BRIDGING THE GAP: FINANCIAL AND STRUCTURAL BARRIERS TO EFFECTIVE ENVIRONMENTAL EDUCATION IN JAPAN

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Summary

Environmental education (EE) in Japan has evolved significantly since the 1960s, shifting from a primary focus on pollution control to a more comprehensive approach that addresses both environmental and social issues. This evolution is exemplified by the current emphasis on Education for Sustainable Development (ESD). Despite the implementation of various policies and measures at both the national administrative level and within school settings, the effective integration and tangible outcomes of EE and ESD remain inadequate. This report delves into the factors contributing to this shortfall and explores potential solutions.

Key Learnings from the Report

- Insufficient Financial and Human Resources: Despite clear goals and educational approaches for EE and ESD within Japan's legal frameworks and policies, there is a significant shortfall in financial and human resource allocations needed for effective implementation.
- Structural Challenges in Education and Employment: Japan's rigid school hierarchy and traditional lifetime employment practices inhibit the integration of EE and ESD. These structures prioritize academic achievement and fixed career paths, limiting flexibility and innovation in educational and professional development.
- Economic Constraints on Households: High educational expenses impose a substantial burden on Japanese households. This economic strain affects the ability to provide experiential learning opportunities, particularly disadvantaging children from low-income families and contributing to a "gap in experiential learning."
- Policy Shifts and Emerging Trends: Recent policy shifts, such as the "New Capitalism" initiative and the growing trend of "Ethical Job Hunting," reflect a movement towards aligning employment practices with sustainability goals. These trends highlight the potential for EE and ESD to foster talent development for green transformation and create economic incentives for sustainability skills.
- Necessity for Economic and Human Investments: To fully integrate and realize the benefits of EE and ESD, significant economic and human investments are essential. These investments will support the development of a workforce capable of meeting environmental challenges and contributing to a sustainable future.

Contents

1. Introduction: Overcoming Challenges in Implementing Environmental and Sustainability Education in Japan

Japan has faced numerous challenges in implementing robust Environmental Education (EE) and Education for Sustainable Development (ESD) initiatives, with one of the most significant obstacles being the lack of funding and economic resources. During the Environmental Education Expert Meeting convened in preparation for the FY2023 revision of the Basic Policy for Promoting Environmental Education, Kunio Sato, a Visiting Professor at Mie University, highlighted the intrinsic link between the economy and the environment, stating, "the environment is affected by the economy. The economy is equally affected by the environment. (MOEJ, 2023)" Despite this recognition, there has been a noticeable lack of efforts to integrate economic and financial incentives into EE and ESD frameworks or to mobilize more funding for these initiatives.

There has been insufficient exploration of how governmental and public organizations, educational institutions, and learners can be incentivized economically to engage in EE and ESD. Addressing these gaps is crucial for fostering a more holistic and sustainable approach to EE and ESD in Japan. This issue brief will cover the following points:

Chapter 2: Outlines the evolution of policies regarding EE and ESD in Japan, summarizing how these have been integrated into the education system.

Chapter 3: Provides an overview of the impact and effectiveness of EE and ESD on citizens' awareness and actions regarding sustainability, based on surveys conducted by the Ministry of Environment, Japan (MOEJ). It also examines how these initiatives are introduced in educational settings.

Chapter 4: Examines the current lack of financial and human resources for EE and ESD.

Chapter 5: Analyzes the factors contributing to the limited economic expenditure by national and local authorities on EE and ESD and other barriers to their diffusion in Japan. This chapter discusses Japan's economic situation, educational system, and corporate employment practices, exploring why skills gained through EE and ESD are undervalued by companies and irrelevant to university entrance exams. It highlights factors hindering the diffusion of EE and ESD from the perspectives of government and local authorities, citizens, and companies.

Chapter 6: In summary, this report emphasizes the need for strategic investments and policy adjustments to fully integrate and realize the benefits of EE and ESD in Japan. By addressing these financial and structural challenges, Japan can better prepare its students to tackle environmental and social issues and contribute meaningfully to global sustainability efforts.

2. Environmental and Sustainability Education Policy Development in Japan

2-1. Evolution of Environmental Conservation and Education Policies in Japan

1. 1945-1960s: Initial Efforts and Awareness

After World War II, Japan's rapid industrialization led to significant environmental degradation. Two main origins of environmental education (EE) emerged (Ogawa, 2009): "pollution education," stemming from pollution due to economic growth, and "nature conservation education," focusing on preserving the natural environment. During this period, although formal EE policies were limited, public awareness of environmental issues began to grow (Sato, n.d.). Citizen movements and ecological perspectives contributed to the rise of nature conservation education, with community nature observation meetings fostering a positive inclination towards nature.

2. 1970s: Turning Point for Environmental Awareness

The 1970s marked a significant shift in environmental awareness in Japan, triggered by high-profile pollution incidents such as Minamata disease and Yokkaichi asthma. Public concern led to the establishment of the Environmental Agency (now the Ministry of the Environment, Japan, MOEJ) in 1971 and the enactment of the Natural Environment Conservation Law in 1972, laying the groundwork for environmental conservation efforts (Environmental Restoration and Conservation Agency, n.d.).

3. 1980s: International Influence and Domestic Setbacks

In the 1980s, the adoption of international declarations like the Belgrade Charter (1975) and the Tbilisi Declaration (1977) promoted EE globally (Inoue, 2001). However, Japan experienced a setback in environmental policies due to the focus on economic recovery from the oil shock. The perception that Japan had overcome its pollution crisis led to a decline in interest in EE (Taisen Iguchi, 2002). By 1988, the implementation rate of EE in schools had dropped significantly compared to earlier in the decade (Nakamura, 2022, pp. 35-36).

4. 1990s: Environmental Education Boom

The 1990s saw renewed attention to environmental issues, partly due to the 1992 Earth Summit. This period witnessed a boom in EE, supported by the establishment of the Basic Environmental Law in 1993 and the introduction of "the Period of Integrated Study" in school education in 2002. These measures provided a legal and structural foundation for promoting EE.

5. 2000s to Present: Embracing Sustainable Development

From the 2000s onwards, there was a significant push to promote Education for Sustainable Development (ESD) both globally and domestically (See Figure 1) . Key milestones include the Millennium Development Goals (2000), the UN Decade on Education for Sustainable Development (2002), and the Aichi-Nagoya Declaration (2014). Japan proposed the UNDESD at the 2002 Johannesburg Summit and reflected ESD principles in domestic laws such as the 2003 Act on Enhancing Motivation on Environmental Conservation and Promoting Environmental Education. UNESCO launched the Global Action Programme on Education for Sustainable Development (GAP) and, in 2020, adopted the ESD for 2030 Roadmap. This roadmap emphasizes the implementation of the 17 Sustainable Development Goals (SDGs) and the promotion of country-specific ESD initiatives. Additionally, UNESCO established the Global ESD-Net to support country-led initiatives and facilitate networking among experts and stakeholders (York University, n.d.). Post-2011 earthquake in Japan, EE expanded to include topics like disaster education, nuclear power issues, and renewable energy (Nakamura, 2022, p. 36).

Japan's commitment to ESD continued with the establishment of the Inter-Ministerial Conference on Education for Sustainable Development and the formulation of the National Implementation Plan for ESD (2014-2019), aligning with the Global Action Programme. These initiatives underscore Japan's dedication to integrating ESD into its educational framework, in line with international goals and standards (MEXT).

Box 1. Key Terms and Definitions

(1) Environmental Education (EE)

The Act on the Promotion of Environmental Conservation Activities through Environmental Education defines environmental education as "education and learning related to environmental conservation conducted at home, school, workplace, community, and all other places to deepen understanding of the link between the environment and society, economy and culture, and other aspects of environmental conservation, with the aim of building a sustainable society" (Article 2) (MOEJ, 2011). In addition to the conservation of the natural environment, an integrated perspective between the environment and society, economy and culture was added to the definition.

As defined in the Act, EE encompasses lifelong learning elements that should continue not only during students' school years but also after they enter society. However, this report focuses primarily on environmental education in primary, middle and high schools, up to university level.

(2) Education for Sustainable Development (ESD)

According to the Second Phase of the National Implementation Plan for Education for Sustainable Development, ESD is a learning and educational activity aimed at achieving a sustainable society by addressing various problems in modern society caused by human development activities, such as climate change, loss of biodiversity, depletion of resources, and expansion of poverty, so that humanity can secure a prosperous life for future generations (The Inter-Ministerial Conference on Education for Sustainable Development, 2021). ESD involves individuals taking a proactive approach to perceive these issues as their own, focusing on the fundamental causes of problems, and addressing them from their immediate surroundings, leading to a transformation of values and behaviours that contribute to the resolution of these problems. ESD was an idea advocated by Japan at the World Summit on Sustainable Development held in Johannesburg in 2002, and since then, it has been promoted internationally under the leadership of the United Nations Educational, Scientific and Cultural Organization (UNESCO) (The Inter-Ministerial Conference on Education for Sustainable Development, 2021).

