

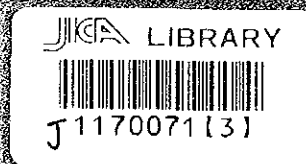
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

GENERAL ORGANIZATION FOR TECHNICAL EDUCATION
AND VOCATIONAL TRAINING (GOTEVT)

**THE STUDY ON
IMPROVING EFFICIENCY AND EFFECTIVENESS
OF TECHNICAL EDUCATION AND VOCATIONAL TRAINING
IN THE KINGDOM OF SAUDI ARABIA**

**FINAL REPORT
EXECUTIVE SUMMARY**

March 2002



AL-TAF MANAGEMENT AND ECONOMIC CONSULTANTS

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Preface

In response to the Saudi Government's request, the Japanese Government decided to conduct a Study on Improving the Efficiency and Effectiveness of Technical Education & Vocational Training in the Kingdom, and entrusted it to the Japan International Cooperation Agency (JICA).


JICA Saudi Arabia Office therefore together with JICA Advisor Mr. Muneharu IWAMOTO, held discussions on the scope of the Study, with the General Organization for Technical Education and Vocational Training (GOTEVT), and accordingly agreed on the implementation arrangement for the Study in 2nd November 2001 and started implementation in 7th January 2002.

Under the supervision of Mr. IWAMOTO, JICA entrusted implementing the study to Al Saif Management and Economic Consultant, a Saudi Consultant in association with the International Center for Leadership in Education (ICLE), an American Consultant, as a supporting member of the Study.

JICA and GOTEVT held series of discussions with the consultants team members on the Study. The joint study team carried out several field surveys on educational training facilities of GOTEVT, then held an intensive workshop on the Study where they reviewed what have been observed and gave accordingly their recommendation on improving the efficiency and effectiveness of technical education and vocational training in the Kingdom.

Now, it is my pleasure to submit the final report to GOTEVT, hoping that it will contribute to realizing the target of the Study from one side, and to strengthen the technical cooperation activities between JICA and GOTEVT, which consequently enhance the Japanese-Saudi friendly relations.

Finally, I would like to express on behalf of JICA my deep thanks and appreciation to the officials of GOTEVT and other organizations for all their supports extended to the Study to make it successful and effective.



Kuniaki NAGATA
Resident Representative
JICA Saudi Arabia Office

Executive Summary

1. Introduction to the Study

The General Organization for Technical Education and Vocational Training (GOTEVT) was established in 1980 in the Kingdom of Saudi Arabia as an independent institution, in terms of financial and administration policies. There were 77 institutions run by GOTEVT, with 70,428 students, which comprise colleges of technology, secondary technical institutes as well as vocational training centers, in the year 2001.

The relationship between the Kingdom of Saudi Arabia and Japan goes back to decades. The cooperation in the different fields has fruited and benefited both parties. This cooperation was enhanced by signing the economic and technical cooperation agreement in 1975.

Japan International Cooperation Agency (JICA) represents the official Japanese body to implement the technical cooperation schemes resulting from the said agreement.

GOTEVT & JICA are now cooperating to conduct a study under the title of "Improving the Efficiency & Effectiveness of Technical Education & Vocational Training in the Kingdom of Saudi Arabia"

JICA contracted Al-Saif Management & Economic Consultants Office, a Saudi Arabian Consultants Office, to conduct the above mentioned study, in association with the International Center for Leadership in Education (ICLE), an American Consultant.

2. Background of the Study

Technical Education and Vocational Training plays a major role in the development of the various sectors in Saudi Arabia. GOTEVT assumes major responsibilities in Technical Education and Vocational Training in Saudi Arabia, and it exerts major efforts in order to provide the Saudi labor market with manpower properly prepared in technical education and vocational training. This study is intended to pinpoint areas that will improve the efficiency and effectiveness of technical education and vocational training in the various sectors (industry, business, agriculture and construction) that is covering all levels of education and training undertaken by GOTEVT.

3. Objectives of the Study

The objectives of the study is to recommend innovative measures, in terms of quality, for efficient and effective technical education and vocational training in the field of industry, commerce, agriculture and construction, taking into consideration the future industrial structure of the Kingdom and the need for a big number of qualified engineers and technicians for the various industrial sectors.

