

Country Name	Project for Human Resources Development for Heavy-Chemical Industry at Industrial University of Ho Chi Minh City
Socialist Republic of Viet Nam	

I. Project Outline

Background	<p>The Vietnamese petroleum industry was heavily dependent on imports of refined gasoline and other petroleum products, which was one of the major reasons for the country's trade deficit. To address this issue, the Government of Viet Nam (GOV) had decided to build a second refinery in Thanh Hoa Province (i.e., Nghi Son Oil Refinery Complex), which was scheduled to start operations in 2017. In 2018, Industrial University of Ho Chi Minh City (IUH) under Ministry of Industry and Trade (MOIT) established Thanh Hoa Campus (THC), its second branch, to meet the needs of the local industries for human resource development (HRD). However, the vocational training curriculum of THC had not yet met the requirements of employers in the field of petro-chemical industry, which required rather practical and creative engineers. In addition, there was a growing momentum for promotion of heavy-chemical industry in Vietnam on the whole such as new projects in the steel industry being planned in the neighboring provinces of Thanh Hoa with capital participation by Japanese companies.</p>								
Objectives of the Project	<p>The project aims to have IUH show and verify the HRD model which provides practical and creative engineers for the development of Vietnam's heavy-chemical industry through (i) enabling IUH THC to provide more practical and creative human resources in the fields of heavy-chemical industry especially refinery industry, (ii) establishing the collaboration network with local industries and local communities for HRD by IUH, and (iii) strengthening the effective channel with the Government agencies, other education and training institutions and Vietnamese society by IUH for promoting desirable model for HRD of practical and creative engineers, thereby promoting a new HRD model which provides practical and creative engineers by the GOV for the objective of becoming an industrialized country.</p> <ol style="list-style-type: none"> Overall Goal: The GOV promotes a new HRD model which provides practical and creative engineers for the objective of becoming an industrialized country. Project Purpose: IUH shows and verifies¹ the HRD model which provides practical and creative engineers for the development of Vietnam's heavy-chemical industry. 								
Activities of the Project	<ol style="list-style-type: none"> Project site: Thanh Hoa Province, Ho Chi Minh City (HCMC), and related areas. Main activities: (i) application of the new HRD model drawn from Japanese Kosen education system (i.e. KOSEN model) to the 3-year High Quality College Program (HQCP)² (vocational training program) launched at IUH THC and Main Campus (MC),³ (ii) development of safety education, improvement of the experimental training, and strengthening of research activities of IUH THC and MC in the field of heavy-chemical industry, especially refinery industry, establishment of the management system and implementation of activities for promoting collaboration with local industries for HRD by IUH, and (iii) promotion of the new HRD model to the Vietnamese society by MOIT etc., introduction of part of the elements of the new HRD model to other institutions under MOIT.⁴ Inputs (to carry out above activities) <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">Japanese Side</th> <th style="text-align: left;">Vietnamese Side</th> </tr> </thead> <tbody> <tr> <td>1) Experts: (long-term) 5 persons, (short-term) 11 persons.</td> <td>1) Staff allocated: 99 persons.</td> </tr> <tr> <td>2) Trainees received: 62 persons.</td> <td>2) Land, building and facilities.</td> </tr> <tr> <td>3) Equipment: X-ray diffractometer, atomic absorption spectrophotometer, gas chromatograph, Fourier transform infrared spectrometer, high performance liquid chromatography etc.</td> <td>3) Local cost: 6,407 million Vietnamese dong (VND).⁵</td> </tr> </tbody> </table> 	Japanese Side	Vietnamese Side	1) Experts: (long-term) 5 persons, (short-term) 11 persons.	1) Staff allocated: 99 persons.	2) Trainees received: 62 persons.	2) Land, building and facilities.	3) Equipment: X-ray diffractometer, atomic absorption spectrophotometer, gas chromatograph, Fourier transform infrared spectrometer, high performance liquid chromatography etc.	3) Local cost: 6,407 million Vietnamese dong (VND). ⁵
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¹ Initially, the project aimed to have IUH show the HRD model. Due to extension of the project period described in the footnote 2 below, it became possible to verify the HRD model and the relevant activities were started; however, the logical framework was not modified timely. Based on the recommendation of the joint terminal evaluation in 2017, the phrase "and verifies" was added to the original Project Purpose to reflect this upward revision. The addition was authorized by the Minutes of the Meeting (MM) of the 4th Joint Coordinating Committee (JCC) of the project (December 2017).