Japan has a long history of EE, and ESD is often integrated into this existing framework. While ESD encompasses various elements such as environmental education, international understanding, development, peace, human rights and gender, when ESD is mentioned in this report, it mainly refers to education intended to promote sustainability related to the natural environment.

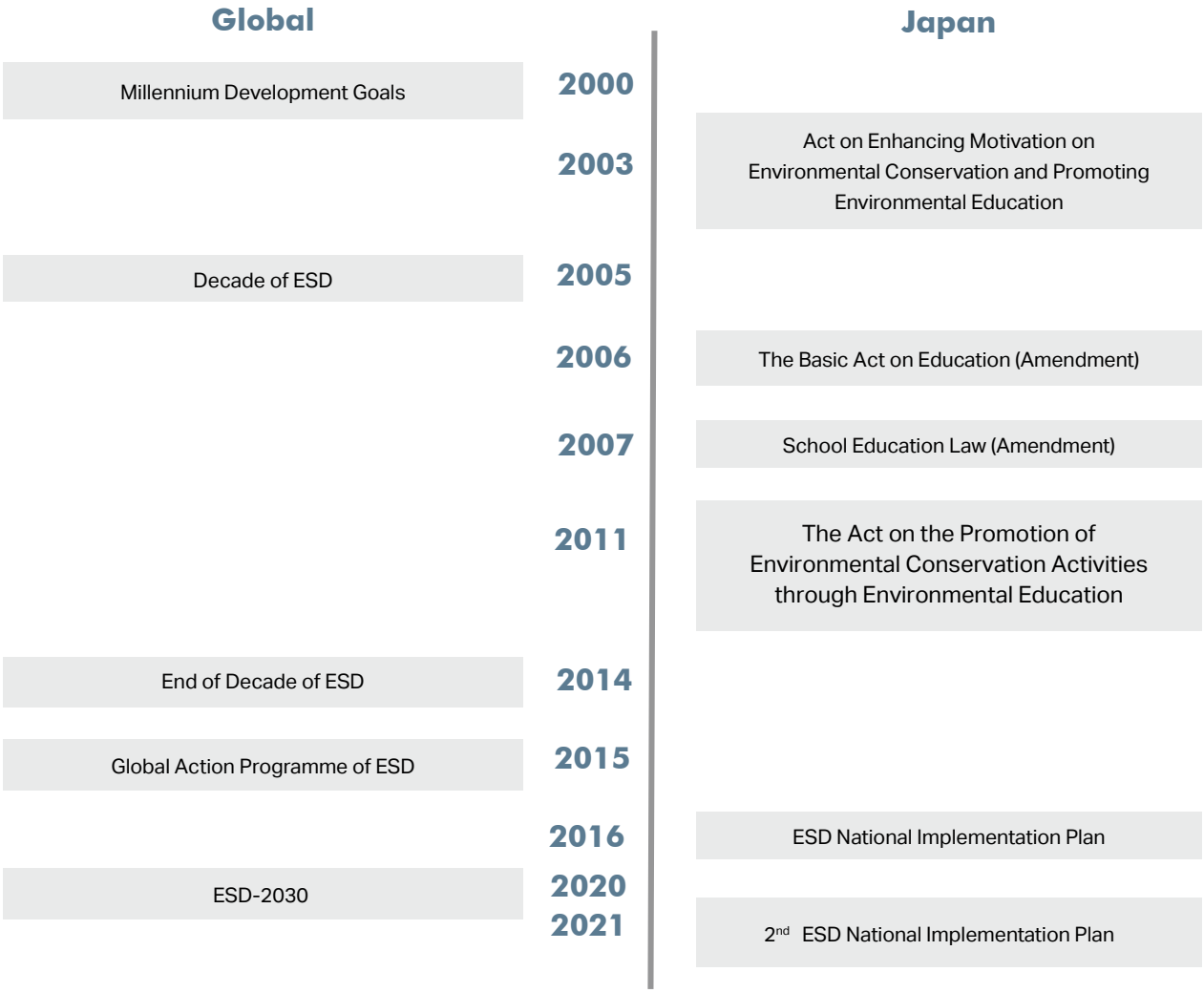


Figure 1. Historical milestones

2-2. National Strategies for Promoting Environmental and Sustainability Education in Japan

In advancing Environmental Education (EE) and Education for Sustainable Development (ESD), Japan has implemented various governmental initiatives. This chapter explores the following aspects:

- Integration and positioning of EE and ESD within the educational system.
- Legislative frameworks to promote EE and ESD.
- Recent trends in the national curriculum guidelines (Courses of Study) established by government authorities.

It also highlights governmental strategies to enhance the incorporation and promotion of EE and ESD within education and examines the recommended pedagogical methodologies for implementation.

1. Positioning EE and ESD within the framework of education and school systems

The Basic Act on Education emphasizes cultivating a mindset that respects life, cherishes nature, and actively contributes to environmental conservation (Article 2, paragraph 4) (MEXT, n.d.). The amended School Education Law of 2007 promotes nature-oriented experiential activities within and beyond educational institutions to foster a reverence for life and nature and nurture proactive environmental preservation attitudes (Article 21(2)) (MEXT, 2007). These provisions align with EE's objectives, underscoring its role in national educational goals.

The Ministry of Education, Culture, Sports, Science, and Technology (MEXT) integrates EE into school education by emphasizing the importance of understanding environmental issues and taking appropriate actions. School education is encouraged to incorporate environmental themes across various subjects such as social studies, science, and home economics. Additionally, during the 'Period of Integrated Study,' cross-curricular exploration of environmental issues is emphasized to foster a holistic understanding and engagement with environmental challenges (MEXT, 2010) (MEXT, 2010).

2. Legislative framework - Act on the Promotion of Environmental Conservation Activities through Environmental Education

The Act on Enhancing Motivation on Environmental Conservation and Promoting Environmental Education was established in 2003 (MOEJ, 2003), followed by the Act on the Promotion of Environmental Conservation Activities through Environmental Education (EE Promotion Act) in 2011 (MOEJ, 2011). This legislation is pivotal for promoting EE initiatives in Japan.

3. National curriculum guidance: Courses of Study

The Courses of Study, established by MEXT, serve as national curriculum standards ensuring consistent education across Japanese schools. Schools must structure their curricula according to these standards and use government-approved textbooks. The Courses of Study undergo revision approximately every decade to align with evolving societal, economic, and environmental dynamics.

Recent revisions emphasize experiential and self-directed learning approaches. The latest Courses of Study, implemented since 2020, highlight fostering "builders of a sustainable society" in the preamble

Box 2. Features of the EE Promotion Act (MOEJ, 2011)

Educational Methodologies: Experiential Learning

The Act emphasizes promoting experiential learning in natural, societal, communal, and cultural contexts. Article 10(3) mandates private organizations and businesses to provide students with practical work experiences. National and local governments must implement measures to enhance experiential learning, develop educational resources, and facilitate training programs for educators. In addition to the EE Promotion Act, the School Education Act, which forms the foundation of Japan's educational system and outlines ten objectives for compulsory education, also mandates the promotion of experiential learning activities from elementary through high school. This includes fostering community service experiences such as volunteer work, nature-based activities, and other forms of hands-on engagement. The emphasis on experiential learning aims to cultivate a sense of responsibility, environmental stewardship, and practical skills among students.

Enhancement of EE Infrastructure

Certification programs have been established to strengthen EE infrastructure:

- EE Support Groups: NGOs and private non-profit organizations meeting specific criteria can be designated as EE support groups (Article 10.2).
- Nature-Based Experiential Sites: Land or building owners can offer their properties for nature-based activities and receive certification from the prefectural governor (Article 20).

Partnership Approaches

The Act promotes cooperation among government, businesses, and private organizations for environmental conservation activities, enhanced motivation for environmental conservation, and environmental education (Article 2). In addition, Article 7 mandates the government to formulate the Basic Policy to promote environmental conservation activities, motivate participation, and enhance environmental education. This policy is formulated with inputs from various ministries and public opinion to ensure comprehensive and collaborative efforts.

and general provisions. Emphasis areas include programming, language skills, moral education, science and mathematics, traditions and culture, sovereignty education, consumer education, career education, entrepreneurship, financial education, disaster prevention, and safety education. The term "Active Learning," characterized by proactive, interactive, and in-depth learning methodologies, has been explicitly introduced (MEXT).

EE and ESD are integrated into various educational domains, ensuring their comprehensive incorporation (MEXT). Past revisions introduced "life studies" for first and second graders in elementary school (1989) and "the Period of Integrated Study" (1998-99) to foster interdisciplinary learning.

Additionally, a joint notice from MOEJ and MEXT entitled "On the Enhancement of Education on Climate Change and Other Global Environmental Issues" was issued in 2021 following the amended Act on Promotion of Global Warming Countermeasures. This initiative further reinforces the position of EE within school education (MOEJ and MEXT, 2021).

These strategies and legislative measures demonstrate Japan's commitment to advancing EE and ESD, integrating these crucial aspects into the educational system, and addressing global and domestic environmental challenges.

