

In the Name of God

TECHNICAL AND VOCATIONAL EDUCATION AND
TRAINING IN IRAN

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TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING IN IRAN

1. Background

The first modern technical and vocational institution in Iran was Dar-ol-Fonun which acted as the nucleus for further development of modern education system in the country. A German group established the first technical high school in Tehran in 1907, nearly a century after Dar-ol-Fonun was founded (it closed and reopened twice after World War I and World War II). Following the Constitutional Revolution in Iran, the Ministry of Education was established in 1911 to administer the whole education system. The foundations of modern education system continued to be laid down in the first half of the twentieth century. At the outset, the structure of general education system was 6-3-3. In the sixties the education system was reformed and expanded greatly. This reform changed the structure of education from 6-3-3 to 5-3-4, with two main tracks at upper secondary level, one of them called academic and the other vocational and technical. However, vocational education and training were more or less ignored in Iran until the year 1970. The number of students enrolled in the vocational and technical track was only 4 percent of the total (academic and vocational and technical) before then.

In the 1970s, the oil prices rapidly rose and brought in an enormous extra income for the Iranian government to invest in industry and agriculture. In response to the growing need for skilled labor in industry, agriculture and commerce, the technical and vocational high school system rapidly expanded in the 1970s. The relative size of enrolment in VET tracks reached 23.6 percent before the victory of Islamic Revolution at the end of the decade.

Although the Islamic Revolution in 1979 fundamentally changed the structure of the political and economic systems, social values and even cultural activities, the structure of the education system and its administration remained unchanged during the first post-revolutionary decade.

During the first decade after the Revolution (prior to the establishment of the new VET system) enrolment in secondary schools including technical and vocational schools rapidly increased. Yet, the relative size of enrolment in the VET system dramatically declined to 12.9 percent of the total by 1990.

Meanwhile, with the approval of the Supreme Council for Cultural Revolution (SCCR), the Council for Fundamental Change in Education (CFCE) was established in 1986. Its main function was to design a comprehensive education system at the general and secondary levels. The CFCE focused on the establishment of a number of subcommittees, each consisting of representatives from related organizations such as Higher Education, the Ministry of Labor, and the Plan and Budgeting Organization (later renamed Management and Planning Organization), as well as teachers' representatives.

In 1988, the CFCE presented its final report under the title "The Outline of the Education System in the Islamic Republic of Iran" to the SCCR for confirmation. This report, which was confirmed with little changes, provided a detailed framework for designing an education system. However, due to some socioeconomic and political reasons the new system was not granted a chance to be fully implemented from the 1st grade of the primary education. The reform was limited to the upper secondary education.

In 1990, the detailed plan for the new secondary education system was designed and confirmed by the SCCR. In September 1992, a plan to pilot this program in a limited number of high schools in large cities was implemented. It covered ten percent of students who voluntarily chose the new system. Various improvements in the implementation of the system resulted from this piloting and the program expanded over the next few years across the country. In September 1996 the entire first graders of the old upper secondary school (grade 9) were replaced in the new system, and by 1999 the change in the upper secondary education for all grades was complete.

The current structure of education system of Iran (after the implementation of new upper secondary system) is 5-3-4 (= 1-2-1). The system is shown in Diagram 1. The basic general education consists of two stages, 5 years primary level education, and 3 years lower secondary (called guidance cycle). Upper secondary has a 1+2+1 structure, in which the first year is common for all students. In second and third years there are three branches, theoretical (academic); technical and vocational; and vocational training (*Kardanesh*). The fourth year is a pre-university course.

In this chapter after the Background, Section 2 is devoted to TVET in primary and lower secondary (guidance cycle), including an overview of enrollment trends and forecast and its implications for labor market and skill development. Section 3 is devoted to TVET in upper secondary education.

2. TVET in primary and lower secondary education

2.1 The curriculum specification in relation to labor market

Children enter the 1st grade of primary school when they are 6 years old and after 12 years of study graduate from pre-university course at 17. As repeating grades is

allowed throughout schooling, they are permitted to stay at school up to age 21. There is no streaming in the primary and lower secondary education level. At primary, the program of study consists of Persian language, mathematics, religious instruction, sciences and health, arts, physical education and social studies. At this level, the school year consists of 816 hours of study, divided into 34 weeks of schooling; each week contains 24 periods of 45-50 minutes duration. At lower secondary, two other subjects, foreign language (commonly English) and vocation and technique are added to the subjects taught at the primary level. The school year consists of 1080 hours of study, divided into 34 weeks of schooling; each week contains 30-32 periods of 50 minutes duration.

