The Role of Higher Education in Achieving the Sustainable Development Goals

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Abstract

This chapter focuses on the relationship between Sustainable Development Goal (SDG) 4 and higher education. Higher education has traditionally been expected to play three significant roles: education, research, and social contribution. However, due to globalization, these societal roles and expectations are gradually evolving. There are two targets under SDG 4 that are directly related to higher education. Target 4.3 aims to “ensure equal access for all women and men to affordable and quality technical, vocational, and tertiary education, including university.” It is noteworthy that the target mentions not only accessibility to higher education, but also quality. Additionally, the Times Higher Education released the Impact Ranking and visualized a university’s global performance, which assesses universities according to the framework of SDGs. Japan was the most represented nation in 2019, highlighting Japanese universities’ active efforts to work on global issues. While various efforts have been made to achieve the indicators of SDG targets, the global impact of COVID-19 has provided a significant opportunity for the role of higher education to be reconsidered. Considering this background, this chapter introduces various activities and initiatives at Japanese higher education institutions, such as the Science and Technology Research Partnership for Sustainable Development (SATREPS), which promotes international joint research on global issues. Finally, this chapter presents the further expected roles and challenges for higher education in society through the indirect spillover effects on the other goals of the SDGs.

Keywords

Higher education · Research · Education · Social contribution · Industry-academia collaboration

5.1 Introduction

In 1990, the international trend of emphasizing basic education, especially at the primary level, became clear at the World Conference on Education for All (EFA). During this time, the global expansion of basic education progressed dramatically. The Sustainable Development Goals (SDGs) are a new set of global goals for the year 2030. It explicitly expands the scope of education, from pre-school to higher education, shifting the emphasis from merely increasing...
accessibility, to offering more opportunities for higher quality education.

Higher education institutions are expected to play a more active role in developing human resources that can contribute to the achievement of the SDGs (Sustainable Development Solutions Network-Australia/Pacific 2017). Under SDG 4, two targets, namely 4.3 and 4.b, pertain directly to higher education. Goal 4.3 specifically states, “by 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university.” Previously, under the development theory that economic growth is essential for reducing poverty and benefitting the poor, education was seen as a necessary investment¹ to improve future products and achieve economic growth. In particular, higher education has been emphasized as a means to achieve economic development, along with vocational and technical training. However, in the wake of serious poverty problems and massive unemployment in the 1970s, it became apparent that economic growth alone would not solve poverty. As education itself has come to be perceived as an investment objective, primary education, which aims to replace higher education with the acquisition of basic knowledge and life skills, has attracted the attention of the United Nations (UN) and other donors. Since the 1990s, the perspective that education is a basic human right has flourished, emphasizing the importance of basic education in guaranteeing equal access to learning opportunities. In this context, the Millennium Development Goals (MDGs), with an achievement deadline of 2015, set goals related to primary and secondary education. While higher education was only indirectly mentioned under the MDG regarding elimination of the gender gap, it is considered an actual goal under the SDGs. This shows that higher education has once again attracted attention after the expansion of basic education in recent years.

Another target aimed at higher education, target 4.b, states that “By 2020, substantially expand the number of scholarships available to developing countries, in particular, least developed countries globally, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries” (United Nations 2015). This target was established as a necessary measure for the implementation of target 4.3, which aims to increase the number of scholarships to expand accessibility to higher education for students from developing countries. Considering the costs and resources involved in providing higher education and the introduction of appropriate curricula that incorporate the latest technology, opportunities for higher education in developing countries are still limited. Consequently, it is essential for students to study in middle and developed countries, where higher education is more accessible. However, it is difficult for an individual from a developing country to study abroad, owing to the considerable cost burden it entails. Support for study abroad programs is a meaningful initiative that develops human resources, who will play a leading role in education and industry in their respective countries. To achieve target 4.3 on higher education, it is therefore recommended to substantially increase the number of scholarships provided by governments, donors, and the private sector, and establish new scholarship systems and programs.