3. Current Situation and Obstacles in Environmental Education in Japan

Japan has actively implemented policies to integrate Environmental Education (EE) and Education for Sustainable Development (ESD) into its educational system. To evaluate the impact of these initiatives, the Ministry of the Environment of Japan (MOEJ) conducted a nationwide, internet-based survey in 2021. This survey targeted 2,075 members of the general public aged 18 and above and 1,000 school teachers (with equal representation from elementary, junior high, and high schools). The survey aimed to assess public awareness of environmental and social issues and the awareness and implementation of EE and ESD among educators (MOEJ, 2021). Key findings from the survey are discussed below, with further analysis in subsequent chapters.

1 General public's awareness of EE, ESD and SDGs

The survey explored the extent to which environmental and sustainability education has influenced individuals' awareness and behavior. When asked, "Do you think your previous studies have changed your awareness of environmental and social issues and your behavior?", 32.8% of respondents reported a change in awareness, while 26.9% indicated changes in both awareness and actions, totaling 58.8% experiencing some form of change. However, 40.2% expressed no change, uncertainty, or other responses. Although nearly 60% of respondents showed interest in environmental and social issues through their studies, many indicated that this interest did not translate into concrete actions.

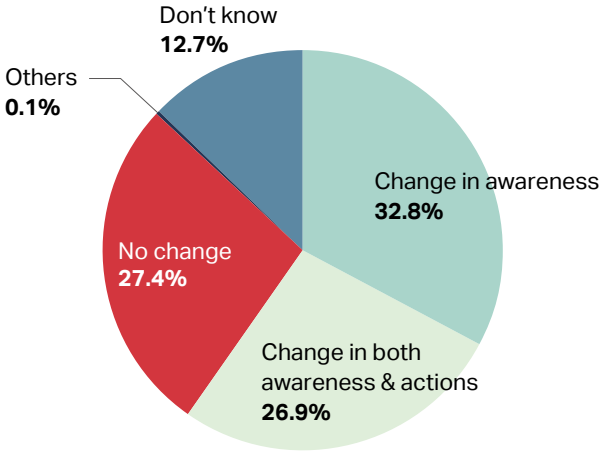


Figure 2. Q. Do you think your previous studies have changed your awareness of environmental and social issues and your behaviour? Source (MOEJ, 2021)

Further analysis reveals that for people to take concrete action on environmental and social issues, certain prerequisites are necessary. The survey found that 43% of respondents cited "Economic leeway" as the primary prerequisite, followed by "Colleagues to work together with" and "Mental stability." Despite Japan's status as the world's fourth-largest economy, many respondents believe that financial security is crucial for engaging in sustainability actions. This finding will be discussed in detail in Chapter 5.

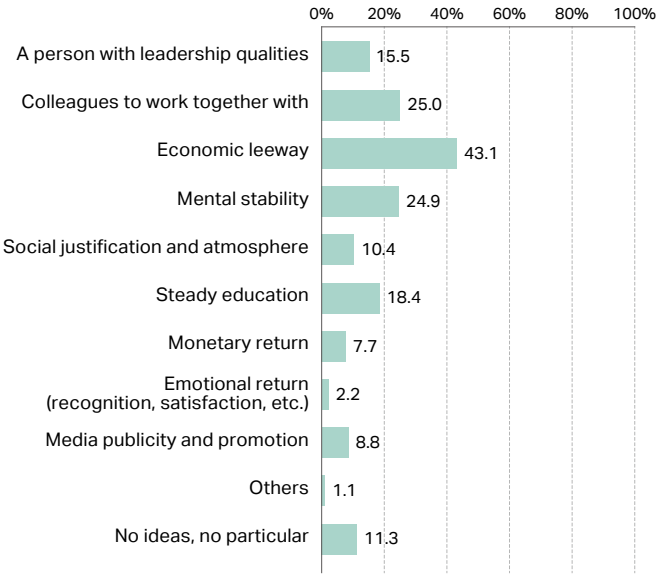


Figure 3. Q. What are the prerequisites for directing attention toward environmental and societal concerns and subsequently taking action?

Source (MOEJ, 2021)

2 Awareness and actual implementation of EE and ESD among educators

Among the surveyed teachers, 53.5% reported high or relative motivation to teach EE and ESD, while 46.5% showed a lack of motivation and enthusiasm.

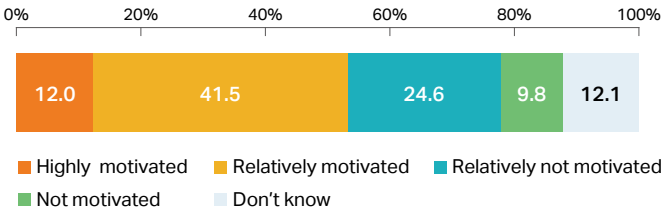


Figure 4. Q. Are you motivated to teach EE and ESD?

Source (MOEJ, 2021)

When queried about the challenges encountered in teaching EE and ESD, approximately half of the educators, accounting for 42.9%, identified time constraints as a primary obstacle, followed by preparation of teaching materials and lesson plans, and then curriculum management. As will be elucidated in Chapter 4, frontline educators in Japan already have long working hours compared to their counterparts in other countries and thus find it difficult to allocate time for preparations to incorporate EE and ESD into their lessons.

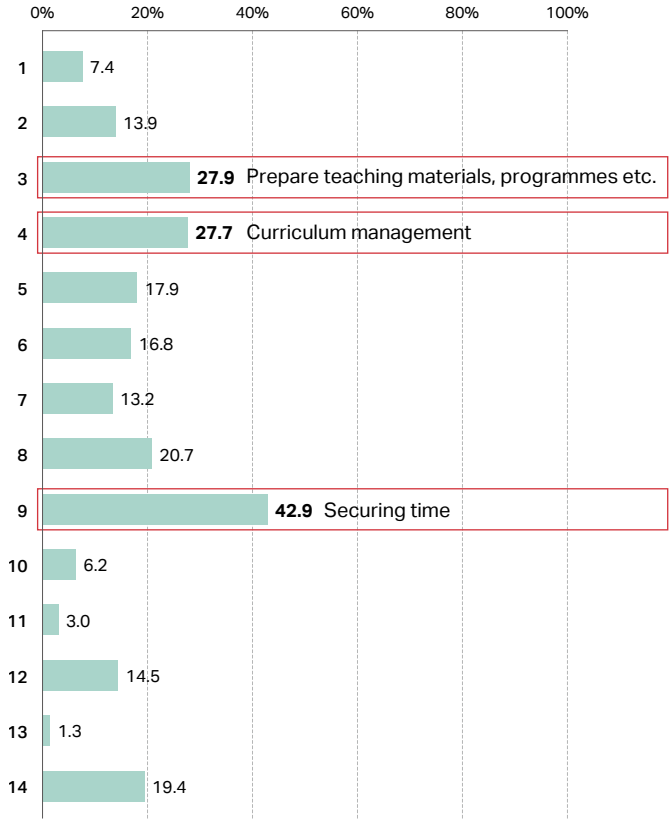


Figure 5. Q. What are the challenges of teaching EE and ESD?

Source (MOEJ, 2021)

These findings highlight the existing obstacles in effectively implementing EE and ESD in Japan, indicating the need for better support and resources for educators, as well as addressing broader socio-economic factors that influence public engagement in environmental conservation activities.

4. Financial and Human Resources Availability for Environmental and Sustainability Education in Japan

4-1. Funding and Financial Resources for the Implementation of ESD/EE

As mentioned in the previous section, a diverse array of policies has been formulated and various initiatives are being undertaken in Japan. However, in order to put all of these into practice, it is crucial to understand the extent of financial resources allocated to the promotion of EE and ESD. In particular, the importance of experiential opportunities is emphasised in both the EE Promotion Act and the Courses of Study. Providing such learning opportunities requires not only physical facilities and environments, but also personnel to support effective learning, which can be costly. This section explores the funding allocated to EE and ESD by the government and local authorities, highlighting the challenges in securing sufficient financial support.

Government Budget for EE and ESD

The importance of experiential learning opportunities is emphasized in both the EE Promotion Act and the national Courses of Study. Implementing such opportunities requires not only physical facilities and environments but also personnel to support effective learning, which can be costly. According to an OECD study, the proportion of public funds allocated to education in government spending, not limited to EE and ESD, is relatively lower compared to other countries (Japan: 7.8%), falling below the OECD average (10.6%) (OECD, 2022).

