Arab Republic of Egypt
Ministry of Education and Technical Education

Preparatory Mission
on JICA Technical Education Project
in Arab Republic of Egypt

Proposed JICA Technical Cooperation Project

Final Report

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JAPAN INTERNATIONAL COOPERATION AGENCY

PADECO Co., Ltd.

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Abbreviations

EC1	Executive Committee One
EC2	Executive Committee Two
EJEP	Egypt-Japan Education Partnership
JICA	Japan International Cooperation Agency
MEXT	Ministry of Education, Culture, Sports Science and Technology, Japan
MOETE	Ministry of Education and Technical Education, Egypt
NAQAAE	National Authority for Quality Assurance and Accreditation
PMU	Project Management Unit
SC	Steering Committee
TQM	Total Quality Management

1.   Current Situation and Issues of Industrial Technical Secondary Education in Egypt

The main purposes of technical education in Egypt are described in the educational law and Strategic Plan for Pre-University Education 2014–2030. These are; "to educate students to be ready for higher education and joining the workforce upon graduation", and "to learn necessary skills for participating in each industrial sector". However, in practice, the JICA preparatory mission team found through interviews with local Japanese companies that most of the graduates from technical schools lack these necessary skills and often cannot meet the demands from the industries. This situation is considered one of the main reasons why the employment rate of technical secondary education graduates is very low (2.8% in 2013.). This is a serious issue nowadays for technical education in Egypt.

Based on interviews with local Japanese companies by the JICA preparatory mission team, the team categorized issues regarding technical school students as follows:

1. Ability to maintain discipline
2. Soft skills[1] (e.g. work attitudes to improve the preciseness of the job, knowledge of safety, team work, 5S (sort, set in order, shine, standardize, and sustain), etc.) and basic hard skills[2] that can be learnt from the use of basic equipment acquired through practical lessons
3. Recognition of necessary skills at workplace upon graduation

Among these three skills, particularly, "maintaining discipline" and "soft skills" are the basic and generic skills in the workplace. Therefore, many companies require these skills for new graduates. While looking at hard skills, basic hard skills can be taught in most of the existing technical secondary schools in Egypt with the existing facilities and equipment, while hard skills which require advanced equipment ability are required by only some companies. For these reasons, the JICA preparatory mission team suggests that an effective way to improve the situation in technical education in Egypt would be by strengthening skills that are commonly required by industries and companies. In cases where partner companies require advanced hard skills and are willing to provide necessary assistance, additional practical programs should be introduced.

To elaborate further, there are several issues in Egyptian technical education regarding the three points mentioned above. First, it is widely accepted that "maintaining discipline" can be learnt easily in younger ages. Hence, it is important to teach these skills during primary and secondary education. However, it should also be noted that once students are away from the disciplined school environment, they are more likely to forget these skills in a very short time. For this reason, teaching discipline at the technical education level (the level of school just before entering the workforce) can also play a crucial role in teaching how to maintain discipline in the workplace for students.

In order to teach discipline in a school, one of the essential features is to keep discipline inside the school management. Yet, in many cases, schools in Egypt are operated with poor discipline in their school management. For example: a) it is quite hard to find any rules in a school in

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[1] Soft skills mean interpersonal skills, such as work attitudes to improve the precision of the job, knowledge of safety, team work, 5S (sort, set in order, shine, standardize, and sustain), etc.
[2] Hard skills mean specific and teachable abilities, including:
1) Basic skills (single basic skills, learnt through basic practical training)
2) High-level skills (ability to utilize the high-level equipment)
3) Applied skills (ability to make a product by oneself, utilizing a broad set of knowledge, skills etc.)

Egypt, because rules are often not written on bulletin board notices in classrooms; and b) even the model teachers find it difficult to start and end their classes on time. One of the reasons that the model teachers are not able to start their classes on time is because there is no break between classes. To improve these issues, one of the most effective options would be to allow more opportunities to discuss among teachers. Leading these discussions through the principal's strong leadership can also be effective. However, most schools in Egypt do not have teachers' meetings regularly, which make it difficult to solve these problems. From this perspective, it can be said that many Egyptian schools also have challenges in school management.

Secondly, among the three issues mentioned above, another problem affecting the teaching of soft and basic hard skills in technical education in Egypt is due to less repetitive practical lessons in Egyptian technical schools. In general, students are supposed to obtain not only basic hard skills, but also safety awareness through instruction before practical lessons, team work through group activates at practical lessons and mental attitude toward accuracy improvement through more and more practical lessons. Nevertheless, because of the less frequent practical lessons, many students in Egyptian technical schools are not able to acquire these skills mentioned above. As a result of this, it is estimated that many local Japanese companies are not satisfied with the graduates' competency in terms of soft skills. In fact, there are some dual system technical schools in Egypt which teach soft skills along with their practical lessons; however, it is at the partner local companies and not at schools where these soft skills are usually taught. This situation also indicates that many local Japanese companies end up teaching soft skills as technical schools do not often teach them in their practical lessons. For basic hard skills, according to the interviews done by the JICA preparatory mission team so far, it can be said that hard skills taught at technical schools in Egypt are inadequate by industry standards. In Egyptian technical schools, students are supposed to learn both basic and advanced hard skills. However, the level of advanced hard skills taught varies due to the schools' budget to purchase expensive advanced equipment. Moreover, some schools have difficulty teaching even basic hard skills due to lack of materials for practical lessons, lack of students' basic knowledge necessary for practical lessons and lack of adequate operation of practical lessons by teachers.

Finally, in order to improve the low employment rate and reduce cases where new hires leave their job soon after employment, the Ministry of Education and Technical Education (MOETE) has been setting up the Work Transition Unit in 300 schools to be ready by 2020. However, 300 schools are not enough compared to the total number of technical schools in Egypt. It is necessary for each school to operate a Work Transition Unit properly to contribute to this situation in Egypt. At the same time, it is also necessary to expand the function of the Work Transition Unit so that more students in Egypt can obtain proper information regarding their future employment.

To sum it up, the JICA preparatory mission team found that many technical schools in Egypt lack the environment, equipment and human resources to teach the three necessary skills mentioned above: namely, ability to maintain discipline; soft skills and basic hard skills; and recognition of necessary skills at the workplace upon graduation. Therefore, it is necessary in technical schools in Egypt to develop and prepare an environment where teachers can teach those skills mentioned above to students. The next chapter discusses the characteristics of industrial technical education in Japan, as well as proposes possible cooperation projects.

2.   Significance of Japanese Technical Education

The Courses of Study, published by the Ministry of Education, Culture, Sports Science and Technology (MEXT), are considered to be the standard for curricula throughout the school system in Japan. The document tries to define the way for a well-balanced development of individual students as human beings under the concept of "Zest for Living", which consists of three pillars, namely: Solid Academic Prowess (the ability to acquire basic knowledge, develop critical thinking skills, improve decision-making capabilities, express oneself and encourage the aptitude to solve problems by themselves); Healthy Body (self-development both physically and mentally in order to live successfully), and; Well-rounded Character (self-control, cooperation with others, balanced character development and greater empathy for others). Based on this, Japanese technical education aims to equip the next generations with: basic and essential knowledge and skills in each field of technical education; capacity to understand the roles and significance of technology in modern society; promote an environment with the ability to think and act-of energy-consciously, creativity and practicality, so that they can take initiative in solving various problems which arise in and around industrial technology logically as well as ethically, and can contribute in developing not only industries but also the society as a whole.

This objective of technical education in Japan is very much similar to what is defined in Egypt. But the actual strategy in Egypt is different from that in Japan, namely, Egypt promotes a dual system and with an emphasis on highly specialized skills while Japan prioritizes basic skills. In other words, technical high schools in Japan excel in producing graduates whose readiness for being professional workers is much higher than the readiness of their Egyptian counterparts. As a result, employment rates for graduates from Japanese technical high schools are high. Technical high schools in Japan usually keep a culture of good discipline, so that the students are ordinarily and routinely familiar with a disciplined group of people. Classes start and end on time, and include a short break between them. Teachers and students expect punctuality as a routine. School rules and regulations are printed in student hand books as well as on bulletin board notices. Teachers notify and instruct students if a violation of the rules occur. Teachers meet and discuss various issues in school very frequently under the strong leadership of school principals, which is also a characteristic of the Japanese school management.

The other characteristic of technical education in Japan is providing students with soft skills through practical lessons. Students master soft skills during practical lessons where they practice the very basic and essential skills repetitively. If they properly apply the acquired soft skills in their future workplaces, we expect that not only that individual student but also their school will be evaluated highly by the companies which hired them. Secondly, basic hard skills are also provided to students through the same process. Thirdly, opportunities for advanced hard skills will be given in the third year, where students go through a final project-based year building on the theories and basic technical skills that they learned in the first and second year.

In addition, the technical high schools in Japan offer a variety of career support services to students. Students are engaged in internship programs and factory visits which enable them to see their future-selves in real work situations. These close partnerships with industries are built through the teacher's frequent visits to maintain good relationships with them.

In summary, Japanese technical schools provide students with learning opportunities in the well-disciplined environment of school life, which can provide students with the "Zest for Living" through the process of thinking why it is necessary, repetitive practical lessons to train students' basic and essential skills. Importantly, these are relatively low-cost methods which potentially have feasibility in Egypt. Hence, this preparatory mission team proposes a project for technical secondary schools in Egypt with reference to technical high schools in Japan.

3.   Proposed Project

3.1   Outlines of the Project

As mentioned in the previous chapter, "maintaining discipline" is a basic and generic work skill in the workplace. However, most students in Egypt are missing their opportunity to learn this at school because, in many cases, schools have very poor discipline in their school management. Similar to these skills, "soft skills" are also very important and essential work skills in the workplace. Nevertheless, many Egyptian students are also lacking these skills due to the lack of repetitive practical lessons at schools. Moreover, to find a job after graduation is not so easy in Egypt nowadays. This is partly because there are very few opportunities for students to obtain future employment information at school in Egypt. For example, student career support services, such as internship programs or local site visits during the school period, are not so common in Egypt due to the lack of cooperative relationships between schools and local industries.

In response to these situations, the JICA preparatory mission team proposes a new technical cooperation project of Japan International Cooperation Agency (JICA) 1) to improve the school management system so that students can easily maintain discipline in the classroom; 2) to support delivering more practical lessons on basic hard skills so that students can learn the necessary soft skills through their practical lessons; 3) to support each pilot school establishing the Work Transition Unit and strengthening its function in order to increase students' opportunities accessing necessary information when they look for a job; and 4) to support the new model school introducing additional project work for students to learn applied hard skills.

The following sections explain the detailed plans of the new JICA project.

(1)   The Type of Target Schools

The project will focus on technical secondary schools both under the conventional system and the dual system. The reason for focusing both on the conventional and dual system technical schools is that there is no difference between these two systems in terms of strengthening the work skills, such as "maintaining discipline in a group", soft skills, and basic hard skills. As mentioned in the previous chapter, the partner Japanese companies require new graduates who have learned the necessary soft skills along with the basic hard skills through practical lessons at schools. To meet this demand, it is not through the use of advanced facilities or equipment, but rather through improving the school management system and the practical lesson system at the school, which contributes to improving the situation. Therefore, a new JICA project will target both conventional system technical schools and dual system technical schools.

(2)   Overall Goal, Project Purpose, Outputs and Objectively Verifiable Indicators

The following table shows the overall goal, project purpose, outputs and objectively verifiable indicators of the proposed new JICA project.

Table 1: Project Design Matrix for Proposed New JICA Technical Cooperation Project for Technical Education in Egypt (Preliminary)

	Details	Objectively Verifiable Indicators
Overall goal	The model activities for technical secondary schools that introduce Japanese style technical education are disseminated in Egypt	1. The number of technical secondary schools which have introduced the model activities. 2. Satisfaction of industries with graduates from the technical secondary schools that have introduced the model activities
Project purpose	The model activities for technical secondary schools that introduce Japanese style technical schools are established at pilot schools and a new model school.	1. Satisfaction of students with the classes given at the technical secondary schools that have introduced the model activities (e.g. whether the class is easy-to-follow, whether the class is punctually given, and etc.) 2. The number of graduates who pursued and obtained a job at the technical secondary schools that have introduced the model activities 3. The number of action plans for enhancing model activities developed by the technical secondary schools that have introduced the model activities
Output 1	School management at pilot schools is improved through introducing Japanese style school management systems.	1-1 Activities conducted for improving school management (e.g. the frequency of teachers' meetings, information visualization, and development of filing systems) 1-2 Improvement of teachers' and students' punctuality at pilot classes 1-3 A guideline on school management
Output 2	Students acquire basic hard skills and soft skills through introducing improved practical lessons at pilot schools.	2-1 Improvement of students' basic hard skills 2-2 Improvement of students' soft skills
Output 3	Local companies and pilot schools are cooperating with each other.	3-1 The record of graduates' placement 3-2 The record of recruitment information from local industries at the pilot schools 3-3 The number of training and internship programs in partner companies and study visits to local companies
Output 4	A new model school that introduces Japanese style education is in operation.	4-1 Japanese style school management of the new model schools.

After achieving the project purpose, the project will disseminate the model activities to other schools around Egypt to reach the overall goal. There are several possible ways to deliver the model activities to schools. However, since schools located nearby Japanese industries would be most accepting of the Japanese school model, the project has deemed these as the best schools to start with. After successfully implementing the model activities in these schools, the project will disseminate the model activities to other areas. Outputs are explained in the following section 3.3.

(3)   Important Assumptions

Important assumptions are as follows:

- MOETE continues to work towards enhancing and maintaining motivation of pilot school principals to improve current conditions at schools.

- The socioeconomic conditions do not worsen.
- Educational policies in the technical education sector do not change.
- Economic performance and recruitment plans in local partner companies do not worsen drastically.
- A new technical secondary school, which is to be used as a model for introducing Japanese style technical education, is to be established under auspice of MOETE in cooperation with industry.

(4)   Inputs from Japanese Side

- Expert
  - Co-director
  - Chief Advisor
  - School Management
  - School Industry Partnership
  - Training Planning Management and Coordination
  - Industrial Training (tentatively Electrical & Electronics, and Mechanical)
- Local staff
  - Interpreter
  - Local administrative coordinator
- Training in Japan
- Teaching and learning materials for the pilot schools
- Minimum equipment necessary for conducting the model activities at the pilot department of the new model school (equipment on the list of MOETE standard equipment)
- Other essential operations for implementing the project

(5)   Inputs from Egyptian Side

- Counterpart Personnel
  - Project Director (Director of Project Management Unit, PMU)
  - Project Coordinator
  - Director of Technical Education in pilot Idara and Modereya Offices
  - Other administrative staff
  - Drivers
- Facilities
  - Office space and necessary facilities for JICA experts
- Training materials for the pilot schools
- Office and stationery supplies materials for the pilot schools
- Training cost (travel allowance of C/Ps and teachers, venue fee, etc.)
- Incentive for the pilot school teachers
- Other essential costs

(6)   Implementing Structure

Figure 1 indicates the proposed organization structure to implement the project.