The SDGs address a wide range of issues relevant to businesses, including poverty, health, education, climate change, and environmental deterioration. Therefore, governments and companies are encouraged to consider the SDGs as a strategic issue. An increasing number of companies are attempting to formulate management strategies that incorporate the SDGs. With this trend, there will be an increasing demand for graduates who have a broad and deep understanding of the issues related to the SDGs and

¹This idea, known as human capital theory, is one of the theories in modernization theory, which was the mainstream of development theory in the 1950s and 1960s. Human beings were considered a means to achieve economic growth, and education was considered a means to produce a certain quality of labor force and an investment.
can work to solve global issues. As educational institutions that respond to social changes, universities are expected to adopt teaching and learning content related to the SDGs at an early stage and develop human resources that can contribute to the achievement of the goals.

This chapter focuses on the relationship between SDG 4 and higher education. The remainder of this paper is organized as follows. Section 5.2 summarizes activities aimed at internationalizing universities in line with recent globalization and its characteristics, focusing mainly on the Asian region. The author also considers the new roles and issues expected to be addressed to achieve the goals of the SDGs. In Sect. 5.3, the relationship between other SDG goals and higher education will be examined from the perspectives of education, research, and social contribution, with reference to the previous literature. Section 5.4 discusses Japan’s guiding principles for SDG implementation and clarifies how higher education is mentioned therein and recognized as an important stakeholder. In addition, the Times Higher Education (THE) Impact Ranking, which visualizes the social contribution efforts of universities, will be discussed, and an overview of how Japanese universities are reported will be given. Section 5.5 will focus on COVID-19, which has been significantly impacting the world since 2020, and summarize its impact on higher education from the latest reports. Based on these discussions, the conclusions will examine the roles and challenges expected in higher education in light of post-COVID-19 and the achievement of the SDGs by 2030, while also addressing indirect spillover effects on the other goals of the SDGs.

5.2 The Changing Role of Higher Education

Traditionally, higher education has played three roles: teaching, research, and social contributions. Comparing the three, education and social contribution have pertained to activities open to society, while research has developed in a separate area, as an independent activity carried out a group of researchers. However, as globalization progressed in the 1990s, and people, goods, capital (money), and information traveled freely across national borders, the nature of higher education also required change. On one hand, the demand for higher education has grown and expanded in countries that have achieved economic development and wealth. On the other hand, in countries where domestic higher education is underdeveloped and the supply does not meet demand, students who can afford to do so choose to study at institutions overseas.

Coupled with these developments, higher education institutions are moving toward internationalization. Middle and developed countries with well-developed higher education systems try to meet demand by aligning their indicators for the transfer of university credits with international standards, as well as promoting overseas study. In addition, agreements with domestic and international higher education institutions should also be established. Taking the Asian region as an example, the structure of the educational networks and programs in recent years has tended to become more multi-layered, with collaborations not only between two universities, but also between three or more institutions and intra- and inter-regional collaborations that transcend national frameworks (Sugimura 2012).

The internationalization of higher education has led to an increase in transnational higher education, which is not only a traditional form

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2 This chapter is prepared based on the previous work written in Japanese by the author (Ashida 2019). It is translated and revised with some new augmentations and major modifications.

3 For example, twinning programs allow students to receive a single degree from a university in their home country after a certain period of education in both their home country and the destination country. In addition, overseas universities set up campuses in other countries, including developing countries and dispatch faculty members and programs to these campuses, allowing...
of study abroad where students move across national borders, but also a broader form where institutions and programs are delivered across national borders. Additionally, there is a new type of learning that is not limited to existing academic disciplines, but involves dialogue with different ones, understanding each other’s differences, integrating with one’s own specialized field, and creating a new research field. In recent years, the expansion of opportunities for learning, the use of information and communications technology, and the introduction of active learning to encourage learners to participate proactively in class rather than passively have been often observed.