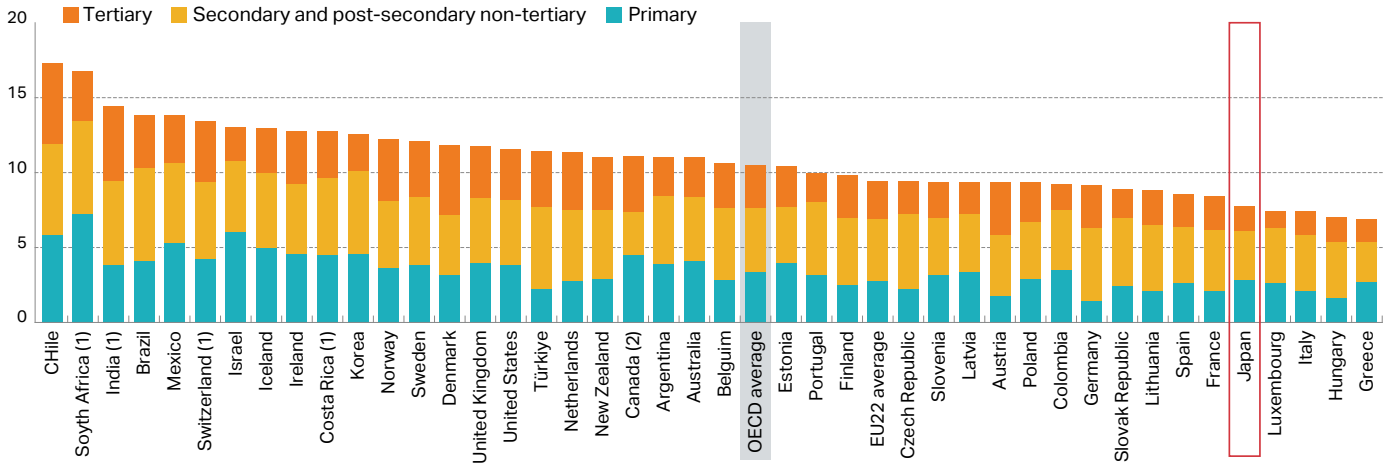


Figure 6. Total public expenditure on education as a percentage of total government expenditure - Primary to tertiary education

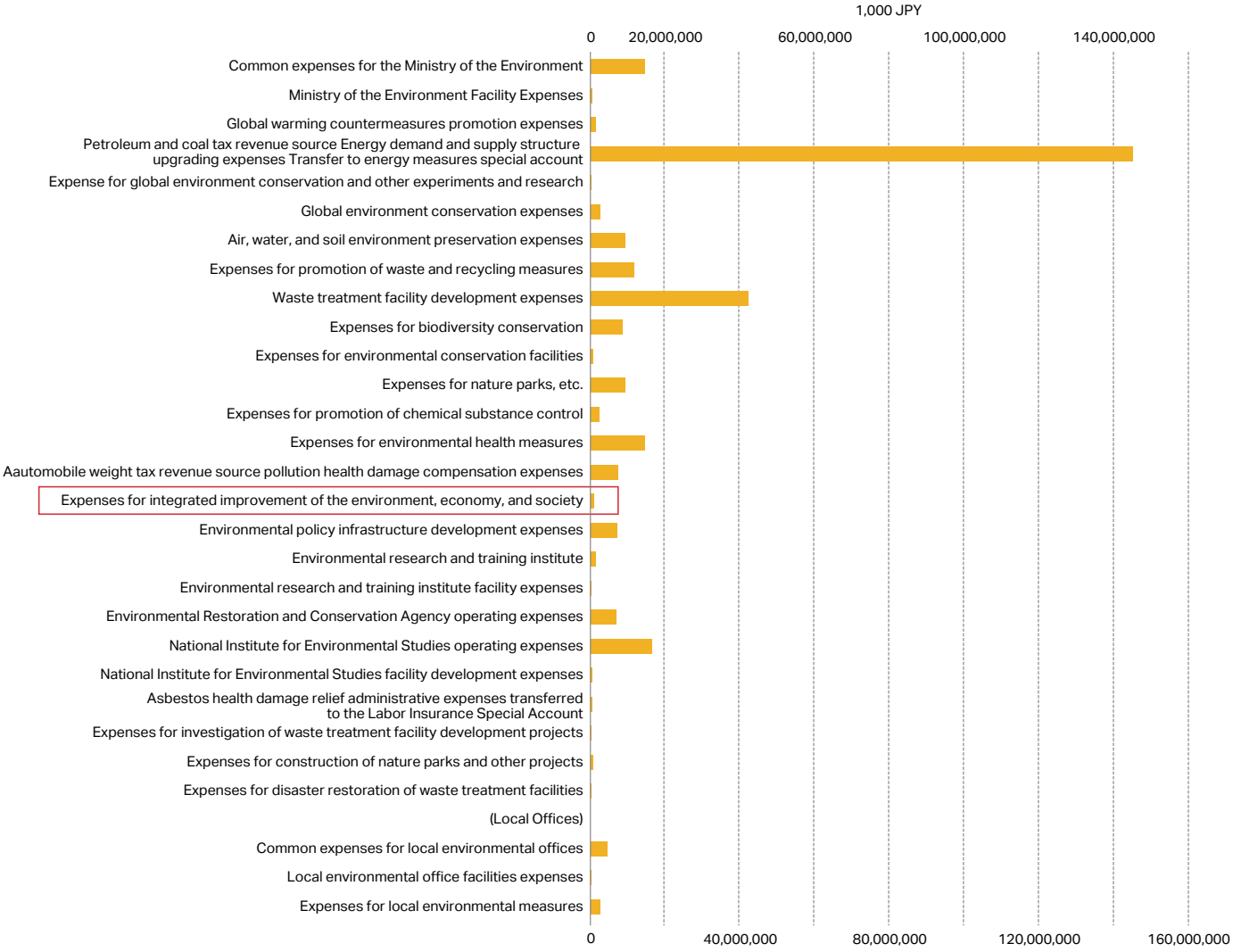
Source (OECD, 2022)

Ministry Budget Allocations

The Ministry of the Environment, Japan (MOEJ) plays a significant role in promoting EE and ESD initiatives. In the 2020 fiscal year budget of MOEJ, the budget allocations to concerning projects related to EE and ESD are as follows: JPY 61.69 million (USD 514,058[1]) for the "Comprehensive Measures for Strengthening Environmental Education" project, and JPY 132.40 million (USD 1.1 million) for the "Post-UN Decade of ESD Environmental Education Promotion Expenses." These amounts represent a mere 0.06% of the total FY2020 budget for MOEJ, which came to 309 billion JPY (USD 2.6 billion (MOEJ, 2021).

1 The conversion from JPY to USD in this document is based on an exchange rate of 120 yen per dollar.

It should be noted that the scope of EE and ESD promotion activities may encompass various initiatives, including infrastructure investments. Depending on the definition of the scope of the initiatives contributing to or being related to EE and ESD, the budget amount allocated to EE and ESD initiatives may differ. However, for the purpose of the analysis, only projects directly and specifically aimed at promoting EE and ESD and clearly indicating the enhancement of EE and ESD from the project names are extracted as a benchmark in this report, in order to grasp the proportion of the budget allocated to EE and ESD initiatives.



The budget for EE and ESD under the category "Expenses for integrated improvement of the environment, economy, and society"

Comprehensive measures to strengthen environmental education	61,687
Post-UN Decade of ESD Environmental Education Promotion Expenses	132,391

(1,000 JPY)

Figure 7. MOEJ budget in FY2020

Source (MOEJ, 2021)

Local Government Budgets

It is important to also consider the budget for EE-related initiatives in local governments.

According to a survey conducted by MOEJ in 2011, covering all prefectures, designated cities, and other municipalities nationwide (with a total of 1,106 responses), approximately 28.2% reported having no budget for EE. Furthermore, 35.2% of responding municipalities reported budgets of less than one million yen, indicating that over 60% of all municipalities either had no budget or had a budget of less than one million yen.

In addition, regarding changes in the total budget amount, 50.1% reported that it remained the same, while 12.3% reported a decreasing trend. (MOEJ, 2012)

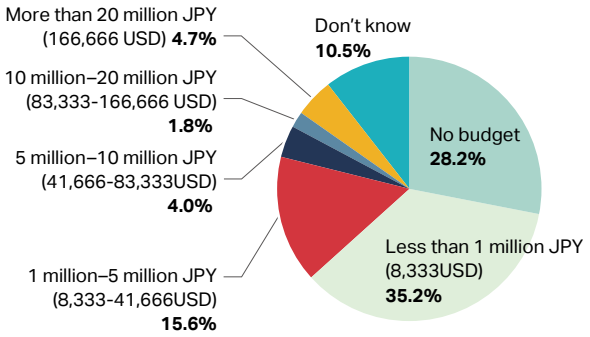


Figure 8. Local governments' total EE budget for FY2011 (N=1106) Source (MOEJ, 2012)

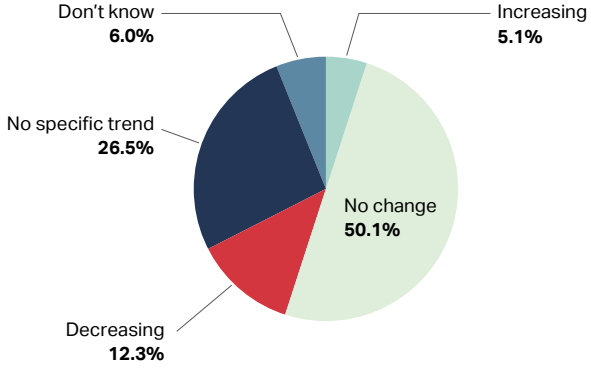


Figure 9. The budget trend in the last few years (Municipalities other than the designated cities) (N=1044) Source (MOEJ, 2012)

It should be noted that there is an issue with the segmented nature of municipal administration, where the environmental education budget is also included in various departments' educational initiatives (e.g. consumer education, social education, school subject education). Therefore, depending on how to define the scope of the initiatives contributing to EE and ESD, the budget amount allocated to EE and ESD initiatives may differ. This point could be considered a challenge and limitation in grasping and analysing the budget for environmental education and ESD.