When President Abdel-Fattah Al-Sisi visited Japan in February 2016, the government of Egypt and Japan agreed on a comprehensive cooperation framework called "Egypt-Japan Education Partnership (EJEP)", which covers from pre-school education to higher education. This EJEP has been supervised by the Steering Committee (SC) which is under the chairpersonship of the National Security Advisor to the President of Egypt. There are two sub-committees set under the SC, namely, Executive Committee One (EC1) and Executive Committee Two (EC2). EC1 is

responsible for several educational stages including pre-school education, basic education and technical education that are administered by the MOETE. While EC2 is responsible for higher education. EC1 is expected to lead the JICA project in basic education which introduces the Japanese education approach to Egypt. Additionally, the JICA technical education project will also be led by EC1. SC discusses directions of the program to plan and select the effective cooperation schemes regarding EJEP. Under the direction and selected detailed plans examined in SC, EC1 will propose implementation plans and make a decision with each responsible unit in MOETE.

As with the JICA basic education project, the JICA preparatory mission team proposes JICA technical education project to establish the Project Management Unit (PMU) under EC1 as shown in Figure 1 below, so that the PMU can manage all the necessary procedures by themselves. These procedures include proposing effective implementation plans, drafting necessary Ministerial decrees, proposing and executing budgets for the project, and conducting negotiations with other departments in the government.
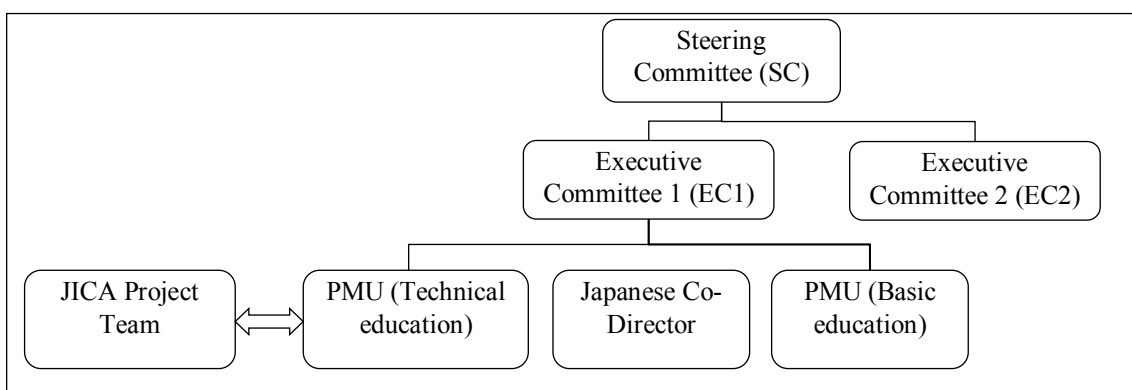
Source: Prepared by the JICA preparatory mission team

Figure 1: Implementing Structure

(7)   Project Sites and Courses in the Project

The Project sites will be Port Said and near the Cairo area (pilot schools to be determined) as there are possible partner companies nearby those areas. The target courses in the project are electronics for Port Said, and are to be determined later for the Cairo area.

(8)   Beneficiaries

Beneficiaries in this project are students, teachers and staff in each pilot school.

(9)   Project Design Matrix (PDM) (Draft)

See the Appendix 1.

(10)   Plan of Operation (Draft)

See the Appendix 2.

3.2   Pilot Schools

The following sections provide the details of the target schools for the pilot activities in the new JICA technical cooperation project.

(1)   Criteria for Selection of Target Schools

First, this section explains the criteria for selection of target schools. As already mentioned in the previous chapter, technical education in Egypt faces various problems these days; however, one of the more urgent problems to be solved is that many graduates cannot find an appropriate job. In particular, most of the students in technical education in Egypt do not have any clear images of their future work, resulting in their insufficient preparation before starting a job. In order to tackle this situation, it is important for schools to establish a new career support system for students, so that they can obtain necessary information before starting their job. For example, providing opportunities such as internship programs or study visits to local industries can be effective programs for students. Therefore, the JICA preparatory mission team suggests JICA cooperation project find local industries that are willing to build and keep strong ties with schools.

In order to establish a cooperative partnership between schools and local companies, it will be very important to select target schools which are located close to the partner companies. Also, when considering creating benefits for local industries, it is important to identify the schools which provide relevant courses to the partner companies' industries. Additionally, because Article 11 of the constitution refers to gender equality, the project also considers a fair gender balance. Consequently, under these conditions, the JICA preparatory mission team has proposed the criteria for the selection of pilot schools to MOETE and we have received their permission. The following five points are the criteria for selecting pilot schools:

1. A school which has a possible partner company nearby
2. A school which is providing the specific courses related to partner company's area
3. A school in which gender equality is taken into consideration
4. A school in which teachers and staff have the motivation to improve technical education in Egypt by building a good relationship together with local partner companies

(2)   Selection of Local Partner Companies

The following section explains the selection details of local partner companies for the pilot activities. When selecting local companies as partner industries for the project, it is recommended to select from local Japanese companies. There are two reasons for choosing local Japanese industries for this project.

First, EJEP has set the goal for partnership programs including technical education in Egypt. The goal for technical education in EJEP mentions that technical cooperation programs to implement Japanese style technical education in Egypt are conducted under collaboration with Egyptian local industries, including local Japanese companies. Subsequently, associating with Japanese local industries can contribute to achieving one of the goals of EJEP.

The second reason is that Japanese industries prefer graduates who have studied under Japanese style education. In Japan, as explained in chapter two, technical education students usually obtain the basic skills required at the workplace or school. In other words, students often learn how to maintain discipline at the workplace or basic hard skills through their practical training at school. Because of this, many Japanese companies, including local Japanese enterprises in Egypt, also expect graduates to have these basic skills. When implementing Japanese style

technical education in Egypt, making a bond with local Japanese industries would also benefit Japanese companies in terms of the possibility to establish a reliable stream of skilled workers in the future.

Additionally, although the manufacturing industry leads the Egyptian economy these days, the unemployment ratio of technical secondary education graduates (which provides much of the manufacturing workforce) is the highest at 41% by education level among the total number of graduates.

For the above reasons, the JICA preparatory mission team suggests choosing local Japanese industries as partner companies.

In detail, according to the research made by the Embassy of Japan in Egypt, there are three companies that have shown their interest in collaborating with the project. The following sections mention these companies as Company A, Company B and Company C. In particular, Company A has been ready to collaborate with the project from September 2016. Company B is planning to cooperate with the project from September 2017. Finally, Company C stated that they are ready to support a new technical school that introduces Japanese style technical education. Therefore, based on this information, the JICA preparatory mission team selects these companies as partner companies.

(3)   Target Schools

The following table examines each criterion introduced in the previous section with regards to Port Said.

Table 2: Selection Criteria Adopted for the Pilot School in Port Said

Criteria	In the case of Port Said	Notes
1. There is a possible partner company near the schools that is ready to accept students	Company A	Company A has had an experience in delivering cooperative programs together with a dual system technical school for 2 years. They are also interested in and ready for expanding their collaboration programs with schools from September 2016.
2. Schools which are providing specific courses related to partner companies' area	Electronic or electric courses are preferable.	These courses are directly related to the work in Company A.
3. Schools in which gender equality is taken into consideration	Girls' schools are preferable	There are more males than females in company A. Therefore, Company A wants to hire more females to keep a gender balance within the company.

Source: Prepared by JICA preparatory mission team

There are seven possible technical schools in and around Company A. The following table compares each school with general information.

Table 3: Possible Pilot Schools in Port Said

	School names	Sex	Number of students				Distance from Company A (km)	Education systems (Dual/ conventional)	Department of Electrical /electronic Engineering
			Total	G1	G2	G3			
A	Ahmed Zwail School	Female	252	94	58	100	5.60	Dual (all)	✓
B	Elbetool School	Female	87	40	22	25	Need to transport by ferry	Conventional	No data
C	El Tahrir School	Female	262	133	84	45	7.60	Conventional	✓
D	Gamal Abd El Naser School	Male	418	206	112	100	6.70	Dual (partly)	✓
E	Pilot Mohamed Rafeet School	Male	364	152	112	100	6.70	Conventional	✓
F	Port Said Mechanics School	Male	1,396	713	378	305	6.40	Conventional	✓
G	Port Said Secondary Industrial School	Female	342	207	71	64	7.10	Conventional	✗

Source: Prepared by JICA preparatory mission team

Company A has delivered dual system education with Ahmed Zwail School for the last two years. They are receiving 150 students in total (50 students with two classes for each grade). Recently, in addition, Company A showed their interest in expanding the number of students received to 300 in total (100 students with four classes for each grade). Examining each condition including the situation of Company A mentioned above, Table 4 shows the results of selecting pilot schools in Port Said. The schools marked with ○ in the column "Result" are selected as pilot schools.

Table 4: The Results of Selecting Pilot Schools in Port Said

	School names	Access[1]	Course[2]	Gender[3]	Result[4]	Notes
A	Ahmed Zwail School	○	○	○	○	Continuing dual system education in the electronic industry course (two classes for each grade)
B	Elbetool School	✗	○	○	✗	
C	El Tahrir School	○	○	○	○	[5]
D	Gamal Abd El Naser School	○	○	✗	✗	
E	Pilot Mohamed Rafeet School	○	○	✗	✗	
F	Port Said Mechanics School	○	○	✗	✗	
G	Port Said Secondary Industrial School	○	✗	○	○	[5]

(1): Since Company A needs to provide a bus for students, the schools where students can come by bus are marked with ○, the schools where students need to come by boat are marked with ✗.
(2): Since Company A requests graduates who learned either electronic or electric courses at schools, the schools which have these courses are marked with ○, the schools which do not have any of these courses are marked with ✗.
(3): ○ refers to girls' school.
(4): The schools with ○ for all "Access", "Course" and "Gender" are marked with ○. Although "Course" for school G is marked with ✗, this school is preparing for opening required courses, it has got ○ for "Result".
(5): Among the new school C and school G, one of them will keep the conventional education system, whereas the other school will open a new electronic industry course with dual education system (two classes for each grade).
Source: Prepared by JICA preparatory mission team

As shown in Table 4, three schools are selected as pilot schools in Port Said; namely, Ahmed Zwail School, El Tahrir School, and Port Said Secondary Industrial School. These pilot schools in Port Said were also examined by EC1 on 1 August 2016, and were approved.

In other cities (for Company B and Company C), partner companies are continuing their preparation and negotiation with relevant organizations and schools to start the project. In addition, Company C is also proceeding with discussions and arrangements with MOETE to start a new school. The new project site for this new school has already been decided and they are now in the process of selecting a builder.

(4)   General Information of Pilot Schools

Table 5 shows the general information of the selected pilot schools in Port Said.

Table 5: General Information of Pilot Schools

School names	Courses	Number of male teachers	Number of female teachers	Number of students (Promotion rates)			Number of classrooms
				G1	G2	G3	
Ahmad Zwail	Electronics	4	5	50 (94%)	27 (100%)	11 (100%)	20 Classrooms
	Readymade clothes	5	20	113 (77%)	61 (100%)	53 (98%)	2 Public labs 4 Workshops
	(Education)	1	8	-	-	-	
	(Admin)	14	23	-	-	-	
	Total	24	46	163	88	64	
El Tahrir Technical	Electronics	6	12	35 (95%)	22 (95%)	16 (87%)	20 Classroom 3 Public Labs
	Computer			22 (95%)	23 (100%)	14 (100%)	12 Workshops
	Electrical	7	16	27 (95%)	27 (100%)	13 (100%)	
	Readymade Clothing	2	22	121 (86%)	106 (88%)	33 (100%)	
	Ornament	8	12	38 (100%)	33 (93%)	28 (100%)	
	(Education)	5	19	-	-	-	
	(Admin)	13	30	-	-	-	
	Total	41	111	243	211	104	
Port Said Secondary Industrial School	Electronics and computer	3	16	16 (100%)	21 (100%)	37 (100%)	8 Classroom 4 Public Labs
	Electrical	1	23	16 (100%)	19 (100%)	35 (90%)	5 Workshops
	Fine equipment	2	14	21 (100%)	24 (100%)	45 (91%)	
	Metals	0	12	19 (100%)	19 (100%)	38 (100%)	
	(Education)	1	27	-	-	-	
	(Admin)	4	23	-	-	-	
	Total	11	115	72	83	155	

Source: Interview at pilot schools by JICA preparatory mission team

3.3   Activities

The project consists of activities with four related outputs. The activities under Output 1, 2, and 3 are for existing technical secondary schools. The project will start with the pilot schools in Port Said, which were available to take part in 2016, followed by the other school with Company B in 2017. Activities under Output 4 are intended for a new school which will be built in cooperation between MOETE and Company C.

In the following section, two JICA teams are used; the JICA preparatory mission team that suggests this project and the JICA project team that implements the Project with MOETE.

(1)   Output 1: School Management at Pilot Schools is Improved through Introducing Japanese Style School Management Systems

Discipline will be acquired through day-to-day practice. If students spend their school life under discipline, they can easily adopt such a manner when they enter professional life. By contrast, if their school life is not well organized, it may be very hard for them to adjust to workplace discipline. It is necessary for students to acquire discipline through their own motivation. Otherwise, their discipline may not be sustained when they are not under their teachers' watchful eyes. In this sense, it is important that teachers be role models as disciplined professional workers in order for students to see the necessity of doing so. The goal of Output 1 is to grow such culture in the pilot schools.

In order to avoid the activities being disrupted by those who are not under the same rules, these activities target all teaching staff and students in the pilot schools. The following are the outlines of the activities under Output 1.

1-1   The organizational framework of the pilot schools is improved.

This activity of restructuring school organization includes defining and developing; (1) School Vision, and introducing (2) Task Force activity in school. (1) School Vision is the key document for obtaining accreditation from the National Authority for Quality Assurance and Accreditation in Education (NAQAAE), which states what school it shall be and what education it shall provide to students. It is expected that the schools with valid accreditations have already materialized their School Visions. However, all pilot schools will be asked to review their School Visions, as they introduce the new model of Japanese-style technical education. (2) The Task Force consists of; school principal as the chairperson, department heads, senior teachers, and one or two regular teachers. Its members will be designated by the principal.