4. Expected Output of the Study

- 4.1 The prospective number of engineers and technicians are clarified according to the types of industry (including commerce and agriculture) and technical field.
- 4.2 Long/medium-term improvement measures for the development of schools (colleges, institutes and vocational training centers) and departments are proposed.
- 4.3 Qualitative improvement measures of the curriculum and the education and training methods are proposed.

5. Scope of the Study

5.1 Survey the General Economic Situation in Saudi Arabia.

5.2 Survey the Current Situation of Industrial and Employment Structure

- **Survey of current industrial situation.**
- **Survey of current employment situation:**
 - ⇒ **Manpower growth rates and patterns.**
 - ⇒ **Population growth rates and patterns.**

5.3 Forecast of Saudi Manpower Needs in the Next (20) Years for the Following Sectors:

- **Industrial**
- **Commercial**
- **Agricultural**
- **Construction**

5.4 Survey the Current Situation of Technical Education and Vocational Training.

5.5 Make Recommendations and Conclusion to Improve the Technical Education and Vocational Training System.

6. Steps for Conducting the Study

6.1 Step One: Forming the Study Research Team

After signing the contract with JICA, Al Saif Management & Economic Consultants formed a main committee for the research, and identified the various activities to be undertaken in order to achieve the set objectives of the study. According to this, it was apparent that many aspects have to be taken care of by certain experts, having in mind the limited time of the study. Therefore, the following experts were called upon to participate in the study:

- Dr. Abdul Wahab Al-Mansoori - for Construction Education
- Dr. Mohamed Al-Doghaishem – for Business Education
- Dr. Ahmed Al-Sowyan – for Industrial Education
- Dr. Khalid Al-Shalash – for Agricultural Education
- Dr. Mohamed Abdulla – for Manpower
- Headed by Professor Khalid Abdulrahman Al-Saif

6.2 Step Two: Meetings

A meeting was held with His Excellency Dr. Ali Al Ghafis, Governor of GOTEVT, His Excellency Dr. Saleh Al Amr; Vice Governor of GOTEVT, His Excellency Dr. Omar Basoudan; Head of the Research Department at GOTEVT, Mr. Muneharu Iwamoto; JICA Advisor to GOTEVT and the research team; Prof. Khalid Abdulrahman Al Saif, Dr. Ahmed Al-Eisa, Dr. Abdulwahab Al-Mansoori, Dr. Ahmed Al-Sowyan and Dr. Mohamed Al-Doghaishem.

The purpose of this meeting was to get GOTEVT point of view and to seek the needed cooperation from GOTEVT regarding this study.

As a result, His Excellency Dr. Ali Al Ghafis gave his advise and directions to all GOTEVT authorities to extend unlimited cooperation to the team of this study.

This was materialized by the full support that was extended by His Excellency Dr. Saleh Al Amr.

The study research team is very grateful for the highly appreciated help, support and cooperation provided by GOTEVT authorities.

Another meeting was held in presence of Prof. Khalid Abdulrahman Al Saif, Dr. Ahmed Al Eisa and Mr. Muneharu Iwamoto to identify the aspects to be included in the final report.

6.3 Step Three: Field Visits

Some members of the research team visited samples of the Colleges of Technology, Secondary Industrial Institutes, Secondary Commercial Institutes, Technical Supervisors Institutes and Vocational Training Centers. Other members of the team have extensive experience in this type of education that is assigned to them for this study.

During these visits, they contacted the Deans/Directors of these institutions, reviewed the Curriculum, Textbooks and met some Trainers/Instructors and some of the trainees, in order to form recent view of the current situation of these institutions.

6.4 Step Four: Review of the Related Literatures

The team members reviewed the previous studies and related research in their prospective assigned research. This was made possible by using the following sources:

- a) GOTEVT publications
- b) The Manpower Council publications
- c) The Ministry of Planning publications
- d) Riyadh Chamber of Commerce and Industry publications
- e) King Saud University Library publications
- f) Ministry of Education publications
- g) Ministry of Labor and Social Affairs publications
- h) Ministry of Finance and National Economy publications
- i) Saudi Arabia Monetary Agency publications

6.5 Step Five: Writing the Working Papers

The study research team members were asked to write about the main issues of the current situation of technical education and vocational training in the different disciplines. Each of them after making the field visits and reviewing the related literatures, wrote about the current situation of type of Technical Education and Vocational Training pertaining to his field concerning the curriculum, textbooks writing, education media and technology, instructors & trainers selection, instructors & trainers preparation, instructors & trainers development, methods of teaching/training, students, relationship between education/training programs and regional economic activities. This write up came in a format of working papers which were presented in the workshop, using the Power Point format.