² This activity was not specifically shown in the logical framework, but it was agreed in the first year to embody and present the new HRD model in visible ways and to verify the applicability of the new HRD model. The project period was extended for one year and half to complete one-cycle of the 3-year courses of the HQCP which started in October 2014 and related activities based on the recommendation of the joint mid-term review of the project in 2015. (Extension of the project period was proposed by JICA Vietnam Office in the 2nd JCC (November 2015). The 2nd JCC MM did not describe whether the extension was agreed upon in the meeting, but it had been agreed by the 3rd JCC (December 2016).as its MM reads "The project has also been extended 1.5 years". However, the project period mentioned in the logical framework was not revised until the 4th JCC.)

³ Initially, the HQCP courses were to be developed/offered only at THC. Due to the decline in the number of students at THC, which became noticeable around the start of the project, the courses were also developed/offered at MC as a risk aversion measure.

⁴ This activity was not included in the logical framework, but it was added to the original activities in the third year to expand the new HRD model to other vocational training institutions under MOIT in the extended project period (see footnote 2). These other institutions were Phuc Yen College of Industry (PCI) in Vinh Phuc Province, Hue Industrial College (HUEIC) in Thua Thien-Hue Province, and Cao Thang Technical College (CTTC) in HCMC.

⁵ In addition, the study trips to Japan for 53 persons were sponsored by MOIT or IUH.

	4) Local cost: 55 million yen.		
Project Period	(ex-ante) November 2013-October 2016 (actual) November 2013 – April 2018	Project Cost	(ex-ante) 199 million yen, (actual) 338 million yen
Implementing Agency	Ministry of Industry and Trade (MOIT); Industrial University of Ho Chi Minh City (IUH).		
Cooperation Agency in Japan	National Institute of Technology (KOSEN).		

II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation>

- As for the Project Purpose Indicator 2 (Satisfaction of local industries and local communities with the new HRD model), the satisfaction of the local industries with the graduates of the HQCP course was proposed to be used to assess the achievement status of the indicator at the time of terminal evaluation. To be consistent with the perspective of the terminal evaluation, the satisfaction of the local industries with the graduates of the HQCP course was used to judge the achievement status. According to the Joint Terminal Evaluation Report (JTER), the achievement status would be judged based on the results of the survey on the satisfaction of local industries with these graduates to be conducted by the project completion. Such survey results were not available in the existing documents. So, the information was collected through the field survey by asking IUH about satisfaction of the local industries at the time of project completion.
- As for the Overall Goal Indicator 1 (Incorporation of the new HRD model in HRD policy of the GOV), “HRD policy of the GOV” was interpreted to include HRD projects of MOIT because a proposal on a HRD project to promote the new HRD model was mentioned in the results of the Overall Goal Indicator 1 in the JTER.
- As for the Overall Goal Indicator 2 (“Application of the new HRD model by 10 or more education and training institutions”), the target figure of 10 or more was considered to include the 3 colleges to which some elements of the new HRD model had been introduced under the project because these colleges are included in the results of the Overall Goal Indicator 2 in the JTER.

1 Relevance/Coherence
<p>[Relevance]</p> <p><Consistency with the Development Policy of Viet Nam at the Time of Ex-Ante Evaluation > The project was consistent with the 10-Year Socio-Economic Development Strategy (SEDS) (2011-2020), the development policy of Viet Nam at the time of ex-ante evaluation, which highly prioritized the areas related to the industrial development with objective of becoming an industrialized country.</p> <p><Consistency with the Development Needs of Viet Nam at the Time of Ex-Ante Evaluation > The project was consistent with the development needs of Viet Nam for the HRD for heavy-chemical industry at IUH at the time of ex-ante evaluation as mentioned in “Background” above.</p> <p><Appropriateness of Project Design/Approach> No problem attributed to the project design/approach was confirmed.</p> <p><Evaluation Result> In light of the above, the relevance of the project is③⁶.</p>
<p>[Coherence]</p> <p><Consistency with Japan’s ODA Policy at the Time of Ex-Ante Evaluation> The project was consistent with the Country Assistance Policy for the Socialist Republic of Viet Nam (2012), the Japan’s ODA policy to Viet Nam at the time of ex-ante evaluation, which included supports to develop the industry and human resources under one of the priority areas of “Promotion of Economic Growth and Strengthening International Competitiveness”.</p> <p><Collaboration/Coordination with other JICA’s interventions> Any collaboration/coordination between the project and other JICA’s intervention was not clearly planned at the time of ex-ante evaluation.</p> <p><Cooperation with other institutions/ Coordination with international framework> Any cooperation/coordination with other institutions/international framework was not clearly planned at the time of ex-ante evaluation.</p> <p><Evaluation Result> In light of the above, the coherence of the project is②.</p>
<p>[Evaluation Result of Relevance/Coherence]</p> <p>In the light above, the relevance/coherence of the project is③.</p>
2 Effectiveness/Impact
<p><Status of Achievement of the Project Purpose at the Time of Project Completion> At the time of project completion, the Project Purpose was mostly achieved as planned. The new HRD model called “KOSEN model” was formulated⁷ and its applicability was verified through implementation of the 3-year HQCP courses at the faculties of Chemical Engineering and Mechanical Engineering at IUH MC and IUH THC.⁸ Through activities to disseminate the model such</p>

