmental Protection in the Period of National Economic Adjustment" once again emphasized the need to strengthen the popularization of environmental science in primary and secondary schools.

4.1.2. Development Stage

In 1987, the Chinese National Education Commission proposed in the "Compulsory Education Full Day Primary and Junior High School Teaching Plan (Trial Draft)" that environmental education be integrated with the curriculum activities of related subjects, and suggested that schools with good

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innate conditions could set up separate courses or lectures for environmental education. In March 1990, the State Education Commission of China explicitly requested that general high schools should offer an elective course on environmental protection in its "Opinions on the Adjustment of High School Teaching Plans". In the "Decision on Further Strengthening Environmental Protection" issued by the State Council in December 1990, it was clearly stated that early childhood education and primary and secondary education should incorporate environmental protection knowledge into the teaching content. In 1991, the "General Outline for Strengthening Education on China's Modern History and National Condition in Primary and Secondary Schools" stated that national condition education, including population, resources and environment education, should be added to the geography subject.

4.1.3. Expansion Phase

In 1992, China's National Education Commission (NEC) formulated the "Nine-Year Compulsory Education Curriculum Plan for Full-Time Primary and Junior High Schools (for trial implementation)", which proposed that students should understand basic national policies on the environment, and that environmental education should be emphasized in nature and society in elementary school, and in physics, chemistry, and biology in junior high schools. In the same year, the State Environmental Protection Administration (SEPA) and the State Education Commission (SEC) proposed the guideline of "education-based environmental protection" and emphasized the importance of training teachers in environmental protection.

In 1996, the State Environmental Protection Administration of China, the Ministry of Propaganda and the State Education Commission specified the use of classroom, activity classes and extracurricular activities to implement environmental education and proposed a plan to create "green schools". In February 2003, China's Ministry of Education issued the "Environmental Education Syllabus for Primary and Secondary Schools", which stipulates that "environmental education" will be taught in primary and secondary schools starting in the spring of 2003.

In 2010, China's national strategy, the Outline of the National Medium and Long-term Education Reform and Development Plan. 2010-2020, clearly states the importance of EFS. Therefore, in 2010, China formally incorporated ESD into its national education policy. After the concept of ESD was added to the "National Education Program 2010-2020" and local policies, the concept of ESD has been gaining more and more attention from people and groups. Although there is no specific national policy governing ESD in China, several documents in other specific areas, such as education, sustainable development, and climate change, are guiding ESD. For example, the "Experimental Handbook on EFS in China" and the "Guidelines on EFS for Primary and Secondary Schools in Beijing" are examples.

The higher education aspect of EFS is also one of the key areas of focus for the Chinese government. Since the Rio Summit, the Chinese government has been focusing on all issues related to sustainable development, such as: climate change, atmospheric pollution and waste of natural resources[12]. In the 1994 White Paper "China's Agenda 21", it was clearly stated that education is an important way to promote sustainable development. Education in this context includes formal degree and vocational education. The Agenda 21 priority plan identifies the strengthening of training for sustainable development researchers through educational curricula, training and related activities. At the same time, specific projects are proposed. For example, postgraduate courses in sustainable development at a few universities with a certain foundation, postgraduate and doctoral research centers in sustainable development programs at the same universities, pilot programs to train top-level personnel in sustainable development, and writing sustainable development-related books and teaching materials. Moreover, through the implementation of these policies and projects, it has been confirmed that education is an important way and means to achieve sustainable development. In 1998,

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the Law of the People's Republic of China on Higher Education also clearly stated that higher education has a role to play in the transformation of science and technology, culture and technology, and in 2007, Hu Jintao proposed the "Scientific Outlook on Development". It is also proposed to optimize the educational structure of higher education and to improve the quality of higher education. In addition, it is clear that sustainable development is a fundamental requirement.

4.2. Policy on ESD in Japan

At the Johannesburg Summit in 2002, Japan proposed the "Decade of EFS", which was adopted at the 59th session of the United Nations General Assembly in October 2004. Japan's proposal has successfully promoted its national concept of ESD internationally and has become a strategic guideline for ESD internationally. The proposal has successfully opened a new path for ESD and has provided opportunities, platforms and guidelines for many research and practice efforts. The concept of ESD for Japan focuses more on the need for people to look around them. Such a format would give citizens a new understanding of the relationship between people, society and the environment. This new awareness may change their behavior or their values[13]. Such a system, once developed, will be of great help in solving modern social problems and will ultimately lead to the goal of a sustainable society.