6.6 Step Six: The Workshop

A workshop was held for 12 working days, lasting for five hours per day. The participants in this workshop were:

- a) Prof. Khalid Abdulrahman Al Saif
- b) Dr. Abdulwahab Al Mansori
- c) Dr. Ahmed Al Eisa
- d) Dr. Mohammed Al Dogaishem
- e) Dr. Ahmed Al Sowan
- f) Dr. Khalid Al Shalash
- g) Dr. Adil AL Samahi
- h) Dr. Richard Jones of ICLE
- i) Dr. Dale Eggebraaten of ICLE
- j) Secretary
- k) Typist

During this workshop, the experts presented their working papers using Power Point presentations. Major issues were presented to shed some light on the ways and means of improving the efficiency and effectiveness of Technical Education and Vocational Training in the field of Commerce, Industry, Agriculture and Construction under the authority of GOTEVT.

6.7 Step Seven: Review of the Findings

After the workshop, a group was formed of Prof. Khalid Abdulrahman Al Saif, Dr. Richard Jones and Dr. Dale Eggebraaten.

The group reviewed the findings, the recommendations, and the mechanisms developed during the workshop. This review was done in the light of other countries experiences in technical education and vocational training. These countries are: Australia, Brunei, Canada, Denmark, Japan, South Korea, Malaysia, Singapore, South Africa, United Kingdom and the United States of America.

6.8 Step Eight: Further Investigation

Further investigation of these issues in the light of international experience was done by Prof. Khalid Abdulrahman Al Saif and Dr. Willard Daggett (President of ICLE).

6.9 Step Nine: Preparation and Discussion of the Draft Final Report

The draft final report is prepared to be forwarded to JICA for review and discussion.

6.10 Step Ten: Preparation of the Final Report

Based on the review and discussion of the draft final report, the final report will be prepared and forwarded to JICA.

7. Research Tool

The research tool used in this study was the experts' opinions, through their review of the related literatures, visits, meetings, workshop discussion and the international terms of reference of other countries. The findings, recommendations and mechanisms that were presented throughout this report came as collective efforts and opinions of the participating study research team and workshop members. There were different points of views that were presented, as it could be expected in having several experts coming from different backgrounds. However, the recommended reforms of the Colleges of Technology, Secondary Technical Institutes and the Vocational Training Centers were endorsed by the majority of the study research team members' to improve the efficiency and effectiveness of these institutions.

From these presentations, discussions and investigations, it was apparent that major actions have to be taken by the GOTEVT.

These major actions are related to the organizational structure of technical education and vocational training systems. These actions should not only be undertaken for a specific subject or specialization in a curriculum, but to the setup of the whole curriculum in the Colleges of Technology, Secondary Technical Institutes and Vocational Training Centers.

It was the intention of this study as perceived by the objectives and the scope of the study, to pinpoint problems in the curricula of these institutions in order to improve their efficiency and effectiveness. But, during the experts' visits, presentations and discussions, it was apparent that the whole curricula need to be changed in Duration, Specialization and Contents.

The only exception to this is the Secondary Commercial Institutes curriculum, which went through a thorough reform in the recent past years and an evaluation is needed in order to uncover the efficiency and effectiveness of this reform.

The curricula as a whole should be changed in Industrial, Agricultural and Construction Education and Training aspects. Therefore, specific investigations of the parts (such as problems in the curriculum) were invalid.

The following are the findings and the recommendations, as perceived by this study to improve efficiency and effectiveness of the Technical Education and Vocational Training in the Kingdom of Saudi Arabia.

8. Findings and Recommendations

8.1 The Economic Structure of the Kingdom: The survey of the economic structure of the Kingdom covered the period from 1973 to 2000. The basic structural change in the Saudi Economy during that period of time was that going away from the public sector to the private sector as measured by the share of each of them in the Saudi G.D.P. In 1973 the share of the public sector in GDP was 66.4% and of the private sector was 33.6%. In 1999, the share of the public sector declined to 49.6%, while, of the private sector increased to 50.4%. Another important structural change was the movement of the Saudi Economy away from depending mostly upon only one resource (the oil) to more diversified economy.

