

VOCATIONAL INDUSTRIAL TRAINING IN EGYPT
SUGGESTIONS FOR USAID/E INVOLVEMENT.

263-0062

The problem as presented by the GOARE to USAID/E.

Briefly stated, responsibility for providing vocational education and training to meet Egypt's manpower needs is divided among twelve different Ministries and the Military. The largest share of this uncoordinated responsibility lies with the Ministry of Industry and Mineral Resources which reportedly accounts for more than 550,000 of the public sectors' 1,210,000 industrial workers and for LE 3,550,000 of LE 7,000,000 of the total public industrial payroll. Still industrial productivity is low, quality of products is often marginal, training programs are inadequate, expansion is consequently limited and economic development seriously constrained.

The Government of the Arab Republic of Egypt is aware of the bottlenecks and inefficiencies of its training programs and is seeking assistance from many donors to rectify the situation. It is aware of the great economic strides that have been made in Latin American countries such as Brazil, Venezuela and Colombia - all "USAID graduates" - by placing nearly all other non-formal vocational, technical, commercial and agricultural training under a single, private or semi-autonomous National Training Institute fully funded by a payroll tax levied on the end users of the trained workers - the industrial, commercial, agricultural enterprises themselves.

As fourteen Latin American countries have followed Brazil's

38 year leadership in its field, and as AID and its predecessor agencies have provided heavy inputs in the realization of such programs, the GOARE has asked USAID/E for assistance in analyzing Egyptian manpower training needs and programs and the feasibility of developing a similar , autonomous human resource training agency.

The USAID/E Initial Response

This report, made by an AID officer who has assisted vocational education in Brazil, Venezuela and Colombia, is an initial response to the GOARE request. It is based on a two week look at the Ministry of Industry's Productivity and Vocational Training Department (PVTD), the major supplier of trained workers for industry.

No attempt has been made during this short period to supply definitive solutions to Egypt's problems; however, the programmatic suggestions support the Vocational Industrial Training PID previously prepared by the USAID/E - Education office and offer additional insights for Project Paper preparation .

Insights regarding the PVTD operations were acquired by visiting eleven training centers in Cairo, Tanta and Alexandria, the national and regional offices in Cairo and Alexandria and the Instructor Training Institute as well as students and supervisors in an industry cooperating in the apprenticeship program. Discussions were held with staff at all of the centers

and both academic and practical classes were observed. Engineer Mikael Attalah, director of technical programs and research, served as the principal counterpart and proved to be realistically aware of existing problems and constraints.

Briefly, PVTD operations may be described as under-utilized and inefficient. Although the Productivity department and the Management Consultancy Institute divisions have taught hundreds of courses for middle level and executive management and have conducted numerous studies for senior management, their own internal operations and particularly those of the vocational training centers are woefully lacking in good management practices. Although an IBRD mission for vocational education complimented the PVTD for their ability to furnish statistics - an ability which other Egyptian training agencies lacked - according to this consultant's analysis - PVTD statistics do not mesh. Data collection at the source is unreliable and 9 of 11 center directors were unable to respond to simple requests as to actual numbers of students enrolled, instructors and teachers on their staff, etc. as their records were not being kept systematically. One may well question when the number of graduates in a given year for several centers consistently exceeds the number of final year students by as much as two hundred percent and the responsible data collecting office is unaware of the problem.

Three hours a week of instruction is given in Industrial Safety,

yet only one Center visited showed any evidence that safety was practiced in the shops: grinders had no guards nor were goggles available; loose and floppy clothing was worn by machine operators; files had no handles; no safety lines were painted around dangerous machines; floor drain covers were missing or protruding at an angle instead of being flushed to the floor; cut electric wires were loose and untapped in their metal wall boxes; some safety switches were unoperable; trash cans were seldom seen or used; adjustable lamps on machines had no bulbs; and so forth. On the other hand the metal machinery itself is reasonably well cared for and is capable of producing quality work.

Most of the centers, including the Instructor Training Institute (ITI) were developed by the ILO with trainers from many European countries. More recently the Russians provided major inputs to the system. Instructional techniques are based on the system whereby all students merely copy a specified set of objects. Nothing "useful" is produced nor can the students keep their projects which are kept for inspection by a supervisor who rarely visits the shop. The academic program is likewise a "copy book" program. Such an approach to vocational education is out-moded and relatively ineffective in view of modern methods and technologies. It is in sharp contrast to the cohesive what, how, why practice and application process typical of the flexi-time, competency-based,

individualized vocational instruction widely practiced in the US, and leading Latin American countries.

Heretofore, the United States has not been involved in the Ministry of Industry's vocational programs. Staff have studied in and received technical assistance from many countries including England, Austria, Poland, Russia, Sweden, Germany, Canada, Norway and Japan. None have been to the United States, to study the American approach. The forth-coming USAID/E sponsored trip to the U.S., Colombia and Brazil for five MOI leaders is, therefore, an essential first step to further cooperative efforts recommended below. The Egyptian trainers must internalize the methodologies and technologies they encounter on this trip and become advocates of such practices if they are to adapt and sponsor them effectively. The study will enable them to attend both National and International conferences of the American Society ^{for} of Training ^{and} Development (ASTD), study the exhibit of more than 200 suppliers of ~~training equipment and knowhow, evaluate prospective contractors~~ in-depth by visiting their installations and talking with personnel the contractor would propose to send to Egypt as consultants and study the Colombian SENA and Brazilian SENAI/SENAC at first hand. After such involvement their recommendations should provide clear guidelines for further joint initiatives such as these recommended herein.