On the whole, in the intended curriculum of basic education, there exists a strong emphasis on topics directly or indirectly related to labor market needs, as a prerequisite to skill development programs associated with TVET. But in practice, when the curriculum is implemented, the first direct exposure of the pupils, in general and basic education system, to TVET themes is provided by 306 periods of study (= 255h), in a subject called in Persian “*Herfeh va Fan*”, which literally means vocation and technique. The course objectives are familiarization of pupils with different jobs, exercises in manual activities, and use of common hand-tools. Some of these objectives are also indirectly followed in other subjects, such as arts (manual activities) and sciences (practical instruction). However, by tradition, schooling in Iran is theoretically oriented, with emphasis on root learning; the practical instructions in laboratory and workshop are more or less overlooked in the assessment of students’ achievements processes.

This hidden curriculum approach toward the world of work and TVET, which is practiced unintended at all levels of schooling, especially in basic education system, has negative consequences for all prospective skill development programs. Its emphasis, as discussed above is on root-learning, stockpiling facts and individual competition to get better marks to acquire higher certificates or degrees. Yet what the labor market demands is mastery of skills in reasoning, problem solving, and creativity as well as team work, discipline and observance of rules and regulations.

2.2 Enrollment trends in general and basic education system and its implications for labor market and skill development

The enrollment trends in education system of Iran are shown in Table 1. From the information provided in this table, the following points can be derived:

- During the past two decades, enrolment in the education system has experienced steady growth at an annual rate of 3.6% (for girls 4.6%). The growth rate was greater in the first decade, gradually decreased in later years and in the last four years became negative. Female enrolment throughout all

these years has grown faster than that of boys by more than one percentile point. In 2001, the overall enrollment was 17.9 million, or around 29% of the total population in this year.

- The enrollment of upper secondary schools during the period (1978 – 2001) expanded faster than primary and lower secondary education (6.3% against 1.8% for primary and 5.2% for lower secondary). This brought up a bigger share for upper secondary in 2001 (24.9%) than 1978 (4%). The shift in enrollment was in part due to the decreases in the number of 6 year old children entered and continued in the system after 1992. This naturally impacted enrollment trends at higher levels of education, gradually appearing in prospective years and affecting upper secondary education in 2002.

The effects of the past expansion of education system on labor force are:

- The average years of schooling of labor force that was 2.98 years in national census of 1976 was raised to 6.19 by 1996 and to 6.74 by 2000. This has provided a better foundation for skill development of labor force.
- The status of schooling and employment of the population in the age group 6-19 in 1996 is shown in Table 2. It should be noted that the schooling age-group is 6-17, but in the published information of the National Census the age-group of economically active population is given in 5 year brackets: 10-14, 15-19, etc. The year 1996 is the latest date for which relatively detailed information on the labor market is available. In that year, of the total population of 23.08 reported for the age group 6-19, 17.9 million were in school (77.5%). Of the 5.2 million non-student population, 1.45 million were employed and 469,043 were unemployed seeking job. There is no information available concerning the matrix of age-group by level of education to show the level of educational attainment of active population in this age group. The important points in this regard are as follows:

*- The first point is that, if in 1996 full enrolment had been achieved for the age group 10-19, then the 1.45 million jobs this age group occupied would have become available to the 1.46 million adults who were unemployed at that time. This shows that the education system has potential capacity to partially control the existing unemployment crisis.

*- The second point is that, the large size of literate early school leavers and drop outs from the educational system (3.4 million) is an indication of the internal inefficiency of the system. Table 3 summarizes the result of an attempt to build a trend on this issue by the education system performance for 1992-2000 (despite the scarcity of information). The number of early school leavers and drop-outs in different years vary between 820,000 to 1,400,000 (5.1% to 7.9% of total enrollment). While these figures are alarming on their

own, the entry of a rather sizable portion of these unskilled young people into the labor market, may have a severe impact on labor productivity. In the future the majority of these drop-outs would be potential applicants for TVTO training centers, while the level of their general education may pose problems for skill development programs. As illustrated in Table 4, the estimated supply of labor through the general education system that in 1992 was 144,000 new job seekers, reached 305,000 in 2000 at an annual rate of growth of 9.8%. Further, the share of those with high school diplomas in the population of newcomers that was 15.2 % in 1992 increased to 52.8% in 2000. It seems that there is a relative improvement in level of educational attainment of labor supply.