The most important economic and social indicators of the Saudi Economy during the years 1995 – 2000, was that the population increased from 18.8 million persons in 1995 to 22.01 million persons in 2000. The labor force, which was 6.3 million persons in 1995, increased steadily to reach 7.2 million persons in 1999. GDP which was SR 478.7 billion at current prices in 1995, increased to SR 529.3 billion in 1996, and then to SR 548.4 billion in 1997. It decreased in 1998 to SR 481.2 billion but increased again to SR 535 billion in 1999 and then to SR 649.0 billion in 2000. However, in real terms (1970 = 100) GDP was SR 62.9 billion in 1995 and showed the same fluctuations as GDP at constant prices to reach SR 68.6 billion in 2000.

The annual growth rate of population in Saudi Arabia, which is rated as one of the highest in the World, is declining. In 1995, when the Kingdom population was estimated at 18.80 million persons, the annual growth rate of population was 3.6%, which declined to 3.2% in 1999 when the estimated Kingdom population was 21.33 million persons. In the year 2000 when the Kingdom population was estimated at 22.01 million persons, the growth rate of population was 3.1% per annum.

As for non-Saudi population, the annual growth rate in 1995 when their number was 5.21 million persons, was 1.7% which increased to 2.4% in 1999 when their number became 5.68 million persons, then it declined to 2.2% per annum in 2000 when their number became 5.8 million persons. The average growth rate of non-Saudi population during (1995 - 2000) was 2.1% per annum.

In 2000, the total number of schools at different levels of general education (government and private) was 11,918 schools. The total number of male students enrolled in these schools reached 2,234,195 male students, and the number of teaching posts was 172,704 posts.

The Seventh Development Plan estimated the Saudi population at 29.7 million persons in the year 2020. That means the Saudi population in 2000 (16.2 million) will increase by 83.3%, at an average annual growth rate of 3.0%. The total population in Saudi Arabia in the said year is expected to be 33.4 million persons rising from 22 million persons in 2000. This is a 51.4% increase, at an average rate of 2.1 percent per annum. The Non-Saudi population is expected to be 3.7 million persons by 2020, which is 11.1% of the total population in the Kingdom.

- 8.2 The Labor Force: According to the Seventh Development Plan, the total number of the labor force in Saudi Arabia in 1999 was around 7.2 million persons, 44.2% of them (3.18 million) are Saudis and 55.8% of them (4.02 million persons) are non-Saudis.

Most of the employees working in the private sector are non-Saudis. Out of the 6.3 million civilian employees working in 1999 in this sector 3.6 million (61.3%) were non-Saudis, whereas 2.4 million Saudis (38.7%) were working in this sector.

In 1999 the labor force was distributed according to professions. 30.5% were working in production, construction and transportation jobs, 29.8% in the services personnel and 15.6% were working in professional and technical jobs. The rest (24.1%) were engaged in agriculture and related jobs (7.7%), clerical jobs (7.4%), sales personnel jobs (7.1%) and 1.9% were in management and administration.

The highest average growth rate was in production, construction and transportation jobs (1.4%), followed by the growth rate of management and administration (1.3%), then agriculture and related jobs (0.9%) and professional and technical jobs (0.7%).

Future expectations show that most of the new jobs will also be in the private sector due to the privatization process, which is going on in the Saudi Economy. The Seventh Development Plan expects that 94.5% of the new jobs (311,000 jobs) to be realized during the five years of this plan (2000 –2005) will be in the private sector. It is also expected that during these five years the share of Saudis in the labor force will increase to 53.2%. At the end of the Seventh Development Plan (2004), the total labor force in Saudi Arabia is expected to reach 7.5 million employees.

The Seventh Development Plan continued to emphasize labor market development and Saudization. However, this plan concentrates more upon development on human resources, issues related to labor market efficiency and policies, considering the current domestic and international events; such as privatization and the recently expected membership of Saudi Arabia in the World Trade Organization (WTO). That is why this plan emphasizes the following:

- a) Increasing the participation of Saudi nationals in the labor market (Saudization of jobs).
- b) Closing the gap between the educational systems and the requirements of the labor market.
- c) Encouraging the private sector to employ more Saudis instead of non-Saudis.

