Learning About Biosphere Reserves (Brs) And Sustainable Development Goals (Sdgs) Through Training Programs: A Comparative Analysis Between Japanese And International Students

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Abstract:

Sustainable development is of utmost importance in recent years because of several environmental and economic concerns which threatens the existence of living things in this ecosystem. However, the Higher Education Institutes (HEIs) are one of the prime components which can trigger sustainable behaviors among the younger generations which can effectively minimize the menaces towards sustainable development. In this research study, a comprehensive questionnaire was designed in order to evaluate the perceptions of the Japanese as well as international students about BRs and different aspects of SDGs No: 8 (Decent Work and Economic Growth), 12 (Responsible Consumption and Production), 13 (Climate Action), 14 (Life Below Water) and 15 (Life on Land). The students from different universities of Japan, India, Sri Lanka, and Africa were recruited for an online training program where they were introduced to BRs which are UNESCO designated places for the promotion and preservation of sustainable behaviors and activities. The

evaluation of the behaviors or perceptions of the students was carried out in two phase system; pre-evaluation and post-evaluation which was conducted before the start of the online training program and after the program. The students were awarded with certificates as a token of appreciation upon the successful completion of the training programs. The results of the statistical evaluation confirm that there was statistically significant difference between the evaluation of the students throughout the training programs. The results imply that the understanding of the international students is more towards sustainable development and behavioral learning as compared to their counterparts. The females more tend to work at higher salaries even if the working environment is not feasible. In addition, some of the core challenges are also identified which hinder the sustainable development in the behavioral learning of students at higher education institutes. It has been inferred that HEIs can utilize UNESCO designated BRs as learning platforms with innovation in curriculum design, teaching, research, and training. Finally, some of the practical implications are proposed for promoting sustainable behaviors and autonomy comprehension of SDGs among students at HEIs via using BRs as learning places to meet the present and future challenges posed for sustainable development.

Keywords: Sustainable Development; Biosphere Reserves; Sustainable Development Goals; Higher Education Institutes; Sustainable Behaviors; Students' Perceptions.

1. Introduction

Sustainability is one of the main concerns right now because of the increased threat of global warming around the world. It has repercussions on the social, economic, and political discourse in the modern world (García-González et al., 2020; Yang et al., 2020). The increased concerns of energy crisis and changing unprecedented temperatures around the globe have compelled the organizations to think evolutionary and out of the box for the promotion of sustainable behaviors and value-oriented

behaviors. Therefore, as the higher institutions are one of the most important organizations which can improve the way of thinking of the young generations about their behaviors and discourse of actions to deal with the rise issues which impact the negative menaces on the environment (Aleixo et al., 2021). It shows a compelling need to initiate the debate on sustainable behaviors in the higher institutes about how the perceptions of the young people can be modified for the sake of improving their actions and behaviors about sustainable development so that the there should be no compromise on the resources of the future generations.

Among these resources, Biosphere Reserves (BRs) and the UNESCO designated sites are one of the important learning places which can be used as the model sites for the learning about the sustainable behaviors in the modern world (Ishwaran et al., 2008a; UNESCO, 2017). These BRs and UNESCO designated places are considered as places which can be used for the preservation of natural resources and cultural diversity among the masses. These places are recognized as model spaces which can be used for the development and promotion of sustainable behaviors among the masses. Therefore, it can be argued that these BRs can be used for the UN's agenda of 2030 for the promotion of sustainable development among the communities. These sites can serve as the model sites for improving the understanding of common people about these 17 SDGs (Ishwaran et al., 2008b). It can be confirmed that Education for Sustainable Development (ESD) can be used as one of the platforms which can improve the social, political, and environmental attitude among the communities in order to improve their awareness, skills and knowledge pertinent to the sustainability issues (UNESCO, 2013). BRs have been used as training camps and sites for the promotion of sustainable behaviors both at regional and local level among many communities around the globe, with their special emphasize on ESD programs. ESD stresses on the collective input from the stakeholders such as academia, students, and leaders for the promotion of sustainable behaviors and changing the way of thinking, processes and curriculum in the education sector (Maruyama, H. (2010). It's important to mention here that the

concept of ESD was first rolled out in the MAB's Madrid Action Plan in 2008-2013 and it was reasoned that it should be an important part and parcel of UNESCO's working strategy adopted for the promotion and development of sustainable behaviors (UNESCO, 2016). In the meeting of UNESCO's world conference held in Bonn, it was suggested that BRs should be used as one the important sites for training of sustainable behaviors among the communities. In 2016, the famous Lima Action Plan (LAP) was adopted with the sole purpose of promoting sustainable behaviors through teaching, training and skills upgrading.

Universities all around the world are considered as one of the most important learning places which can be used for the development and effective policy making for the promotion of SDGs. They can be used to impart skills among the stakeholder which can be used for the regional development aside from providing concrete policy making. Universities can be used as one of the main important learning centers which can improve the cooperation between different stakeholders for the regional development keeping in mind the sustainable behaviors of stakeholders as one of the core points of focus (Aleixo et al., 2021; Shephard, n.d.).