School-Level Perceptions

In addition to government and local government budgets, how do schools perceive budget issues? According to a survey conducted on selected public elementary (98 schools) and junior high schools (46 schools) in Tokyo in 2018 to grasp the current situation and challenges of EE, both elementary and junior high schools cited "limited budget" as one of the top issues in implementing EE (Tokyo Metropolitan Board of Education, 2019). Therefore, it can be inferred that the scarcity of budget is perceived as a significant obstacle in many public schools in the metropolitan area.

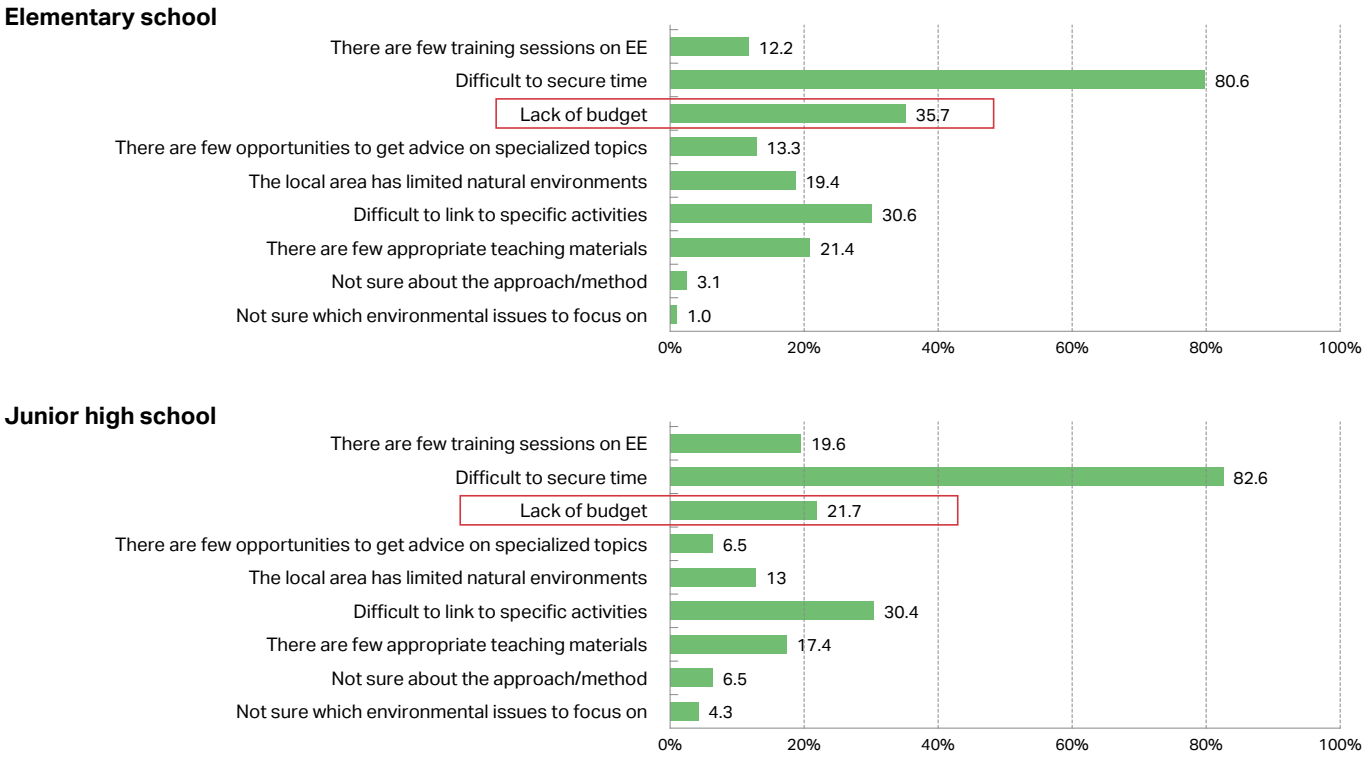


Figure 10. Challenges of EE implementation at public schools in Tokyo Source (Tokyo Metropolitan Board of Education, 2019)

Challenges in Budget Allocation

The segmented nature of municipal administration often results in EE budgets being spread across various departments' educational initiatives (e.g., consumer education, social education, school subject education). This fragmentation can make it challenging to accurately assess and allocate budgets specifically for EE and ESD initiatives.

Due to these financial limitations, there are concerns about whether the goals of the EE Promotion Act and other national policies can be fully realized. Ensuring sufficient funding and effective budget management is crucial for the successful implementation and sustainability of EE and ESD programs in Japan.

4-2. Human Resources Availability - The Situation Surrounding Teachers

According to MOEJ's survey in 2021, 57.5% respondents cited that lessons at school provide opportunities to learn about the environment and social issues. This means that schools are functioning as institutions that provide learning opportunities regarding environmental and social issues.

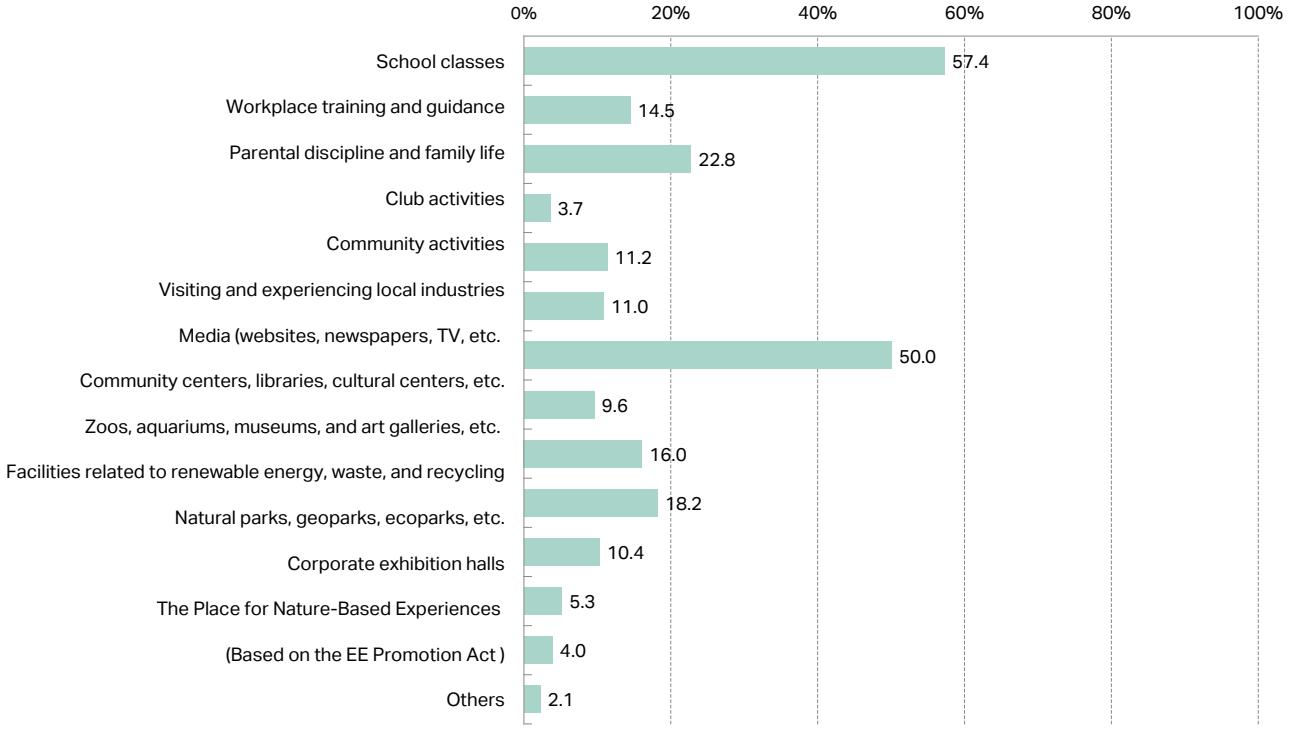


Figure 11. Where have you learned about the environment and society issues? (n=2075) Source (MOEJ, 2021)

Challenges Faced by Educators

In this context, the focus is on examining the prevailing circumstances and obstacles encountered by educators in schools. Primarily, findings from a survey conducted by MOEJ reveal that when queried about the challenges associated with EE and ESD instruction, 42.9% of educators cited time allocation as a prominent concern. Notably, Japan has come under increasing scrutiny regarding teachers' long working hours in recent years. As illustrated in Figure 12, , the average primary school teacher in Japan works longer hours compared to their international counterparts.