- d) Provide financial resources and information needed to improve the efficiency of the labor market.
- e) Increasing the productivity of Saudi workers. With the exception of the fourth point, all of these aspects require training and retraining to achieve. To enhance the Saudization process, Saudi entering the labor market for the first time needs to be trained to satisfy the requirements of the private sector that hesitates to employ them because they lack experience and know-how. As for closing the gap between the labor market requirements and the educational system outputs, it can only be done by training the newly entering the labor market. The training should be specific to jobs they are planning to engage. Improving the productivity of Saudis can also be achieved by training, targeted for this particular aspect.

So, all Colleges, Institutes and Training Centers have to gear their curricula to achieve each of the above mentioned aspects for manpower planning to be successful. Even the Saudi educational system has to adapt itself in order to help reducing the gap between its output and the labor market requirements and human resources development.

8.3 The Labor Force Projection: The labor force projection showed that the labor force will increase from 7.24 million employees in 2000 to 8.69 million employees in 2020. Jobs will be inclined towards more professional and technical employment. Production, construction and transportation employment will increase at a

faster rate than other sectors employment. The new comers to the labor market during the Seventh Plan is 817,300 employees with an estimated yearly of unskilled comers of 89,960 employees coming from elementary, intermediate and secondary school. Major efforts of training are needed. This could be attained by both expanding the utilization capacity of GOTEVT institutions and diversifying the skill levels.

8.4 **The Present Situation of Technical Education and Vocational Training and The Proposed Reforms:** During the course of this study, the present situation of Technical Education and Vocational Training was reviewed by the study's research team. It was found that GOTEVT faces two major problems:

- a) There is extreme pressure on GOTEVT to accept more students and trainees. This is due to the increasing number of comers to the labor market with no skills.
- b) The limited capacity of GOTEVT institutions.

After extensive further review and discussion by the study research team it was found that all GOTEVT curricula (in exception of secondary commercial education) have to be reformed in duration, specialization and contents. When the duration (time) of a curriculum changes all aspects of the curriculum have to be changed, that is the specialization and contents of the courses.

The proposed reforms to GOTEVT institution are presented as follows:

8.5 Colleges of Technology: The present status of the Colleges of Technology is that they are time-based. The students have to stay three years before graduation, they are also burdened with general subjects at the expense of technical subjects and practical training. There are no sets of skill standards for the graduate to meet for specific occupation. The expert opinion is to change the duration of the Colleges of Technology into two years (65 credit hours) programs rather than the present situation of three years (90 credit hours). The new programs should be built around and based on skill standards. These programs also should be related to the regional requirements of the manpower according to the economic activities of that region. The registration system has to be changed to allow the student to register for a set of courses designed for a specialization according to a set of skill standards. The student could stay only for four years and he will lose all the provided financial benefits and remuneration after two years from the date of his enrollment in the college.

To coordinate with the concerned authority in order to allow the distinguished graduates of the Technical Colleges to further their college education in similar colleges of specialization, that is based on conditions to be put by these colleges. This will allow an open education system to be put for those distinguished graduates of the Technical Colleges who want to further their higher education.

8.6 The Secondary Technical Institutes: These institutes are three years system, the curricula in these Institutes (except the Secondary Commercial Institutes) are loaded with general subjects such as physics, math and chemistry, at the expense of the technical subjects and the practical training. Students' failures are caused mainly by these subjects. In addition to the fact that the curricula in these institutes are not built around skill

standards. The student has to pass successfully the three years program to be graduated or he goes to the labor market with recognized level of skill for employment. Even the levels of skill the graduates have, do not justify staging three years to acquire. This time based curricula do not allow providing several levels of skilled national manpower needed by the labor market. Therefore, the secondary technical institutes have to be reformed to be Vocational Training Institutes using the facilities of the these institutes with two year programs, consisting of four sessions, graduating four levels of skilled manpower. The trainee can leave the center after any one of the four sessions being labeled at that skill level according to set skill standards. The graduates of session one will be labeled vocational level 1, and of session two as vocational level 2, and so on.