⁶ ④:very high, ③:high, ②:moderately low, ①:low (* To be the same afterwards.)

⁷ As shown in the Project Purpose, the project originally aimed to present the HRD model for the development of Vietnam’s heavy chemical industry, but due to delayed development of Nghi Son economic zone, it was decided to focus not only on the heavy chemical industry but also on the industrial sector in general to train engineers with practical skills.

⁸ It is noted that the student recruitment for the HQCP courses were discontinued after the second batch (school year: 2015/16-2017/18) both at IUH MC and at IUH THC for the following reasons. First, the approval formality of the establishment of THC was found out to be inadequate after the project started in 2014 and it was notified by Ministry of Education and Training (MOET) that THC could provide only 3-year vocational training courses. Then, due to change of the Vietnamese higher education system in 2015, all universities, including IUH, were required to provide only 4-year higher education courses and all colleges were required to provide 3-year vocational training courses. As for the

as direct instruction and advice from Japanese experts and the relevant staff of IUH, the KOSEN model was introduced and some activities (or elements) of the KOSEN model were practiced at 3 colleges under MOIT (PCI in Vinh Phuc Province, HUEIC in Thua Thien-Hue Province, and CTTC in HHMC) (Indicator 1). As for IUH MC, the local industries were satisfied with the graduates of the HQCP courses based on their feedbacks collected through the post-graduation employment survey conducted by Student Counselling and Support Center (SCSC) established under the project and the communication channels between the concerned faculties and the industries established under the project. As for IUH THC, the satisfaction of the local industries at the time of project completion was not available⁹ (Indicator 2).

<Continuation Status of Project Effects at the Time of Ex-Post Evaluation>

By the time of the ex-post evaluation, the project effects have been partially continued. At IUH, the KOSEN model has not continued to be shown as the new HRD model for vocational training because all the vocational training courses, including the 3-year HQCP courses/ developed under the project, have been ceased since SY2018/19 in compliance with the policy of MOET (2015) which requires universities to focus on higher education (see footnote 7)¹⁰. At IUH MC, however, the key elements of the KOSEN model, such as 5S (Seiri, Seiton, Seisou, Seiketu, and Shitsuke), Project Based Learning (PBL), safety training, and research promotion, have been incorporated into the existing university courses of all faculties and implemented since SY2018/19 as IUH planned at the time of terminal evaluation (also see footnote 7). It still shares the knowledge and experiences on the KOSEN model to vocational training institution, but only on ad-hoc basis. The THC's contribution to the HRD for the heavy chemical industry has not been continued in Thanh Hoa Province as expected at the time of ex-ante evaluation (see "Background"); however, all the teachers trained under the project have been transferred to MC with the discontinuation of the vocational training courses, and they have continued to contribute to the above-stated activities at MC. Meanwhile, all 3 colleges where some elements of the KOSEN model were practiced under the project¹¹ have been selected as the pilot colleges of the MOIT-KOSEN's project to pilot KOSEN training program (2017/18-2021/22, 2022/23-2025/26) and have provided KOSEN courses that apply the KOSEN model since SY2019/20 or 2020/21¹². As vocational training at IUH was stopped, information on satisfaction of the local industries with the graduates of vocational training courses, including the HQCP courses is unavailable. According to IUH MC, however, most employers of the graduates of the higher education programs who could learn the key elements of the KOSEN model highly appraised their soft skills, which are unique for the KOSEN model. This can be considered as their satisfaction with the KOSEN model. At IUH MC, the Safety, Research, and Collaboration Working Groups (WGs) established in the 2 target faculties have been continued and further developed¹³. As for IUH THC, none of the WGs have been continued due to discontinuation of the vocational training courses, but the teachers transferred from THC to MC have participated in and contributed to continuation and further development of the WG-related activities at MC.