As globalization accelerates, the degree of interaction and dependence between countries is becoming increasingly stronger. It has become clear that the issues that need to be addressed are in cooperation with the international community as a whole, not just the problems of one country. The Asian region, in particular, has many issues that cannot be solved by a single country alone, and requires the collaboration of multiple countries. In response to this trend, a variety of higher education reforms targeting research and education on global issues are underway in today’s higher education institutions. The human resources and research results produced by the aforementioned multi-layered program structure and cooperative system in the Asian region can become an international public good. In the context of the SDGs, researchers who specialize in research activities are called upon to address these issues beyond their own disciplines and fields to solve global issues in the real world. Furthermore, it is necessary to collaborate on an equal footing with stakeholders outside of higher education institutions, such as public agencies, industry, and civil society. For example, more innovative forms of collaboration are expected beyond the framework of industry-academia collaboration; private companies and universities can collaborate on research, product development, and other projects, such as public–private partnerships.

5.3 Other SDG Goals and Higher Education

The SDGs were adopted by the UN General Assembly in September 2015. They consist of 17 goals and 169 targets that cover a wide range of social, economic, and environmental issues. To solve this global challenge, academic expertise and cooperation among parties across various fields are essential. Among institutions of higher education, universities, in particular, can provide cutting-edge academic knowledge in both research and teaching. Moreover, they can stand as neutral and reliable stakeholders in society. Universities have the ability to take the lead in addressing local, national, and international SDGs through cross-sectoral dialogues and partnerships, as well as play a key role in advocating the importance of the SDGs and providing educational programs on SDGs in sectors other than education. In other words, higher education is a sub-sector within the education sector that can contribute to goals beyond SDG 4.

For example, the guidebook “Getting Started with the SDGs in Universities,” which attempts to explain how higher education institutions can engage with and contribute to the SDGs (Sustainable Development Solutions Network-Australia/Pacific 2017), shows that universities can contribute to relevant goals beyond Goal 4 in two dimensions, namely teaching and research. With reference to this guidebook, this section presents specific examples of how education and research can contribute to each SDG.

5.3.1 Contributions from Education and Research

Quality education, which is explicitly mentioned in Goal 4, not only develops the qualities, abilities, and potentials of individuals, but also leads to the development and advancement of communities and nations through individuals. For
example, if individuals have the opportunity to obtain education and advance to higher educational levels, they can acquire the qualifications and skills necessary for future employment and broaden their career choices. As a result, they are more likely to find jobs with better conditions. In the future, this will lead to the realization of Goal 8 of the SDGs: “Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.” Education can also contribute to the realization of other goals through the implementation of educational programs in non-educational sectors, such as knowledge on improving nutritional status, proper disease prevention and treatment, reproductive health care and services, and disaster preparedness. Specifically, education can help achieve Goal 2: end hunger, achieve food security and improved nutrition, and promote sustainable agriculture; Goal 3: ensure healthy lives and promote well-being for all at all ages; and Goal 11: make cities and human settlements inclusive, safe, resilient, and sustainable.

A wide range of research-related activities is essential for addressing the challenges of the SDGs, which at the same time is seen as a means for the implementation of the goals. Under the SDGs, universities are expected to play an important role in providing knowledge, evidence-based solutions, and innovations needed to identify and solve the challenges that hinder the realization of the SDGs. By creating knowledge through research activities and disseminating it to society through educational activities, universities are able to promote economic development, social well-being, and innovation in the world. For example, among the eight targets set in Goal 9 (“Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation”), two targets, 9.5 and 9.b, are directly related to research, such as promoting scientific research, improving technical capacity, and supporting technology development, research, and innovation (Table 5.1). The direct contribution of the research is essential for realizing each goal. However, this is done not merely through a single field of research, but a variety of academic standpoints from different fields, such as the natural sciences, social sciences, and humanities. Thus, education is set as one of the targets of Goal 4, but it is also closely related to the other SDGs in terms of promoting research and development (R&D), human resource development, and capacity building in various fields.