Regarding these long working hours, MEXT is promoting "work-style reform in schools," (MEXT, 2019), but the current situation remains challenging. MEXT's Teacher Work Environment Survey targeting approximately 35,000 elementary and junior high school teachers in 2023, reported the working hours of teachers as shown in Table 1. A total of 77.1% of junior high school teachers and 64.5% elementary school teachers are putting in long hours of overtime work (over 45h/month, the government's overtime working limit). Moreover, 36.6% of teachers at junior high schools and 14.2% at elementary schools are crossing the "death by overwork" danger line (over 80h/month) (MEXT, 2023) (NHK, 2023).

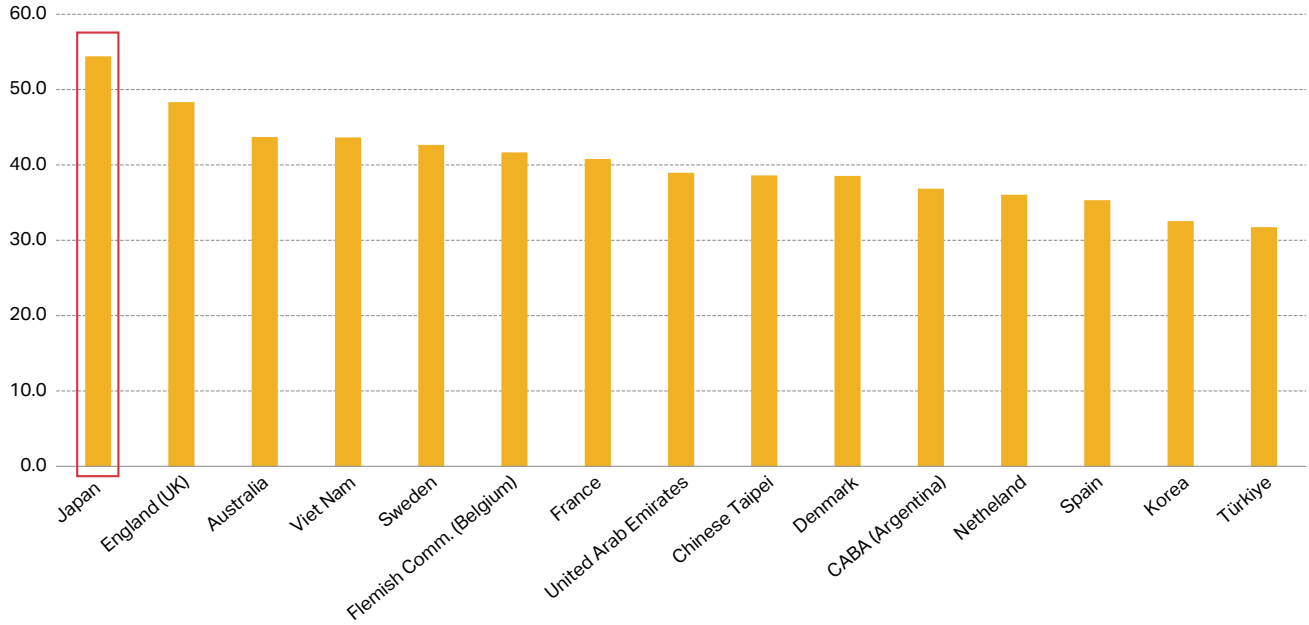


Figure 12. Primary school teachers' working hours (Average / week)

Source (OECD, 2019)

Table 1. MEXT's Teacher Work Environment Survey conducted for approximately 35,000 elementary and junior high school teachers in 2023, reported the working hours of teachers as below.

Average working hours per day* are:

	Weekdays	Weekends
Junior high schools	11 hours and 1 minute	2h 18 min
Elementary schools	10 hours and 45 minutes	36 min

*for one week each in October and November 2023
Source (MEXT, 2023), (NHK, 2023)

Teachers working overtime:

	Over 45h/month (the government's overtime working limit)	Over 80h/month (the "death by overwork" danger line)
Junior high schools	77.1%	36.6%
Elementary schools	64.5%	14.2%

Source (MEXT, 2023), (NHK, 2023)

Recruitment and Retention of Teachers

The process of recruiting teachers in Japan involves obtaining a teaching license and passing recruitment examinations conducted by each prefecture for public schools. From kindergarten to senior high school, teachers must have a teaching licence, and public schools hire through recruitment examinations conducted by each prefecture. Private schools hire at the discretion of each school. Figure 12 shows the ratio of applications that take the teacher recruitment exam in all prefectures across Japan (MEXT, 2023). While teaching used to be a popular profession, its popularity has been decreasing recently. In 2020, there were over 14 times the number of applicants versus recruitment, but this dropped below four times in 2022. The harsh working conditions may be one contributing factor.

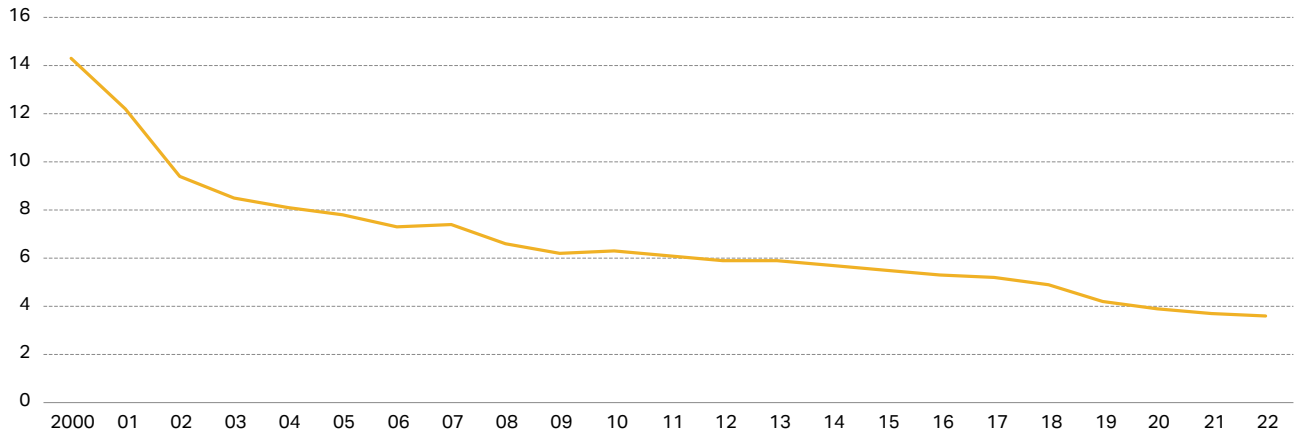


Figure 13. Teacher recruitment exam Application Ratio (Elementary, Junior, high schools) Source (MEXT, 2023)

5. Discussion

Despite the importance of Environmental Education (EE) and Education for Sustainable Development (ESD) being underscored within various legal frameworks and governmental policies, there remains a significant gap in the allocation of sufficient financial and human resources for their implementation. This chapter explores the fundamental factors hindering adequate resource allocation, focusing on economic conditions, the educational hierarchy, and employment patterns in Japan.

5-1. Challenges in Allocating Budgets to EE and ESD

One major issue in resource allocation for EE and ESD is the difficulty in measuring the impact and outcomes of these educational initiatives. This challenge is not unique to EE and ESD but is prevalent across educational programs. During discussions at the Environmental Education Expert Meeting convened in preparation for the Basic Policy revision in FY2023, MOEJ pointed out that while education and learning represent one approach to promote environmental conservation alongside regulatory and economic approaches, it is very difficult to evaluate the effectiveness of environmental conservation solely through an educational lens. This is because environmental conservation depends on the collective results of policies, making it challenging to assess its progress solely from an educational perspective (MOEJ, 2023). Another challenge is determining how to establish Key Performance Indicators (KPIs) for measuring the effectiveness of EE and ESD, something that requires thoughtful consideration.

In previous MOEJ surveys targeting municipalities, it was found that evaluation of the outcomes of projects related to EE and ESD was not widely conducted. Approximately 70% of respondents stated that they had not conducted any evaluation of project effectiveness, while around 30% reported conducting either quantitative or qualitative assessments, or both.