<Status of Achievement of the Overall Goal at the Time of Ex-Post Evaluation>

At the time of ex-post evaluation, the Overall Goal has been partially achieved because one indicator was mostly achieved as planned and the other one was not achieved. According to MOIT, the KOSEN model has been incorporated in the HRD policy of the GOV. MOIT has been implementing and formulating the projects to promote KOSEN models to education and training institutions under its purview¹⁴ in accordance with its Decision on "Adjustment to the Master Plan on Human Resources Development in Industry and Trade Sector by 2025, Vision till 2035" (2016), which sets forth strengthening of the capacity for training of practical engineering through applying model/program (model to train advanced engineers, model to train practical engineers-KOSEN). In March 2022, MOIT and Ministry of Labor, Invalids and Social Affairs (MOLISA),¹⁵ together with KOSEN, established the Vietnamese KOSEN Model Committee to develop industrial human resources in Viet Nam and to promote exchange of educational activities with Japan.¹⁶ The Committee also includes the presidents of the 3 pilot colleges of the MOIT-KOSEN's project as the members (Indicator 1). Only the 3 pilot colleges of the MOIT-KOSEN's project have launched KOSEN courses that apply the KOSEN model because MOIT has not been able to secure the necessary budget for model application such as the cost of

first point, IUH failed to get approval from MOET to grade up THC to the official branch in 2018 but showed strong determination to keep developing THC at the time of project completion. Regarding the second point, IUH MC was planning to implement the HQCP courses as 4-year courses after the graduation of the second batch at the time of terminal evaluation. During the field survey, IUH MC, confirmed that implementation of the HQCP courses as the 4-year courses meant incorporation of the KOSEN model's elements into the existing 4-year university courses (not implementation of the newly developed 4-year HQCP vocational training courses with the full-KOSEN model applied).

⁹ According to interviews with the 4 enterprises by the terminal evaluation team, all of which are related with the HQCP course students and graduates in terms of internship and employment, they largely appraised the capacity and potentiality of the students and graduates enhanced by the HRD model; however, the JTER reads "It is too early to judge the achievement level at the time of the terminal evaluation since the graduates of the HQCP course have just been starting their job at their enterprises". The information about whether the HQCP course graduates employed by these enterprises included those from THC, was not available either.

¹⁰ At the same time, IUH failed to obtain approval from MOET to grade up THC to the official branch in 2018 since only one branch is allowed under MOET's regulation. This was another reason why IUH had to end all the vocational training at THC from the school year 2018/19.

¹¹ The name of PYCI has been changed to College of Industry and Trade (COIT).

¹² It is noted that the KOSEN courses provided by 2 colleges are 3-year courses and target high-school graduates while the one by the other college is a 5-year course and target junior high-school graduates. Up to SY2022/23, total intake of the KOSEN courses of the 3 colleges was 771.

¹³ Steering Committee for Safety, which has taken up the role of the Safety WG, has been established with the extended members from other faculties. New research WGs have been established in almost all faculties. The functions of the Collaboration WG has been merged into SCSC to promote employment of graduates as well as to enhance training quality based on feedbacks of graduates and enterprises.

¹⁴ In addition to the MOIT-KOSEN project mentioned earlier, MOIT has developed a project proposal for piloting the KOSEN model for a large number of junior high school graduates in December 2021, which was submitted to Ministry of Labor, Invalids and Social Affairs (MOLISA) for approval.

¹⁵ With the change of the Vietnamese higher education system in 2015 explained in footnote 7, MOLISA overseas vocational training schools, including colleges.

¹⁶ The operational period of the Committee is up to March 2024, which can be extended with agreement of both Vietnamese and Japanese sides. (Source: <https://www.jetro.go.jp/biznews/2022/03/f8e491ecadce32ef.html>)

hiring technical advisors that is borne by KOSEN under the MOIT-KOSEN's project. In order to promote the KOSEN model, MOIT incorporates various topics about KOSEN in its annual summer training for the colleges under its purview (24 in total, including the 3 pilot colleges). As a result, some of other colleges have applied some elements such as 5S or collaboration with enterprises (target: 10 or more schools) (Indicator 2).

<Other Impacts at the Time of Ex-Post Evaluation>

IUH lecturers and staff members could learn about KOSEN from the project and apply its elements in teaching and personal life. Negative impacts have not been observed.