To achieve the SDGs, education can play an important role in underpinning all goals. The aforementioned guidebook “Getting Started with the SDGs in Universities,” prepared by Sustainable Development Solutions Network-Australia/Pacific (2017), has so far been widely referenced by many higher education institutions around the world. The guidebook has also been translated and provided in different languages. In September 2020, based on the information provided in the previous work, the Sustainable Development Solutions Network (SDSN), published a new guidebook with expanded, updated, and improved information, titled “Accelerating Education for the SDGs in Universities: A guide for universities, colleges, and tertiary and higher education institutions” (SDSN 2020a). In the process of developing this new guidebook, universities around the world were invited to submit case studies on how they are implementing and supporting education for the SDGs. Some of the most innovative and inspiring case studies were presented. Other examples of activities not yet included in the guidebook are also provided through the website (SDSN 2020b).

In addition, in 2020, the United Nations University (UNU), a UN agency based in Japan, created the UNU SDG–Universities Platform. This platform was developed with the intention of strengthening and promoting partnerships between the UNU and the universities in Japan in order to initiate research and educational activities to contribute to the achievement of the SDGs (United Nations University 2020). It must be noted that individual universities actively embrace opportunities to collaborate and discuss various issues with one another.
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<th>Goals</th>
<th>Targets</th>
<th>Relevant to research</th>
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<tr>
<td>9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</td>
<td>9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending</td>
<td>The need for training R&amp;D workers Promotion of scientific research Improving technical capacity Support for research and innovation</td>
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<td>2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture</td>
<td>2.a Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries</td>
<td>Sustainable agriculture Vaccine development Need for scientific research and input on sustainable consumption and production</td>
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<td>3. Ensure healthy lives and promote well-being for all at all ages</td>
<td>3.b Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all</td>
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<td>7. Ensure access to affordable, reliable, sustainable and modern energy for all</td>
<td>7.a By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology</td>
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<td>12. Ensure sustainable consumption and production patterns</td>
<td>12.a Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production</td>
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| 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development | 14.3 Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels  
14.4 By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics  
14.5 By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information  
14.a Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries | The need for scientific input in addressing marine and fisheries management |

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<th>Goals</th>
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| 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development | 17.6 Enhance North–South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism  
17.8 Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology | Triangular cooperation and knowledge sharing  
Technology bank and full operation of the science and technology innovation capacity building mechanism  
Strengthen the use of enabling technologies |

Source Prepared by the author based on SDSN Australia/Pacific (2017, Table 2), and United Nations (2015)
5.3.2 Contributions from Collaborations with Society

While this chapter has so far outlined the contributions of universities in terms of education and research, examples of collaboration with international organizations, corporations, and other societies are also essential. One example is the United Nations Academic Impact (UNAI), an initiative for higher education to collaborate with international organizations (UNAI 2021). With the aim of supporting and contributing to the realization of the goals and missions of the UN, such as the promotion and protection of human rights, access to education, sustainability, and conflict resolution, the UNAI has encouraged cooperation between the UN and higher education institutions. It has established a network of more than 1400 member institutions currently across 147 countries. The UNAI provides an essential link to these stakeholders so that the international community can harness the energy and innovation of young people and researchers for the benefit of humanity.

Another example of collaboration with companies is the so-called industry-academia collaboration, which refers to joint research, product development, and other projects between private companies and universities. It is emphasized as one of the channels through which the results of university research are provided to society and industry, and the returns are channeled back. In recent years, Japanese universities have been mainly contributing to the SDGs through research, but there are also many examples of industry-government-academia collaborations that include companies and government agencies. Compared to the past, a more proactive approach is now being taken to achieve the SDGs with companies being considered as important partners. For example, the SDG Compass, a set of guidelines for corporate action, was provided by three international organizations: the United Nations Global Compact (UNGC), Global Reporting Initiative (GRI), and World Business Council for Sustainable Development (WBCSD) (Global Reporting Initiative, UN Global Compact, and World Business Council for Sustainable Development 2015). Taking Japan as an example, the Japan SDGs Award was established at the Third SDGs Promotion Headquarters meeting in June 2017 to recognize companies, local governments, and NGOs/NPOs that make outstanding efforts to achieve the SDGs (Ministry of Foreign Affairs [MOFA] 2020). Receiving such an award can be an incentive for companies and organizations to promote their social contribution activities that lead to the SDGs.