BRs are designed in such a way that they can be used for the learning and upskilling of the stakeholders in such a way that the conservation and utilization of the resources can be ensured by practicing sustainable behaviors without compromising the future of the next generations. Sometimes, BRs are designed in such a way that they can be used as learning sites among different stakeholder in such a way that they can promote the interaction among different stakeholder in order to achieve the sustainable objectives for the conservation of natural resources (Price, 2002; Stoll-kleemann et al., 2006). If BRs are used successfully, they can bring the stakeholder together for the conduction of different activities pertinent to the sustainable behaviors among communities.

Until now, in Japan the ESD programs were conducted physically and face-to-face in order to engage different stakeholders for the promotion of sustainable behaviors and they have yielded positive attitude and impart great impact for the promotion of

sustainable behaviors among communities. They have proved to be quite impactful keeping in mind the cultural, social, and environmental concerns among communities in order to alter their behaviors towards sustainable development. However, with the emergence of COVID-19, the physical activities outdoor were restricted and the learning programs were converted from traditional physical systems to online learning (Abdullah et al., 2021; Baber, 2020; Wang & Huang, 2021). The student exchange programs locally and overseas were halted because of the spreading of COVID-19. The Ministry of Japan restricted the entry of foreign nationals in the country in an effort to curb the spreading of the pandemic. In this effort, the entry of the foreign students was also restricted in the country. The number of foreign students which entered the country were 35,000 and 54,000 in 2018 and 2019, respectively. However, during the pandemic these numbers significantly reduced, and the learning programs were switched from conventional face-to-face system to online learning. This can be confirmed that the number of e-learning programs rose with a percentage of 93.7% with a gap of one month in April and May of 2020. Apart from that, the Japan government also imposed restrictions on travel within the regions, therefore, it was not feasible to conduct on-site ESD programs even for the Japanese students. Therefore, it was a big challenge to convert the classical and traditional ESD program into online learning program, which requires a lot of field trips and on-site visits (Fredriksson et al., 2020; Mammadova, 2021; Mammadova et al., 2022).

Online learning is one of the effective means which provides freedom of time and space for the learners to continue their learning experiences without physical contact with each other. With the emergence of e-learning systems, all of the Japanese Universities and Universities around the globe have adopted the e-learning programs through the use of Zoom, Mood Le, Skype, and QQ. etc., as a medium of communication and this e-learning practice has secured a good position among educational institutions. However, this remains as a concern for the researchers, educators, and Universities to explore if the e-learning platforms are successful enough like on-site visits to provide better learning experiences and academic goals as

compared with the conventional learning practices. This suddenness in the shift has initiated a debate among stakeholders to explore the quality of learning and students' satisfaction about these e-learning platforms (Hafezi et al., 2013; Mammadova et al., 2022).

Based on the above-mentioned reasons, it is imperative to investigate; how e-learning affects the perceptions of the students about their sustainable behaviors, observe the perception of the students about SDGs, check if their perceptions change significantly as a result of the online training program. Therefore, in this research study, we created a unique integrated learning curriculum about SDGs and engaged different stakeholders from academia and industry together with the international partners from academia by using e-learning communication system. The students from Japan, Africa, Sri Lanka and India were engaged and they learnt about SGDs through this online training program.

The core objectives of this learning program were as follows:

- How this online learning experience affects the perception of students about SDGs and different aspects of sustainability?
- Whether this online learning experience will affect their perceptions significantly or not?
- How the manifestations of the students will change with this virtual relationship about different aspects of SDGs?

2. Methods

In this research study, we created two intensive training programs for students from Japan, Africa, Sri Lanka and India. In all of these courses, BRs were used as learning sites in order to educate the students about SDGs and different aspects of sustainability. In this research study, following BRs from Japan (Mount Hakusan BR, Aya BR, Minakami BR), Africa (Vhembe BR), Sri Lanka (Sinharaja BR), and India (Bandipur BR) were included. The online training programs were divided keeping in mind the demand and real-time meetings. On-demand lectures were prepared as voice-recorded and videos, which were created and designed by the partners from academia and industry with local representation from these BRs. All of these lectures were

translated into Japanese and English to make them understandable for the local students from the participating countries. Real-time meetings among the students and the instructors were also conducted for a period of three weeks, 90 minutes each day. The applications for the program were opened to all the students among partner universities in these countries and the students were able to continue their learning experiences through the use of Zoom as a learning platform. The students were able to study the without the restriction of time and space. The students were trained, and the evaluation was conducted after each course in such a way that students who acquired 80% of the scores were qualified for the second round of the training program. Only students who qualified for the second round were able to continue their learning experience. In the meantime, real-time meetings were also conducted between the students and instructors along with the BRs representatives about discussion on SDGs and different aspects of sustainability. At the end of the training program, the students have to submit a report about specific chosen topics on SDGs and different aspects of sustainability. The students who successfully completed their training programs were provided with the certification of successful completion of the program as a token of appreciation.