The Initial Project of USAID/E Assistance

The project recommendations that follow are based on the original GOARE request for assistance, the draft PID and insights gained during the past two weeks visiting MOI/PVTD installations and holding in-depth discussions with PVTD leaderships and Minister of State Naim Abu Taleb.

The longer range goal, Project I, is the assimilation of all non-formal vocational training programs of the various ministries into one National organization patterned after the Brazilian, Colombian, Venezuelan and Peruvian experiences. This Egyptian national training institute would be private or a semi-autonomous public organization. It would receive the bulk of its funds from a payroll tax or levy on the end users; be responsive to the Manpower training needs of all sectors; offer pre-employment training; on-the-job programs; short courses; accelerated courses, as well as long-term apprenticeship programs for industry, commerce and administration. It would require the key involvement of employers in planning implementation and evaluation.

The effective establishment of such an organization will take several years of concentrated effort to overcome the obvious political, logistical and organizational constraints. Immediate steps may be taken, however, building on the strengths of the largest most able contributor, the MOI, and moving towards the larger goal.

Each of the following projects will strengthen capabilities

essential to the new organization and support its development. Each project may be expanded to embrace similar activities of other Ministries or the new national training organization as appropriate:

Project II Upgrade the PVTD office organization and management of its Regional offices, the Instructor Training Institute, and management procedure for the Vocational Training Centers. At the same time special attention would be given to upgrading and strengthening the Productivity department courses, seminars and related activities for Middle Management. ~~A summary of this department's activities is found in Annex~~ . An alternative diagram for re-organization of the PVTD is found in Annex 2. This includes the addition of the Planning, Education, Research office discussed in Project III.

Project III Design and implement a Planning, Evaluation, Research, Information office at the under secretariat level to conduct studies and research and ordinate information/data needed for ~~MANAGEMENT AND OPERATIONAL DECISIONS. AN IMMEDIATE QUALITY/~~ quantity study of all Egyptian training institutions/ management/ operation/ and training programs as well as the condition of facilities/ equipment/ materials and expansion needs is urgently needed as a basis for planning the national organization which is the focus of Project I above. A cost-effective projection for the new organization and a projection of possible staff salary incentives and alternatives is also needed in the early stages of planning

for either MOI/PVTD upgrading or development of the new umbrella organization.

Project IV Upgrade and strengthen the PVTD Industrial Management Consultancy Institute (IMCI) for executive level management.

Although this Institute has existed for a number of years it seems to have lost much of its effectiveness and personnel.

A new three floor building is already under construction in Dokki, however the total staff is now only five people. There is reason to doubt that highly qualified full-time personnel can be attracted to the institute to fill the 26 - 30 positions anticipated.

It seems highly feasible that the institute - geared specifically for industrial management could be merged with the National Institute for Management Development (NIMD) located in Maadi which serves top management needs of other sectors... and is reportedly suffering similar problems of staffing and organization.

This project may be questionable in its present context. USAID/E might wish to explore the situation further with other GOARE officials. Samples of IMCI studies are found in Annex 5.

Project V Establish an Instructional Materials Production Center at the ITI.

This project is essential to the adaptation of instruction materials validated in other countries and for the development of new indigenous materials to accompany new instructional methodologies and technologies.

Project VI Apply new instructional technologies to the study of

electricity/electronics at the Almiria Metals and Electrical Training Center.

This pilot project will test the application of new methods and equipment in the Egyptian environment. It will offer a basis for immediate production at the new instructional materials center. It will be designed to determine the depth and breadth of skills which Egyptian boys may be able to learn in determined time periods. It will also offer a proving ground for the effective correlation of academic and practical instruction.

Project VII Establish one mobile training center in one of the new cities, a small town or the New Valley.

As recommended by the MOI under secretary, mobile shops will be used for SHORT or ACCELERATED courses that require only minimal literacy skills rather than for the three year apprenticeship program which requires a ninth grade preparatory level certificate for admission. Such courses presently receive very little attention in the training centers but are crucial to the AID Basic Human Needs approach.

Project VIII Conduct pre-investment studies concerned with upgrading additional PVTD centers through the use of modern U.S. instructional technologies.

These studies will lay the ground work for designing and costing future AID Vocational Industrial Training projects in Egypt.

Summary Specific objectives and USAID inputs of consultant services, training and equipment required to meet those objectives are more fully discussed in Annex I . Cost factors follow USAID/E formulas for personnel and training. Equipment costs are estimated as closely as possible at this point in time with information available. Annex I has been discussed at length with PVID officials who are in agreement that the projects reflect priority needs. Upon reflection they may have further suggestions, however. Annex I has also been given to Minister of State Naim Abu Taleb. His recommendations will be discussed with USAID/E on or about April 23, 1978. .

Incentives to Study at Vocational Apprenticeship Centers.