In regard to the Secondary Commercial Institutes further follow-up study is needed to assess the graduates' effectiveness on the job. That is because a major reform has been done recently to the curricula of these institutes and an evaluation has to be made for that reform.

- 8.7 **Vocational Training Centers:** The current vocational training at these centers is for one and two years. There is no flexibility to provide the labor market with diversified skill levels, which the labor market needs. The trainee under this system has to stay in the center for one or two years to be graduated. If he leaves the center before this period, he will go to the labor market with no labeled skill level. This system has to be changed into the Vocational Training Institutes system, consisting of four sessions. The trainee can leave at the end of any session and be labeled to that level. The graduates of session one will be labeled as vocational level 1, and from session two as vocational level 2 and so on.

- The trainee who is 15 years old should complete the whole program (four sessions) to be 17 years after graduation.
- The trainee who is 16 years can take only two sessions and go to the labor market by the age of 17 if he chooses to be skilled at that level of skill.
- The trainee who is 17 years old can take one session and go to the labor market if he chooses to be labeled at that level of skill.

8.8 Skill Standards Development: GOTEVT has launched major efforts in establishing skill standards. It has shouldered this responsibility as the first government authority to take such action. It followed the most advanced methods and means in this process. The research team has visited GOTEVT workshop and attended demonstration to the steps taken in order to develop these skill standards. The research team highly appreciated the accomplished efforts in this regard, that is to establish scientific foundations for the development of the curricula for technical education and vocational training at GOTEVT in particular and at the Kingdom as a whole. Building upon the excellent success it has already achieved, GOTEVT should:

- Determine the frequency of each Task, Knowledge, Skills and Tools/Equipment used.
- Identify the personal aspects needed to be successful in each occupation.
- Provide greater details in their job profiles.

8.9 Training Methods: It is recommended that GOTEVT commit itself to providing multimedia programs and virtual training in all Colleges of Technology and Vocational Training Centers. This will require changes in facilities, equipment and retraining of trainers/instructors to change their teaching methods. Specifically GOTEVT should take the following measure:

- a) Work with business/industry to obtain multimedia demonstration of the tools/equipment.
- b) Create virtual training system where the most cutting edge technology is provided in one location and demonstration through virtual delivery system to all Colleges and/or Training Centers offering such a program.
- c) Classrooms in the Colleges of Technology and Vocational Training Centers need to be equipped with multimedia technology to enable the use of virtual delivery systems.
- d) A great deal of information can be taught using both the Internet and Intranet. All classrooms need to be wired and equipped to permit Internet and Intranet usage.
- e) For trainers/instructors to effectively use the Internet and Intranet all classrooms need to be equipped with appropriate projection equipment.

8.10 Textbooks and workbooks writing and translations: It is imperative for GOTEVT to address the issue of writing textbooks, references and manuals for its education and training programs in Arabic language. In order to successfully achieve that goal, the following mechanism could be followed:

- a) **GOTEVT should allocate part of its annual budget for writing and/or translating books, references, manuals and workbooks.**
- b) **Some generous financial incentives and rewards in the range of 50,000 – 100,000 Saudi Riyals can be paid to those who write quality books, references and manuals through writing and/or translation.**
- c) **Books, references and manuals that are either authored or translated, shall be updated by their author(s)/translator(s) every three to five years depending upon the specific occupational cluster.**
- d) **For updating books, references and manuals, some incentives ranging between 30,000 – 50,000 Saudi Riyals need to be paid to those authors/translators.**
- e) **Workbooks written for trainees should include practical applications and proper illustrations.**
- f) **Trainers/instructors manuals and solution of problems and case studies must also to be written.**
- g) **By-laws need to be developed especially to serve GOTEVT purposes in writing and translating textbooks, references, manuals and workbooks needed for the training programs offered by the various GOTEVT training entities. The present by-laws for both writing and translating of books, references, manuals and workbooks do not fit the nature and the complexity of the technical aspects, as well as the scarcity of trainers and/or instructors who can write or translate such technical materials.**

- h) GOTEVT should solicit on a competitive basis proposals for writing and/or translating textbooks, references and manuals through some announcement to their trainers/instructors staff and other qualified professionals.
- i) GOTEVT should cooperate, coordinate and encourage industry leaders to produce their training kits, baskets and manuals in Arabic language.