2.1. Questionnaire Design and Data Collection

A comprehensive questionnaire was designed keeping in view the objectives and goals of the research study. As a methodological precedent, Kanazawa University was considered as the parent institute to conduct this research study as it is considered as the ESD institute in this case. The questionnaire was divided into four different parts; in the first part, some of the basic socio-demographics of the respondents were collected such as age, gender, nationality, and major field of study. It is important to mention that none of the personal information of the respondents were collected in order to maintain the privacy and secrecy of the respondents and they were fully made aware of their responses that the data would be used for the research purposes only. In the second part, the respondents were asked about their perceptions of the designated BRs in their respective

countries. In part 3, the respondents were asked to rate their perceptions about different SDGs on Five-point Likert scale. In part 4, the respondents were asked to rate their perceptions about different aspects of SDGs on Five-point Likert scale. It is important to mention here that only 5 SDGs were selected for the evaluation and training in this program; SDGs Goal 8: Decent Work and Economic Growth; SDGs Goal 12: Responsible Consumption and Production; SDGs Goal 13: Climate Action; SDGs Goal 14: Life Below Water; and SDGs Goal 15: Life on Land. In part 4 of the questionnaire, the different aspects about specific SDG were evaluated and the cross-comparison among respondents was conducted. The students were given 10 days each to fill in the online questionnaire at the start and end of the training program. In the training program, the experts in SDGs from different universities and BRs were invited for talks and the material were translated into Japanese and English so that it can be easily comprehend by the students. In order to extract the exact responses, the questions were kept short and concise. During the program, the students were given different tasks to complete to improve their comprehension. The flow chart showing the methodology adopted in this research study can be seen in Figure 1.

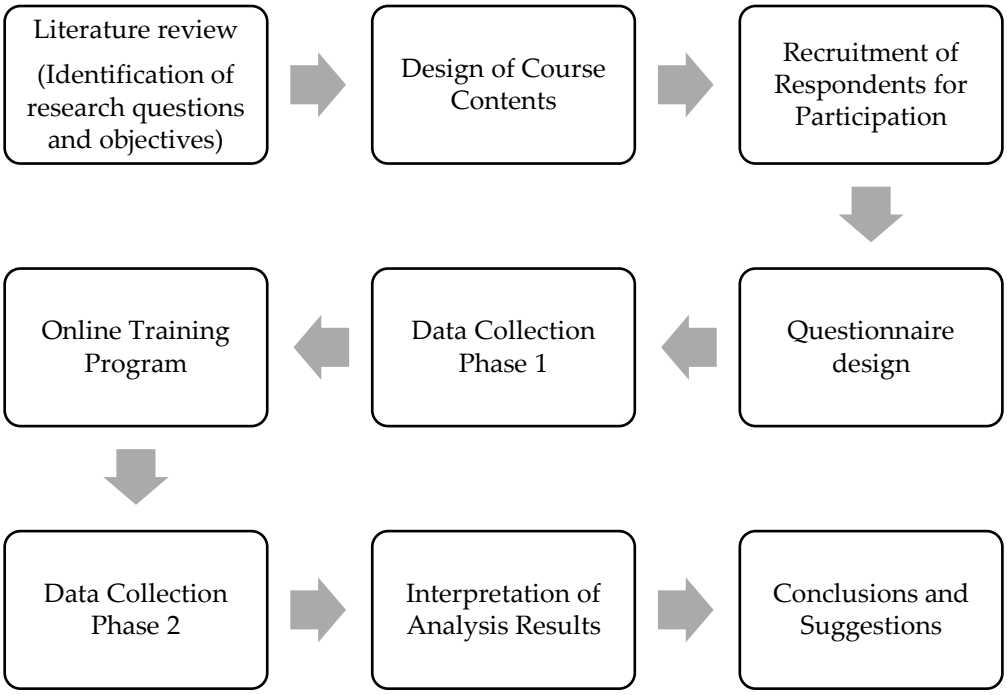

Figure 1: Flow Chart of the research study

2.2. Socio-demographic Features (SEDs) of the Respondents

The students were invited to join from different universities of Japan, Africa, Sri Lanka, and India. In this section, some of the basic information are detailed. In the first phase of the program, there were a total of 31.25% of males, and 68.75%. It can be observed that the percentage participation of the female students is almost double as compared with the male students. In the first phase of the evaluation process, 37.50% were Japanese, 31.25% were African, 16.73% were Sri Lankan, and 14.50% were Indian students. With respect to the participation of the Universities, 31.58% of them are Japanese, 21.05% are African, 26.32% are Sri Lankan and 21.05% are Indian Institutes. With respect to the major field of study, the students with Engineering and Technology background are 37.50%, Business and Administration are 27.08%, Social Sciences are 29.18% and Medical are 6.25, respectively. In the second phase of the evaluation, the distribution of the students was as follows; 36.67% of them were male, and 63.33% are females. With respect to the nationality, 31.58% of them are Japanese, 21.05% are African,

26.32% are Sri Lankan, and 21.05% are Indian citizen. Based on the category of major field of study, 43.33% are with Engineering and Technology background, 25% are with Business and Administration background, 23.33% and 8.33% are related with the Social Sciences and Medical background.