Even though he has some earning power in the second and third years, every apprentice foregoes LE 286.20 in wages during his three year apprenticeship period. This is roughly equivalent to the total earnings available to him during his first two years of work as an unskilled laborer in a public enterprise. The public wage scale and laws governing mandatory military service, however, do provide the following incentives for him to study and learn a skill:

1. A minimum earning power during training as follows: -
year 1, cold lunch; year 2, LE 72; year 3, LE 100.80.
 2. Compulsory military service reduced from 3 to 1½ years.
 3. Compulsory military training delayed until after study and approximately two years at skilled trade.
 4. Opportunity to use trade during military service and avoid some foot soldier duties.
 5. ~~Higher job market at minimum A (minimum level) rather than~~
lower level class 10 unskilled at 25% higher pay and 33½ %
increase in yearly automatic increment from LE 9 to LE 12.
 6. Eligible for merit promotion from class eight to class seven after three years work or at the end of military service. Class seven salary is 33½ higher than class eight and the annual automatic increase is 50 % greater.
- The above may be expressed hypothetically as follows
for two preparatory school graduates age 16:

<u>AGE</u>	<u>YEAR</u>	<u>BOY A</u>	<u>BOY B</u>
		<u>unskilled work force</u> <u>(one merit advance)</u>	<u>apprentice training</u> <u>(two merit advances)</u>
		<u>LE</u>	<u>LE</u>
16	1	144 class 10-1	---
17	2	153	72 (foregone wages while ... in training = LE286.20)
18	3	162	101
19	4	Army	180 (1st. year salary, class 8 - 1)
20	5	Army	192
21	6	Army	Army (1½ years)
22	7	198	Army (1½ year salary class 7 - 1)
		<u>657</u>	<u>147</u>
Total Earnings To Date		<u><u>657</u></u>	<u><u>692</u></u>
23	8	225 * promoted to class 9-8	303 (147+156)*
24	9	234	366 (156+210)* promoted to class 6 - 6
25	10	<u>243</u>	<u>429</u> (210+219)*
Total		LE <u><u>1359</u></u>	Total <u><u>1790</u></u>

* = ½ year at each
Salary step

According to this chart, after 7 years (Age 22) the apprentice's total earnings of LE 692 exceed those of the unskilled worker (Boy A - LE 657) by 35 Egyptian pounds. This in spite of his foregone wages during training of LE 286.20. From this point on he widens the gap each year. At the end of 10 years (age - 25) he has surpassed the unskilled worker (now semi-skilled) by LE 441 or nearly two years' wages.

MOI Apprenticeship Training's Limited Clientle

To be eligible to take the admission exams for MOI apprenticeship training one must have completed the ninth grade and have a "Preparatory" level certificate. The USAID/E report, Education in Egypt, dated 12/30/77, page 55 states that only 413 of every 1000 who enroll in grade one complete the six grades of primary education. Although the report does not carry the wastage analysis further, by the end of the preparatory level (grades 7 - 9) it is safe to estimate that the number of graduates will reduce the 413 still further to approximately 300. Page 34 indicates that 79% of this group entered secondary education in 1976. Thus, the eligible group for entering apprenticeship training is reduced to 21% or 63. 65% of Egypt's population is rural and not covered by MOI apprenticeship training. This further reduces the eligible to 41. Of this approximately 54% are boys. As there are currently no MOI apprenticeship programs for girls the number of eligibles per 1000 is reduced to 22 or 2.2% of all children entering the education stream. This is indeed a limited clientle under present standards. And training to date is only for the public sector.

To strengthen this and attend to the vocational aspirations of the vast majority of youth, MOI Centers must: 1) greatly expand their short term and accelerated courses; 2) serve the rural areas through mobile units; and 3) offer both short term and apprenticeship courses to girls.

According to PVTD officials a large number of women are employed

in spinning and weaving, electronics, automatic control, radio manufacturing, drafting/drawing, chemical and pharmaceutical pursuits to name a few . These women also are prospective clients. MOI training only serves government or public industry and therefore is largely scaled for firms who employ 50 people or more. Small industry and other private enterprises are not served. This market is large, however, as shown by the following:

Firms with 500 & employees - 5% private

100-499 & employees - 35% "

50-90 & employees - 51% "

10-49 & employees - 93% "

1-9 & employees - all private.

There seems a real need for private sector training as well to serve Egypt's economic development.

POINTS SUGGESTED FOR CONSIDERATION DURING GRANT AGREEMENT
NEGOTIATIONS OR PP PREPARATION.

1. Apprentice and accelerated training for both private and public sector.
2. Increase in accelerated and short term courses.
3. Flexibility in length of training for various skills.
4. Expansion of trades in each Center to produce a "general" skills student ..
(Add' basic wood-working, drafting, mechanical drawing, arch. drawing, etc,
except in special cases where industry needs are specific, chemical, pharm., etc.).
5. Admission of girls in certain skill areas (or special vocational
schools for girls).
6. Training and employment of women teachers and instructors in
certain skill areas..
7. Curriculum revision to correlate academic and vocational subjects.
8. Expansion of pupil personnel services.
9. Addition of maintenance unit with appropriate budget and equipment
to each Center for general cleaning and maintenance of facilities,
furniture and equipment.
10. Addition of "buildings and grounds" or "Maintenance" office in the
Alexandria and Cairo Central offices (under Business/Fiscal
Management) Department.

INFORMATION ON POSSIBLE CONTRACTORS TO BE VISITED BY MOI/PVTD
OFFICIALS IN THE UNITED STATES.