In December 2005, the Government of Japan established the "Liaison Meeting of Ministries and Agencies for the Decade of ESD" in the Cabinet in order to strengthen close cooperation between government departments and to promote the development of EFS in a comprehensive and systematic manner. In March 2006, the "Implementation Plan for the Decade of ESD" was launched. Based on these recommendations, the plan is based on the national conditions of the country, and is based on the following principles: "regional characteristics", "multi-subject and multi-site implementation", "mutual learning and cooperation in multiple fields", and "practical and participatory learning", Based on the basic guidelines of "practical and participatory learning", each stage of the program was planned in detail, and the responsibilities and priorities of each participant were listed in detail, which became the general plan of action for the program in Japan.

In 2007, the Japanese government held a roundtable on the "Decade of EFS" to provide a platform for exchange among the administration, education practitioners, government organizations, and NGOs. Each field exchanged education and opinions on how to promote ESD, evaluated the current practice of ESD, and made recommendations for improvement. In January 2008, the Central Education City Council released a report on "Improvement of Guidance for Learning in Kindergartens, Elementary and Middle Schools, High Schools, and Special Education Schools". Based on this report, the Ministry of Education, Culture, Sports, Science and Technology published revised versions of the "Essentials of Kindergarten Education, Essentials of Learning in Elementary and Junior High Schools" and "Essentials of Learning in Senior High Schools" in February 2008 and March 2009, respectively.

In July 2008, the Japanese government launched the first phase of the Basic Plan for Education Promotion, establishing the basic policy of education as a nation. EFS is one of the developmental education initiatives in Japan. In March 2009, the Japanese and U.S. governments officially launched the "Japan-U.S. Teacher Exchange Program on EFS".

As ESD continues to advance, in 2015 Japan began to build an exchange platform to strengthen the links between the central government, local governments, schools, and society to familiarize them with each other's work processes, thereby accelerating the development of ESD. In the same year, the UNESCO Global Action Plan on EFS (2015-2019) was released to continue guiding the next steps in each country. In order to further accelerate the progress of ESD in Japan, the Japanese government abolished the Decade of ESD (DESD) Liaison Conference of Ministries and Agencies and established the DESD Liaison Conference of Ministries and Agencies. In addition, the Government has reviewed

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the original DESD implementation plan in light of the current state of sustainable development and issued a new version of the Domestic Implementation Plan for EFS in March 2015. After the World Conference on EFS in May 2021, the Japanese government again revised its ESD implementation plan and guidebook.

4.3. Comparison of ESD-related Policies in China and Japan

The first two subsections have listed the policies related to ESD in China and Japan in detail. The next section analyzes the similarities and differences between the two countries' ESD-related policies. Similarities between the two countries' policies. First, both China's and Japan's ESD policies are based on the requirements issued by the United Nations. The policies of both countries are based on the requirements of the United Nations for ESD, and then they are formulated in accordance with the national conditions of their countries. Second, at the early stage of development, both countries formulated their policies in accordance with the UN's requirements for ESD. For instance, the "Experimental Manual on EFS in China" and the "Decade of EFS Implementation Plan" and "Decade of EFS Implementation Plan" of Japan are some of the relevant policies.

Differences in ESD policies between the two countries. First, the focus on ESD is different between the two countries because of their different national conditions. As China is a developing country and Japan is a developed country, the difference in the nature of the two countries has resulted in different ESD policies. China's policy is more general, while Japan's policy is more specific. Second, the education systems in the two countries are different. In terms of teacher management, Japanese public elementary school teachers have a 3-5 year intra-provincial mobility system, and many schools have developed a system of division of responsibility for ESD, which allows each teacher who moves to that school to quickly implement ESD-related curriculum. But there is no such system in the Chinese education system.

4.4. Curriculum for ESD in China

In order to further deepen the promotion of ESD, the Chinese National Committee sees the need to develop a specific curriculum for sustainable development. This type of curriculum should start from three aspects at the same time - national curriculum, local curriculum, and school-based curriculum. The national curriculum is designed by the Ministry of National Education, and this type of curriculum is to be carried out in all schools. Since each region is different, local and school-based curricula are designed according to the different characteristics and circumstances of each region and school. The national curriculum plays the role of the general director, while the local curriculum makes up for the fact that the national curriculum cannot take into care of the characteristics of each region and school. In addition to this, there are clear learning objectives, content, etc. for students at each stage.