2.3. Data Analysis Methods

Non-parametric statistical tests i.e., Mann Whitney-U tests were performed on the ordinal data (items related to familiarity with SDGs) to determine the effects of demographic variables i.e., gender, major and nationality on the familiarity about SDG goals 8, 12, 13, 14, and 15. As the non-parametric tests are easy to conduct and require fewer assumptions and taking into account the nature of the collected data (Kitchen, 2009). It is necessary to mention here that there might be the possibility of lower prediction power of the parametric tests. However, the loss of the data is less because data follows the normal distribution and meets all the required assumptions (Chakraborti, 2019). It is confirmed from the existing literature that the non-parametric tests can be performed if there is no evidence of the distribution of errors in the data. Parametric statistical tests i.e., independent sample t tests were performed on the data (factor scores of the items measuring concerns regarding SDGs) to determine the effects of demographic variables i.e., gender, major and nationality on the concerns regarding SDG goals 8, 12, 13, 14, and 15. All the non-parametric tests were performed using SPSS v. 20 for the sake of conducting statistical tests. The results of the Mann-Whitney U test are reported in the next section because in this analysis we consider the independent group of students. The Mann-Whitney U test is the alternative of the two-sample t-tests and does not necessarily require the samples to be continuous and normally distributed and dependent variables. Therefore, keeping in view of the above-mentioned reasons, the Mann-Whitney tests are performed on the collected data in order to check the statistically significant differences between the pre- and post- evaluations of the students as a result of the training program.

3. Results and Discissions

3.1. Familiarity with SDGs

In this research paper, five SDGs were selected for evaluation; SDGs No. 8, 12, 13, 14, and 15. The students were asked to rate their evaluations on Five-point Likert scale against each SDGs before and after the training program. Therefore, it was evaluated if their responses have changed significantly or not after the training program. In each of the SDGs, the students were asked specific questions about how they perceive their ratings about the specific SDGs. The evaluations of respondents were recorded as per their understanding of the specific SDGs and the questions in each SDGs were kept short in order to extract the exact responses. It has been observed that the training programs among students yield a positive response about their understanding of the SDGs. However, it is important to mention that the evaluations of the students were recorded in the post- evaluations after they were properly introduced to the basic concepts of SDGs and detailed discussions about each SDGs with the experts from academia, industry and BRs. They were also informed of the role of HEIs about their mission and discussions on ESD programs for the successful evaluations.

It can be seen from Figure 2 that the difference between the understanding of the students varies in great extent as the students becomes more familiar after the training program as compared with their understanding of the SDGs in the pre-training program. It confirms the fact that the understanding of the students has improved after their involvement and training program about the SDGs. The details of their understanding can be seen in Figure 2.

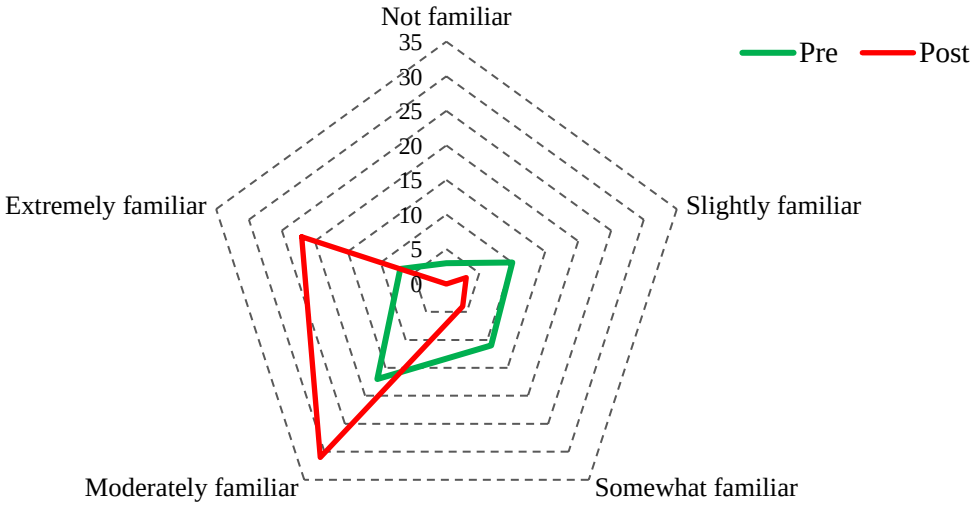

Figure 2: Familiarity with SDG No. 8

In the similar fashion, the students were asked to rate their evaluations about SDGs No. 12 before and after the training program and their evaluations can be seen in Figure 3. Again, the findings suggest that the training program improved the understanding of the students about SDGs as a result of the training program. Before the training program, the students were not much familiar with the concepts of SDGs No. 12. However, after the intensive training program, they become moderately and extremely familiar about SDGs No. 12 and it can be confirmed from the plotting of Figure 3.