*- Geographical imbalances that is a persistent characteristic of education system, although has improved during past decades due to the outstanding increase in the rate of participation of girls, rises a bottleneck on the way toward skill development in deprived provinces.

2.3 Challenges and enrollment forecasts and their implications for labor market and skill development

- Population forecasts indicate that the size of the age group 6-17 is decreasing at an annual rate of 2.2% from 20.5 million in 1996 to 14.6 million in 2011. However, for the primary level age group (6-10 years old), the population decrease will stop after 2005 and will turn into an increase at an annual rate of 2.35%. Three years later, in 2008 the same will happen at lower secondary age group. The population growth will begin beyond the year 2011 at upper secondary age group. The details are shown in Table 5.
- The implication of these changes for the labor market, as well as skill development programs are diverse and needs more research. Some apparent effects will be the diminution of participation rates of the 10-19 years age group in the labor force, the bigger share of high school diploma holders in the labor supply, and the growth of female participation in the labor force.
- The changes in the school age population during the next decade provide a unique opportunity for the education system to experience reduced pressure after decades of increasing demand for educational services. Now the challenge is to give priority to the improvement of the quality of education, in terms of promotion of core competencies that more than ever are needed in the world of work; to provide basic education for special groups; and to allocate educational resources to the provinces in a more equitable way.
- The above-mentioned probable changes in education system provide a more educated labor supply, in which the share of women and special groups (physically and mentally handicapped, tribal population and youth from

deprived families) will be greater than before. Therefore, the skill development programs should take relevant measures to encounter new diversified social demands.

- If the enrolment projections of the school age population hold, the supply of 10-19 year old persons to the labor market will sharply diminish during the next decade. Hence there will be a chance for policymakers of TVET system to focus more on the improvement of the quality of skill development programs.

3. VET in New Secondary Education System

3.1 General view

As shown in Diagram 1, the new secondary education, from grade 9 to 11, comprises three branches: 1) Academic (theoretical or in Persian *Nazari*) branch, 2) vocational education branch (*Fanni va Herfei*), and 3) vocational training branch (*Kardanesh*). Moreover, there is a one-year pre-university course (grade 12) for students who gain a high school diploma and intend to continue their studies at the university level. For graduates of both vocational education and vocational training branches there is a parallel path for further education without passing pre-university course. It is through AA/AS program of study that is carried out in technical and vocational colleges, which will be presented in section 3.4 in details.

The program of study in each branch consists of three academic years commencing from grade 9, and leading to a diploma in year 11. A certificate is awarded at the end of this course. All students who study for three years and pass relevant examinations successfully are awarded a high school diploma, which makes them eligible to participate in the pre-university course, on condition that their average scores is more than 70 out of 100. The successful completion of the pre-university course is essential for admission to university entrance examination.

Three types of courses are offered in all branches. These include:

- (a) General or common courses which are similar for all tracks and are compulsory for all students. All of the courses offered in the first grade fall in this category. They consist of Persian language, foreign language (most commonly English), sciences, social studies, religion, health and physical education.
- (b) Limited optional courses which could be selected by students according to their interests and abilities.
- (c) Specific courses selected by students in accordance with the field of studies that they have chosen.

Common courses (including 66 units for academic, 58 units for vocational education, and 53 units for vocational training) are offered in grade 9 and 10 while specific courses are presented partially in grade 10 and mostly in grade 11. Optional courses, which are limited and can help students test their own interests and aptitudes in choosing appropriate fields of study, are offered in grades 9 and 10. Grade 9 is common for all students and they choose the track in grade 10. Therefore, students have a year during which to think and choose the main track and area of their own studies in grade 10. This provides more opportunities for students to choose gradually the appropriate stream in accordance with their abilities and interests.