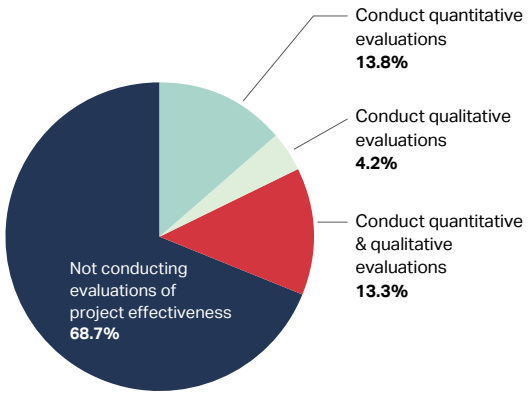


Figure 14. Q. What evaluations does your municipality conduct to assess the effectiveness of environmental education-related projects? (Select one)
Source (MOEJ, 2012)

5-2. Economic Burden on Households and Education Costs

Chapter 4 of this report indicated that government expenditure on EE and ESD remains relatively limited and that Japan allocates a relatively small proportion of public funds to education in general compared to international standards. Conversely, education expenses impose a significant burden on households in Japan. As discussed in the preceding Chapter 3, a survey revealing that 43% of respondents identified economic leeway as imperative to addressing environmental and societal concerns, and taking tangible actions underscored the paramount importance of financial considerations.

Despite Japan's status as the world's fourth-largest economy, many households face economic constraints. According to the National Tax Agency's Private Payroll Statistics in 2022 (National Tax Agency), the average annual salary for salary earners was JPY 4.58 million, with a noticeable income gap between regular and non-regular employees. The largest group of male earners fell within the JPY 4-5 million range, which often places families below the standard for receiving public assistance when accounting for taxes, insurance, and educational expenses (Goto, 2016).

University tuition fees have also significantly increased over the years. For instance, national university fees rose from JPY 36,000 in 1975 to JPY 535,800 in 2021, and private university fees increased from JPY 182,677 to JPY 930,043 in the same period (MEXT, 2022). Consequently, households with children face substantial educational expenses, estimated at JPY 8.2 million for public schools and over JPY 20 million for private schools from kindergarten through university (MEXT, 2022), (MEXT, n.d.), (The Japan Finance Corporation, 2021).

5-3. Educational Hierarchy and Employment Patterns

Amidst this tightening economic situation in Japanese households, one question is whether knowledge and skills related to sustainability lead to better employment opportunities and increased income. While interest in sustainability has been growing particularly among younger generations in recent years, if they acquire knowledge and skills related to sustainability, will this directly lead to better employment opportunities and increased income.

In Japan, the enrollment rate at four-year universities increased from 25.5% in 1991 to 57.7% in 2023. The number of university graduates rose from approximately 380,000 in 1989 to around 590,000 in 2023 (MEXT, 2023). However, according to the "Science and Technology Indicators 2021" by the National Institute of Science and Technology Policy, Japan's enrollment in graduate schools, especially doctoral programmes, is not increasing, and the number of doctoral degree recipients is also struggling to grow. Referring to Figure 14 The trend of doctoral degree holders, in the latest academic year for each country, the highest number of doctoral degree recipients is in the United States at 92,000, followed by China at 61,000 and Germany at 28,000. Japan has 15,000 doctoral degree recipients, showing a decreasing trend since the peak in the 2006 academic year (National Institute of Science and Technology Policy, 2021).

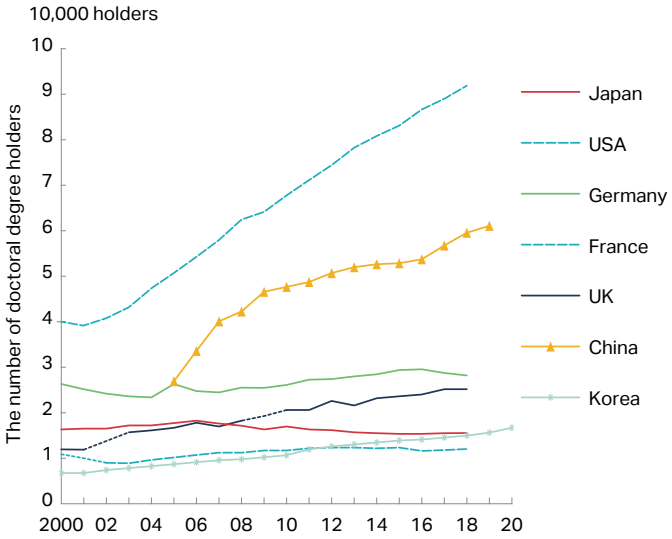


Figure 15. The trend of doctoral degree holders
Source (National Institute of Science and Technology Policy, 2021)

This is mainly because in Japan, it is seen as more important to pass the entrance exams to a prestigious university, while the actual content of what is learned is less valued. Rather than evaluating specialised degrees, the emphasis is on the "ability" demonstrated by passing the entrance exams. In general, when selecting new employees, companies place importance on the ranking of the university a candidate graduated from. In this way, companies evaluate the "potential" of the candidate,

in terms of such qualities as "intelligence," "aptitude," and "ability to diligently learn through effort." (Ebihara, 2015). This is because if a person possesses these abilities, they can be expected to work diligently, learn quickly, and adapt well regardless of the department they are assigned to. Thus, Japanese companies value these abilities over specialised knowledge acquired at universities. Keidanren (the Japan Business Federation) has conducted an annual "Survey on New Graduate Recruitment" among member companies since 1997, asking them to list five points they emphasise during the selection process from a list of 20 items. The top five points are communication skills, proactivity, willingness to take on challenges, cooperativeness and sincerity. Academic background and performance only accounts for 4.4% (18th place). The trend over the years for the top five items remains largely unchanged (Keidanren, 2018).

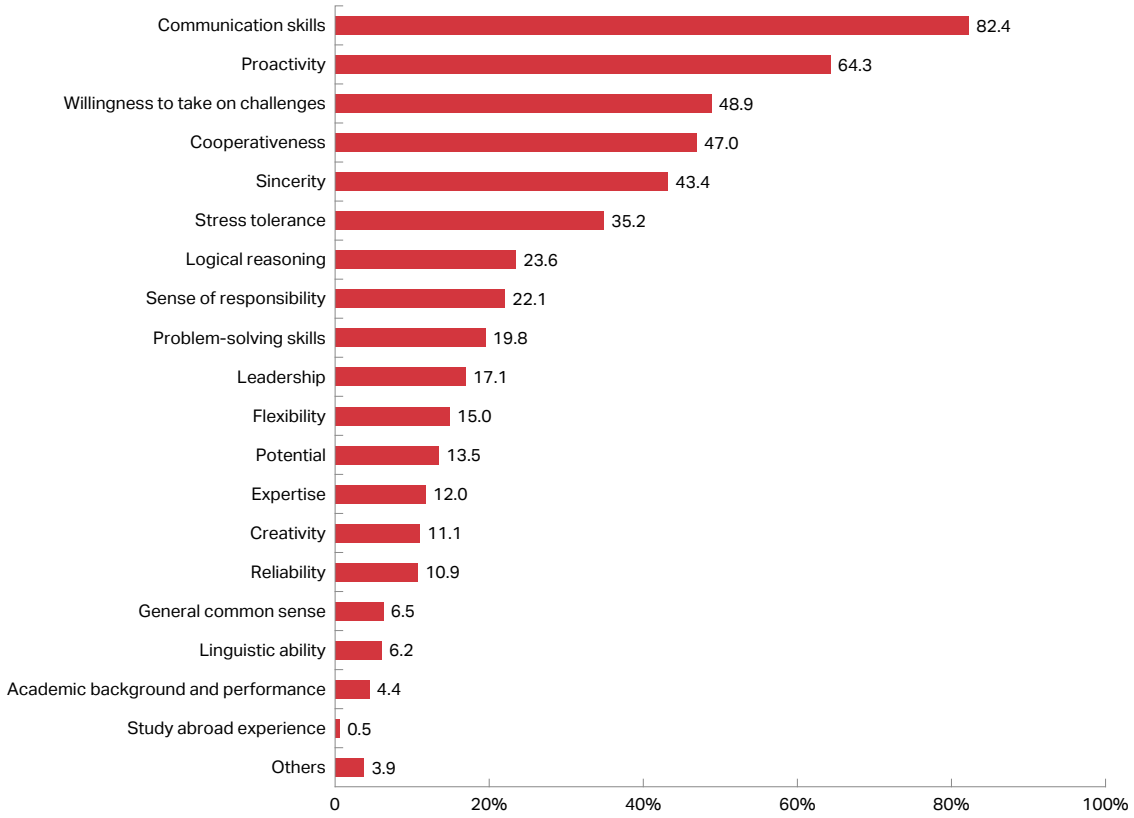


Figure 16. Abilities particularly considered during the recruitment selection process Source (Keidanren, 2018)