Table 6: Expected Roles in Activity 1-1

Organization	Expected role
MOETE	Provides necessary assistance to school principal.
Modereya Office	Provides necessary assistance to school principal.
Principal of School	Selects Task Force members who develop School Vision, and adopt it through existing mechanisms such as teachers' meeting, as a person who is responsible for this activity.
JICA Project Team	Provides necessary assistance to school principal

Source: Prepared by JICA preparatory mission team

1-2 Teachers and management positions of the pilot schools are trained, based on Japanese style discipline, to improve school management.

School management staff and teachers will be briefed about the advantages and characteristics of Japanese Technical High Schools by the JICA project team. This will be held in the following three sequences.

Table 7: Training School Management

No.	Target	Contents
First	Principals, Vice Principals, one additional person	Briefing about advantages and characteristics of Japanese Technical High Schools, Orientation about Task Force selection (Activity 1-1).
Second	Principals, Vice Principals, and Task Force members	Briefing about advantages and characteristics of Japanese Technical High Schools, Nominating of draft activities.
Third	Principals, Vice Principals, Task Force, other teachers	Briefing about advantages and characteristics of Japanese Technical High Schools, Kick-off meeting where all teachers will be informed about the selected activities.

Source: Prepared by JICA preparatory mission team

In addition, selected management level staff will be invited to a study visit program in Japan where they will observe Japanese technical high schools. The purpose of the program is to observe the advantages of Japanese technical high schools, of which they chose some activities that they can introduce to their schools in Egypt for enhancing their educational capacity. Participants will visit approximately three technical high schools, the Prefectural Education Board and its training center. The program will offer them a chance to see what sort of capacities are required for teachers as well as local education administrative staff who support such schools in Japan. The proposed schedule and expected participants are shown in the following table.

Table 8: Study Visit to Japan for School Management (Tentative)

No.	Period	Start-End	No. of Participants	Candidates
First	One week	22–29 Oct. 2016	3	One participant each from all pilot schools in Port Said, and four participants from MOETE.
Second	One week	Around Jul. 2017	9	Maximum of three participants from each pilot school, who should be either the Principal, Vice Principal, Department Head, or Member of Task Force.

Source: Prepared by JICA preparatory mission team

Table 9: Expected Roles in Activity 1-2 (Study Visit)

Organization	Expected role
MOETE	Provide necessary administrative work in visa application such as issuing HR letter.
Modereya Office	Provide necessary support to MOETE.
JICA Project Team	Implement the Study Visit Program.

Source: Prepared by JICA preparatory mission team

1-3	**Pilot schools develop and implement action plans to improve student discipline in the schools.**

The JICA project team will introduce the advantages and characteristics of Japanese technical high schools which serve as models to teachers and managerial positions in the pilot school. The pilot schools will choose what they will introduce into their schools through their own initiative. The project will first try to foster an awareness of the need for school management improvement (Kaizen) among school principals and members of the Task Force, followed by other members of the pilot schools.

The JICA project team supports the schools which are not familiar with Kaizen activities by offering some model Kaizen activities, which are shown in the table below. From the experience in the JICA basic education project, the preparatory mission suggests that promoting awareness among parents is the key for successful introduction of the activities, especially with clean-up activities at school.

Table 10: Initial Soft Skill Activities (Draft)

		Target	
Title	**Description of Activity**	**Teachers**	**Students**
Increase frequency of teachers' meetings	Leveling the understanding about the new project among all teachers and staff in school is indispensable for sharing problems in school, as well as to foster one strategy for the problems toward students. Hence, the preparatory mission team suggests increasing the frequency of teachers' meetings from the current more or less once-a-month standard to a minimum once-a-week standard.	Yes	
Punctuality	It was observed that many Egyptian schools do not have regular breaks after every lesson except one long break during lunch hour, leading to start and end times not being punctual in many cases. Hence, the preparatory mission team proposes to install a wall clock in each classroom together with a display of the timetable containing a clear indication of the start and end time of lessons. The preparatory mission team also proposes to have a five-minute break after every lesson. Teachers are expected to instruct students to observe punctuality.	Yes	Yes
5S activities[3]	The preparatory mission team proposes to introduce 3S out of 5S, namely Sort ("Seiri"), Set ("Seiton"), and Standardize ("Seiketsu") which is a very common Total Quality Management (TQM) tool in Japanese factories. In addition, the JICA preparatory mission team recommends cleaning activities of regular classrooms as well as workshops by students, with awareness raising activities by displaying slogans about a litter free school. The JICA project team also introduces sorting ("Seiri") and setting ("Seiton") to their workshop storage rooms.	Yes	Yes

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[3] http://www.jica.go.jp/activities/issues/health/5S-KAIZEN-TQM-02/ku57pq00001pi3y4-att/text_e_02.pdf
5S are the principles of work environment improvement derived from the Japanese words "seiri", "seiton", "seiso", "seiketsu", and "shitsuke". In English the five Ss are respectively described Sort, Set, Shine, Standardize, and Sustain. These principles focus on effective workplace organization starting from the physical environment and gradually moving to functional aspects. 5S simplifies work environment, reduces waste and non-value activities while improving quality efficiency and safety. 5S are key activities of the TQM and embody the basic philosophy of Kaizen.

Title	Description of Activity	Target	
		Teachers	Students
Information Visualization	In order for information to be accessible for everyone in school, this activity relies on slogans and rules of all activities be displayed around school grounds. Such rules, organizational charts, and timetables will be printed and posted in places easily accessible for people so that it contributes to visualizing the importance of discipline.	Yes	Yes
Follow the rules	Teachers will instruct students to observe visualized disciplines displayed on the walls.	Yes	Yes
Group activities	Students will learn about working in teams by being engaged in group activities such as clean up of classrooms or adjusting wall clocks, and daily tool maintenance for their practical lessons.		Yes
Develop Filing System	Make all documents in school accessible to anyone by sorting them and keeping them in files so that teachers can reduce time needed to deliver quality lessons.	Yes	Yes

Source: Prepared by JICA preparatory mission team

The JICA project team will explain that proper sequencing the order of activities is a key for success. So, this preparatory mission team recommends pilot schools start by having more frequent teachers' meetings first, and gradually stepping up to the other more difficult ones.

Table 11: Expected Roles in Activity 1-3

Organization	Expected role
MOETE	Provide necessary support to school principal.
Modereya Office	Modereya office will extend support to the principal, in case the activity requires something that the principal cannot determine on his own with regards to institutional constraints. The office will send a representative to the meetings in pilot schools for this project.
Principal	As the person responsible for implementation of the activities, the principal will host meetings with Task Force and the JICA project team for selecting the activities to be implemented. The decision will be shared among teachers and students through teachers' meetings and school lines respectively. If necessary, parents may be briefed about it.
Task force	Participate in the meetings and select initial activities to be implemented. Also, monitor teachers implementing the activities and regularly propose suggestions for improvement (Kaizen), in addition to reporting to the principal.
JICA Project Team	Take part in the meetings and propose an initial activity to the Task Force. Some materials will be offered explaining how to conduct each activity. If a school comes up with its own counter proposal, the team will offer advice from a technical perspective.

Source: Prepared by JICA preparatory mission team

1-4   Pilot schools maintain and continue the improved conditions based on the action plan.

It is expected that the initial activities selected by the JICA project team will lead schools to the next activities smoothly. The schools should continue to focus on the initial activities until they can adequately maintain them. The next activities will be offered after confirming well-maintained implementation of initial ones. The decision over whether initial activities are considered as "well-maintained" will be made under the cooperation between partner Japanese companies, Modereya office, and the JICA project team. In addition, opportunities will be

offered where one pilot school visits another one to see and exchange ideas, taking into consideration to disseminate the model to other area in the future.

Once it is confirmed that the initial activities are properly rooted in the school, a meeting will be held between the principal, Task Force, and the JICA project team to decide on moving to the next activities.

Table 12: Expected Roles in Activity 1-4

Organization	Expected role
Principal	Supervise Task Force (as the person responsible for this activity).
Task force	Implement continuous improvement (Kaizen), then plan and implement new activities.
JICA Project Team	Support the Task Force in monitoring the current activities and suggesting additional ideas for improvement.

Source: Prepared by JICA preparatory mission team

1-5   Pilot Schools conduct an effective verification on student discipline.

This activity will be conducted not only for monitoring the effect of activities on continuous improvement regularly but also for capacity building of Task Force members, which is indispensable for sustaining continuous improvement (Kaizen). The following table explains how to verify the effect.

Table 13: Method for Obtaining Data for Effect Verification (Draft)

Category	Activity	Proposed Method
Soft Skills (for all staff and students)	Punctuality	Count the number of teachers and students who come late to lessons, or lessons commenced or ended on time (around two classes per school will be monitored).
	Attendance rate	Obtain attendance record of teachers and students.
	Information Visualization	Count the number of different kinds of displays (slogans, posters, etc.) and how many there are.
	Follow the rules	Conduct interview survey with teachers.
	Standardize ("Seiketsu")	Compare the same place by taking photographs before and after the activities.
	Sort ("Seiri") and Set ("Seiton"), Filing System	Count the number of folder labels for document files.

Source: Prepared by JICA preparatory mission team

Table 14: Expected Roles in Activity 1-5

Organization	Expected role
MOETE	Provide necessary support to school principal.
Modereya Office	Provide necessary support to school principal.
Principal	Supervise Task Force (as the person responsible for this activity).
Task force	Conduct data evaluation. Prior to doing so, the Task Force members will inform other teachers about it, and report the results after the event.
Teacher	Cooperate with Task Force and collect data.
JICA Project Team	Provide advice to the Task Force, especially in drafting questionnaire and interview questions.

Source: Prepared by JICA preparatory mission team

1-6   Each pilot school develops a guideline to introduce necessary activities for improving student discipline based on the effective verification results.

Develop guidelines for the above activities from 1-1 to 1-5, which could serve as introductory material for school management improvement. The document includes an introduction process as well as lessons learnt. The document should contain activities which could be adapted by as many other schools as possible in consideration of dissemination in the future.

Table 15: Expected Roles in Activity 1-6

Organization	Expected role
MOETE	Develop guidelines.
Principal	Review the draft guidelines and return feedbacks as well as data.
Task force	Review the draft guidelines and return feedbacks as well as data.
JICA Project Team	Provide support to MOETE in the development process such as providing suggestions for the guidelines.

Source: Prepared by JICA preparatory mission team

(2)   Output 2: Students Acquire Basic Hard Skills and Soft Skills through Introducing Improved Practical Lessons at Pilot Schools

This pillar aims to equip students with basic hard skills and soft skills through continuously improving practical lessons in the pilot schools. Activities in this pillar will be expected to arise as follows: (1) Workshops[4] are to be improved by having clear display of safety and standardizing (Seiketsu) slogans; (2) Teachers continuously approach students in order to improve their skills; (3) Supplementary materials for practical lessons such as training manuals are developed and utilized.

Only the essential topics which are considered as contributing to students' basic practical skills will be selected for activity (3) at this moment, since this is an initial pilot stage. The current curriculum for grade one in technical secondary school focuses on the basic practical skills and is used among all different departments. The JICA preparatory mission team recommends focusing this grade. By contrast, other grades offer different practical lessons from one department to the other. Therefore, the JICA preparatory mission team recommends selecting topics that offer more knowledge and skills shared with the other departments or subjects. The topics which require highly sophisticated equipment will be discussed in the Output 3 and/or 4 below.

2-1   Pilot schools select a practical subject, based on discussions with partner companies, to be improved through model activities.

After considering needs in the neighboring factories and above mentioned requirements, pilot practical lessons will be identified by the pilot schools.

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[4] The rooms for practical lessons.

Table 16: Expected Roles in Activity 2-1

Organization	Expected role
Principal	As the person responsible for this activity, the principal will hold meetings with Task Force members and the JICA project team in order to decide the pilot subject.
Task force	After observing the needs in the neighboring factories (considering the current state of the school) and discussing with colleagues, the Task Force will select topics for pilot practical lessons, which aims to strengthen students' soft skills by practicing very basic and essential skills repetitively.
Practical teachers	Participate in the discussion between Task Force and the JICA project team, and cooperate in selecting the topics.
JICA Project Team	Analyze curriculum, textbook, equipment used in the current practical lessons at pilot schools, identify possible topics that can be used to strengthen students' soft skills by practicing very basic and essential skills repetitively, and advise the practical teachers.

Source: Prepared by JICA preparatory mission team

2-2   Training for teachers of selected practical subject is conducted.

This component first examines the technical level of teachers who conduct practical lectures, and provides them with appropriate capacity building opportunities if necessary. Such opportunities include: (1) training at Technical Education Development Center; (2) training provided by local education administrative offices; and (3) other training provided by the JICA project team. This will be further discussed in later stages after more information about (1) and (2) is gathered.

Since the JICA preparatory mission team did not study the instructional materials of practical lessons at the time of the first semester in 2016, it suggests starting with basic soft skills trainings such as safety issues or 5S.

2-3   Pilot schools introduce trial practical lessons to improve students' basic hard skills and soft skills through cooperation with partner companies.

The pilot practical lessons identified above will be implemented on a trial basis.

Table 17: Expected Roles in Activity 2-3

Organization	Expected role
Principal	Supervise teachers for pilot practical lessons (as the person responsible for this activity).
Task force	Monitor the pilot practical lessons regularly, gather information for continuous improvement.
Practical teachers	Implement pilot practical lessons for students.
JICA Project Team	Provide advice to the teachers implementing pilot practical lessons, as well as to the Task Force members, about how to gather information for improvement (e.g. comparing the students' products between two consecutive years, or results in student surveys).

Source: Prepared by JICA preparatory mission team

2-4   Pilot schools conduct improved practical lessons.

Pilot schools will implement improved practical lessons through their own initiative in the following year of the above pilot activity.

Table 18: Expected Roles in Activity 2-4

Organization	Expected role
Principal	Supervise teachers for practical lessons (as the person responsible for this activity)
Task force	Monitor the practical lessons regularly, gather information for continuous improvement, especially pay close attention to the practical lessons to observe any reduction in quality (or any changes in teachers' motivation)
Practical teachers	Utilize currently available equipment and improve the selected pilot practical lessons, and provide it to students
JICA Project Team	Provide advice to the teachers implementing pilot practical lessons, as well as the Task Force members, about how to gather information for improvement (e.g. comparing the students' products between two consecutive years, or results in student surveys). In addition, monitor state of students' skill acquisition, and provide advice to teachers to assure that the level of practical lessons is appropriate to the level of students.