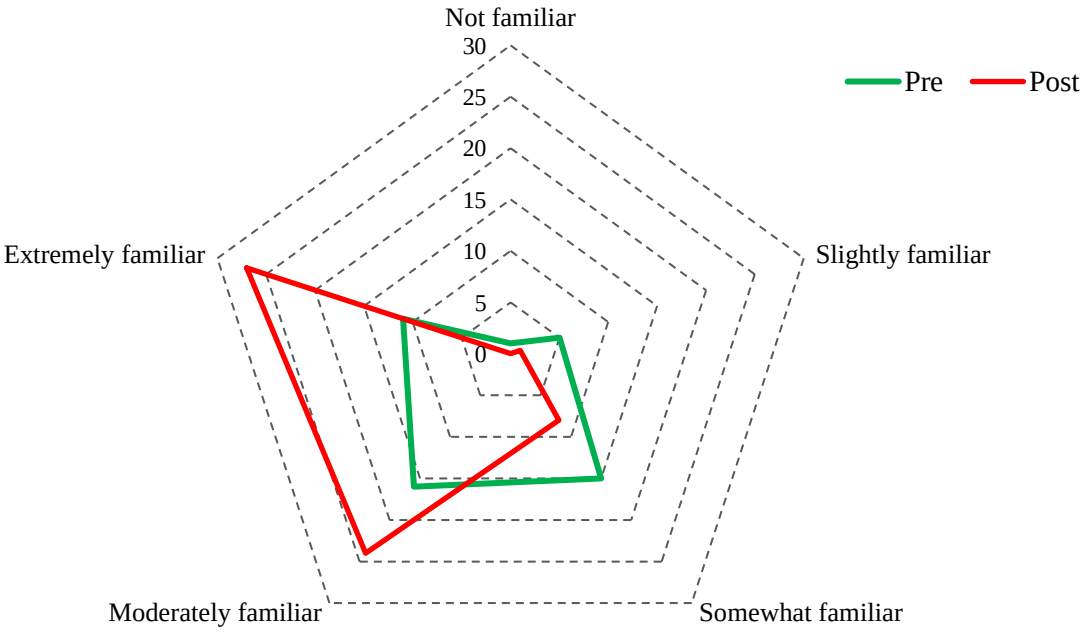

Figure 3: Familiarity with SDG No. 12

It can be seen that the familiarity of the students about SDGs No. 13, 14 and 15 also improved after the training program. Therefore, it can be concluded that the training program is very effective in improving the understanding of the students about SDGs. Before the training programs, the students showed less familiarity or somewhat familiarity about SDGs. However, after the training program, their familiarity shifted to moderately or extremely familiar. However, it can be concluded that the training program was an effective scheme in order to change the perception of the students about their understanding of the SDGs.