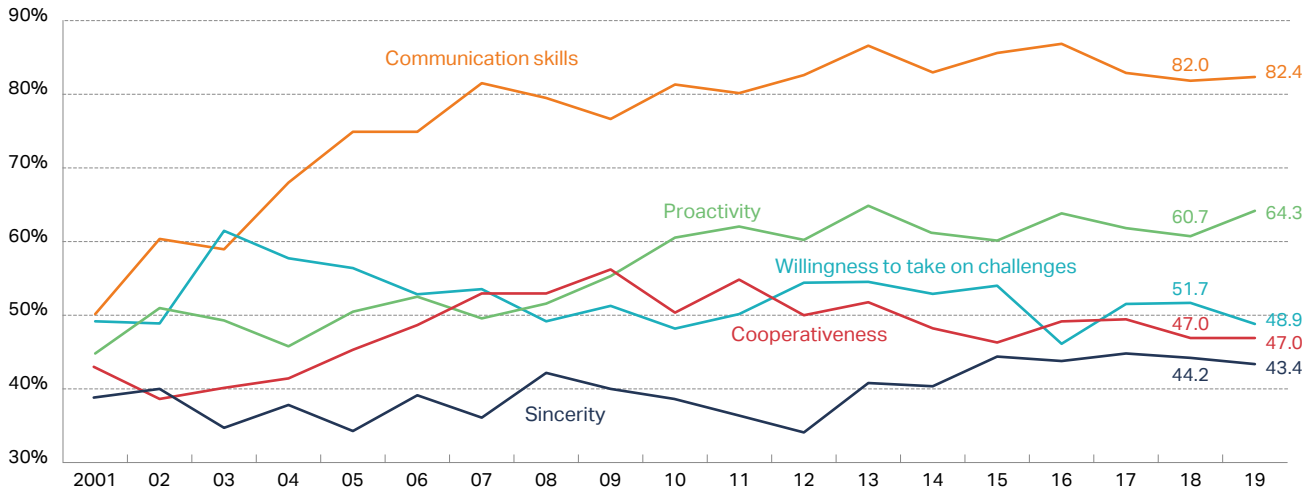


Figure 17. The trend of "the top five abilities considered during the recruitment selection process"

Source (Keidanren, 2018)

In many cases, Japanese companies are not particularly concerned about specialised degrees directly relevant to the job or what candidates studied in university. What they value more is the potential ability to adapt to any position, rather than what was learned in university or graduate school. This ability is often measured by whether a candidate has passed entrance exams for prestigious universities. While other countries also tend to evaluate such potential abilities, this trend is particularly widespread and pronounced in Japan (Oguma, 2019).

One criterion widely prevalent in Japan's school education is the "deviation value" or "standardised test score." Although the concept of "deviation value" was introduced in 1957 initially to clarify students' strengths and weaknesses in different subjects, by the mid-1960s, it began to be utilised for exam preparation and ranking schools, which spread widely in the 1970s (The Mainichi Newspapers, 1999). In the late 1960s and 1970s, as the rates of high school and university enrollment increased, simply being a "university graduate" became less meaningful, and the emphasis shifted towards which university one graduated from (Oguma, 2019). While other countries also have prestigious universities, not all universities are intricately ranked as they are in Japan. The comprehensive ranking of high schools and universities is unique to Japan. (Takeuchi, 1995).

In recent years, many companies and government agencies have been engaging in projects related to sustainability, and there are indeed some job opportunities seeking candidates suitable for such initiatives. However, it is still generally held that Japanese companies and government agencies do not necessarily require specialised degrees directly relevant to the job, and they do not place much emphasis on what was studied in university except in certain occupations where specific skills or qualifications are essential. In this situation, even if learners make efforts to acquire specialised skills and knowledge related to sustainability, they may not necessarily find employment opportunities in the field of sustainability after graduation.

As seen in the previous section, many households in Japan are facing economic constraints, and prioritising graduation from a higher-ranked university over what to study becomes crucial for attaining better income. Given the prevailing employment structure and school hierarchy, where the concern over which university one graduates from tends to be the primary focus for many learners and parents, EE and ESD must positively function as a means to enter higher-ranked educational institutions. Otherwise, there is a high likelihood that incentives for learners to study sustainability, particularly from an economic perspective, may diminish.

To genuinely embed EE and ESD into school education, it is essential not only to emphasise the noble cause of promoting environmental conservation but also to link the skills and abilities acquired to support learners' real-life and income aspects upon entering adulthood. In essence, there should be a greater demand for the skills and expertise in the sustainability field acquired through EE and ESD within the labour market, with clearer and more widespread adoption of employment practices that align skills with job requirements. As for the demand situation in the labour market, in recent years, sustainability has become an increasingly important management issue, with growing interest in sustainable investment and sustainable business practices. As more companies seek to align sustainability with their business strategies and develop sustainable business strategies, there has been a rise in demand for sustainability consultants and ESG consultants who provide support in these areas. This demand is particularly evident within business consulting firms. However, there is still only a limited demand for sustainability professionals in the labour market.

Box 3. Potential job creation by the Green Deal in EU

In 2019, during the first year of its current term, the European Commission unveiled a policy package called the "European Green Deal," which integrates economic and industrial policies with sustainability. Initially, there were doubts about its feasibility due to budgetary constraints within the EU, but the EU found solutions to this challenge amidst the response to the COVID-19 crisis. The EU established the "Next Generation EU," a EUR 750 billion recovery fund. The Green Deal was placed at the core of the recovery plan (Hasumi, 2023), and within this EUR 750 billion, the "Recovery and Resilience Facility (RRF)," totalling EUR 672.5 billion, allocates at least 37% towards green transition, thus driving the realisation of the Green Deal policy.

According to the Annual Report of Employment and Social Development in Europe 2023, the European Green Deal is expected to have positive effects on employment, with forecasts suggesting the creation of between 1 million and 2.5 million jobs by 2030 in sectors benefiting from greening initiatives. The implementation of the Green Deal is anticipated to bring benefits to nearly all occupational categories. According to the European Centre for the Development of Vocational Training's European Green Deal scenario, various sectors are projected to experience substantial increases in employment. Science and engineering associate professionals are expected to see a rise of 3.0%, followed by science and engineering professionals with 2.4%. Additionally, administrative and commercial managers are forecasted to experience a 2.1% increase, while chief executives, senior officials and legislators could see a growth of 1.7%. ICT professionals and business and administration professionals are also projected to witness employment increases of 1.5% and 1.2%, respectively. While job losses are projected in carbon-intensive industries, the overall transformation towards climate neutrality is predicted to generate net employment gains across economic sectors by 2030 (European Commission, Directorate-General for Employment, Social Affairs and Inclusion, 2023).

As such, economic and industrial policies are more robustly integrated with sustainability policies in the EU. Policies are designed to ensure that the skills and expertise acquired through EE and ESD contribute to the demand for sustainability skills in the labour market. Additionally, there is a more significant proportion of public investment in education. In some EU countries such as France and Germany, green budgeting and sustainability budgeting have been introduced to assess the environmental impact of government expenditures toward realising favourable environmental goals (International Monetary Fund, 2019) (European Commission, 2023). These factors could also serve as drivers for individuals and educational institutions to integrate EE and ESD into educational settings.

6. Conclusion

In Japan, while the goals and educational approaches for Environmental Education (EE) and Education for Sustainable Development (ESD) are clearly outlined within legal frameworks and policies (as discussed in Chapter 2), there remains a significant shortfall in the allocation of financial and human resources necessary to achieve these goals. Despite frequent discussions among government and educational institutions about the importance and direction of EE and ESD, concrete frameworks for securing economic resources and creating incentives for learners are still lacking.

Structural Challenges

Japan's unique structural challenges, such as its rigid school hierarchy and traditional employment practices, further inhibit the integration of EE and ESD into educational settings. The conventional education system, which prioritizes academic achievement, has not only posed barriers to EE and ESD but has also been criticized for other drawbacks. Excessive emphasis on academic knowledge has been associated with a decline in critical thinking skills and an increase in individuals unable to work autonomously in society. Active learning and experiential learning, as outlined in the Courses of Study, are strategies not only aimed at promoting EE and ESD but also addressing these broader educational shortcomings.

Employment Model and Economic Context

Japan's traditional employment model, characterized by lifetime employment, has been identified as a factor contributing to prolonged economic stagnation. This model limits talent mobility into new and emerging industries. Unlike the era when economic growth was the sole focus, today's economy demands sustainability in all activities, necessitating a workforce capable of continuous skill refinement, informed decision-making, and effective implementation. Promoting EE and ESD can act as a catalyst for redefining Japan's education system and work culture. Therefore, significant economic and human investments are crucial for achieving this transformation.

Recent Policy Shifts

Recently, significant policy shifts have been observed in Japan. The Japanese government's declaration of "New Capitalism" in 2021 includes expanding investments towards green transformation and promoting job-based employment that emphasizes job roles, expertise, and skills over traditional employment forms (Prime Minister's Office of Japan, n.d.). Additionally, there has been growing interest in "Ethical Job Hunting," where young people seek employment in companies that address environmental and social issues as part of their business. This movement is gaining momentum and highlights the importance of aligning EE and ESD with talent development for green transformation, creating economic incentives for acquiring sustainability skills (The Asahi Shimbun, 2022).

Future Outlook

In conclusion, while the foundational policies for EE and ESD are in place, Japan must address the gaps in financial and human resources to realize these educational goals fully. By leveraging recent policy shifts and aligning educational practices with the demands of a sustainable economy, Japan can foster a new generation equipped to meet environmental challenges and contribute to a sustainable future. Investing in EE and ESD is not just an educational imperative but a critical component of Japan's broader economic and social strategy.

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