Source: Prepared by JICA preparatory mission team

2-5 **Pilot schools conduct effective verification.**

Regular validation of the impact of new activities will not only further improve effectiveness of the new activity itself, but also will lead to strengthening the capacity of the Task Force, which is indispensable for sustaining continuous improvement. The following table explains how to verify the effect.

Table 19: Method for Obtaining Data for Effect Verification (Draft)

Category	Activity	Proposed Method
Soft skills (Practical)	Team work / Attitude toward work	In the short term, collect qualitative data through interviews with principals and vice principals; while in the long term, interviews will be conducted by people from the industries visiting the schools. Then, obtaining information on changes in student attitudes will be followed up by either interviews or questionnaires.
Hard skills (Practical)	Skills	In the short term, qualitative validation will be conducted through interviews with teachers who conducted pilot practical lessons; and observation by the JICA project team to see whether the students acquired the intended skills through practical lessons. In the long term, select a grade level and compare students' works in the end of the year's practical examinations. This is tentatively expected in May 2017, May 2018, May 2019, and May 2020.

Source: Prepared by JICA preparatory mission team

Table 20: Expected Roles in Effect Verification

Organization	Expected role
Principal	Supervise Task Force (as the person responsible for this activity)
Task force	Implement effect verification. Prior to doing so, the Task Force members will inform other teachers about it, and report the results after the event.
Practical teachers	Cooperate with Task Force members and collect data for effect verification
JICA Project Team	Provide advice to the Task Force in drafting questionnaire sheet and interview questions

Source: Prepared by JICA preparatory mission team

(3)   Output 3: Local Companies and Pilot Schools are Cooperating with Each Other

Comprehending the needs in neighboring industries is important for the school to determine what sort of human resources it shall produce. A Work Transition Unit will be established in the pilot schools to offer career services assisting students to get familiarized with local industries while still in school, effectively trying to minimize the learning gap for students entering a real work environment. Collaboration with the industries will be sought in order to realize the above.

3-1   Pilot schools establish the Work Transition Unit.

MOETE has a plan to establish Work Transition Units in 300 schools in collaboration with other international donors. This pillar aims to have all pilot schools in the JICA project team equipped with Work Transit Units, although some of them are already established.

Table 21: Expected Roles in Activity 3-1

Organization	Expected role
MOETE	Provide necessary support to school principal.
Modereya Office	Provide necessary support to school principal.
Principal	Set up the Work Transit Unit (as the main person responsible for this activity).
Task force	Assists in setting up the Work Transition Unit; such as, selection of personnel and developing its course of action.
JICA Project Team	Provide necessary support to school principal.

Source: Prepared by JICA preparatory mission team

3-2   The Work Transition Unit in pilot schools conducts activities necessary for improving employment rates (e.g. to collect and record local industries' data) based on Japanese style career guidance.

Strengthening the Work Transition Unit by developing student database, recording students' placement after graduation (company, university, etc.) and collecting local industries' data.

Table 22: Expected Roles in Activity 3-2

Organization	Expected role
Principal	Supervise the Work Transition Unit (as the person responsible for this activity).
Work Transition Unit	Collect data and record it
JICA Project Team	Provide instruction in collecting and recording data, as well as utilizing it for students.

Source: Prepared by JICA preparatory mission team

3-3   The Work Transition Unit in pilot schools coordinates internship programs, lectures by the companies' trainers, and/or practical training at the companies, by collaboration with local partner companies.

The Work Transition Unit will meet with local industries regularly, exchange information for monitoring their needs, develop a partnership plan with the interested companies, and put it into practice. This component aims to build the capacity of the Work Transition Unit so that it can monitor the needs of local industries autonomously, to which the Task Force as well as the JICA project team will extend support.

The pilot schools are expected to build partnerships with industries so that they will realize:

- Hands-on internships in factories so that students gain practical experience;
- On-the-job training for students based on existing know-how and materials of industries' in-house training;
- Collaboration with experts in industries (e.g. lectures in pilot schools);
- Involvement of industries through school visits by Modereya and Idara office; and
- Support in obtaining materials for practical lessons.

Table 23: Expected Roles in Activity 3-3

Organization	Expected role
Modereya Office	Provide necessary support to school principal.
Principal	Supervise the Work Transition Unit (as the person responsible for this activity).
Task Force	Continuous improvement (Kaizen) in this activity is important, too. Therefore, the Task Force will participate in the activities prepared by the Work Transition Unit.
Work Transition Unit	Organize a series of meetings with local industries in order to establish the expected partnership programs proposed above.
JICA Project Team	The capability of the Work Transition Unit towards the needs in industries may not be sufficient in the beginning. Therefore, the JICA project team liaises between local industries and the Work Transition Unit frequently until the Unit becomes capable of offering such services on its own.

Source: Prepared by JICA preparatory mission team

(4) Output 4: A New Model School that Introduces Japanese Style Education is in Operation

Company C has plans to build a technical secondary school by September 2017. This pillar is for supporting the new school introducing Japanese-style education, so that it plays the role of model pilot school.

> **4-1 Technical advice necessary for establishing a new model school that introduces Japanese style technical education is provided.**

A new technical secondary school, which is to be used as a model for introducing Japanese style technical education, is to be established under auspice of MOETE in cooperation with partner company. The JICA project team will offer advice to MOETE from the view point of Japanese-style technical education, especially school management and practical lessons, and if necessary, through occasions such as EC1.

> **4-2 The new model school selects a practical subject, based on discussions with the partner company, to be improved through model activities.**

The same activity described above in 2-1 will be conducted in the new model school, where the expected roles of concerned parties are the same as in 2-1.

> **4-3 Equipment necessary for the new model school to improve practical training of the selected subject is prepared.**

Basic equipment at minimum cost supported by JICA will be procured and installed in the new model pilot school, by referring to the ministry's standard lists and specifications.

> **4-4   The new model school develops organizational framework, including the Work Transition Unit, to manage model activities in the new model school.**

Activity 1-1 and 3-1 in the above will be conducted in the new model school. Expected roles of concerned parties are shown above in 1-1 and 3-1.

> **4-5   Training for teachers and management level staff of the new model school on improvement of school management is conducted.**

The same activity described above in 1-2 will be conducted in the new model school, where the expected roles of concerned parties are the same as in 1-2.

> **4-6   The new model school plans and implements initial activities to improve school management so as to enhance students' discipline.**

The same activity described above in 1-3 will be conducted in the new model school, where the expected roles of concerned parties are the same as in 1-3.

> **4-7   The new model school maintain improved conditions and continues activities.**

The same activity described above in 1-4 will be conducted in the new model school, where the expected roles of concerned parties are the same as in 1-4.

> **4-8   The new model school conducts effective verification on students' discipline.**

The same activity described above in 1-5 will be conducted in the new model school, where the expected roles of concerned parties are the same as in 1-5.

> **4-9   Training for teachers of the selected practical subject is conducted.**

The same activity described above in 2-2 will be conducted in the new model school, where the expected roles of concerned parties are the same as in 2-2.

> **4-10   The new model school introduces practical education to improve students' basic hard skills and soft skills.**

The same activities described above in 2-3 and 2-4 will be conducted in the new model school, where the expected roles of concerned parties are the same as in 2-3 and 2-4.

> **4-11   The Work Transition Unit of the new model school implements activities necessary for enhancing industrial cooperation (e.g. collect and record local industries' data).**

The same activity described above in 3-2 will be conducted in the new model school, where the expected roles of concerned parties are the same as in 3-2.

> **4-12   The new model school tries to introduce model practical education such as final year project work in order to become a local model for technical secondary schools.**

The new school is a model school in the region, and is expected to play a significant part as a pilot school introducing Japanese-style education, too. The industries in the region have shown high expectations for the school. Therefore, the preparatory mission team proposes to try on a few advanced activities which will not be offered at the other pilot schools. One idea is a final

year project, commonly practiced in Japanese technical high schools. The final year project is a program where students (or a group of students) will work on a project based on the theories and basic technical skills that students learned in their first and second year in high school. It is a comprehensive process where they experience setting an objective, making a plan, and implementing the project until the objective is attained. Students have to use both theories and practices in this process so that they experience something similar to what they would in a real work environment. When this learning process is performed by a group of students, we expect their soft skills to improve too.

3.4   Pre-Pilot Activities

Based on the project plan mentioned in the previous section 3.3, the pre-pilot activities have been partially implemented at three pilot schools in Port Said city; Ahmed Zwail School, El Tahrir School, and Port Said Secondary Industrial School, supported by the JICA preparatory mission team. The activities included some parts of Output 1: School management at pilot schools is improved through introducing Japanese style school management systems, Output 2: Students acquire basic hard skills and soft skills through introducing improved practical lessons at pilot schools, and Output 3: Local companies and pilot schools are cooperating with each other, as mentioned previously. This section explains the activity contents in detail. For the sake of convenience, Ahmed Zwail School is mentioned as School A, El Tahrir School as School T, and Port Said Secondary Industrial School as School P, as listed in the next table.

Table 24: School Names in This Report

Official name of the school	Name in this report hereafter
Ahmed Zwail School	School A
El Tahrir School	School T
Port Said Secondary Industrial School	School P

(1)   Output 1: School Management at Pilot Schools is Improved through Introducing Japanese Style School Management Systems

Referring to the activities in Japanese style school management system, several pilot activities were implemented for both teachers and students. These were aimed at improving students' discipline by their own motivation through improving school management. Details are as follows.

1-1   The organizational framework of the pilot schools is improved.

Activity 1-1 was implemented as per the following table.

Table 25: Pre-Pilot Activities Implemented in Activity 1-1

Activity Item	Brief summary of Implemented Activity
1. Setting up School Visions	To improve organizational framework, the school members started having discussions to set up their School Vision. The principals of schools led the teachers, and the school set up the School Vision through discussions at teachers' meetings. To aid with setting up School Visions, the school members referred to School Visions at Japanese Technical High Schools, and their processes. In the future, the School Vision at each school should be approved and activated.
2. Establishing Task Force	To prepare the organizational system, each school established a Task Force of 8–10 members. The principals of schools designated the Task Force members. The Task Force members are led by school principals, heads of each subject, management staff, and regular teachers actively engaged in the activities. The Task Force members decided the people who would oversee the activities in Table 31, and their role allotment was clarified. As a result, the framework of the system to introduce, implement and promote the pre-pilot activities was organized. The role allotment was displayed on the wall outside of the school principal's office for the visualization of the organizational framework.

Source: Prepared by JICA preparatory mission team

The role allotment for implementing activity 1-1 is as per the following table:

Table 26: The Roles in Activity 1-1

Organization	The roles in activity
MOETE	Provides necessary assistance to school principal.
Modereya Office	Provides necessary assistance to school principal.
Principal of School	Selects Task Force members who develop School Vision and adopt it through existing mechanisms such as teachers' meetings (as the person who is responsible for this activity). In addition, facilitates the Task Force meetings and teachers' meetings.
JICA Preparatory Mission Team	Provides necessary assistance to school principal.

Source: Prepared by JICA preparatory mission team

1-2 Teachers and management positions of the pilot schools are trained, based on Japanese style discipline, to improve school management.

Training at the Pilot Schools

To introduce the activities for improving school management, the JICA preparatory mission team provided training sessions to the members of pilot schools regarding the benefits and characteristics of Japanese technical high schools, as model cases for improvement. The training sessions were organized three times in September 2016, as follows:

Table 27: Contents of the Training for Improving School Management

No. of Training	Date in 2016	Target	Contents
1st	22 September	School Principals	Provided training regarding the benefits and characteristics of Japanese Technical High Schools. Provided orientation for selecting Task Force members.
2nd	26 September	School Principals Task Force	Provided training regarding the benefits and characteristics of Japanese technical high schools. Selected the activities and drafted the implementation plan.
3rd	28, 29 September	School Principals Task Force All teachers	Provided training regarding the benefits and characteristics of Japanese Technical High Schools. Explained the selected activities in the 2nd training, and decided the implementation plan of activities in each school.

Source: Prepared by JICA preparatory mission team

Study Visit Program to Japan

In addition to the training in Egypt, one member of the school management staff from each pilot school participated in a study visit to Japan. The study visit consisted of three main destinations; Japanese technical high schools, private companies, and local government. At technical high schools, the participants especially deepened their understanding of school management, practical subjects, and employment support, through direct observation of the Japanese style technical high schools.

Furthermore, to recognize the educational output of Japanese style technical high schools, the participants visited private companies where graduates from these schools are working. The participants also visited local governments, to learn about the educational administration required to support the Japanese technical high schools. Through those visits, the three participants from pilot schools observed the strong points and benefits of Japanese technical high schools, and considered if they could introduce the Japanese style system and activities to their own schools. After coming back to Egypt, the three participants shared their output with members in the Idara and Modereya offices. The information from the study visit program to Japan is as follows:

Table 28: Brief Summary of Study Visit Program to Japan for Management Staff

Period	Date	No. of participants	Note
One week	22–29 October 2016	Total 7	One school management staff member from each pilot school in Port Said, and four MOETE staff from the relevant sectors or divisions relating to project implementation management, and to the improvement and expansion of technical education in Egypt in the future.

Source: Prepared by JICA preparatory mission team

The role allotment of stakeholders for activity 1-2 is as per the following table:

Table 29: The Roles in Activity 1-2 (Training at Pilot Schools)

Organization	The roles in activity
MOETE	Provides necessary assistance to school principal.
Modereya Office	Provides necessary assistance to school principal.
Principal of School	Participates in training.
Task Force	Participates in training.
JICA Preparatory Mission Team	Organizes the training.

Source: Prepared by JICA preparatory mission team

Table 30: The Roles in Activity 1-2 (Study Visit Program to Japan)

Organization	The roles in activity
MOETE	Provides necessary administrative work for visa applications such as issuing letters for prospective participants.
Modereya Office	Provides necessary support to MOET.
JICA Preparatory Mission Team	Plans and Implements the study visit program.

Source: Prepared by JICA preparatory mission team

1-3 Pilot schools develop and implement action plans to improve student discipline in the schools.

As shown in Table 27, the principals of the pilot schools and the Task Force participated in the first and second training sessions given by the JICA preparatory mission team, regarding the benefits and characteristics of Japanese technical high schools as model cases for improvement. After the training, the schools decided the contents they would introduce and the plan for implementation, with advice from the JICA preparatory mission team. After the third training, the schools started the pre-pilot activities.

The JICA preparatory mission team explained that the teachers' meetings should be introduced first to expand communication among teachers. Then, the action plan was decided in each school. The activities were introduced starting with the ones which seemed easy to handle. The activities (actually implemented between September and December 2016) are shown in the next table.