Initially, the Chinese government introduced the "Environmental Education Curriculum for Primary and Secondary Schools". This curriculum was designed to standardize the number of hours (12 hours for elementary and junior high schools and 8 hours for senior high schools), objectives, and content for each of the different levels of elementary, junior high, and senior high school students. With the gradual development of ESD, China has also made environmental education a part of ESD. The syllabus has also been refined as ESD has evolved and been implemented in schools.

The curriculum is divided into general educational objectives and specific educational objectives. The general educational objectives are to guide students to pay attention to the environmental issues facing their families, communities, countries and the world, and to correctly understand the interdependence between individuals, society and nature; to teach students the skills and techniques to live in harmony with nature, thus helping them to further understand the interrelationship between

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human beings and nature, and to further develop the correct values of environmental protection; to guide and encourage students to participate in the implementation of actions and policies related to ESD, so that they can effectively develop a sense of social responsibility and become social citizens with a sense of sustainable development. The specific educational objectives are three. First, emotions, attitudes and values; second, processes and methods; and third, knowledge and abilities. Under each specific educational goal, there are four to five specific requirements.

A key component of education for sustainable development (ESD) is fostering emotions, attitudes, and values that prioritize the care for nature and respect for life. Effective ESD requires students to observe and analyze the condition of their surrounding environment and its changes. They need to identify environmental problems within their families, schools, and communities, and design, implement, and evaluate solutions. Gathering information about the environment through various ways and means actively and effectively is crucial. Students should be able to clearly describe their own views on environmental issues and communicate them effectively with those around them. Additionally, thinking about regional or global environmental issues and being able to apply their knowledge to choose the best solutions are important skills to be developed.

A comprehensive understanding of the dependence of human beings on nature and the role of human influence on the natural environment from multiple perspectives is fundamental. Students should understand the mechanisms of environmental influence on human social structures and ways of life. Deepening the understanding of the basic components of the environment, its operational principles, mechanisms of action, and constraints is necessary. Moreover, understanding the impact of human social activities, technological development, and social institutions on the environment is critical. Analyzing and comparing the ways and means of citizen participation in environmental protection will enable students to be more effective in their efforts.

For elementary school students in grades 1-3. First, schools should develop their ability to perceive what features of their surroundings are and whether there are changes. Based on this, students in this grade level are encouraged to express their feelings about their surroundings. Secondly, students should be made aware of the natural resources and energy sources around them and be made to feel that bad behavior in their daily lives can have a negative impact on the environment. Finally, the students should be informed of the rules of conduct for environmental protection through specific practical activities.

For intermediate students (grades 4-6), teachers should organize a survey of the basic characteristics of the community and local environment in which they live, and know the main environmental problems in their neighborhood and be able to make a simple analysis of the causes of these problems. In addition, they should be able to understand the relationship between changes in the surrounding environment and people's lives, and know the ways and means to build a good environment. Finally, they should be able to analyze and judge what behaviors are good for the environment and what behaviors are not good for the environment.

Content to be taught at the junior high school level. First, to understand the main regional and global environmental issues and to explore the consequences of these environmental issues; second, to understand the impact of different production methods on the environment; third, to understand the basic meaning of sustainable development and the need to promote sustainable development; fourth, to understand what are the important initiatives of local governments and NGOs in solving local environmental problems; fifth, they can reflect on the environmental impact of their daily consumption activities and promote environmentally friendly lifestyles.

The demands on students at the high school level will be even higher. First of all, they need to be guided to use some of the expertise they have learned from various disciplines to systematically analyze the social roots of environmental problems. Second, they need to know that environmental attitudes and behaviors are influenced by people's perceptions and values of the environment. Third,

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students will be asked to consider the correct values and ethics needed to improve and solve environmental problems. Finally, students will learn step-by-step the reasons, processes, and roles of relevant environmental laws. Students will learn that they have a personal responsibility to participate in public activities to improve the environment.