1. CAREER EDUCATION ASSOCIATES, INC.
6821 REISTERSTOWN RD.
BALTIMORE, MD 21215
TEL. (301) 358-7810

CONTACT:
JOHN TAYLOR, VICEPRESIDENT
MORRIS TISCHLER, PRESIDENT

This firm has many years experience in developing tailor made vocational curricula, instructional materials and teaching/learning equipment. They have trained thousands of instructors through seminars, workshops, at universities and teachers colleges and within industry. CEA has assisted SENAI (Brazil) and INCE (Venezuela) as well as CINTERFOR (the large inter-American organization for vocational training). Among its many international contracts are included: IRAN - Career Skills, Center for the IRANIAN Navy; training center for Technicians in Hospital Equipment Maintenance ; Civil Aviation training, Instructor training in Logistics; THAILAND - Technical School Development; PAKISTAN - Pakistan Airlines Maintenance Repair training. They have worked in over 50 countries and have a branch office in TEHRAN. Their vocational education courses and management training cover a broad spectrum. Courses are set upon modules according to competency based criteria. The why is as important as the how in their training philosophy. It has pioneered in developing mobile instructional units.

2. THE CENTER FOR VOCATIONAL EDUCATION
OHIO STATE UNIVERSITY
1960 KENNY ROAD
COLUMBUS, OHI 43210
TEL (614) 486-3655

CONTACT:
BRUCE A. REINHART
ASSOCIATE DIRECTOR

Although lacking a broad international experience this center is geared

to research, teaching and development of all aspects of vocational education and industrial management. It is closely tied with major vocational programs in the U.S. publishes widely in the field and operates the ERIC clearing house on career education.

3. THE AMERICAN EDUCATIONAL COMPLEX
HIGHWAY 190 W.T.
KILLEEN, TEXAS 76541
TEL (817) 526-1224

CONTACT
RICHARD D. WILSON
VICE PRESIDENT

The complex consists of the American Technological University; Central Texas College for post-secondary, adult and continuing education; American Preparatory Institute; and the Research Institute for Advanced Technology. The Overseas Service Division offers technical training programs to the U.S. armed forces throughout the world. They are prepared to offer internship programs and short courses in instructor training.

All three of the above institutions have already contacted Dr. James Smith, NE/TECH/HRST and have indicated their interest in the Egypt Vocational Industrial Training Program.

MOI officials, however, will have the opportunity of studying programs, equipment and services offered by a wide variety of vocational/technical/management institutions at the AEPD convention in Chicago next June. Their travel tickets should allow for sufficient in-country travel to visit at least three or four potential suppliers so they may recommend selection of one (or two) for immediate service to the program. PDS funds may then be used for awarding contracts following the collaborative style approach for PF development as well as service under a broader contract once the project is approved and the Project Agreement signed.

LOGICAL FRAMEWORK

Goal - To assist Egyptians to meet basic human needs through acquisition and utilization of work skills.

Goal - To develop a National Apprenticeship and Training Service to increase know how and attainment of employable skills for all levels of the Egyptian public and private sector work force.

Purpose: 1. To establish new instructional and management technologies at the Ministry of Industry's Instructor Training Institute (ITI).

2. To improve effectiveness of ITI staff.

3. PVTD - upgrading

EOPS : 1. Pilot laboratory school established at the ITI

2. Trainers trained in utilization of modern instructional technologies.

3. Pupil personnel services upgraded.

4. New, flexible curricula developed for apprenticeships and short term programs.

5. Cost-effective management procedures adopted.

6. Manpower training programs closely allied to the training requirements identified by the Higher Council on Manpower and Vocational Training.

7. Feasibility studies made.

USAID/E 1978 ASSISTANCE PROGRAM

TO THE MINISTRY OF INDUSTRY AND MINERAL RESOURCES
PRODUCTIVITY AND VOCATIONAL TRAINING DEPARTMENT (PVTD)

- I. Assist the PVTD to conduct a thorough study for the Prime Minister and the Ministry of Manpower Planning/ Inter-Ministry Board of Training regarding the feasibility of establishing a private or semi-autonomous public National Training Institute financed by a payroll tax or levy on all public and private establishments employing ten or more persons on a regular basis. Such an Institute would be responsive to the manpower training needs for all sectors through pre-employment, on-the-job programs, short courses, accelerated courses and long-term apprenticeship programs in industry and commerce.

Estimated cost: LE 14,500 US\$ 81,500

- II. (1) Upgrade Undersecretary of State for PVTD office organization and management:

- a) Cairo and Alexandria Regional Offices
- b) Instructor Training Institute (ITI), Cairo
- c) All Vocational Training Center Offices

- (2) Upgrade and strengthen Productivity Department courses, seminars and related activities for middle management:

Estimated cost: LE 200,600 US\$ 1,150,000

- III. Design and implement a Planning, Information, Research, Evaluation Department at the Undersecretarial Office:

Estimated cost: LE 138,000 US\$ 738,000

- V. Establish an Instructional Materials Production

Estimated cost: LE 121,800 US\$ 645,000

- VI. Revise completely the three year speciality of Electricity/Electronics at the Almiria Metals and Electrical Center attached to the ITI as a pilot project using modern U.S. instructional technology:

Estimated cost: LE 83,500 US\$ 560,000

- VII. Establish one mobile training center in one of the new cities or small town in the New Valley (location and trades to be selected by the PVTD):

Estimated cost: LE 17,000 US\$ 257,300

VIII. Conduct feasibility or pre-investment studies through the PVTD with the assistance of expatriate consultants regarding the upgrading of additional PVTD Vocational Centers using modern U.S. instructional technology:

Estimated cost: LE 204,600 US\$ 798,000

Administrative Support:

Estimated Cost: LE 100,600 US\$ 75,000

TOTAL PROJECT COSTS LE 1,233,000 US\$ 6,115,200

6,114,800

LE 353,000 US\$ 1,760,000

Project I Development of a Private or Semi-Autonomous Egyptian
National Training Institute For All Sectors Financed
By a Payroll Tax Or Levy System

A. Objectives:

1. To be responsive to major manpower training needs of all sectors through a single, coordinated, cost-effective Institute with regional offices in each governate.
2. To serve private as well as public enterprises through a payroll tax or levy system which will assure adequate financing and relieve the National budget of the present drain for uncoordinated low and middle level training programs of eleven Ministries.
3. To provide appropriate long and short term training for out-of-school youth and adults in both vocational and family life skills to help them increase their earning power and use their resources wisely.

B. AID Inputs:

	No.	US\$	LE
<u>1. Consultant Services:</u>			
a) High level Brazilian (SENA/SENAC) or Colombian (SENA) official to advise Minister of Manpower and Training and the Inter-Ministry Board of Training on legal and organizational matters in setting up such a training institution as follow-up to the feasibility study described below.	4	26,125	6,540
<u>2. Training:</u>			
a) Send an eight member team to Brazil or Colombia to study SENAI/SENAC or SENA apparatus and utilization in connection with such a program being developed in Egypt. Each team member would represent a different ministry with major training needs. Study to last three months.	24	50,400	6,000
<u>3. Equipment/Supplies:</u>			
a) Books, training materials, acquisition and shipment to Egypt.		4,000	500

<u>Summary:</u>	US\$	LE
1) Consultant Services	26,125	6,540
2) Training	50,400	6,000
3) equipment/Supplies	1,000	500
4) Miscellaneous/Contingency	1,000	1,500
	<hr/>	<hr/>
Total Project I	81,525	14,540
	81,500	14,500

Project II - (1) Upgrade Under-Secretary of State For PVTL
Office Organization/Management

Project II - (2) Upgrade and Strengthen Productivity Department
Courses, Seminars and Related Activities For
Middle Management Training.

A. Objectives:

Provide general assistance to PVTD Office for strengthening the semi-autonomous national organization in Cairo, the ITI and management of all national training centers through:

1. Management study of administrative organization, relationships, responsibilities, qualifications, personnel policies, wages and benefits, financial resources and other related administration/management functions providing a model operational organization based on Egyptian requirements and needs identified by a survey of selected establishments.

2. Introduce and apply new techniques such as management by objectives and management information systems developing and using all necessary plans, controls, measurement, record keeping and evaluation instruments.

3. Re-organize space and equipment to provide effective operation and flow adding new equipment, materials, furniture as required to accommodate expanded or re-aligned organizational patterns and responsibilities.

4. Improve skills of existing and newly recruited staff in procedures, job responsibilities and inter-personal relationships through inservice, pre-service and expatriate training programs.

5. Evaluate all courses in terms of new organizational and management techniques above, revise existing courses where appropriate, develop new courses as identified, design and produce instructional materials utilizing modern technologies and pedagogical methods.

6. Affect improvement of middle level management functions in industrial/commercial enterprises in both the private and public sectors through surveys, evaluations, courses, workshops, and advisory services.

7. Extension of above studies and organizational techniques in the PVTD Alexandria office as appropriate once the improved Cairo operations have been implemented, validated and established.

B. AID Inputs:

Contract with an appropriate management consultancy firm experienced in middle level management services for industry and commerce to assist IVPD officials in accomplishing the above objectives by providing:

1. Consultant Services:

	No.	USS	LE
a) Chief of party, general administration, management, work flow, job descriptions, personnel qualifications, salary schedules and incentives, design of appropriate forms and records. Participant training; advice ment.	24	141,725	15,310
b). Specialist in sample surveys and needs requirements surveys.	6	39,125	9,360
c) Specialist in personnel administration including pre-employment testing, personnel records, evaluation techniques, social activities, and other related activities.	12	100,925	24,720
d) Supervisory personnel training specialist to assist in course and seminar design as well as selection, translation and preparation of training materials.	18	146,325	32,305
e) Industrial engineering training specialist.	18	146,325	32,305
f) economic research specialist	18	147,325	32,300
g) Industrial safety specialist	6	39,125	9,360
Sub total	108	609,775	141,595

2. Training:

1. Expatriate

a) 4 Industrial Management engineering	4	32,600	3,000
b) 2 Industrial Safety	4	16,800	1,500
c) 6 Industrial Costing, Marketing, evaluation	4	50,400	1,500
d) 4 Supervisory Training.	4	33,600	3,000
Sub total	16	134,400	12,000

	No.	US\$	LE
3. <u>Equipment, Books, Films:</u>		80	3,000
Packing and Shippers Equipment 2%		20	
Sub total		100	3,000

Summary

1) Consultants		601,875	185,591
2) Training		134,400	12,000
3) Equipment		100,000	3,000
Sub total		1,236,275	200,591
Contingency/Inflation 10%		103,627	29,959
Total Project II		1,340,902	230,550
Rounded		1,150,000	220,600

Project III Develop a Planning, Research, Evaluation, Information 28
Department at the Under-Secretariat Office.