Table 31: Pre-Pilot Activities Implemented in Activity 1-3

Activity Item	Brief summary of implemented activities
1. Teachers' meetings	Teachers' meetings, which had not been organized regularly before, were organized periodically in all pilot schools. The meeting time differed from school to school, but they were mostly held before or after School Line. All teachers were expected to participate in the meetings; however, large scale schools often only invited the heads of subjects and management staff to the meetings. Most school principals chaired the meetings, but in some cases, other management staff chaired. At the teachers' meeting, they prepared the records of the meetings and a list of participants. The meeting agenda was to solve student problems, to decide the School Visions, and to share administrative information. It was also a time for the principal to share their experience in Japan.

Figure 2: Teachers' Meeting at School T

Activity Item	Brief summary of implemented activities
2. Punctuality	All pilot schools arranged wall clocks in each classroom for regular subjects and practical subjects. Each clock has a code number and each school prepared a management list. Utilizing the management list, the teachers and the students confirmed and adjusted the clocks to the correct time periodically. In addition, the schools arranged a person in charge of ringing the bell at the start and the end of the class. The schools set up five minute breaks between classes, and the teachers and students could use the break time preparing for the next class or for moving classrooms.

The schools set up a timetable of classes in each classroom and at the entrance of schools. Furthermore, the schools recorded the names of latecomers on a list, and some school teachers informed those latecomers not to repeat their tardiness. |
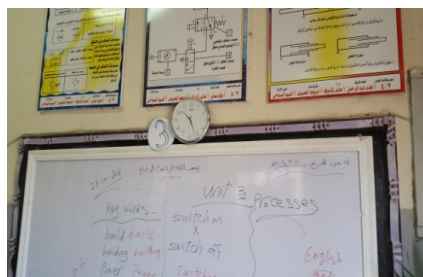

Figure 3: Wall Clock in Classroom at School P

Figure 4: Timetable at Entrance of School P

Activity Item	Brief summary of implemented activities
3. 5S	All three pilot schools started with 2S, Sort (Seiri), Set (Seiton), since it seemed difficult to start 5S at once. The schools especially organized and arranged the storage spaces; they put colored tags in red, yellow, green on the machines and equipment for practical subjects, and arranged in order. They also put name tags on each piece of machine and equipment, so that it would be easy to identify the necessary machine or equipment at a glance. The students as well as teachers joined the activity of putting name tags on each item.

Figure 5: Tagging Equipment at School A

Figure 6: 2S ("Seiri", "Seiton") by Students at School A

4. Visualization	All pilot schools introduced an information bulletin board. These boards were set up near the school gate, at the entrance of the school, or at the principals' office, depending on the structure of school. The board was already utilized to show school structure, the 5S slogan, information indicating the location of the school principal and teachers, and the role allotment of the Task Force. The classroom names and classroom codes were displayed, and a timetable of lessons was also displayed in the classroom.

Figure 7: Bulletin Board at School P

Figure 8: Task Force Roles at School A

Figure 9: School Organization Chart at School A

Figure 10: Information Board indicating Location of School Principal and Teachers at School P

Activity Item	Brief summary of implemented activities
5. Follow the rules	Safety slogans were displayed in the classroom for practical subjects. The teachers guided their students to follow the slogans. Details are mentioned in Output 2.
6. Group Activity	Student groups consisting of two to three members took turns managing the machines and equipment in the practical subject rooms. Details are mentioned in Output 2. It was observed in some schools that the student groups started cleaning activities.
7. Develop Filing System	Each school confirmed the current condition of records for; 1) teaching staff, 2) students, and 3) documents from other organizations such as MOETE or the Modereya office. Out of these three records, they improved the filing system for the teaching staff, since it was used more often than the others. They set up one file for each teacher. All the teachers obtained the same type of file, which helped organization in the storage rack. The name and ID number of teachers were shown on the spine of the file, which helped to quickly find the necessary file at a glance. The documents in the files were divided by purposes, with clear pockets, and put in different colored indexes to help find the necessary documents quickly. Further, the filing items were displayed in the storage rack to easily identify the contents 1) and 2).

Figure 11: Teachers' Files at School T

Figure 12: Storage Rack Display at School T

Source: Prepared by JICA preparatory mission team

The role allotment for Activity 1-3 is as per the following table:

Table 32: The Roles in Activity 1-3

Organization	The roles in activity
MOETE	Provide necessary support to school principal.
Modereya Office	Extend support to the principal, in case the activity requires something that the principal cannot determine on his own with regards to institutional constraints. Send a representative to the meetings with the JICA preparatory mission team in pilot schools for this project as much as possible.
Principal of School	Host meetings with Task Force and the JICA preparatory mission team for selecting the activities to be implemented (as the person responsible for implementation of the activities). Share the pilot activities among teachers and students through teachers' meetings and School Lines respectively. Brief parents if necessary.
Task Force	Participate in the meetings with the JICA preparatory mission team, and select initial activities to be implemented. Allocate the duties for each pilot activity among the Task Force members and start implementing following the action plan. Monitor teachers' implementation of the activities and propose suggestions for continuous improvement (Kaizen), in addition to reporting to the principal and the JICA preparatory mission team.
JICA Preparatory Mission Team	Take part in the meetings and propose an initial activity to the Task Force. Some materials will be offered explaining how to conduct each activity. If a school comes up with its own counter proposal, the team will offer advice from a technical perspective.

Source: Prepared by JICA preparatory mission team

1-5   Pilot Schools conduct an effective verification on student discipline

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The purpose of this activity is so that pilot schools can conduct effective verification by themselves; however, the JICA preparatory mission team conducted the verification due to limited time. The results are summarized in the next section 3.4.

(2)   Output 2: Students Acquire Basic Hard Skills and Soft Skills through Introducing Improved Practical Lessons at Pilot Schools

To improve students' acquisition of the hard and soft skills, the pre-pilot activities were implemented for practical subjects. The activities were; 1) improvement of practical lessons subject (display safety and standardize slogans of 5S), 2) instruction for teachers to guide students, and 3) development and submission for aid materials and manuals for practical lesson subjects. The activities during the pre-pilot period are described as follows:

2-1   Pilot schools select a practical subject, based on discussions with partner companies, to be improved through model activities.

The next table shows the target grade, major, model practical lesson subject for the pre-pilot activities at each pilot school.

Table 33: List of Targets for Model Practical Lesson Subjects for Activity 2-1

School	Grade	Major	Model Practical Lesson Subject
School A	2nd grade	Electrical and Electronic	Electronics and electrical
School T	1st grade	Electrical and Electronic	Electrical engineering basic
School P	1st grade	Electrical and Electronic	Electrical engineering basic

Source: Prepared by JICA preparatory mission team

During the pre-pilot period, the schools did not identify a specific subject, but selected basic skills applicable to all practical lesson subjects. For example, the current 1st grade curriculum focuses on acquiring basic skills, and common subjects applicable to other specialized subjects. Therefore, School T and School P selected the practical lesson subjects of the 1st grade. Since the 1st grade students at School A (with its dual education system) participated in the specialized practical lesson term at the partner company during the pre-pilot period, they decided on the pilot practical lesson subjects for 2nd grade students.

The target major in pilot schools is Electrics and Electronics, since the local partner company, Company A, is in this field.

Since the practical lesson subject was limited to one during the pilot period in the target grade, the one subject was selected as a model subject. The role allotment for Activity 2-1 is as follows:

Table 34: The Roles in Activity 2-1

Organization	The roles in activity
Principal of School	Hold meetings with the Task Force, practical teachers, and the JICA preparatory mission team (as the person responsible for this activity), in order to decide the pilot subject.
Task Force	Select the model practical lesson subject and its topics to aim at soft skills improvement by repeating basic practices, considering needs from companies and the current situation of school, with the JICA preparatory mission team's advice and comments to teachers for practical lessons. It is highly recommended to invite at least one practical teacher who is in charge of the pilot subject.
Practical teachers	Participate in the discussion between the Task Force and the JICA preparatory mission team, and cooperate in selecting model practical lesson topics.
JICA Preparatory Mission Team	Analyze curriculum, textbook, equipment used in the current practical lessons at pilot school. Identify possible topics that can be used to strengthen students' soft skills by practicing very basic and essential skills respectively, and advise the Task Force, and teachers for practical lesson subject.

Source: Prepared by JICA preparatory mission team

2-2	**Training for teachers of selected practical subject is conducted.**

To introduce the activity to improve practical training, the JICA preparatory mission team instructed the teachers for practical lessons through the three steps in the next table.

First, the JICA preparatory mission team organized meetings for the exchange of opinions with practical teachers in each school, and confirmed the differences between an ideal state and the current situation. Then, the JICA preparatory mission team introduced the some Japanese style activities from Japanese technical high schools to fill in the gaps. At the meetings, the JICA preparatory mission team and the teachers discussed and adjusted the Japanese style activities according to the conditions in Egypt. The ideal state was discussed among teachers before the JICA preparatory mission team introduced Japanese style activities, since the teachers must equip themselves for the activities.

Next, the JICA preparatory mission team organized the joint-orientation for the principals and practical teachers in all three pilot schools together. Again, the participants confirmed the ideal state for a technical high school and the introduced Japanese style activities as a plan to reach

the ideal state. The Japanese style activities introduced are described in the following Activity 2-3.

Lastly, the JICA preparatory mission team provided follow-up guidance to the teachers for practical lessons. The purpose of the follow-up was to answer the teachers' questions when they implemented the activities introduced in the orientation.

Table 35: Method of Practical Training Guidance to Improve Practical Training

Instruction Method	Date in 2016	Target	Meeting Style	Implemented Contents			
				Confirm ideal state (Identify their issues)	Introduce Japanese style activity as an example	Meetings for exchange opinions	Advise about unclear points
1. Meetings to exchange opinions	Late Nov.	Practical teachers	Discussion meeting	○	○	○	
2. Orientation	5 Dec.	Principal and Practical teachers	Joint-orient-action with 3 schools	○	○		
3. Follow-up guidance	Early - mid Dec.	Practical teachers	Discussion meetings				○

Source: Prepared by JICA preparatory mission team

The instruction could be conducted by the Technical Education Development Center or Modereya office; however, the JICA preparatory mission team conducted training due to limited time during the pre-pilot term. The role allotment for Activity 2-2 is as follows:

Table 36: The Roles in Activity 2-2

Organization	The roles in activity
Principal of School	As the person responsible for this activity, prepare an environment where teachers responsible for the practical training can easily start pilot activities
Task Force	Participate in all the meetings to understand the contents of pilot activities and to prepare the implementation of pilot activities.
Practical Teachers	Consider the ideal state for practical lessons and understand the contents of the pilot activities.
JICA Preparatory Mission Team	Introduce the pilot activities to improve practical lessons.

Source: Prepared by JICA preparatory mission team

2-3 Pilot schools introduce trial practical lessons to improve students' basic hard skills and soft skills through cooperation with partner companies.

As mentioned previously, the instruction was a three-step process to improve the model practical lessons.

As for soft-skill improvement during the pre-pilot activity term, the schools started with education for safety and set ("Seiton") from 5S. As for hard skills, they did not identify a specific subject, but selected basic skills applicable to all practical lesson subjects. The school guaranteed enough time for practical lessons, and introduced the activities to guide appropriate instruction. The contents of the activities are shown in the next table.

33

Table 37: Ideal State, Current Situation and Improvement Plan for Practical Lessons

Item	Ideal State	Current Situation	Improvement Plan (introducing Japanese style activities)
1. Education for safety	Both teachers and students understand the importance of safety, and behave accordingly.	Safety education is explained once at the beginning of the school year. The safety slogan is not displayed in the classrooms, so the situation could be dangerous when students use industrial tools.	1. [Display of safety slogans] - Display safety slogans such as "safety first", "Sort, Set, and Standardize", "work procedure." - Teachers remind students of attention to safe operation.
2. Usability of practical training rooms (5S)	Both teachers and students understand the importance of usability of workshop rooms (Sort, Set, and Standardize etc.) and practice daily.	The storage of industrial machines, equipment, and tools are not organized within the preparation room. The facility and equipment are not properly used.	2. [Students' managing of equipment] - Student groups with two to three members manage the machines and equipment in the storage space in the practical subject rooms. The managing group rotates every week so that all the students can take part. - The student groups keep records of the date they borrowed and returned equipment, any missing equipment, or out-of-order equipment, and report it to the teachers periodically.
3. Guarantee time for practical training	Practical training is conducted as scheduled. Sufficient practical lessons are guaranteed.	The classes are not conducted as per the original schedule; consequently, the teachers cannot complete all lessons within a school year. The practical training time is often used for filling in the tight schedule of other subjects; therefore, the school does not allocate enough time for practical lessons.	3. [Table of progress of the lessons] The teachers manage the progress of each lesson unit by using the table of weekly schedule and actual achievement.
		Teachers write a lot on the writing board; the teachers use time for writing, but not for teaching. Aid material is not properly used (e.g. the electrical circuit diagram is displayed at too high a place to be used for explanation.)	4. [Effective use of facility, equipment, and material] Increase efficiency of the lessons by using below three items effectively: 1) computer, projector 2) chart 3) demonstration with materials and models made from widely accessible materials.
4. Evaluation for practical training	To improve students' basic hard skills, the teachers instruct each student appropriately.	Teachers evaluate students with subjective views by output in each step in the procedure, and by the final product at School T and School P. The instruction to students based on the evaluation is limited. Teachers instruct all-around performance, but cannot instruct detail indicators as written in the right column.	5. [Evaluation sheet of practical training using subjective indicators] Teachers evaluate students' products by using four subjective indicators. - Time: completed within allocated time - Precision: create products at the correct size and amount - Appearance: complete appropriate style/ look of the final product - Attitude: follow the principal of safety, procedure, and usage of industrial machines, equipment, and tools.

Source: Prepared by JICA preparatory mission team

The role allotment for activity 2-3 is as follows:

Table 38: The Roles in Activity 2-3

Organization	The roles in activity
Principal	Supervise the teachers for practical lessons (as the person responsible for this activity)
Task Force	Support the teachers for practical lessons so that they can start implementing pilot activities for their practical lessons.
Practical teachers	Implement pilot practical activities.
JICA Preparatory Mission Team	Provide advice to the teachers for practical lessons according to their needs

Source: Prepared by JICA preparatory mission team

2-5   Pilot schools conduct effective verification

The purpose of this activity is so that pilot schools can conduct impact verification by themselves; however, the JICA preparatory mission team conducted the verification due to limited time. The results are summarized in the next section, 3.5.

(3)   Output 3: Local Companies and Pilot Schools are Cooperating with Each Other

The project site for the pre-pilot activities was Port Said city, which faces the Mediterranean Sea and is located at the entrance of the Suez Canal. Because of its strategic location, Free Trade Zones [5] are in operation, where various export-oriented industries such as apparel, electronics/electrics, and chemicals are located.