Since the SDGs cover a wide range of issues that are relevant to businesses, such as poverty, health, education, climate change, and environmental degradation, they can help connect corporate strategies to global priorities. Therefore, all companies are expected to use their creativity and innovation to contribute to solving issues concerning sustainable development, while universities and research institutions are expected to provide academic support for these corporate action guidelines based on scientific evidence.

5.4 Japan’s SDGs Implementation Guiding Principles and Higher Education

Japan has been actively advocating for the inclusion of the concept of human security in the SDGs since its formulation phase (MOFA 2020). Based on this idea, its own guidelines for implementing the SDGs were formulated by the SDG Promotion Headquarters in December 2016 (MOFA 2017). Based on the analysis of the current situation, the guidelines set out individual policies for priority issues. In December 2019, three years after the decision on the implementation guiding principles

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4 The eight priority areas and policies formulated by the SDG Promotion Headquarters are as follows: (1) empowerment of all people; (2) achievement of good health and longevity; (3) creating growth markets, revitalization of rural areas and promoting science technology and innovation; (4) sustainable and resilient land use, promoting quality infrastructure; (5) energy conservation, renewable energy, climate change countermeasures and sound material-cycle society; (6) conservation of environment, including biodiversity, forests and the oceans; (7) achieving peaceful, safe and secure societies; and
was made, this guideline was reviewed and assessed in light of changes in the social context surrounding the SDGs and revised to reflect the latest developments (MOFA 2019). This section examines how higher education is viewed in the guidelines, taking as an example, Japan’s guidelines for implementing the SDGs. In addition, human resource development and R&D efforts related to the SDGs have been promoted at various universities. There are a variety of factors that have led to the further promotion of these activities, and we observe the THE Impact Ranking, which may be one of the opportunities.

5.4.1 Positioning and Expected Role of Higher Education in Japan

Edward and Ashida (2020) review how higher education is mentioned in the implementation principles and point out that higher education is listed as a relevant SDG target in the three priorities. Specifically, in the priority areas and policies of “Promoting the Advancement of All People,” higher education is listed as a domestic measure, with the explicit goal of increasing the percentage of students enrolled in higher education including adults, part-time students, and students with disabilities. In addition, under the priority areas and policies “creating growth markets, revitalization of rural areas and promoting science technology and innovation,” higher education is addressed in both domestic and overseas measures. In terms of domestic measures, the following are cited: formulation of R&D and industrialization strategies denouncing industry, academia, and government; reform of universities and strengthening the functions of R&D corporations; realization of world-class industry-academia collaboration; and development of young researchers, in particular, increase in the number of female and foreign researchers, and improvement of the environment as a means of securing diverse human resources, who will be responsible for science and technology innovation. In addition, from the perspective of “science and technology diplomacy,” international joint research through international science and technology cooperation projects, such as the Science and Technology Research Partnership for Sustainable Development (SATREPS) (to be discussed later), is also listed as a foreign policy.

Furthermore, under the priority areas and policies of “Strengthening the means and frameworks for the implementation of the SDGs,” the report states that as a measure aimed at countries outside Japan, official development assistance (ODA) should be implemented through public-private partnerships and effective cooperation should be provided in developing countries to advance human resources, infrastructure systems, and other environments that will contribute to the achievement of the SDGs. In December 2019, this guiding principle was partially revised, but the role for educational institutions was confirmed to continue to be the development of human resources, who will be responsible for solving global issues. Furthermore, research institutions are expected to recognize the role of research and science and technology innovation in achieving the SDGs and to promote their efforts based on scientific evidence.