A. Objectives:

1. Provide assistance to MOI/Under Secretary for PSTD office to develop and staff a semi-autonomous Planning, Research, Evaluation, Information office to support policy makers through such activities as:

a) Conduct local manpower supply/demand studies for planning and dimensioning new vocational training centers, determining trades/skills to be taught, determine level of skills needed, and foster program flexibility/effectiveness in existing training centers.

b) Conduct research to determine effectiveness of department operations and activities; training methods; effectiveness of personnel trained.

c) Provide data for coordination of similar activities in the private and public sectors.

d) Identify, collect, analyze and present data to be used for department managers and decision makers.

B. AID Inputs:

* Contract with an appropriate Planning and Research Institution to assist PSTD officials in accomplishing the above activities by providing:

1. <u>Consultant Services:</u>	No.	US\$	LE
a) Planning generalist	24	191,725	45,540
b) Management Information specialist	18	100,925	24,720
c) Research Design specialist	6	39,125	9,360
d) Evaluation specialist	6	39,125	9,360
e) Short term consultants (4 at 3 No. each)	12	100,925	24,720
Sub total	60	471,625	113,700

* May be same contractor as Project II

	No.	US\$	LE
2. <u>Trainings:</u>			
a) 2 - Ms degree in statistical analysis	24	48,000	1,500
b) 2 - Ms degree in research/evaluation	24	48,000	1,500
c) 1 - Ph.D. degree in educational planning	36	36,000	,750
d) 6 - short term study (no degree) 3 mo. each	18	37,800	2,250
	Sub total	169,800	6,000
3. <u>Equipment and Materials:</u>			
		60,000	6,000
Shipment/packing - 25%		15,000	-
	Sub total	75,000	6,000
<u>Summary:</u>			
1) Consultants		471,825	113,700
2) Training		169,800	6,000
3) Equipment/materials		75,000	6,000
	Sub total	716,625	125,700
Contingency and inflation 10%		71,662	12,570
Total Project III		788,287	138,270
Rounded		788,000	138,000

Project IV - Upgrade and Strengthen the Industrial Management
Consultancy Institute (IMCI) Research and
Instructional Programs.

A. Objectives:

To organize and expand the semi-autonomous National Industrial Management Consultancy Institute of the Ministry of Industry and Mineral Resources to:

1. Establish and develop a body of knowledge and expertise in industrial management, with particular reference to the social, cultural and industrial environment of the ARI.
2. Train and develop a national staff of suitable qualified and experienced people capable of applying industrial management techniques to high level executive management of ARI industrial/commercial enterprises.
3. Develop and present training courses for management consultants in all sectors of industry/commerce with emphasis on the food, textile, chemical, metallurgical and mining sectors.
4. Establish and maintain effective relations with all institutes which provide management training in the ARI and with similar organizations in other countries.

B. UNAP Inputs:

* Contract with an appropriate industrial management consultancy firm experienced in executive level management services to assist UNAP/IFCT staff in accomplishing the above objectives by providing:

1. <u>Quantitative description</u>	No.	US	US
a) Senior Consultant	36	282,525	45,200
b) Production Management (1)	24	191,725	45,540
c) Production Management (2)	24	191,725	45,540
d) Financial Control	24	191,725	45,540
e) Marketing	24	191,725	45,540

* Preferably the same contractor as Project II

	No.	US\$	LE
f) Conference Training and Training Materials	12	100,925	21,720
g) Short term - 4 @ 3 Mo. each	12	78,500	20,520
Sub total	158	1,228,850	293,760
2. Training:			
24 - Management Consultancy Study in USA	4	201,600	8,000
Sub total		201,600	8,000
3. Equipment, Materials.			
Shipment/packing 25%		80,00	5,000
Summary:		20,00	-
		100,00	5,000
1. Consultants		1,228,850	293,760
2. Training		201,600	8,000
3. Equipment/Materials		100,000	5,000
Sub total		1,530,450	306,760
Contingency and Inflation 15%		229,576	46,014
Total Project IV		1,760,017	352,774
Rounded		1,760,000	353,000

Project V Establish an Instructional Materials Production Center
At the ITI.

A. Objectives:

To develop the capacity to create, adapt, translate and produce modern instructional materials geared to vocational training needs at all levels and sectors of manpower requirements specifically designed for effectiveness within the Egyptian culture. Eventually such materials will include, print, slides, single concept films, sound films, video tape, self-instructional programmed lessons, mock-ups, cut-aways, demonstration panels, radio messages, etc. Initially, attention will be focused on translation and adaptation of training manuals and guides, other print materials, single concept films, posters and demonstration panels to support Project VI - a complete revision of the Electricity/Electronics courses. Activities will include:

1. Production of materials.
2. Training of ITI staff in design and utilization.
3. Validation of materials with selected student groups.
4. Performance evaluation in industry of students with these materials.

B. AID Inputs:

Contract with an appropriate vocational education training and materials organization to assist PVTB/ITI staff in organizing and setting up the production laboratory and in designing, adapting, producing, evaluating and utilizing instructional materials.