GOTEVT may lead the way in establishing a translation center that will serve initially the translation of textbooks, references and manuals for GOTEVT. However, such center could be developed to be an independent entity as a cost center that will serve on the national level in the technical area.

8.11 **Trainers and Instructors:** There is a growing international research base that shows the single most important factor in determining the quality of any educational program is the trainers and instructors. Therefore, to have highly successful Technical Education and Vocational Training Programs one must have well trained and effective trainers and instructors.

While all trainers/instructors need to be trained and retrained, the need is greater in Technical Education and Vocational Training than in any other field. Therefore, it is recommended that GOTEVT take the following specific actions to train and retrain their trainers/Instructors.

GOTEVT should establish a Center for Development and Training, and assuming the Electronics Course is fully operationalized, the following is the priority order in which the remaining courses should be implemented:

- a) Machinery Technology
- b) Electricity Technology
- c) Printing Technology
- d) Construction Technology
- e) Automobile Technology
- f) Computer Technology
- g) Chemistry Technology

The trainers/instructors will be trained using the tools/equipment that they will have in their own classrooms. Through direct exposure to students in the "Development and Training Center" they will be able to develop strategies and techniques which they will use in their own classrooms. Thus, a most effective and efficient system will exist.

Selection of trainers should be totally based on their industrial and academic experiences. The following rules should be applied in the selection process of trainers:

- Develop objective criteria for instructor/trainer selection process to include: job description, job specification and job classification.
- Prefer new hired technical instructors/trainers to have at least two years of industrial experience.
- Design an employment pre-requisite intensive training methods program to include: training methods, management of classrooms and laboratories, testing and evaluation, use of training technology and learning theory.
- Require all instructors who have not completed educational preparation programs to complete intensive training methods program.

GOTEVT should help establish a professional association in each program area. The lead specialized institution that has the responsibility for the "Development and Training Center" in their program area should also take the lead in the professional association.

- 8.12 **GOTEVT Capacity:** The new Saudi comers to the labor market are estimated yearly by 163,460 employees from all educational and training institutions in the Kingdom. Fifty-five percent of them (89,960) will come with no skills from elementary, intermediate and secondary school graduates and dropouts entering the labor market yearly. Out of this number, 18,460 from elementary and 28,620 from intermediate graduates and dropouts, this group does need not only training, but also proper general education to be prepared for living and working, because this group comes to the lobar market with age 15 and under.

The total number of students/trainees was 27,705 students/trainees admitted at GOTEVT Institutions in the year 1420–1421H represented only 31% of the new unskilled comers to the labor market. This shows the emergence need for GOTEVT to expand its utilization capacity of its teaching and training institutions to absorb more students/trainees of the new comers to the labor market with no skills.

The previously mentioned reform of the Colleges of Technology will increase the capacity of these colleges at least by 30%. And with the injection of the technical training program in these colleges, the capacity will go higher.

Also the reform of the Secondary Technical Institutes will raise the capacity by more than 30% by changing the system from three years program into two years program. The flexibility of the proposed program for in and out during the four sessions (two years) will raise the capacity even higher than 30%.

Likewise, the reform of the Vocational Training Centers, to be four flexible sessions instead of one and two years, will raise the capacity of these centers.

Even if GOTEVT would raised the capacity of its existing institutions by 50% it will not be able to meet the total demand of the unskilled comers to the labor market. Therefore, GOTEVT should employ the following strategies:

- a) Open its training facilities for two shifts, morning and evening shifts.
- b) Open more training facilities. After employing the said reform to GOTEVT institutions, further study is needed to identify the regions' need for opening more training facilities to meet the need for training.
- c) Coordinate with the concerned authorities to inject vocational training in general secondary schools for initial employment for certain jobs i.e. data entry personnel, front desk receptionist, telephone operators, sales personnel, filing and industrial and agricultural jobs related to the regions' need.

The injection of vocational training in the general secondary schools will enable the graduates of these schools to work in the said jobs if they could not or do not want to go further to their higher education. At the same, time it will reduce the burden of GOTEVT to train for these jobs which are needed badly by the labor market in large numbers.

8.13 Recommended Actions

8.13.1 Short-Term Actions

GOTEVT should take short term actions (1year) to pass the needed legislation, laws and by-laws in order to adapt the proposed reforms on the educational and training systems of the Colleges of Technology, Secondary Technical Institutes and the Vocational Training Centers.