In China, EFS is integrated into other relevant curricula at the compulsory education level. For example, in the "Nine-Year Compulsory Education Curriculum Plan for Full-Time Primary and Junior High Schools (for trial implementation)", the geography curriculum design states that students should have a preliminary understanding of the relationship between human activities and the geographic environment, have some knowledge of the basic national conditions of China's geography, and know the basic national policies on population, resources and the environment; In nature class, students are required to have a preliminary understanding of human use, transformation, protection and exploration of nature; in biology class, students are required to love nature and recognize the importance and necessity of protecting natural resources, controlling population and protecting the environment. In the new curriculum reform, the concept of sustainable development and environmental awareness are the major principles of the curriculum reform. Meanwhile, environmental education has been integrated into the whole curriculum system. For example, language teaching materials should keep up with the characteristics of the times, pay attention to human beings and nature, and understand and respect cultural diversity. Through language learning, nature and society observed in daily life are expressed using oral and written forms; in mathematics, materials from other disciplines, such as nature and society, should be selected to guide students to pay more attention to the exploration of practical problems of degree.

In higher education, China advocates integrating sustainable development into all aspects of campus life, construction, discipline development, and planning, with clear strategic positioning and phased goals tailored to national and institutional contexts[14]. For instance, Tongji University in Shanghai aims to "build a green and sustainable university" through green campus construction, sustainable research, and academic disciplines, forming its own sustainable development culture[15]. Tongji has established a School of Sustainable Development and collaborates with the Royal Institute of Technology of Sweden. Additionally, green teaching, seminars, and research activities are conducted to cultivate leaders in sustainable development. Universities like Tsinghua, Tongji, and Renmin University of China offer specialties in green economy and sustainable cities, with sustainability minors to encourage interdisciplinary study and practice. Chinese universities also focus on ESD research and innovation, collaborating with enterprises, social groups, and NGOs to address national needs in areas like economic development, urbanization, rural development, climate change, and clean air. Internationally, China has formed alliances with renowned universities, such as the Global Universities Partnership on Environment and Sustainability (GUPES) and the International Sustainable Campus Network (ISCN), to promote campus sustainability and integrate sustainability initiatives with teaching and research.

4.5. Curriculum of ESD in Japan

Curriculum is a very important aspect of developing ESD. Among them, curriculum design, teaching format and evaluation methods are directly related to the effectiveness of ESD. Japanese schools have been adhering to the following three principles in developing ESD: Firstly, students are trained to have the concept and values of a sustainable society. Secondly, the teaching principles of subjectivity, dialogue, and inquiry should be used in the process of ESD; thirdly, theory and practice should be integrated[15]. Issues in ESD cannot be treated only at the level of theoretical knowledge, which will not bring substantial progress to the development of ESD. It is necessary to combine theory and practice and to develop students' practical problem-solving skills. It is worth mentioning that many schools in Japan have joined the UNESCO Associated Schools so far.

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The Japanese government focuses on the development of students' interdisciplinary skills. The Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT) has set up practical courses related to sustainable development alongside other subjects in the curricula of elementary, junior high, high school and special schools since 1998. At the same time, different study hours have been set for each different grade level (52.5 hours per school year for elementary school grades 3-6; 37.5-52.5 hours for junior high schools; and a flexible credit system is used for high schools). The content of the integrated practice curriculum varies from district to district, and the curriculum is more school and district specific. The main content is related to international information, understanding, environment, welfare and health, and the focus will vary from school to school depending on their needs. Most of ASPNet Schools will focus on regional nature, history, culture, etc., through activities such as exploration of expertise, participation in social events, and online learning through campus platforms.

Currently, there are five types of ESD courses in formal education in Japan: interactive courses, project-based courses, thematic content-based courses, integrated courses, and club activity courses. Each type of course has specific case studies offered to students. The interactive course is based on the ESD calendar, which is an easy-to-understand, student-friendly course that enhances students' awareness of ESD; the project-based course gives students a clear project to explore with the teacher. The ESD Rice Project is the subject of this type of course. The advantage of this type of course is that there is a clear project and a clear direction for students to follow; topic-based learning focuses on World Heritage Education and Peace Education. These courses are designed to teach students about the cultural heritage of the communities in which they live and the challenges they face today; integrated courses develop students' ability to address sustainability issues in order to promote sustainable development in their communities; and club-based courses are aimed at high school and university students and allow students to get up close and personal with UNESCO's activities. For example, D Elementary School in Tokyo has joined the ASPNet Schools. D Elementary School focuses on the environment, human rights, and cultural understanding in an interdisciplinary manner with other related curricula. In addition, different ESD calendars and school year plans have been designed for different grade levels. These courses are taught through time spent in social studies, science and general subjects. The teaching model is strictly dialogic, focusing on problem identification and problem solving skills. In addition, the school organizes an annual ESD-related showcase for students to share their learning with each other. Each year, D Elementary School also holds an "EFS Exchange" for the community, parents, and relevant NGOs, providing an opportunity for teachers, NGOs, and schools from all over Japan to exchange and learn from each other[16].