<Evaluation Result>

In light of the above, the effectiveness/impact of the project is ②.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results	Source
(Project Purpose) IUH shows and verifies the HRD model which provides practical and creative engineers for the development of Vietnam's heavy-chemical industry.	Indicator 1: Materialization by IUH on the new HRD model which provides practical and creative engineers based on the verification through trial activities at the selected education and training institutions.	Status of the Achievement (Status of the Continuation): mostly achieved as planned (partially continued) (Project Completion) -The new HRD model (KOSEN model) was developed and verified through implementation of the 3-year HQCP courses at the target faculties at IUH THC and MC. - The KOSEN model was introduced, and some elements of the model were practiced at 3 colleges under MOIT. (Ex-Post Evaluation) -The 3-year HQCP courses for vocational training, which applied the KOSEN model, have been discontinued at IUH THC and MC in compliance of the policy of MOET (2015) (see footnote 7 for details). At MC, however, the key elements of the KOSEN model have been incorporated into the existing university courses as IUH planned at the time of terminal evaluation. The teachers of THC trained under the project have been transferred to MC and have continued to contribute to these activities. -All the 3 colleges have been selected as the pilot colleges of the MOIT-KOSEN's project to pilot KOSEN training program and have launched the KOSEN courses that apply the KOSEN model.	JTER, Final Report (FR), questionnaire and interview survey to IUH MC.
	Indicator 2: Satisfaction of local industries and local communities with the new HRD model*. *See <Any special perspectives of evaluation to be considered>	Status of the Achievement (Status of the Continuation): partly achieved as planned (partially continued) (Project Completion) -As for IUH MC, local industries were satisfied with the graduates of the HQCP courses based on their feedbacks collected through the post-graduation employment survey as well as communication channels between the concerned faculties and the industries. As for IUH THC, the satisfaction of the local industries at the time of project completion was not available. (Ex-Post Evaluation) -As vocational training at IUH was stopped, information on satisfaction of local industries with the HQCP graduates was unavailable. According to IUH MC, most employers of the graduates of the university courses who could learn key elements of the KOSEN model highly appraised their soft skills, which are unique for the model. This can be considered as the employers' satisfaction with the model.	JTER, FR, questionnaire and interview survey to IUH MC.
(Overall Goal) The GOV promotes a new HRD model which provides practical and creative engineers for the objective of becoming an industrialized country.	Indicator 1: Incorporation of the new HRD model in HRD policy of the GOV.	(Ex-Post Evaluation) mostly achieved as planned -The KOSEN model has been incorporated in its HRD policy of the GOV. MOIT has been implementing and formulating the projects to promote the KOSEN models to education and training institutions under its purview based on the Decision of MOIT in 2016 which sets forth application of "model to train practical engineers-KOSEN". -In March 2022, MOIT and MOLISA together with KOSEN established the Vietnamese KOSEN Model Committee.	Questionnaire survey to MOIT
	Indicator 2: Application of the new HRD model by 10 or more education and training institutions.	(Ex-Post Evaluation) not achieved -Only 3 pilot colleges of the above-stated MOIT-KOSEN's project have applied the KOSEN model because MOT has not been able to secure the necessary budget for model application. -Some of other colleges under MOIT have applied some elements of the KOSEN model through training about KOSEN included in the MOIT's annual summer training for the colleges under its purview.	Questionnaire survey to MOIT.

3 Efficiency

The project cost considerably exceeded the plan (the ratio against the plan: 170%) and the project period exceeded the plan (the ratio against the plan: 150%). The project period was extended by one and a half year to complete one-cycle of the 3-year course of HQCP because the Project Purpose was revised upward from the original "presentation of the new HRD model" to "presentation and verification of the new HRD model". The project costs exceeded the plan because of the additional inputs such as dispatch of experts and training in Japan mainly due to the extension of the project period for the upward revision of the Project Purpose and addition of activities for dissemination of the model to 3 other colleges during the extended period. Increase of the project cost is justifiable to some extent, but it is difficult to verify whether the change of the cost was proportionate to the change of the project

outputs. In the light above, the efficiency of the project is ②.

4 Sustainability

<Policy Aspect>

The law on vocational training (2014), and the SEDS (2021-2030) set forth international integration and improvement of the quality of vocational training. The Strategy for Development of Vocational Education during the 2021-2030 period with vision to 2045 includes in its tasks the innovation of new training programs and methods through supporting and encouraging association programs with foreign countries and piloting and implementing a number of new training models. The Decision of MOIT (2016) supports promotion of the KOSEN model as stated earlier. Nevertheless, the specific project proposals on the model dissemination has been drafted but not yet approved.