1. Consultant Services:

	No.	US\$	LE
a) Materials production design expert/education	36	282,525	66,600
b) Print materials expert	12	100,925	24,720
c) Short term consultants 3 x 3 mo. months.	9	58,875	15,390
Sub total	57	442,325	106,710

2. Training:

3 short term study (no degree) 3 Mo. each	9	18,900	2,250
Sub total		18,900	2,250

3. Equipment:

<u>Quantity</u>	<u>Item</u>	<u>US\$</u>	<u>LE</u>
2	Multilith machines (table size)	8000	
1	Multilith plate copier	4000	
1	Mineograph - electric	3000	
1	Mineograph stencil cutter - electronic copier	5000	
-	Supplies for above equipment (paper, ink, etc.)	15000	
1	Paper trimmer - power operated	4000	
1	Binding machine and supplies	3000	
1	Stapler/stitcher - power operated	2000	
2	Collating machine	4000	
6	Files for stencils - 4 drawer, hanging	3000	
4	Filing cabinet for tapes, cassettes, films, etc.	2000	
2	Typewriters - electric, large arabic type	1800	
2	Typewriters - electric, small arabic type	1800	
1	Typewriter - manual, extra large arabic type	700	
1	Typewriter - electric, with various English type faces	900	
-	Layout and artist equipment supplies	10000	
-	Furniture - appropriate for above items	4000	
3	Work benches - with appropriate vises	1500	
-	Hand tools	2000	
-	Power tools (home workshop type)	3000	
1	Camera/accessories - 35 mm, slides, pictures	800	
1	Camera/accessories - 35 mm, double frame, film strips	800	
1	Movie camera - 8 mm - film-o-sound	400	
3	Movie projectors - 8 mm - film-o-sound	900	
2	Movie projector - 16 mm - magnetic sound	1600	
6	Projectors - 8 mm, single concept	1800	
8	Projection screens	480	
10	Projection tables	600	
4	Overhead projectors	1200	
1	Transparency printer/copier	1000	
-	Transparency materials - film, frames, grease pencils colored markers, self-stick lines, letters, etc.	3000	
6	Cassette player/recorder	2400	
-	Miscellaneous books, materials, cabinets, cassettes	4000	1,000
	Printing/shipping - 2000	2000	
		122100	
	Commercial processing/printing/multi- copying of films, filmstrips during initial phase	2900	1,000
	Sub total	125000	2,000

<u>Summary:</u>		US\$	LE
1. Consultants		442,325	106,170
2. Training		18,900	2,250
3. Equipment/Materials		125,000	2,000
		<u>586,225</u>	<u>110,720</u>
Contingency/Inflation	10%	58,622	11,072
		<u>644,847</u>	<u>121,792</u>
Total Project V		644,847	121,792
Rounded		645,000	121,800

Project VI Revise Completely the three year specialty of Electricity/Electronics at the Amiria Metals and Electrical Center attached to the ITI as a pilot project using modern U.S. instructional technology

A. Objectives:

An aim of this project will be to coordinate both academic and vocational subjects to the maximum extent possible by using a shop mathematics approach; focusing English and Arabic language on vocational terminology, project descriptions, writing instructions, preparing work plans, etc. Drawing will include sketching, dimensioning, blue print reading and progressively advanced use of common drawing instruments.

Individual student shop projects will stress skills of working with various tools and materials of the trades in fashioning useful items which may be retained by the student. Industrial mass production methods may be introduced for a four week period if desired.

A work study scheme may be designed during the second and third year to acquaint the student with the realities of employment, however, the majority of technical skills will be under the direct supervision of the Center and its instructors.

An experimental focus of this project will be to determine the depth and breadth of skills and dexterity students may achieve in a three year apprenticeship program using modern technologies. Emphasis will be on individual mastery or skill attainment in an area before progressing further. Students may progress at different rates.

Some instructional materials will be adapted and translated from materials previously validated in the United States or other countries and will be produced in the new ITI instructional materials production center. Academic subject materials may be designed in Egypt to Egyptian educational standards.

B. USAID Inputs:

Consultant services, training requirements, and equipment cannot be accurately specified at this time. A sum of _____ will be reserved, however according to the following estimate:

	Mo.	US\$	LE
<u>1. Consultant services:</u>			
a) Instructor trainer in electricity/electronics	24	191,725	45,540
b) Short term - 3 persons for 6 months in academic subject matter correlation	18	117,375	28,080
Subtotal	42	309,100	73,620
<u>2. Training:</u>			
a) ITI Director, department head, one academic teacher, one materials specialist, as well as the director, department head and one academic teacher from the Amiria Center will study modern instructional techniques in the United States or other countries for 3 months	21	44,100	2,250
Subtotal	21	44,100	2,250
<u>3. Equipment:</u>			
Student trainer stations, test instruments, selected tools, teacher aids, texts, instruction manuals, etc. for 20 students per instructional course working in pairs + 1 set trainer stations, etc. for ITI		120,000	
		6,000	
		126,000	
packing/shipping, 25%		31,500	
Subtotal		157,500	

<u>Summary:</u>	US\$	LE
1. Consultant Services	309,100	73,620
2. Training	44,100	2,250
3. Equipment	<u>157,500</u>	<u>-</u>
Subtotal	510,700	75,870
Contingency/inflation 10%	<u>51,070</u>	<u>7,587</u>
Total Project VII		
Rounded	560,000	83,500

Project VII Establish one mobile training center
in one of the New Cities or a
small town or the New Valley

A. Objectives:

To demonstrate the effectiveness of self-contained mobile units to offer basic instruction for short term or accelerated courses in remote or newly developing areas where constructing and equipping a vocational center is uneconomical or to respond quickly to identified partial needs during the two - three year period when a new center is being built.