In addition, the Japanese government places importance on global thinking in the education of students in terms of sustainable development. For example, H International High School in Japan gives full play to the characteristics of an international school. From the three aspects of curriculum, overseas practical activities and extracurricular learning. Students are given an international perspective. At the same time, the curriculum includes "Sustainable Development" and "Sustainable Development in Action". The special course is based on multicultural coexistence in the three areas of disaster reduction, economic life and poverty, and social life and recycling. The school uses the perspective of high school students to identify social problems and apply the contents of other related courses in the process of solving them, thus achieving interdisciplinary learning. In terms of learning practices, the school regularly organizes exchange trips overseas for students to study. For example, the school organizes trips to Singapore and Malaysia to learn about water resources issues in these two countries and to consider how to improve water resources in their own countries after learning about them.

Finally, Japan attaches great importance to the evaluation of ESD. For example, the ESD practice at Z Middle School in Japan is to teach ESD in three steps: setting learning goals from the teaching

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calendar, setting up a modular learning model, and using the Sixth Form Assessment Method[16]. Among them, the Rokuchu-style assessment method is the school's specialty. The evaluation form takes three core aspects of ESD development: communication, thinking and judgment. Each competency is further divided into three basic competencies and fifteen basic indicators. In total, the 45 indicators provide a comprehensive and integrated assessment of students' ESD outcomes.

In general, Japanese EFS is a government-led model that is implemented by schools and universities in cooperation with society. It is also characterized by a variety of institutional safeguards, interdisciplinary thematic learning and institutional participation, and active international cooperation.

4.6. Comparison of curriculum related to ESD in China and Japan

In the previous section, the curriculum of ESD in Japan and China have been clearly described. This subsection will analyze and compare the similarities discourse differences between the curriculum of ESD in these two countries. Similarities in curriculum development. First, both China and Japan have incorporated ESD concepts into their curricula. In the initial stage, China introduced the "Environmental Education Curriculum for Primary and Secondary Schools" to integrate environmental education into the curriculum of primary, middle and high schools. As the United Nations became clearer about the concept of ESD, China incorporated environmental education as part of ESD. Japan has also integrated the concept of ESD into various subjects in the basic education amount after the UN's clarified the concept of ESD. Second, both countries have integrated ESD into all subjects and promote the use of multiple disciplines in ESD learning to solve problems in sustainable development.

Differences in Curriculum. First, the Chinese ESD curriculum is more focused on theoretical knowledge training. Although there are practical activities, there are not many of them, and the content of ESD is put more in the theoretical knowledge part of other courses. In Japan, there are more practical courses than in China. In Japan, there is more emphasis on practical courses, and their practical courses are in conjunction with the local community and with UNESCO. Second, the Chinese ESD syllabus is more detailed, with learning objectives and tasks for each grade level. In contrast, Japan's syllabus is more general and flexible, giving only a broad framework. The specific contents under the broad framework are set according to the characteristics of each region's environment, the school's own characteristics, and other factors. Third, China does not invest much in the international exchange part of EFS development at the basic education level, and puts more emphasis on international exchange in higher education. In Japan, international exchange has been a large part of the ESD curriculum since the primary and secondary school levels. Fourth, Japan's ESD has clear and explicit assessment criteria, but China does not have systematic assessment criteria. For example, the Rokuchu-style assessment method of Japanese secondary school Z systematically and comprehensively assesses students' learning after ESD from 45 indicators.

5. Conclusion

Education for Sustainable Development (ESD) is a crucial topic in today's society. This dissertation compares and analyzes ESD policies and curricula in China and Japan to provide insights for further development. Both countries have aligned their ESD policies with United Nations recommendations, yet differences arise due to their distinct national contexts and education systems. China's policies emphasize theoretical knowledge, while Japan balances theory with practical lessons and emphasizes international exchange and student evaluation. China should enhance its ESD by developing comprehensive assessment systems and integrating ESD into the mandatory curriculum with localized, national, and international perspectives. Japan, on the other hand, could improve by

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fostering collaboration between schools and focusing more on global ESD issues through international projects and cooperation.

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