Regional investigation has to be started and completed to determine the regional needs for manpower according to the economic activities. Further skill standards should be developed according to the needed manpower of regions. And the curricula to be built according should the developed skill standards.

8.13.2 Medium-Term Actions

GOTEVT should take medium-term actions (2-3years) as follows:

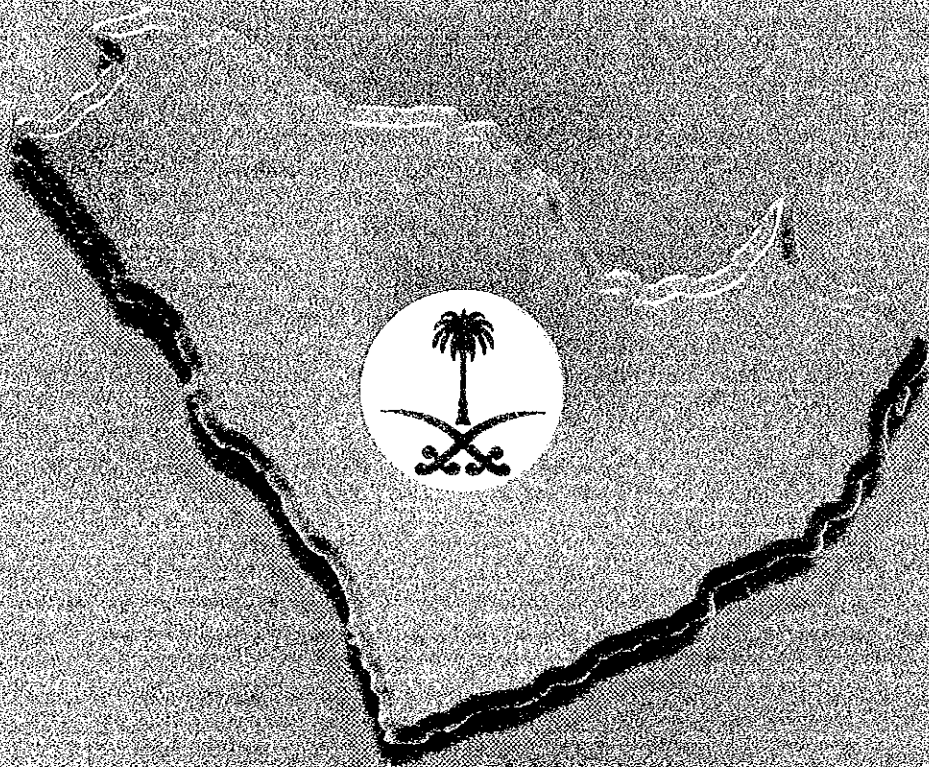
- a) Write training packages, manuals, books, workbooks, standardized inventory and aptitude tests. That is according to the set up curricula in the Colleges of Technology and Vocational Training Institutes.
- b) Train the trainers to be aware and capable to deliver the new curricula

- c) Acquire the equipment, materials needed for the new curricula.
- d) Make the needed changes in physical facilities for the new curricula.

8.13.3 Long- Term Actions

The long- term actions to be taken by GOTEVT are:

- a) Contact the concerned authorities to inject vocational training in the general secondary schools for initial employment for certain jobs i.e. data entry personnel, front disk receptionist, telephone operators, sales personnel, filing and other industrial and agricultural jobs according to the regions' needs. This program could be set up in coordination cooperation and the usage of facilities of GOTEVT and Ministry Education. This program will reduce the burden from GOTEVT to prepare for initial employment for certain jobs. Students who graduate from the general secondary schools with certain skills will to be employed if they could not or do not want to further their education.
- b) Coordinate with Ministry of Commerce, Ministry of Industry Electricity, Ministry of Labor and Social Affairs and Ministry of Agriculture and Water in order to form a partnership between business, industrial and agricultural establishments and that of GOTEVT to shoulder the burden of training and practical training, both in facilities and cost.
- c) Establish laws, by-laws, regulations and systems to encourage the private sector to establish industrial and agricultural training centers. This should include providing long lease land, loans and know-how assistance. In the business education and training field, the private sector is taking a lead and flourishing.



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