Students who have chosen vocational education and vocational training branches have three options at the end of the course: a) Getting high school diploma and joining the social life, as a worker in the labor market or in other social activities. b) Continuing their studies up to five years at a higher education institute through passing its entrance examination, but without passing the pre-university course. In this case they are granted AA/AS degrees, which is regarded as technician certificate. And c) Getting diploma and going to pre-university course to prepare for taking part in university entrance examination. It was initially intended to allow the students to continue their education at institutes of higher education straight without taking any entrance examination, if they have acquired good scores, but in practice it is solely possible through passing the entrance examination. The details of the educational structure of the VET system in the Ministry of Education is presented in the next section.

3.2 Vocational training branch (Kardanesh)

The educational structure of the VET system in the Ministry of Education comprises four components including:

- 1) Vocational training branch (called in Persian *Kardanesh*),
- 2) Vocational education branch (called in Persian *Fanni va Herfei*),
- 3) Technical and Vocational Colleges (called in Persian *Amozeshkadeh*), in charge of continuous AA/AS programs (*Kardani payvasteh*), and
- 4) Technical teacher training University.

According to Article 1 of the regulations concerning the cooperation between ministries and other public organizations *Kardanesh* has been defined as a vocational training program that promotes the general knowledge of students as well as required skills for their employment. Students who choose this branch can take their common and skill development courses together or separately in one of the five kinds of

following training centers and continue their education toward the high school diploma in *Kardanesh*:

- Vocational training centers affiliated with the TVTO (only for skill development courses),
- Vocational education and training schools affiliated with the Ministry of Education,
- Vocational education and training schools established by other ministries and public organizations such as: Ministry of Agriculture, Ministry of Culture and Islamic Guidance, Ministry of Health and Medical Education, and more than 30 other organizations and governmental bodies. These ministries by authorization of ME could establish VT schools and offer common and skill development courses to students according to their capacities in a variety of work-oriented subjects;
- Private non-profit training centers which have permission from the Ministry of Education,
- Training centers in the vicinity of industrial enterprises, which are supervised by TVTO, and
- Training centers administered by industrial enterprises under the permission of the Ministry of Education.

These schools should follow the educational regulations developed by the Ministry of Education, but they can, after reaching an agreement with the Ministry of Education or the local education office, suggest and implement their own curricula in specific courses in order to make them relevant to industry or local requirements.

Students after passing the common courses (at least 47 units out of total 96 units required to obtain a high school diploma) may take 900 hours skill training modules to get 2nd grade skill certificate; by taking 1600 hours skill training modules they could get 1st grade skill certificate granted by TVTO. It means that those who obtain 1st grade skill certificates have completed the 96 unit courses required for high school diploma. However, if according to TVTO standards the time required for acquiring 1st grade skill certificate is less than 1600 hours, the students should fill the remaining hours by taking another skill certificate in related fields.

Thus the *Kardanesh* (VT Diploma) program is different from VE Diploma in two ways: 1) it contains no theoretical VET courses, other than the theoretical contents of TVTO skill standards, and 2) for VE diploma the skill certificate is not required. The *Kardanesh* graduates usually have attained higher level of general education in comparison with TVTO skilled workers with 1st grade certificate (not necessarily 18 month training that consists of 2700-2800 hour of training).

The student enrollment in VT programs for recent years is shown in Table 6 and Figure 2. The number of students increased from 226,141 in 1997 to 401,065 students in 2001, at an annual growth rate of 16%. At present, more than 685 courses aimed at relevant jobs are available for students in *kardanesh* branch. As mentioned these courses are provided through the cooperation of many governmental and non-governmental organizations. These courses may be classified in the following main groups:

- 1- Industrial sector, including electrical, computer (hardware and software), civil works, mechanics, handicrafts, ceramics, dress makings, chemical and petrochemical courses.
- 2- Agriculture sector, consisted of courses in gardening, animal husbandry and veterinary, fishery, forestry, agriculture machinery, food processing, water and soil preservation, pest control and useful insects.
- 3- Service sector, including health and paramedical, finance and administrative affairs, foreign languages, social services, hostelling and tourism.

Table 7 provides information on students in 2nd and 3rd grades of vocational training branch in the academic year 2001-2002 by main fields of training. In this table only those fields that accommodate more than 1,000 students are listed. These fields constitute 77% of enrollment in this year. The training programs in the home economics and child care that comprise 11.34% of enrollment are the most populated; they are chosen by girls who are not motivated for further education. Meanwhile the computer application program that accommodates 11.34% of students is the next one and both sexes eagerly follow it, because the labor market demand is stronger for its graduates, as well as the various options that are available in this field for further study. The traditional training fields such as welding, metal milling, model making, carpentry, masonry and auto-mechanics that usually admit boy students, fall in the middle of the spectrum. But the arts and handicrafts that include handmade carpets as well as agriculture, both of which comprise a big portion of the labor market, specially in non-formal sector, are at the bottom.