This project is not intended initially for apprenticeship training.

B. USAID Inputs:

1. Consultant services:

May be largely provided by the contractor's regular staff in Egypt

3 short term consultants at 3 mo. each

	Mo.	US\$	LE
	9	58,875	15,390
Subtotal	9	58,875	15,390

2. Training:

Instructors will be trained at the ITI by the contractor's regular staff in Egypt and the short term consultants

	-	-	-
Subtotal	-	-	-

~~3. Equipment and Materials:~~

3) ~~Set up~~ the training stations, test instruments, tools, are furnished with the trailers. Books and instructional materials will be adapted and prepared at the ITI instructional materials. Production Center

2,000

	US\$	LE
b) Classroom trailer/equipment	15,000	-
c) Trade instruction Trailer I	40,000	-
d) Trade instruction Trailer II	40,000	-
e) Trade instruction Trailer III	30,000	-
f) Tractor for moving trailers to location	15,000	-
Subtotal	140,000	-
packing/shipping 25%	35,000	-
Subtotal	175,000	-

Summary:

1. Consultant Services	58,875	15,390
2. Training	-	-
3. Equipment/Materials	175,000	-
Subtotal	233,875	15,390
Contingency/inflation 10%	23,387	1,539
Total Project VII	257,262	16,929
Rounded	257,300	17,000

Project VIII.

- A. Objective . To conduct feasibility or pre-investment studies through the PVTD regarding further possible USAID assistance for upgrading additional PVTD Vocational Centers

Under a Collaborative Style approach, a Contractor will be selected to assist USAID/E in preparing this present Project Paper and in implementing several of the projects. This Contractor will also be authorized through this Project to conduct studies to determine the feasibility and dimensions of further assistance to the PVTD or to a successor organization, should the objective in Project #I be attained. These studies should focus on such issues as:

1) What major constraints may be encountered, and how might such issues be resolved if the concept of coordinating various Ministry training centers under a single, autonomous (private or "mixed") National Training Programs for industry and commerce is accepted by the Prime Minister and the High Board of Training?

2) In which trades might the U.S. approach to vocational training be most effective in view of Egypt's present and planned initiatives and the inputs of other donor agencies?

3) How might U.S. style technologies be best adapted to the various trades to make maximum utilization of equipment and buildings already in use?

4) In which trades might the role of Egyptian women in industry be strengthened? What specific training and apprenticeship opportunities might be developed to further their contributions to the economy by utilizing existing Centers or developing new ones?

5) How might relationships among the training Centers and cooperating enterprises be strengthened to increase the validity, reliability and usefulness of the three year apprenticeship program?

6) Could acute training needs of large enterprises be served by a parallel PVTD program whereby both academic and vocational skills are taught within the establishment itself on a release time/overtime basis which would enhance the workers productivity?

Four such studies will be selected to be implemented under the Vocational Industrial Training project umbrella. Some of the required data will be generated by the individual projects outlined above. Likewise, previously identified consultant time will serve as inputs to Project VIII.

For planning purposes however, it is assumed that the PVTD will conduct the studies with assistance of additional consultants for each area as follows:

<u>Each Sub-study</u>	Mo.	LE	US\$
1) Consultant services			
4 specialists for 3 months each	12	20,520	78,500
1 coordinator	<u>12</u>	<u>24,720</u>	<u>100,925</u>
Subtotal	24	45,240	179,425
2) Training - no specific requirement		-	-
3) Equipment/supplies/printing/etc.		<u>1,000</u>	<u>2,000</u>
Subtotal		1,000	2,000
 <u>Summary:</u>			
1) Consultants		45,240	179,425
2) Training		-	-
3) Equipment		<u>1,000</u>	<u>2,000</u>
Subtotal		46,240	181,245
Contingency/Inflation 10%		<u>4,624</u>	<u>18,142</u>
TOTAL		50,864	199,567
Rounded		51,000	199,600
TOTAL PROJECT VIII (4 - Sub-studies)		204,000	798,400

ADMINISTRATIVE SUPPORT

To ensure adequate clerical translation, and transportation services to backstop the total project a core staff will be employed in Cairo as follows for 30 months

2	Administrative assistants	FSL - 2 @ 3,466	L.E.	17,330
3	translators	FSL - 3 @ 2,884		21,630
4	bilingual secretaries	FSL - 5 @ 2,007		20,070
3	clerk typists	FSL - 7 @ 1,419		10,642
6	drivers	FSL - 8 @ 1,189		<u>17,835</u>
	Subtotal			87,507

Salaries for above personnel are taken from the present AID/Embassy Local Compensation Plan, Step. 5 dated July 3, 1977. The PVTD will furnish all additional personnel, office space, equipment, office expenses, car insurance, etc.

Equipment

1.	10 Electric typewriters	\$ 9,000	
2.	1 Copy machine	3,000	
3.	6 Stationwagons & freight	<u>60,000</u>	
		72,000	
	Packing/shipping 25% (1&2)	<u>3,000</u>	
	Subtotal	75,000	

Summary:

Staff		87,507
Equipment	75,000	-
Staff inflation 15%		<u>13,126</u>
Subtotal	75,000	100,633
TOTAL ADMINISTRATIVE SUPPORT	75,000	100,633
Rounded	75,000	100,600