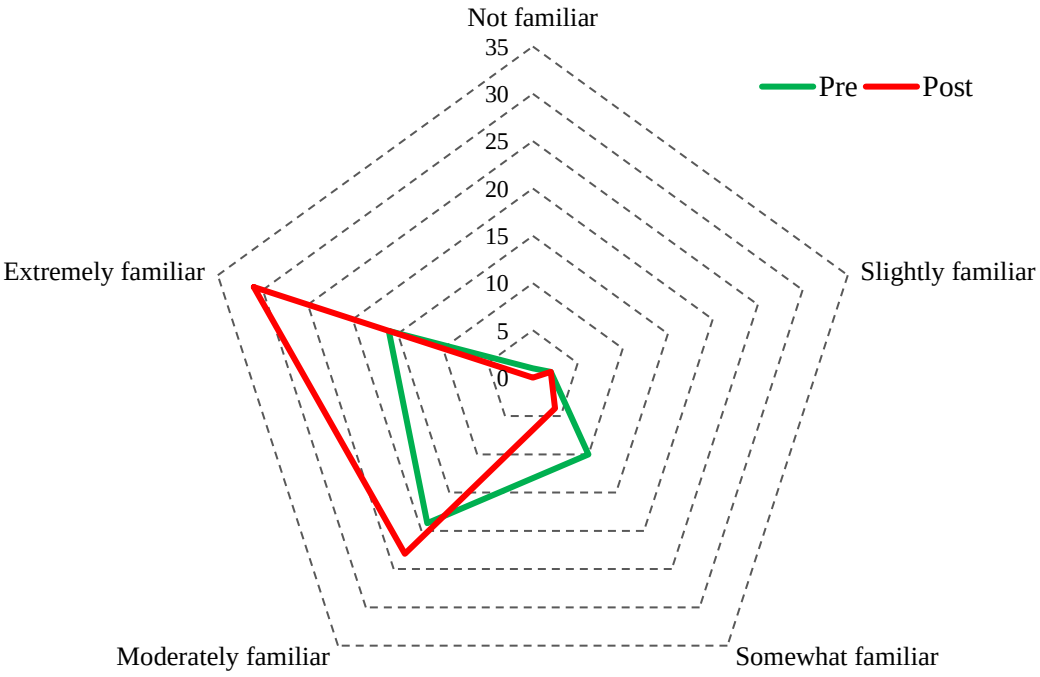

Figure 4: Familiarity with SDG No. 13

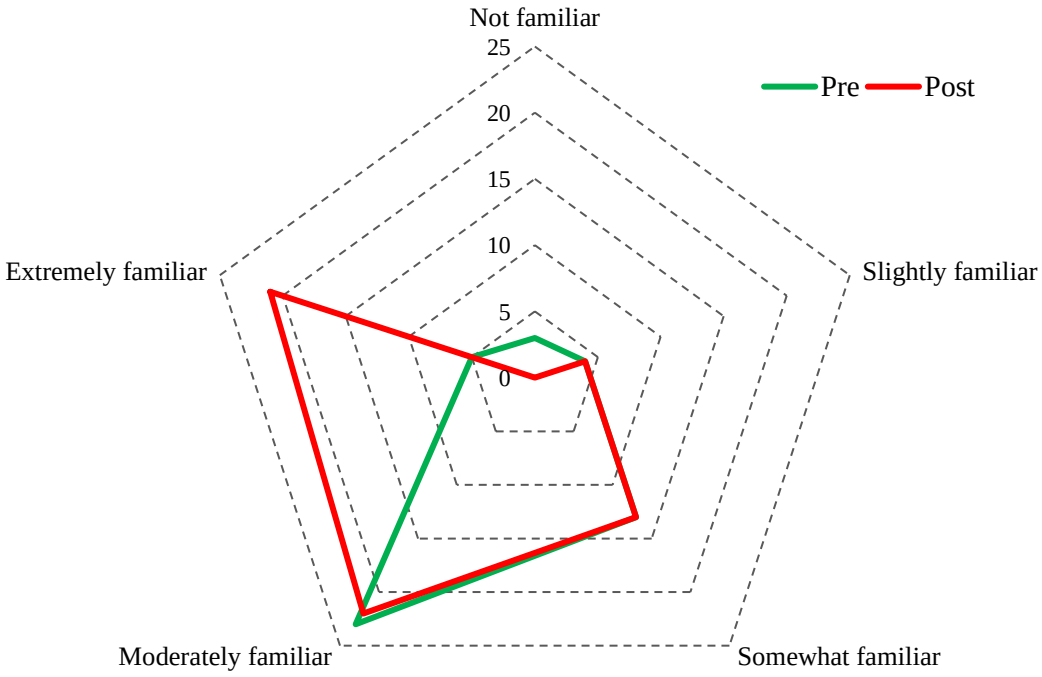

Figure 5: Familiarity with SDG No. 14

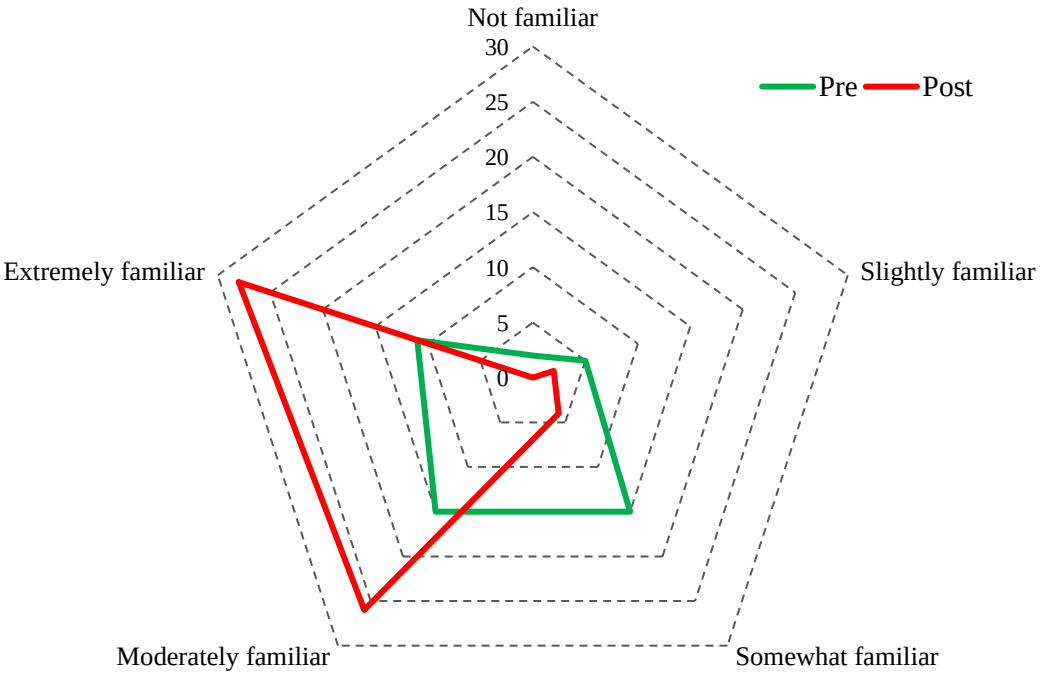

Figure 6: Familiarity with SDG No. 15

In order to check if the students' understanding have improved significantly or not, the Mann-Whitney's test was conducted which confirmed that the results of the training program significantly improved the familiarity of the respondents. The familiarity with all the five SDGs significantly increased after the program. Thus, it can be confirmed that the understanding of the students were not sufficient and lacks the comprehension of their familiarity about SDGs. As the results of the Mann-Whitney's Test confirm that students gained more understanding of the basic concepts of the SDGs. This clearly confirms that they have become more aware of decent work and economic growth, responsible consumption and production, climate action, life below water and life on land. Thus, it can be concluded with conviction that students have more knowledge of the SDGs as a result of their involvement of the training program. However, it is pertinent to mention that collective efforts, and involvement of the stakeholders is very much

important in order to extract the useful outcomes. In addition, if proper training programs are conducted sufficiently, they will lead to increase the understanding of the students about their sustainable behaviors and SDGs. Therefore, in order to put the participatory issues into practice, proper training of the students in HEIs can be one of the important and useful techniques for the promotion of SDGs and sustainable behaviors among the communities. The detailed results of the Mann-Whitney's Test of Pre- and Post-evaluation about Familiarity of SDGs can be seen in Table 1, which confirms that the online training programs if conducted successfully can enhance the understanding of the respondents about their perceptions and familiarity of the SDGs.