Indeed, the establishment of vocational training (*kardanesh*) branch as an innovative aspect of the new upper secondary system provided flexibility as well as more linkages between Ministry of Education and other ministries that are more in touch with workplaces. This is because of different ways of establishment and management of vocational training schools in which they provide the content of education in cooperation with the specialists more acquainted with workplaces.

3.3 Vocational education branch (*Fanni va Herfei*)

The objectives of vocational education (VE) are: to prepare students for social life, make them familiar with the world of work, and lay the ground for further education.

Students graduated from general education and enrolled in secondary schools are qualified to choose this track after passing the first common year (grade 9). Duration of vocational education is three years including the first common year at grade 9. There are 96 unit courses offered in the VE branch, leading to a vocational high school diploma.

Furthermore, the VE curriculum is developed as part of a five-year program, divided into three years at secondary level and two years at tertiary level. Therefore, students who obtain diploma certificates in vocational education can continue their studies up to five years at technical and vocational colleges to get AA/AS degree (technician certificate). Of course there is an entry examination to select competent students. In this case, students will pass 170 unit courses through their five years studies. Another option for students who gain VE diplomas is enrolling at pre-university courses to become prepared for taking university entrance examination to have a chance to continue their studies in undergraduates courses at university.

Industry, agriculture and services are the main three areas of vocational education. Each area is divided into some disciplines, which in turn include many specific programs. More details are as follows:

1. Industrial sector consists of mechanics with 10 specific programs, marine science and technology three specific programs, electricity (electronic and electro-technique) six specific programs, materials eight specific programs, civil works with specific program.
2. Agricultural sector includes food industry, natural resources with 2 programs, gardening and farming with 2 programs, veterinary with 2 programs, and agricultural machinery with 2 programs.
3. Service sector consists of financial and administrative affairs with three programs, health and paramedical programs, management and home economics, computer with two programs.

Following the tradition of old system of secondary education, when the academic tracks were completely, physically as well as educationally, separated from VET tracks, there still exists three types of vocational education schools for offering these courses. These previously included technical high schools (*Honarastan Fanni*) for courses related to industrial sector, agricultural high schools (*Honarastan Keshavarzi*) for agricultural courses, and vocational high schools (*Honarastan Khadamat*) for courses related to service sector. But since 1992, when the new upper secondary system started to work, gradually these schools began to offer courses in other VET tracks, as well as in academic tracks. The same policy is implemented in theoretical high schools -- when the VET schools are not available and there is a demand for VET programs, these schools offer the VET courses that do not require specific workshops equipped with heavy and complicated machinery.

There are three ways available for the establishment of technical and vocational high schools. First, funded and administered by Ministry of Education. Second, established in cooperation with enterprises at the site of an industrial firm in order to use their facilities and equipments or work experiences. Third, through non-profit private initiative.

Table 8 indicates the number of students enrolled in vocational schools in recent years. The number of students at an annual rate of growth of 6.7% has increased from 251,505 in 1997 to 326386 in 2001. The share of girls having increased at a 12.2% annual rate of growth is outstanding. These figures also show that the number of students of both sexes in vocational education in the last year has not increased. This stagnation is partially due to changes of the educational regulation, which took place in 1999-2000, but the issue needs more investigation.

3.4 Technical and vocational colleges

As mentioned before, the vocational education system includes a curriculum for (3 + 2) years, in which 3-year courses are offered in TV high schools leading to high school diploma and 2-year courses (*Kardani payvasteh*) are offered in technical and vocational colleges leading to AA/AS degrees (technician certificate). The Bureau of Higher Education Institutions (colleges), which recently promoted to general office, centrally and nation-wide is in charge of the curriculum affairs (the curriculum is approved by Ministry of Sciences, Research and Technology), as well as the establishment and development of technical and vocational colleges across the country. In the academic year 2001-2002, there existed 108 colleges including 43 for women, located in big cities across the country. In the same year, 98,223 student, (including 30,164 female students) were studying in 33 disciplines at these colleges. The number of personnel working in these colleges was 11,475, of which 7,779 employees were teaching staff. The proportion of fulltime teaching staff was only 17%.