Thus, we can see that higher education plays an important role in Japan’s SDGs implementation policy. For this reason, an increasing number of Japanese universities have established courses and programs to develop human resources who will be responsible for solving global issues, including the SDGs. Moreover, as the international community promotes collaboration to solve global-scale issues under the SDGs, more innovative forms of collaboration, beyond the conventional framework of industry-academia collaboration, are being sought and implemented. One example of this collaboration is SATREPS. The Japan Science and Technology

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(8) strengthening the means and frameworks for the implementation of the SDGs.

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5 It can be confirmed that programs and courses related to SDGs by various universities are currently being established. Among them, Edwards and Ashida (2020) introduce the case of Kyoto University based on literature review and individual interviews. For details, please refer to the paper.
Agency (JST), the Agency for Medical and Scientific Research, Japan (AMED), and the Japan International Cooperation Agency (JICA) are collaborating to combine competitive research funding in science and technology with ODA to address global issues based on the needs of developing countries. They promote international collaborative research to solve global issues based on the needs of developing countries and for future social implementation; SATREPS promotes international joint research facilitating the partnership of universities and research institutions in Japan and developing countries for the development and application of new technology and the acquisition of new knowledge (SATREPS 2020).

Researchers from Japan and each of the partner countries stand in equal positions and aim to contribute to solving problems by developing knowledge through research activities. By working in developing countries where the issues are present, researchers can properly understand the events firsthand and conduct cutting-edge R&D in the field. Some projects require the involvement of the private sector, such as companies in Japan and partner countries, to improve technological capabilities and transfer the new technologies developed. As of September 2020, 157 global research projects have been carried out in 52 countries, and it is expected that this new form of collaboration will continue to contribute to R&D and human resource development in many developing countries.

5.4.2 Visualization of Social Contribution Efforts by Universities: The Emergence of THE Impact Ranking

Universities in the international community work to contribute to the SDGs from a variety of perspectives. The release of the “Times Higher Education Impact Ranking” by THE, a UK-based higher education magazine, in 2019, was one of the opportunities to encourage universities to contribute to the achievement of the SDGs. This ranking is the first time that universities’ social contribution efforts have been visualized using the framework of the SDGs. It is unique in that it presents not only an overall evaluation, but also a ranking for each of the 17 goals of the SDGs. Of the 17 SDGs, 11 that are closely related to universities were identified as indicators. In this 2019 ranking, 462 universities from 76 countries were included. Japanese universities received particular attention having occupied the greatest number of high ranks in the list for proactively addressing global issues (Times Higher Education 2019).

In the latest edition of the THE University Impact Rankings 2021, a record number of 1420 universities were included, intensifying the competition. Nevertheless, the median score of all Japanese universities included in the rankings has improved from the previous year, indicating that the efforts of Japanese universities are making progress (Times Higher Education 2021). The Japanese universities that were ranked, posted their achievements on their websites and it is apparent that they are using this as a form of publicity, such as appealing to the public as a contribution to society. These world rankings, which have a variety of implications for universities worldwide, encourage active commitment from higher education institutions to contribute to the SDGs.

5.5 The Impact of COVID-19 on Higher Education

The COVID-19 pandemic, which began in early 2020, has caused serious social and human health problems. By July 2021, 190 million infections

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6 The 11 goals include SDG 3 (Good health and well-being), SDG 4 (Quality education), SDG 5 (Gender equality), SDG 8 (Decent work and economic growth), SDG 9 (Industry innovation and infrastructure), SDG 10 (Reduced inequalities), SDG 11 (Sustainable cities and communities), SDG 12 (Responsible consumption and production), SDG 13 (Climate action), SDG 16 (Peace, justice and strong institutions), and SDG 17 (Partnership for the goals). The latest 2021 ranking includes SDG 1 (No poverty), SDG 2 (Zero hunger), SDG 6 (Clean water and sanitation), SDG 7 (Affordable and clean energy), SDG 14 (Life below water), and SDG 15 (Life on land), all of which are also included.
had been confirmed worldwide, with more than 40 million reported in the Asia-Pacific region (United Nations Educational, Scientific and Cultural Organization [UNESCO] Institute for Statistics and UNESCO Bangkok [2021]). Many countries have closed their borders to prevent the spread of the disease, disrupting the international movement of people, which had increased due to globalization. This pandemic not only stopped cross-border movement but also led to restrictions on inter-regional movement within countries. As many countries took steps to avoid denseness and ensure social distancing, university campuses also took steps to on-campus classes, resulting in learning disruptions (Organization for Economic Co-Operation and Development [OECD] 2021). According to UNESCO (2021), more than 220 million higher education level students were affected by the closure of universities in 2020.