According to the questionnaire survey which polled 134 students from the three pilot schools about their daily habit and future aspirations after graduation, the ratios of students who are interested in; further study, job seeking and marriage are 66%, 23% and 11%, respectively. According to the telephone survey of the graduates of the three pilot schools (See Box 1), however, those who are actually studying at higher educational institutes are few, which implies that the actual ratio of job seekers is much higher than 23%. Therefore, it is significantly important to strengthen the capabilities of the Work Transition Unit (WTU).

The development stages of WTU in the three pilot schools varied before commencing the pre-pilot activities. WTU has 5 functions, that is, career guidance (GIZ), training for teachers and students (USAID), marketing survey (EU), entrepreneurship development (ILO) and recruitment (USAID) (organizations in parentheses show the international cooperation agencies in charge). In Port Said, a part of the function of recruitment (or WTU) has already been commenced by the WISE Project[6] in cooperation with USAID. As School T was chosen as a Batch 1 school for WISE, their activities are ahead of the other two pilot schools. Therefore, the cooperation scheme among the three pilot schools was established during the pre-pilot activities, in which know-how and experiences acquired by School T are shared with the other two pilot schools. The progress of the three pilot schools during the pre-pilot activities is summarized in Table 39.

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[5] There are two FTZ, that is, within the city and in the southern suburbs. In the former FTZ, around 30 apparel companies are located, including leading companies such as Lotus, the largest group company in the area with 15 factories, and Sabah with 2,200 workers. In the latter FTZ, various types of industries are located Royal for soap (Egyptian company), Petrochemical for nylon (Indian company) and chemicals for various chemical related products (Indian company)

[6] WISE (Workforce Improvement and Skills Enhancement) Project is scheduled be implemented from 1 November 2015 to 31 October 2019. It consists of five components, including recruitment as one of the components.

Table 39: Progress of Three Pilot Schools during the Pre-Pilot Activities

School	School A		School T		School P	
Type	**Dual**		**Convntional**		**Convntional**	
Items	Before	After	Before	After	Before	After
1. Establishment of WTU						
Batch in WISE (Date to be established)	Dec 2016		2016		Apr 2017	
Establishment of WTU	X	○	○	○	X	○
Office opening	X	○	○	○	X	○
Assignment of teachers	X	○	○	○	X	○
2. Database						
Student database						
Format	X	○	Partially	○	X	○
Data entry	X	Partially	Partially	○	X	Partially
Telephone survey to graduates	X	Partially	X	Partially	X	Partially
Company database						
Format	X	○	X	○	X	○
Data entry	X	Partially	X	Partially	X	Partially
3. Cooperation with companies						
Contact to companies	2 companies	2 companies	2 companies	4 companies	1 company	3 companies
Participation of internship/dual program by students	○	○	X	○	X	X
Company briefing session by graduates	X	X	X	Partially	X	X
Participation in job fair	○	○	○	○	○	○

Source: Prepared by JICA preparatory mission team

Responsibilities of relevant parties related to Output 3 are summarized in Table 40.

Table 40: The Roles in Output 3

Organization	The roles in activity
MOETE	Provide necessary support to school principals.
Modereya	Provide necessary support to school principals.
Principal	Establish WTU and act as the main person responsible.
Task Force	Participate in selecting WTU members and preparing implementation plan to support WTU.
JICA Preparatory Mission Team	Provide necessary support to school principals.

Source: Prepared by JICA preparatory mission team

Activities implemented during the pre-pilot period were summarized for each pilot school as below.

3-1   Pilot schools establish Work Transition Unit.

Two teachers had been assigned to the WTU for School T as part of the WISE Project before the pre-pilot activities commenced. At the beginning of the pre-pilot activities, two Task Force members were added as new WTU members, resulting in four WTU members. The individual roles of the four members are; 1) establishment and maintenance of student database, 2) establishment and maintenance of companies' database and identification of companies, 3) Promotion and participation in recruitment events implemented by government agencies and companies, and 4) development of training materials for entrepreneurship and further study. The WTU office has already been set up. The activities implemented so far include; 1) to provide students who failed in their recruitment activities with consultation and training on CV writing

and company interviews, 2) to visit companies, 3) to invite graduates to be briefed by companies on their work conditions, and 4) to contact to companies through facebook.

School A was chosen as WISE's Batch 2-school and established WTU in December 2016, based on the WISE schedule. Four teachers were assigned and activities started with the help of School T. School P was chosen as WISE's Batch 3-school and is planning to establish WTU in April 2017, based on the WISE schedule. Due to the pre-pilot activities of the JICA preparatory mission team, however, School P established WTU in December 2016. Four teachers were assigned and activities have started with the help of School T. A series of meetings among the three pilot schools were held in December 2016 and the cooperation scheme was established among them.

3-2   The Work Transition Unit in pilot schools conducts activities necessary for improving employment rates (e.g. to collect and record local industries' data) based on Japanese style career guidance.

Student Database

School T had partially developed a student database. The original database included name, nationality, religion, status (pass or fail), ID number, birth date, age as of the next 1 October, birth place, department, address, telephone number (mobile phone is acceptable) and profession of parents. The database for graduates in 2016 was completed in this format. Through discussions with the JICA preparatory mission team, it was decided to upgrade the original database by adding information of academic results, learning attitude, daily behavior, target company to be recruited by, expected salary level, willingness for further study and willingness of marriage. WTU is trying to complete the students' database in the new format for graduates in 2016 and the current students of all grades.

School A and School P started the same activities, following School T.

Company Database

Shortly after the pre-pilot activities of WTU commenced, School T announced information on job offers from two companies (Company D and E) on the notice bulletin board. 20 students were then employed by Company D and started working the night shift. In addition, 9 students are currently under training for the next incoming employees' group. Furthermore, 20 students from the apparel department joined the training program prior to employment at Company F, an apparel company, from 5 December 2016. However, this is still pending based on the connection with the company and the principal, and therefore WTU should foster and institutionalize this relationship. In addition, the job-opening information sheet was developed by WTU, referring to the same sheet used in Japan (see Appendix 3). This can be considered a company database by collecting information about various companies.

As School A has been operating in the dual system, they have already developed linkages with the Company A for the electronics/electrics department and several apparel companies for the apparel department. Since there is a willingness to diversify recipient companies, School A is eager to establish WTU and strengthen capacities by learning know-how through the experiences of School T.

School P has a linkage with Company D, but the relationship is personal. Since there is a willingness to have more recipient companies, School P is eager to establish WTU and strengthen capacities by learning know-how through the experiences of School T.

Box 1 Telephone Survey to Graduates

The telephone survey of graduates this year was conducted in November and December 2016 in order to understand the reality of their career options. As Port Said is an industrial area with a relatively wide range of companies, the job hunting ratio seems quite high compared to the national average of 2.8%.

Table 41: Results of Telephone Survey to Graduates

Technical school	A School		T School		P School	
Survey department	Aparrel		Electronics/electrics		Electronics/electrics/IT	
	(graduate)	(%)	(graduate)	(%)	(graduate)	(%)
Working	4	66.7%	8	32.0%	9	90.0%
Studing at higher institute	0	0.0%	4	16.0%	0	0.0%
Marradge including preparation stage	2	33.3%	3	12.0%	1	10.0%
Nothing to do	0	0.0%	8	32.0%	0	0.0%
Repeating at the same technical school	0	0.0%	2	8.0%	0	0.0%
Total	6	100.0%	25	100.0%	10	100.0%

Source: Prepared by JICA preparatory mission team

3-3   The Work Transition Unit in pilot schools coordinates internship programs, lectures bythe companies' trainers, and/or practical training at the companies, by collaboration with local partner companies

Linkage with Companies

School T established linkages with Company D and Company E during the pre-pilot period. WTU of School T is in the process of further strengthening the linkages with these companies, as well as expanding linkages with other companies.

As School A has been operating in the dual system, they have already established linkages with companies, some of which contributed to building workshops. School A is planning to further diversify its recipient companies.

School P only has a linkage with Company D and therefore is eager to identify additional recipient companies.

A joint job fair is held with the support of the Ministry of Industry and ILO in February every year. 18 companies in the manufacturing and service sectors participated in the joint job fair last year. In 2013, the job fair had grown to 40 companies with 1,600 job offers. As involvement of WTUs in the planning stage of these job fairs makes job matching more efficient, an institutional setting integrating all parties concerned is advisable for future joint job fairs.

Lectures by Company Staff

As School A is a dual system School, Company D has been providing School A students with lectures and practical training on a regular basis. Both School T and P are conventional schools and therefore, these activities have been limited so far. However, School P had a 21-day practical training course for wire harnessing by Company D's staff in April 2016. School P is willing to continue this kind of practical training as well as soft skill training.

Identification of Recipient Companies for Internship and Practical Lessons for Conventional Technical School Students

School T developed linkages with Company D and Sabah during the pre-pilot period, by which 20 students for night-shift and 20 students for paid practical lessons were recruited.

As School A is a dual system school, practical lessons have been implemented for years.

School P has been implementing the survey of Grade 3 students to confirm willingness to work prior to their graduation. School P arranges with Company D so that the job seekers have opportunities to have 1-month practical lessons at Company D. In the case that the students are willing to continue to work at Company D after graduation, they can apply for jobs.

3.5　Effective Verification during Pre-Pilot Term

The JICA preparatory mission team conducted effective verification during the pre-pilot term. The future JICA project is aimed at expanding students' employability through acquiring necessary skills that the companies expect. Therefore, the effective verification was targeted at the items directly related to companies' expectations. Details are described in the following paragraph. The verification measurement was led by the JICA preparatory mission team, to obtain suggestions for instructing the Task Force.

(1)　Output 1: School Management at Pilot Schools is Improved through Introducing Japanese Style School Management Systems

The aim of Output 1 is to improve the students' discipline, which is one of the most important abilities that many companies expect from graduates. In order to improve discipline, the JICA preparatory mission team implemented many Kaizen activities to enhance the school management by introducing Japanese style school management systems. Hence, the JICA preparatory mission team verified the effectiveness of Kaizen activities by assessing how the following different disciplines have been improved among students.

**Table 42: Method for Obtaining Data for Effect Verification
(Improving the Discipline)**

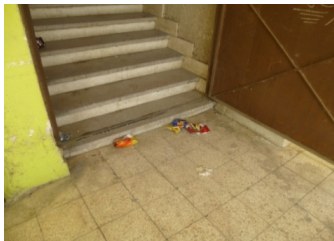| Criteria	Verification items	Period
Punctuality	1) Record the time before the last students come into the classroom after the 15 minute break. 2) Conduct interview surveys with teachers and students.	Early and late December 2016
Follow the rules	Conduct interview surveys with teachers and students on following the safety rules in a workshop.	Late December 2016
Standardize ("Seiketsu")	1) Compare areas by taking pictures before and after the activities. 2) Conduct interview surveys with teachers and students.	Early October and late December 2016
Sort ("Seiri") and Set in order ("Seiton") (Filing system)	1) Count the number of folder labels and cabinet labels for document files. 2) Count the number of cupboard labels for tools and equipment in a workshop storage room. 3) Conduct interview surveys with teachers and students.	Early October and late December 2016

Source: Prepared by JICA preparatory mission team

The following table shows the results of the verification. The JICA preparatory mission team attempted to look at how both students' and teachers' various disciplines (punctuality, follow the rules, standardize, and sort and set in order) have improved. When the JICA preparatory mission team subjectively identifies a certain discipline has dramatically improved with statistical data, it shows ◎ on the following table. When the JICA preparatory mission team finds little progress, it shows ○, and if there is almost no changes, △ is marked on the

following table. The target groups of this effective verification are both teachers and students. This is mainly because it is important that teachers be role models as disciplined professional workers in order for students to see the necessity of doing so.

The verification results of Output 1 during the pre-pilot period are summarized in the following table.

Table 43: Verification Results (Improving the Discipline)

Criteria	Verification items	Effec-tiveness	Before pre-pilot activities (Early October 2016)	After pre-pilot activities (Late December 2016)
Punctuality	Records the time the last students enter the classroom after the 15 minute break.[7]	◎	School A: Teacher 0 min, students 4 min[8] School T: Teacher 1 min, students 11 min[9] School P: Teacher 0 min, students 6 min[10] *Early December 2016[11]	School A: Teacher 0 min, students 1 min[12] School T: Teacher 0 min, students 1 min[13] School P: Teacher 0 min, students 2 min[14]
	Conduct interview surveys	◎		The number of students coming late has decreased. Both teachers and students became punctual.
Follow the rules	Conduct interview surveys on safety rules	○		More attention is paid to safety rules than before.
Standardize (Seiketsu)	Compare the same area before and after the activities	◎		
	Conduct interview surveys	◎		The amount of garbage on the floor decreased. We want to keep the school clean.

Figure 13: 1st Floor Outside (School T)

Figure 14: 1st Floor Outside (School T)

Figure 15: 1st Floor Inside the Building (School T)

Figure 16: 1st Floor Inside the Building (School T)

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[7] Grade and a subject were randomly selected.

[8] Conducted on 30th December 2016, with 1st grade, theoretical class for electrical and electronics

[9] Conducted on 1st December 2016, with 1st grade, Arabic

[10] Conducted on 7th December 2016, with 3rd grade, Religions *After the 5 min break

[11] Conducted early December right after all the clocks were distributed for all classrooms

[12] Conducted on 18th December 2016, with 2nd grade, practical lesson for electrical and electronics

[13] Conducted on 19th December 201, with 1st grade, practical lesson for computer science

[14] Conducted on 20th December 2016, with 2nd grade, practical lesson for electrical and electronics

Criteria	Verification items	Effec-tiveness	Before pre-pilot activities (Early October 2016)	After pre-pilot activities (Late December 2016)
Sort ("Seiri") and Set in order ("Seiton") (Filing system)	Count the number of folder labels and cabinet labels for document files.	◎	School A: 8 School T: 0 School P :1 **Figure 17: Cupboard for Teacher's Documents (School T)**	School A: 31 School T :112 School P :72 **Figure 18: Cupboard for Teacher's Documents (School T)**
	Count the number of cupboard labels for tools and equipment in practical lesson storage rooms.	◎	School A: 0 School T: 0 School P : 0 **Figure 19: Practical Lessons Storage Room (School T) (Before Sorting)** **Figure 21: Practical Lessons Storage Room (School A) (Before Labeling)**	School A: 51 School T: 338 School P : 30 **Figure 20: Practical Lessons Storage Room (School T) (After Sorting)** **Figure 22: Practical Lessons Storage Room (School A) (After Labeling)**
	Conduct interview surveys	◎		Reduced the time searching for files We have also tried sorting at home

Source: Prepared by JICA preparatory mission team

The following section explains in detail about the verification results mentioned in the above table.