<Institutional/Organizational Aspect>

The organizational structure of MOIT to promote the KOSEN model has been unchanged and functioning. Department of Personnel is the focal point for KOSEN model dissemination, and the necessary number of staff (7 persons) is allocated. The linkage between KOSEN and MOIT facilitated by the project has been further enhanced through the joint project to pilot KOSEN training program. The HQCP courses at IUH were ceased in SY2018/19; however, the KOSEN courses, which started at the 3 pilot colleges of the MOIT-KOSEN's project from SY2019/20 to 2020/21, have served as the KOSEN model courses. In addition, the Vietnamese KOSEN Model Committee has been established, including MOIT, KOSEN and the 3 pilot colleges as members. So, the effects of the discontinuation of the HQCP courses on promotion of the KOSEN model have been minimized. With the discontinuation of the vocational training at IUH, all of the staff of THC trained under the project has been transferred to MC. At IUH MC, the necessary number of staff has been allocated to promote the key elements of the KOSEN model, including those transferred from THC.

<Technical Aspect>

MOIT and the 3 pilot colleges have sustained the necessary knowledge/skills to promote the KOSEN model through continued collaboration with KOSEN. IUH MC, including the teachers transferred from THC, has maintained necessary skills and knowledge to promote the KOSEN model. On-the-job training has been provided to all lectures to disseminate the key elements of KOSEN model. The manuals and guidelines developed under the project have been utilized. All the equipment originally provided to IUH THC has been transferred to MC, which has been maintained in good condition and used for the higher education programs which incorporate the key elements of the KOSEN model.

<Financial Aspect>

MOIT has allocated the budget to organize the annual summer training in which the training about KOSEN is included. The 3 pilot colleges have secured the necessary budget to implement the KOSEN courses under the MOIT-KOSEN project from their own budget, but MOIT have not been able to secure the necessary budget to expand the KOSEN courses to more vocational training institutions (e.g., expenses to hire technical advisors to provide support to vocational training institutions to apply the KOSEN model) which has led to insufficient dissemination of the KOSEN model. Meanwhile, IUH has secured the necessary budget to promote the KOSEN model at MC from its own budget. For example, it has allocated 2 billion VND (equivalent to 86,000USD) to disseminate the key elements of the KOSEN model in all faculties at MC.

<Environmental and Social Aspect>

No issue on environmental and social aspect has been observed and it has not been necessary to take any countermeasures.

<Evaluation Result>

In light of the above, slight problems have been observed in terms of the policy / financial aspects of the implementing agency. Therefore, the sustainability of the project effects is ③.

5 Summary of the Evaluation

The project mostly achieved as planned the Project Purpose of presentation and verification of the HRD model which provides practical and creative engineers for the development of Vietnam's heavy-chemical industry by IUH, but partially achieved the Overall Goal of promotion of the new HRD model by the GOV because the model has been applied by only 3 training institutions (target: 10) due to budget limitation. The project cost exceeded the plan and project duration was extended. The effects of the project have partially continued mainly because, although IUH MC implements university courses with the model's key elements, IUH does not present the new HRD model for vocational training at THC and MC due to policy change on the higher education system. As for the sustainability, no problems have been observed in terms of the institutional/organizational, technical, and environmental and social aspects. Considering all of the above points, this project is evaluated to be partially satisfactory.

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- After the project, IUH further developed the application of KOSEN aspects into their higher education program and management. This can be a good showcase. IUH, however, shares their knowledge and experiences to vocational training institutions only on ad-hoc basis. It is recommended that, in the future, MOIT examine the possibility of utilizing IUH's human resources and good practices in promoting the KOSEN model developed under the project to vocational training institutions.
- It is still uncertain when the project proposal for piloting the KOSEN model for junior high-school graduates will be approved. It is recommended that MOIT will support MOLISA to accelerate the approval procedures to ensure the benefits of the students.

Lessons Learned for JICA:

- The linkage between KOSEN and MOIT facilitated by the project has paved the way to pilot KOSEN training program by KOSEN and MOIT after the project completion, which has partly contributed to the sustainability of the project. During implementation of technical cooperation projects which aim to establish models, the JICA expert team and their counterparts should consider connecting the implementing agency with organizations who can help disseminate the project results.
- JICA should carefully examine the legal status of the implementing agencies before project commencement to avoid the situation that any of them have to be closed during or after the project's implementation.



A job fair organized by IUH in May 2022



A new laboratory at IUH where 5S is applied