In light of this situation, international organizations such as UNESCO, OECD, and the World Bank have compiled surveys on the impact and current status of the COVID-19 pandemic on higher education institutions around the world. For example, UNESCO surveyed the responses of higher education institutions to COVID-19 in terms of access to education, equity and quality of teaching and learning, university operations, national challenges, emerging issues, and strategic response. The report summarizes 10 key findings regarding the impact of the COVID-19 pandemic on higher education. Those that are particularly relevant to the discussion so far include the non-implementation of traditional on-site teaching and learning, cessation of international physical movement of international students, and suspension, postponement, or termination of international education and research activities. Thus, traditional educational and research activities were restricted, resulting in a decline in productivity. Apart from the above-mentioned, research on other topics, such as medicine and vaccine development related to COVID-19, increased.

In response to the COVID-19 pandemic, higher education institutions in many countries shifted their teaching and learning methods from on-site to online, hybrid methods, offering virtual mobility as an alternative for international students who cannot travel, ensuring health and safety during teaching and learning activities, and implementing online seminars, conferences, and academic programs using digital communication. For example, many Japanese universities, which receive government subsidies to promote internationalization, have attempted to continue international exchange in a virtual form by using information and communications technology. Virtual mobility programs are offered both for short periods, primarily for the purpose of learning a foreign language, and for longer periods, lasting one or two semesters, for the purpose of acquiring credits. Some universities are collaborating with overseas partner universities to develop an online platform system to continue study abroad programs (Shimmi et al. 2021).

Based on the above, UNESCO’s report mentions that financial support from the government and external funding is essential to address the growing inequity in higher education opportunities caused by COVID-19 (UNESCO 2021). The World Bank (2020) also identified several short- and long-term challenges facing higher education systems and institutions, including decreasing institutional resources, personal and academic challenges for institutions and students, demand for improved infrastructure to support continued distance and blended learning models, and reduced mobility-placing pressures to improve regional and local higher education (Table 5.2). Thus, it can be said that today’s higher education institutions are facing a tough time, as they need to continue to address issues related to achieving the SDGs, while also dealing with the challenges of COVID-19.

5.6 Concluding Remarks

Since the 1990s, there has been a need to change the nature of higher education to meet the increasing demand brought about by the rapid development of globalization. As a result, the internationalization of higher education, including the provision of educational programs across national borders, has been strengthened.
Globalization was accelerating even after the establishment of universal development goals, however, the spread of COVID-19 has caused restrictions that prevented people from moving across borders. As of 2021, the pandemic is far from over.

One of the key ideas of the SDGs is to form an inclusive society. Researchers and other experts, as well as various stakeholders responsible for solving the issues, have been actively involved in the formulation stage of the SDGs. The SDGs are transnational development goals, aimed at addressing global challenges. For them to be implemented and realized, researchers must go beyond their own disciplines and areas of expertise and collaborate with a global framework of actors composed of governments, companies, and civil society, on an equal and new basis in both research and education. To do this, it is necessary to be able to observe from a broader perspective without getting too caught up in the common sense and conventions of one’s own field of expertise. Moreover, researchers must be able to understand the opinions of actors who are well versed in the field where the problem is occurring and empathize and collaborate with them. Beyond collaboration, they must build a holistic approach that brings together the respective fields of expertise and tackles issues on an equal footing in a transdisciplinary manner that aims to integrate academia and society. The SATREPS described