<u>Punctuality</u>

By installing wall clocks, displaying timetables containing a clear indication of the start and end time of lessons in each classroom, implementing 5-minute regular breaks after every lesson, and starting a bell system at school, there has been a change in both teachers' and students' attitude toward punctuality. The following comments are from teachers and students about time management where the changes in their attitude and behavior can be found.

Teachers

- Both teachers and students became more punctual than before (School A).
- Before the activities, students usually came into the classroom after they heard a bell. On the other hand, after the activities started, many students tend to come into the classroom before the class starts by checking the time via the wall clock (School T).
- The number of students coming late to school has decreased (School T).
- Before the activities, there were many students who arrived more than 15 minutes late to the classroom. However, after the activities, all students arrive to the classroom within only 2–3 minutes (School P).

Students

- I am now paying more attention to the time than before (School P).
- After wall clocks were installed in each classroom, I usually check the time before taking any action at school (School T).

We can also see these changes in their behavior and attitude toward punctuality with the quantitative data. When comparing early December and late December, it took only 1 or 2 minutes before the last students arrived to the classroom after the 15 minute break in late December, while in early December when all the clocks were ready in every classroom, it took more time in all schools; particularly, it took 11 minutes in School P.

<u>Follow the Rules</u>

As one of the activities for Output 2, the JICA preparatory mission team introduced safety posters in practical lesson rooms.

In some schools, students have also joined in making these posters with teachers, which can be a good opportunity for students to learn the importance of safety rules. Before they started displaying safety posters in practical lesson rooms, they usually taught safety issues only at the beginning of the year with only a textbook. However, through utilizing safety posters which everyone can easily see every time in a classroom, it seems teachers and students began paying more attention to the safety rules. This can also be clarified by the following comments from teachers and students.

Teachers

- Because students also got involved in making safety posters, this offered a good opportunity to learn about the safety rules, students are paying more attention to following the safety rules than before (School T).
- Both teachers and students respect the safety rules more than before as the safety posters can be easily seen at any time in a practical lesson room (School T).

Students

- I pay more attention to the safety rules with posters (School T).
- I became more aware of the importance of respecting safety rules than before (School T).

Standardize ("Seiketsu")

As the photos in the table above show, the amount of garbage on the floor in the schools has been dramatically decreased. One of the reasons for this is that all pilot schools started cleaning and picking up trash activities by students. In addition to this, pilot schools started displaying posters to explain 5S activities, and teachers also explain 5S methodology to students. These activities help teachers and students to change their mindset for cleanliness and standardization. The following are the comments from teachers and students.

Teachers

- The amount of garbage on the floor has been decreased. Teachers can say that students' mindset toward cleanliness and standardization has changed after starting cleaning activities at school (School P and T).

Students

- I want to keep the school clean. I also want to study in a comfortable condition at school (School T).

Sort ("Seiri") and Set in order ("Seiton") (Filing System)

After installing a filing system for teacher's documents, all documents were made accessible to anyone by sorting them and keeping them in files. Similar to this, the JICA preparatory mission team also introduced sorting and order methodologies for maintaining tools and equipment in storage rooms for practical lessons. In some pilot schools, students were also participating when teachers began sorting and ordering approaches with the teacher documents and the storage rooms for practical lessons. This can also help students learn how to keep documents, tools, and equipment in good order, in good condition and stored correctly. The following comments also show the changes in their attitude toward sorting and ordering.

Teachers

- By sorting and maintaining order, we can save significant time and can decrease unnecessary burdens when searching for documents, tools and equipment. I have also tried the same approach to the cupboard in my home (School T).
- Before installing a filing system, teachers usually needed to ask around for who is in charge of controlling the particular documents when we needed to find them. After installing a filing system, there is no need to ask somebody. Because anyone can find the necessary documents as all the documents are arranged in the same standardized way (School A).

Students

- We save time finding the tools after sorting and maintaining order of our tools in the storage rooms for practical lessons. This was very helpful, I will try to do sorting and keeping order at my home (School T).

(2)   Output 2: Students Acquire Basic Hard Skills and Soft Skills through Introducing Improved Practical Lessons at Pilot Schools

The main purpose of Output 2 is to have students equipped with basic hard skills and soft skills through continuously improving practical lessons in the pilot schools. However, some of the approaches that we have introduced at pilot schools were not implemented quickly during the pre-pilot period. The following sections explain the verification results for the approach that has already been implemented during the pre-pilot period. Besides this, for the approaches that have not yet been implemented at the pilot schools, this section also attempts to find out the challenges and barriers that pilot schools have been facing prior to starting these approaches.

The following table shows the approaches that the project introduced to pilot schools and the progress for each approach during the pilot period.

Table 44: Introduced Approaches and Their Progress

Purpose	Approaches	Progress (As of 18 December 2016)
Safety education	1. Safety posters	Implemented
5S methodology	2. Daily tool maintenance by students	Not yet
Securing enough practical lessons	3. Progress chart	Not yet
	4. Maximum resource use in a classroom	Not yet
Evaluation for practical lessons	5. Evaluation sheet with four criteria	Implemented at some schools

Source: Prepared by JICA preparatory mission team

Safety Posters

As explained in the table above, the only approach which was implemented during the pre-pilot period was safety posters. First, the following table shows how to verify the effect of safety posters in a pre-pilot period.

**Table 45: Method for Obtaining Data for Effect Verification
(Improving both Soft Skills and Basic Hard Skills)**

Approaches	Verification items	Period
Safety posters	1) The number of safety posters in a practical lesson room 2) Conduct interview surveys with teachers and students.	Early October and Late December 2016

Source: Prepared by JICA preparatory mission team

The following table shows the verification results.

Table 46: Verification Results (Improving both Soft Skills and Basic Hard Skills)

Purpose	Verification items	Before activities (Early October 2016)	After activities (Late December 2016)
Safety education	The number of safety posters in practical lesson rooms	Almost none at three pilot schools	School A: 4 posters School T : 9 posters School P : 7 posters

Figure 23: An Example of a Safety Poster "Switch off After Use." (School T)

	Conduct interview surveys with teachers and students.		✓ We began paying more attention to the safety rules than before.

Source: Prepared by JICA preparatory mission team

As explained in the previous section, in some schools, students have also joined in making these posters with teachers, which can be a good opportunity for students to learn the importance of safety rules. As we can see from the following interview results from teachers and students, student participation in creating posters contributes to enhancing their clear understanding of safety rules.

Teachers

- Because students also got involved in making safety posters, this offered a good opportunity to learn about the safety rules, students are paying more attention to following the safety rules than before (School T).
- Both teachers and students respect the safety rules more than before as the safety posters can be easily seen at any time in the practical lesson room (School T).

Students

- I pay more attention to the safety rules with posters (School T).
- I became aware of the importance of respecting safety rules than before (School T).

Other Approaches

While the safety posters described above has been implemented rather easily at all pilot schools, there has been some difficulties and challenges when starting the other four approaches at each pilot school. The following table explains some of the challenges and barriers that can be found at each pilot school when trying to implement each approach during the pre-pilot period.

Table 47: Challenges and Barriers when Pilot Schools Implement Other Four Approaches (Improving both Soft Skills and Basic Hard Skills)

Purpose	Approaches	Challenges and barriers (As of 20 December 2016)
5S methodology	2. Daily tool maintenance by students	• Because it is the end of the first semester, they do not have any more practical lessons where students use tools and equipment. Thus, this approach is not urgently needed. • Teachers are thinking of starting this approach before the next semester begins. • The particular steps to start daily tool maintenance by students were not clearly explained in the orientation.
Securing enough practical lessons	3. Progress chart	• Because it is the end of the first semester, they do not have any more practical lessons which teachers need to make a plan for. Thus, this approach is not urgently needed. • Teachers are thinking of starting this approach before the next semester begins. • Because a lecture plan is usually provided by Modereya, teachers were confused about using two types of progress charts, one from Modereya and one from JICA.
	4. Maximum resource use in a classroom	• There is a shortage of resources (some schools do not have data show, smartboard, etc.). • The purpose of this approach was not fully understood by teachers. • A demonstration to start this approach was needed by teachers. Otherwise, it is too difficult for teachers to understand the steps.
Evaluation for practical lessons	5. Evaluation sheet with four criteria	• Because it is the end of the first semester, they do not have any more practical lessons where teachers need to evaluate students' work. Thus, this approach is not urgently needed. • Teachers are thinking of preparing for this approach before the next semester begins. • Because it is just before the exam period, teachers are too busy to spend their time to do additional work. • Teachers prefer using the existing evaluation sheets as they are used to them. • There are some criteria on the evaluation sheet that are not relevant to some training topics.

Source: Prepared by JICA preparatory mission team

As can be seen in the table above, one of the main challenges for practical teachers to implement these four new approaches was that it was not the right time to start. Because the JICA preparatory mission team attempted to introduce all the activities one by one from Output 1 in order to avoid any confusion among teachers in pilot schools, it was right before the exam period and end of the semester when the JICA preparatory mission team started introducing the Japanese approaches to improve their practical lessons to practical teachers. At that time, there were only a few practical lessons or no practical lessons left in the semester to allow these four approaches to be effective. In addition, some practical teachers told us that the purpose and the particular steps to start the approaches were not made clear to them. Because of these reasons, the four approaches mentioned in the table above were not implemented quickly during the pre-pilot period.

In addition to these reasons, there was also another critical reason for the delay in their implementation. It was the implementation structure when the project attempted to carry out these Japanese approaches at each pilot school. When the JICA preparatory mission team introduced the Japanese approaches regarding practical lessons improvement as for Output 2, basically we explained the purpose and the methods directly to practical teachers, sometimes without principals' attendance. Besides, no clear action plan was made by the team. On the other hand, when the JICA preparatory mission team introduced the Kaizen activities to each school as Output 1, we started our activities with the Task Force members that are led by principals. Also, the JICA preparatory mission team tried to make a plan for each activity and allocate the duties for each teacher very clearly. These were the main factors that Output 1 has been implemented with shorter period than Output 2. Hence, this lack of leadership by a group or principals, as well as the lack of clear schedule caused the delay in implementation, and confusion among practical teachers when they started new approaches at school.

It is very important for the future JICA project to be aware of these lessons that we have learned during the pre-pilot period.

(3) Output 3 : Local Companies and Pilot Schools are Cooperating with Each Other

As stated in the previous section, the objective of the project is to increase the job securing ratio of graduates from technical secondary schools through acquiring skills required by companies. As for Output 3, a level of understanding of principals and teachers in pilot schools is verified in the implementation processes of establishment of WTU, development of the database and establishment of linkage with companies.

The verification results of Output 3 during the pre-pilot period are summarized in Table 48.

Table 48: Verification Results (WTU)

Activity	Verification item	Before pre-pilot activities (Early November 2016)	After pre-pilot activities (Late December 2016)
Establishment of WTU	Assignment of teachers in charge	2 teachers had been assigned at School T, a WISE school.	Three schools assigned 4 teachers and set-up WTU Offices.
Development of Database	Development of Student database	Database had been partially developed at School T, a WISE school.	A new format with additional items was developed and three schools started entering data, although not yet completed.
	Development of company database	Nothing	A format was developed and three schools started using.
Linkage with Companies	Implementation of company visit	Only School A has linkage, which is a Dual School.	School T, School A and School P visited 4, 2 and 3 companies respectively.

Source: Prepared by JICA preparatory mission team

The conditions to further strengthen linkage between companies and pilot schools became better after establishing WTU at the three pilot schools. Although the level of activities varies among pilot schools, all of the pilot schools have been gradually expanding their collaborative activities with companies. Principals and WTU members visited companies and had opportunities to discuss with top management in terms of their human resource needs; through which they understood the importance of WTU and the significance of its activities, and became confident to expand activities. By observing that WTU members started entering data into the Student

database and making appointments with other companies, it is considered that their motivation has been improved. Furthermore, it can be expected that the productivity of WTUs will continue to improve, since the cooperation scheme among WTUs of three pilot schools was established and the database format for students and companies was standardized.

As it is sometimes observed that the levels of understanding and motivation are different among individuals, it is crucial for the principal to choose the most appropriate and enthusiastic teachers as WTU members.

3.6   Lessons Learned and Recommendations

(1)   Lessons Learned

Lessons learned from pre-pilot activities are listed below.

Output 1: School management at pilot schools is improved through introducing Japanese style school management systems

- There are differences among the three pilot schools in terms of implementation speed, sustainability of activities, participation and the level of understanding towards the purpose of the activities among teachers. The table below compares the three schools with the four criteria mentioned above.

Table 49: Comparison between Three Schools with Their Kaizen Activities

School name	Implementation speed	Sustainability of activities	Participation of teachers	Level of understanding of the activity purpose
School A	○	△ Clocks are not well maintained. Bulletin board is not used.	○	△ Teachers in the non-targeted department do not know anything about the activities.
School T	◎ Very quick with principals' initiative	◎ Clear division of labor among teachers.	◎ Teachers who are not in Task Force are also participating many activities.	◎ Teachers in the non-targeted department also know very well about the activity purpose.
School P	◎ Very quick	◎Students are participating in many activities.	○	○

Source: Prepared by JICA preparatory mission team

◎ : Very good

○ : Average

△ : Poor

- As described in the table above, in school T, not only Task Force members but also other teachers understand clearly about the purpose of Kaizen activities. One of the primary reasons for this is because the principal of school T has good leadership. For example, the principal in school T understands clearly and correctly about the purpose of Kaizen activities as well as the importance of Kaizen activities for students. He also tries to convey this understanding as many times as possible with other teachers, for example, at teachers' meetings in the morning. With this effective communication among teachers and his leadership, the number of teachers who are participating in the

Kaizen activities at school T is the highest among the three schools. Furthermore, only at school T did teachers create many new Kaizen activities by themselves.

- There were some clocks of low quality which needed to be repaired several times and required more batteries to be changed. It is preferable for pilot activities to prepare quality wall clocks.

Output 2: Students acquire basic hard skills and soft skills through introducing improved practical lessons at pilot schools

- Some approaches were not implemented quickly during the pre-pilot period as the purpose and particular procedures to start the activities were not made clear to practical teachers; this is mainly because there was a lack of leadership by a group, as well as lack of a clear schedule. This is probably because Output 2 was implemented by practical teachers while Output 1, which was implemented smoothly, was handled by principals.