Table 1: Results of Mann-Whitney's Test of Pre- and Post-evaluation about Familiarity of SDGs

Test Statistics[a]

	SDGs Goal 8: Decent Work and Economic Growth	SDGs Goal 12: Responsible Consumption and Production	SDGs Goal 13: Climate Action	SDGs Goal 14: Life Below Water	SDGs Goal 15: Life on Land
Mann-Whitney U	795.500	925.000	1086.500	1036.000	856.000
Wilcoxon W	1971.500	2101.000	2262.500	2212.000	2032.000
Z	-4.227	-3.364	-2.361	-2.634	-3.822
Asymp. Sig. (2-tailed)	.000	.001	.018	.008	.000

a. Grouping Variable: Time

3.1.1. Effect of Gender

Gender was not significant before and after the program. In other words, it can be concluded that the perceptions of the male and female students do not differ as a response to the online training program and both of the genders perceive their understanding equally.

3.1.2. Effect of Major Field of Study

Major was not significant before the program. However, those with engineering and technology degrees had a significantly higher level of familiarity with Goal 15 as compared to those having social and natural sciences degrees. Therefore, it can be

confirmed that the understanding of the students with engineering and technology program perceived the concepts of SDG No. 15 (Life on Land) in a more positive manner as compared with the students with social sciences background.

3.1.3. Effect of Nationality

Nationality had a significant effect on familiarity with the SDGs before the programs except Goal 14. Japanese were less familiar with Goals 8, 12, 13, and 15 as compared to other nationals. The similar findings have been confirmed by Mammadova et al. (Mammadova et al., 2022) that the understanding of the Japanese students is less as compared with their counterparts. Nationality had a significant effect on familiarity with all the 5 SDGs after the program. Overall, the familiarity of Japanese people with the SDGs increased, however, it was still significantly less than other nationals for all the 5 SDGs. The manifestations of the Japanese students about all of these 5 SDGs are less as compared with the other international students. Which can be attributed to the fact that the Japanese students do not have to go through many of the challenges attributed with the SDGs. The lack of proper training and curriculum in HEIs in Japan can also be one of the reasons for the deficient learning of the Japanese students about SDGs. Therefore, it must be stressed that the Japanese HEIs should devise and organize their curriculum in such a manner that they should contribute significantly towards the sustainable development and learning for the promotion of the SDGs in the Japanese community. It can be confirmed that the effective combination of the curriculum development and student's learning can proved to be one of the valuable and performance-based actions for the promotion of SDGs in the Japanese culture.

3.2. Concerns Regarding SDGs

The respondents were significantly more likely to choose a higher paying job with bad social and environmental reputation after the program. Thus, it can be confirmed that the students are more willing to work for jobs with higher salaries even if the working environment do not meet the needs of sustainable and healthier environments. One of the main reasons which can

leads to the fact that as most of the students are from the developing regions of Africa, Sri Lanka and India, where the responsibilities lie on the shoulders of the earning members of the family. Therefore, they are willing to compromise on the working environment pertinent to an increase in the salaries which can give them an advantage to take care the needs of their families in the society.

The respondents were significantly more concerned about Goal 15 after the program. In other words, as the SDGs No. 15 is directly related with the observations of the respondents in their daily life so they are more concerned of the SDGs No. 15. The detailed results of the factor scores can be found in Table 2 below.

Table 2: Factor Scores about SDGs

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
factor_8	Equal variances assumed	6.073	.015	-2.279	106	.025	-1.63667	.71815	-3.06048	-.21286
	Equal variances not assumed			-2.237	92.066	.028	-1.63667	.73176	-3.08999	-.18334
factor_12	Equal variances assumed	1.404	.239	-1.566	106	.120	-.17417	.11125	-.39472	.04639
	Equal variances not assumed			-1.538	92.671	.127	-.17417	.11322	-.39902	.05068

factor_13	Equal variances assumed	6.411	.013	-1.879	106	.063	-.22833	.12155	-.46931	.01264
	Equal variances not assumed			-1.814	83.096	.073	-.22833	.12587	-.47868	.02201
factor_14	Equal variances assumed	.674	.414	-1.323	106	.189	-.18417	.13919	-.46013	.09180
	Equal variances not assumed			-1.298	91.796	.198	-.18417	.14190	-.46600	.09767
factor_15	Equal variances assumed	10.037	.002	-2.215	106	.029	-.25250	.11400	-.47852	-.02648
	Equal variances not assumed			-2.137	82.716	.036	-.25250	.11814	-.48748	-.01752

3.2.1. **Reliability**

The values of the Cronbach's alpha were satisfactory for both pre and post scenarios (i.e., > 0.7), which confirms the fact that the evaluations of the responses are internally correlated and consistent (Taber, 2018). The findings suggest that the values of Cronbach's alpha greater than 0.7 are acceptable. The detailed values of Cronbach's alpha for all the SDGs can be seen in Table 3.