| Table 5.2 Immediate and long-term challenges to confront for higher education institutions |
|---------------------------------------------|---------------------------------------------|
| Immediate challenges                        | Long-term challenges                        |
| • Broadscale institutional disruption        | • Increased inequity/inequality in access and retention, as at-risk students return at lower levels due to increased financial and situational constraints (family obligations, changes in personal circumstances, support networks diminished or dismantled by campus closures, etc.) |
| • Staff and student illnesses—provision of adequate support | • Reduced public funding for higher education |
| • Mass student displacements and/or loss of vital campus services and support | • Reduced private funding for higher education in terms of household, firms, and other third-party funding |
| • Technical “debt”—even advanced, wealthy countries find themselves hampered by the use of outdated technology platforms | • Permanent closures of programs and institutions—resulting in permanent loss of skills and human capital in academic and administrative positions |
| • Maintaining instructional operations, including coursework, exams, and awarding of degrees—modification of assessment modalities | • Permanent movement of more programs to online/remote platforms—requiring support for doing this effectively |
| • Maintaining or closing research operations, including on-campus laboratories and facilities, fieldwork, conferences, and external research collaborations | • Reduced internal mobility, leading to increased local demand for higher education, but also increased quality issues |
| • Curtailing of international mobility, including logistical implications for repatriation or locally housing international students and staff | • Reduced global mobility (and related reduced income generation) |
| • Staff and faculty furloughs | • Socio-emotional impacts of remote teaching and learning on students (and academic staff)—attention must be paid to both student welfare and the development of interpersonal skills in contexts lacking direct interpersonal experiences |
| • Student loan maintenance (including deferrals/repayment freezes) | • Loss of higher education’s contributions to the local and national civic communities and culture, including the provision of continuing education, community meeting spaces, centers for performance, and visual arts |
| • Equity implications—academic, social, financial, physical—for low-income/at-risk students (potentially those with COVID-19 health vulnerabilities) | • Loss of research, including research collaborations across institutions, borders, and disciplines |

*Source* Prepared by the author based on World Bank (2020)
in this chapter is an initiative that will lead to such an ideal form and will contribute to the achievement of target 17.6.

As mentioned in this chapter, higher education is one of the goals in Goal 4, but it is closely and indirectly related to the other goals in the SDGs (Goals 2, 3, 7, 9, 12, 14, and 17) in terms of promoting R&D, human resource development, and capacity building in the various fields covered by the SDGs. In other words, we need to continue to educate researchers and experts who understand these issues and can contribute to the realization of the SDGs (this will lead to the achievement of target 9.5), while taking into consideration the post-COVID-19 era and the period after 2030. This requires the concept of Education for Sustainable Development, an approach to education that fosters the ability to view diverse issues such as poverty, human rights, development, and the environment as one’s own problems and to take independent action in solving them. In addition, considering how necessary it is to disseminate scientific findings to society in an easy-to-understand manner and promote measures to enable dialogue between academia and society, it is recommended to emphasize science communication and develop human resources who can contribute to problem solving based on an understanding of both social issues and scientific findings. In fact, Japanese universities have established and are operating programs and courses related to the SDGs with the aim of developing such human resources. This will lead to further enhancement of higher education institutions in line with target 4.3. Such proactive human resource development is also expected to lead to an increase in the number of young and female researchers who can engage in future R&D (target 9.5). It is also necessary to set up spaces, such as companies and research institutions, where human resources developed in this way can play an active role. In the future, there will be an even greater need to support the career development of human resources who contribute to the realization of the SDGs, so that they do not only remain within universities and research institutions, but can actively move back and forth between government, industry, civil society, and academic institutions. There is a need for a form of collaboration that transcends the boundaries of international organizations, universities, and corporations and a place for such collaboration.

References


Organization for Economic Co-Operation and Development (2021) The state of higher education: one year


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