- When introducing how to make safety posters, the JICA preparatory mission team advised teachers to search and refer to applicable pictures on the internet. However, without explicit instruction on how to search the pictures on the internet, it might lead to them making confusing posters or ones in which the purpose is not clear.

- Some approaches had small conflicts with the existing system. For example, some teachers were confused with the new evaluation sheet as they have been using a different evaluation sheet for a long time. It is very crucial for the JICA project team to clearly understand the current situation and also identify any duplicated points and/or different points between the current system and the introduced approaches.

Output 3: Local companies and pilot schools are cooperating with each other

- Modereya is involved in the WISE project which includes recruitment activities and this lead to some confusion within Modereya and the pilot schools. The common understanding that the JICA preparatory mission team supports WISE activities by applying Kaizen approaches should have been shared among all relevant parties at the onset of the JICA preparatory mission.

- According to the CEO of an apparel company, their most serious business constraint is a shortage of workers, in particular young female workers, who tend to be less motivated to work outside. This is because of the traditional way of thinking in this region. Schools together with companies should develop an institutional setting which provides parents and students with periodical opportunities to share information on actual work conditions and the environment at factories.

(2)   Recommendations

Recommendations based on the above-mentioned lessons learned are listed for the next phase of the technical cooperation project:

Output 1: School management at pilot schools is improved through introducing Japanese style school management systems

- It is very important for the JICA project to make sure every counterpart clearly understands the purpose of the activities. Otherwise, it is very hard to expect sustainability in the activities.

- In order to achieve the above, it is necessary to introduce the purpose not only through an interpreter but also with a well-developed training module. Developing a training module is highly recommended for JICA technical cooperation project.

Output 2: Students acquire basic hard skills and soft skills through introducing improved practical lessons at pilot schools

- Same as the recommendation for Output 1, it is very important for the JICA project to make sure every counterpart clearly understands the purpose of the activities. It is also necessary to explain the purpose repeatedly and as many times as possible to reinforce it.

- When introducing new approaches, it is necessary to show the particular steps and examples before starting implementation.

- It is also essential for the JICA project team to clearly understand the current situation and also identify any duplicated points and/or different points between the current system and the new approaches.

Output 3: Local companies and pilot schools are cooperating with each other

- The comprehensive institutional development including both the government and private sectors is essential for WTU to have a wide range of support.

- Adopting a recommendation letter system is encouraged, which is commonly used in Japan. A recommendation letter is issued by his/her school to a company to which the student applies. The recommendation letter includes not only academic records but also learning attitude, daily behavior, participation in Kaizen activities and so on. This makes students' motivation higher in their school lives. From the viewpoint of the school, this might make it easier to discipline students.

- The survey of Grade 3 students to confirm willingness to work is done just before their graduation and subsequently students have a gap period after their graduation. Therefore, the survey should be done at the beginning of Grade 3 so that students have enough time to seek jobs and they can be employed immediately upon graduation. This kind of system should be institutionalized in all schools.

- There seems to be many cases that parents do not allow female students to work in companies after graduation. For those students, there are needs to strengthen their entrepreneurship training to start up small or micro companies. It is useful if those students learn basic business knowledge such as profit-and-loss statements and break-even point analysis. This contributes to women's empowerment.

Appendices

Appendix 1: Project Design Matrix (PDM)

Project name: The Project for Enhancement of Technical Secondary Education

Duration：Approximately 4 years from the date when the first Japanese expert(s) for the Project arrives in Egypt, Target Group: Technical secondary schools

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal The model activities for technical secondary schools that introduce Japanese style technical education are disseminated in Egypt.	· The number of technical secondary schools that have introduced the model activities. · Satisfaction of industries with graduates from the technical secondary schools that have introduced the model activities	Survey done by the project	· MOETE continues to work towards enhancing and maintaining motivation of pilot school principals to improve current conditions at schools. · The socioeconomic conditions do not worsen. · Educational policies in the technical education sector do not change. · Economic performance and recruitment plans in local partner companies do not worsen drastically. · A new technical secondary school, which is to be used as a model for introducing Japanese style technical education, is to be established under auspice of MOETE in cooperation with industry.
Project Purpose The model activities for technical secondary schools that introduce Japanese style technical education are established at pilot schools and a new model school[1].	· Satisfaction of students with the classes given at the technical secondary schools that have introduced the model activities (e.g. whether the class is easy-to-follow, whether the class is punctually given, and etc.) · The number of graduates who pursued and obtained a job at the technical secondary schools that have introduced the model activities · The number of action plans for enhancing model activities developed by the technical secondary schools that have introduced the model activities	Records in the pilot schools Survey done by the project	
Outputs 1. School management at pilot schools is improved through introducing Japanese style school management systems.	1-1 Activities conducted for improving school management (e.g. The frequency of teachers' meetings, information visualization, and development of filing systems) 1-2 Improvement of teachers' and students' punctuality at pilot classes 1-3 A guideline on school management of each pilot school	Records in the pilot schools Survey done by the project	
2. Students acquire basic hard skills[2] and soft skills[3] through introducing improved practical lessons at pilot schools.	2-3 Improvement of students' basic hard skills 2-2 Improvement of students' soft skills	Survey done by the project	
3. Local companies and pilot schools are cooperating with each other.	3-1 The record of graduates' placement 3-2 The record of recruitment information from local industries at the pilot schools 3-3 The number of training and internship programs in partner companies, and study visits to local companies	Records in the pilot schools Records in the pilot schools Records in the pilot schools	
4. A new model school that introduces Japanese style technical education is in operation.	4-1 Japanese style school management of the new model schools	Survey done by the project	

1. Model activities are conducted at pilot schools, which are already operated, and at a new model school that is to be prepared by the Egyptian side.
2. Hard skills is defined by the Project as specific and teachable abilities, including: 1) Basic skills (single basic skills, learnt through basic practical training); 2) High-level skills (ability to utilize high-level equipment); and 3) Applied skills (ability to make a product by oneself, utilizing a broad set of knowledge, skills, and etc.).
3. Soft skills is defined by the Project as interpersonal skills, such as work attitudes to improve the precision of the job, knowledge of safety, team work, 5S (sort, set in order, shine, standardize, and sustain), and etc.

Activities	**Inputs**	.

1-1   The organizational framework of the pilot schools is improved.
1-2   Teachers and management positions of the pilot schools are trained, based on Japanese style discipline, to improve school management.
1-3   Pilot schools develop and implement action plans to improve student discipline in the school.
1-4   Pilot schools maintain and continue the improved conditions based on the action plan.
1-5   Pilot schools conduct effective verification on student discipline.
1-6   Each pilot school develops a guideline to introduce necessary activities for improving student discipline based on the effect verification results.
2-1   Pilot schools select a practical subject, based on discussions with partner companies, to be improved through model activities.
2-2   Training for teachers of the selected practical subject is conducted.
2-3   Pilot schools introduce trial practical education to improve students' basic hard skills and soft skills through cooperation with partner companies.
2-4   Pilot schools conduct improved practical lessons.
2-5   Pilot schools conduct effective verification.
3-1   Pilot schools establish the Work Transition Unit
3-2   The Work Transition Unit in pilot schools conducts activities necessary for improving employment rates (e.g. to collect and record local industries' data) based on Japanese style career guidance.
3-3   The Work Transition Unit in pilot schools coordinates internship programs, lectures by the companies' trainers, and/or practical training at the companies, by collaboration with local partner companies.
4-1   Technical advice necessary for establishing a new model school that introduces Japanese style technical education is provided.
4-2   The new model school selects a practical subject, based on discussions with the partner company, to be improved through model activities.
4-3   Equipment necessary for the new model school to improve practical training of the selected subject is prepared.
4-4   The new model school develops organizational framework, including the Work Transition Unit, to manage model activities in the new model school.
4-5   Training for teaching and management level staff, of the new model school on improvement of school management is conducted.
4-6   The new model school plans and implements initial activities to improve school management so as to enhance students' discipline.
4-7   The new model school maintain improved conditions and continues activities
4-8   The new model school conducts effective verification on students' discipline.
4-9   Training for teachers of the selected practical subject is conducted.
4-10 The new model school introduces practical education to improve students' basic hard skills and soft skills.
4-11 The Work Transition Unit of the new model school implements activities necessary for enhancing industrial cooperation (e.g. to collect and record local industries' data)
4-12 The new model school tries to introduce model practical education such as final year project work in order to become a local model for technical secondary schools.
	Inputs
	1. Japanese side
	✓ Expert
	  ➤ Co-director
	  ➤ Chief Advisor
	  ➤ School Management
	  ➤ School Industry Partnership
	  ➤ Training Planning Management and Coordination
	  ➤ Industrial Training (tentatively Electrical & Electronics, and Mechanical）
	✓ Local staff
	  ➤ Interpreter
	  ➤ Local administrative coordinator
	✓ Training in Japan
	✓ Teaching and learning materials for the pilot schools
	✓ Minimum equipment necessary for conducting the model activities at the pilot department of the new model school (equipment on the list of MOETE standard equipment)
	✓ Other essential operations for implementing the project
	
	2. Egyptian side
	✓ Counterpart Personnel
	  ➤ Project Director (Director of PMU)
	  ➤ Project Coordinator
	  ➤ Director of Technical Education in pilot Idara and Modereya Offices
	  ➤ Other administrative staff
	  ➤ Drivers
	✓ Facilities
	  ➤ Office space and necessary facilities for JICA experts
	✓ Training materials for the pilot schools
	✓ Office and stationery supplies materials for the pilot schools
	✓ Trainings costs (travel allowance of C/Ps and teachers, venue fee, etc.)
	✓ Incentives for the pilot school teachers
	✓ Other essential costs	

Appendix 2: Plan of Operation

Project name: The Project for Enhancement of Technical Secondary Education

No	Activities	2017			2018				2019				2020			
		2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
	Project Period															
	School semester	2 E		1 Seme E	2 Seme E			1 Seme E	2 Seme E			1 Seme E	2 Seme E			1 Seme

Output 1. School management at pilot schools is improved by implementing Japanese style school management systems.

No	Activities
1-1	The organizational framework of the pilot schools is improved.
1-2	Teachers and management positions of the pilot schools are trained, based on Japanese style discipline, to improve school management.
1-3	Pilot schools develop and implement action plans to improve student discipline in the school.
1-4	Pilot schools maintain and continue the improved conditions based on the action plan.
1-5	Pilot schools conduct effective verification on student discipline.
1-6	Each pilot school develops a guideline to introduce necessary activities for improving student discipline based on the effect verification results.

Output 2. Students acquire basic hard skills and soft skills by receiving improved practical lessons at pilot schools.

No	Activities
2-1	Pilot schools select a practical subject, based on discussions with partner companies, to be improved through model activities.
2-2	Training for teachers of the selected practical subject is conducted.
2-3	Pilot schools introduce trial practical education to improve students' basic hard skills and soft skills through cooperation with partner companies.
2-4	Pilot schools conduct improved practical lessons.
2-5	Pilot schools conduct effective verification.

Output 3. Local companies and pilot schools are cooperating with each other.

No	Activities
3-1	Pilot schools establish the Work Transition Unit.
3-2	The Work Transition Unit in pilot schools conducts activities necessary for improving employment rates (e.g. to collect and record local industries' data) based on Japanese style career guidance.
3-3	The Work Transition Unit coordinates internship programs, lectures by the companies' trainers, and/or practical training at the companies, by collaboration with local partner companies.

Output 4. A new model school that introduces Japanese style education is in operation.

No	Activities
4-1	Technical advice necessary for establishing a new model school that introduces Japanese style technical education is provided.
4-2	The new model school selects a practical subject, based on discussions with the partner company, to be improved through model activities.
4-3	Equipment necessary for the new model school to improve practical training of the selected subject is prepared
4-4	The new model school develops organizational framework, including the Work Transition Unit, to manage model activities in the new model school.
4-5	Training for teaching and management level staff, of the new model school on improvement of school management is conducted.
4-6	The new model school plans and implements initial activities to improve school management so as to enhance students' discipline.
4-7	The new model school maintain improved conditions and continues activities.
4-8	The new model school conducts effective verification on students' discipline.
4-9	Training for teachers of the selected practical subject is conducted.
4-10	The new model school introduces practical education to improve students' basic hard skills and soft skills.
4-11	The Work Transition Unit of the new model school implements activities necessary for enhancing industrial cooperation (e.g. to collect and record local industries' data).
4-12	The new model school tries to introduce model practical education such as final year project work in order to become a local model for technical secondary schools.

A-3

Appendix 3: Company Sheet

Company Sheet

Company Information

Name.	---------------------------	No. Of employees.	-------------- .
Summary.	---------------------------	Tel Number.	(+2) --- ----- ----.
.)	---------------------------	Fax Number.	(+2) --- ----.
Address.	---------------------------	E-mail.	---------------------------.
CEO Name.	---------------------------	.)	---------------------------.
Capital.	---------------------------	Transportation provided?. ☐ Yes. ☐ No. ☐ Other ---------------.
Date of Establishment.	-- / -- / ----.	Accommodation provided? . ☐ Yes. ☐ No. ☐ Other ---------------.

Job description

Employment Type. ☐ Full-time. ☐ Part-time. ☐ intern.	No. Of Vacancies needed. ------ .
Job summary. ------------------------------------	Working Hours. From. . To. .
.) ------------------------------------	Required Skills. - ....
------------------------------------	- ....

Salary

Starting of Financial Year.	-- / -- / ----.	Salary date.	-- / -- / ----.
Incentive date.	-- / -- / ----.	.)	
Basic Salary.	----- EGP.	Tax.	----- EGP.
Allowance.	----- EGP.	Social insurance.	----- EGP.
Net salary.	----- EGP.	The deductions.	----- EGP.

Vacations

When is the first vacation:.	# month----- From hiring ----. date.	Annual vacation:.	--------. Days.
No. of Permissions/month:.	-------------.	Delays allowed:.	--. Minutes.

Company Selection criteria

selection Method : .		☐Interview. ☐Exam. ☐CV.	Date apply. -- / -- / ----.
Interview date:.	-- / -- / ----.	Interview place.	------------------------------------.
Result date:.	-- / -- / ----.	Age:.	From. -- Years. To. -- Years.
Transportation for interview:.		☐Yes.	☐ No.

Terms

Military Status:. ☐Exemption. ☐ postponed.	☐Temp. exempted. ☐completed.
Qualifications:. ☐ Institute . ☐ Technical School .	Required -. ☐ Any Major. major:. - .

Representative of the company

	Name	Job Title	Telephone	
1	------------------------------.	------------------.	(+2) --- --- ----.	
2	------------------------------.	------------------.	(+2) --- --- ----.	

Company Logo.