Table 3: Values of Cronbach's Alpha for Reliability Test

	Before	After
Familiarity with SDG 8	0.964	0.948
Familiarity with SDG 12	0.804	0.887
Familiarity with SDG 13	0.852	0.880
Familiarity with SDG 14	0.903	0.900
Familiarity with SDG 15	0.801	0.806

3.2.2. **Factor Scores**

The factor scores were computed using an unrefined method. The values were summed up and then divided by 5 to obtain the factor scores. The factor scores for the items against goal 8 were computed using a weighted approach.

3.2.2.1. Effect of Gender

Gender had a significant effect on concerns regarding SDG 8. Females were more likely to choose a job with bad social and environmental reputation for higher salaries. The effect of gender SDG 8 was not significant after the program. In addition, gender had a significant effect on concerns regarding SDG 14 after the program. Females were more concerned about SDG 14 compared to males after the program.

3.2.2.2. Effect of Major Field of Study

Major did not have a significant effect on concerns regarding any SDGs before the program.

However, those having social and natural sciences degrees were significantly more likely to choose a job with high salary but bad social and environmental reputation.

3.2.2.3. Effect of Nationality

Nationality had significant effects on concerns regarding all SDGs before and after the program except SDG 8. The overall Japanese concerns regarding the SDGs increased after the program. However, other nationals were still significantly more concerned about SDGs 12, 13, 14, and 15 compared to the Japanese after the program.

4. Conclusions and Future Research Directions

The main purpose of this research study is exploring the perceptions of Japanese and International students about SDGs and different aspects of sustainable behaviors. A comprehensive questionnaire was designed, and data was collected in two phase system. First data was collected before the training program and then, after the program. The difference in evaluations of the students about SDGs and different aspects of

their sustainable behaviors was recorded. The questionnaire was designed in order to extract the exact responses of the respondents. The questionnaire was divided into four different parts; in the first part, some of the basic socio-demographics of the respondents were collected such as age, gender, nationality, and major field of study. It is important to mention that none of the personal information of the respondents were collected in order to maintain the privacy and secrecy of the respondents and they were fully made aware of their responses that the data would be used for the research purposes only. In the second part, the respondents were asked about their perceptions of the designated BRs in their respective countries. In the part 3, the respondents were asked to rate their perceptions about different SDGs on Five-point Likert scale. In part 4, the respondents were asked to rate their perceptions about different aspects of SDGs on Five-point Likert scale.

In this research study, five SDGs were selected such as; SDGs No. 8 (Decent work and Economic Growth), SDGs No. 12 (Responsible Consumption and Production), SDGs No. 13 (Climate Action), SDGs No. 14 (Life Below Water), and SDGs No. 15 (Life on Earth). The perceptions of the students were recorded before and after the training program about these SDGs and they manifested significant changes in their behavior as a result of this training program in HEI. The evaluations of the students were recorded as Japanese and International students. It has been observed that the responses of Japanese students are less as compared with the international students and these findings are consistent as reported by (Mammadova et al., 2022). This can be attributed because of the fact that Japanese students do not have to face a lot of issues which the rest of the world faces. Additionally, it was reported that students are willing to work in an infeasible working environment if the salaries are high. Also, the females more tend to work at higher salaries even if the working environment is not decent. In the same manner, the international students are more willing to work at higher salaries despite the indecent working environment. However, some of the evaluations of the respondents are not statistically significantly different before and after the training program. But, the awareness of the

international students increases more as a result of this training program, which manifests that they are more socially, economically and politically aware of the SDGs and different aspects of the sustainable behaviors. It can be attributed because of the fact that their communities are more subject to the issues pertinent to the sustainable behaviors and SDGs. Based on the opinion of the authors, it can be concluded that the international students are having more exposure and awareness of the different social issues regarding SDGs and same has been reported by (Mammadova et al., 2022). The lack of understating of SDGs in the Japanese community can be attributed because Japan is an isolated country with limited exposure to the outer world, so Japanese students are having less exposure of the social issues pertinent to SDGs (Mammadova, 2021; Mammadova et al., 2022).

The possible limitations of this research study might include; (i) the online training includes the experts in the SDGs so it was an intensive training program which might give a vague idea to the students about SDGs, (ii) though, the specific information of the respondents were not collected, however, the analysis provided a basis for the internationalization of the SDGs and adequate information about the profiling of sustainable behaviors among students in HEIs.

It is imperative to mention here that as the manifestations of the respondents are solely based on their self-assessment then there is a possibility that the responses are biased based on the social desirability of the respondents. For the continuation of this research work, the students would be explicitly asked about specific behaviors about SDGs and different perspectives of sustainability in order to improve their engagement with sustainable behaviors for practice. Also, based on the intensive exploratory study, some concurrent policy suggestions would also be proposed.

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