Students who have been granted high school diplomas in VT or VE are qualified for taking part in college entrance examination. In 2001-2002, 76.7% of students admitted had VE diploma and 23.3% VT diploma (of the total VT and VE diploma holders who were admitted). The duration of these programs is two years, and usually their contents cover the same topics as VET high schools curriculum but at advanced levels. The detail of TVET at higher education, including the activities of the Ministry of Education will be covered in Chapter VI

3.5 Technical Teacher Training University

The Shahid Rajaie University of Technical Teacher Training (named after the first martyr President of IRI) was established through the further development of the Technical Teacher Training College in 1998. This university offers courses at the

Bachelor and Master degrees in sciences and engineering (technical and vocational education) to train teachers for vocational education and training schools as well as technical and vocational colleges. There are three faculties in this university including: faculty of engineering, faculty of physical training and human science and faculty of basic sciences. There are 180 lecturers and faculty members with MS and PhD degrees at this university.

In academic year 2001-2002, 3,500 students (of which 35 percent female), were studying at the university and 822 students graduated. Most graduates are employed by the Ministry of Education to teach in technical and vocational schools and colleges; they are usually granted a scholarship from the government. Another source for recruitment of technical teachers is the graduates of other engineering and technical universities.

4. The Administrative structure of TVET in Ministry of Education

4.1 The general view

The organizational structure, which recently has been changed, is a centralized system of four levels including the ministerial departments, the provincial general offices (now they are transformed to a relatively autonomous provincial organization), the local offices and schools in the local areas. At the first level, decision-making processes, planning, curriculum development and human and financial resources are provided for whole system and transferred to the lower levels for implementation.

Since the implementation of the new upper secondary education system the organization of ministry of education has changed several times, especially in terms of vocational education and training. Before implementing the new education system in 1994, the VET system at the first level was administrated by deputy minister for vocational education and training with six bureaus, according to major fields of study: agriculture, industry, services, TVE in higher education, and research and curriculum development. At provincial level, there was also a deputy general manager in charge of the VET affairs. Overall, at that time from an organizational point of view, TVET at secondary level was completely separated from academic secondary education.

After the implementation of the new education system, first, the vocational education and training bureaus amalgamated with the bureaus of academic secondary education and were called secondary education and training branch. Then, in 1998, due to the adaptation of the down sizing policy of administrative structure, the secondary education and training branch was amalgamated with general education branch and was called education branch. In this case, VET curriculum bureau was transferred to the Research and Educational Planning Organization, which is responsible for curriculum development of all education courses at all levels.

The last administrative changes in the Ministry of Education were conducted recently in 2001-2002. As far as the VET system is concerned, the educational branch was divided into two branches: general education branch and academic and training branch, each one under the management of a deputy of minister. Diagram 3 shows the last organizational structure of Ministry of Education confirmed in 2001 by MPO.

Thus, different bureaus centrally manage the various aspects of vocational education and training within Ministry of Education. They are as follows:

- *The Bureau of Vocational Education and Training Curriculum Development* as part of Research and Educational Planning Organization, which makes educational policy and develops curriculum for VET at all levels.
- *The Bureau of Vocational Education* under the auspices of Academic and Training branch, providing educational planning for technical and vocational schools;
- *The Bureau of Vocational Training (Kardanesh)* under the same branch as above, providing educational planning for vocational training;
- *The Bureau of Technical and Vocational Colleges Affairs* under the Academic and Training branch, in charge of technical colleges affairs such as curriculum and educational planning across the country.
- Furthermore, two research centers, the Institute for Educational Research (IER) and the Research Institution for Curriculum and Educational Innovation (RICI), are involved with VET research.

4.2 Bureau of curriculum development and provision of text books for VET

The implementation of new upper secondary education system provided a vast spectrum of activities in terms of curriculum development and preparing text books for vocational education and especially vocational training that was a new case without any instruction materials.

It should be emphasized that because in vocational training the educational and skill standards, as well as the textbooks developed by Technical and Vocational Training Organization (TVTO) are extensively used, the bureau of curriculum development and provision of text books for VET is not directly concerned with curriculum development for skill development courses in vocational training branch (*Kardanesh*).

At present, this bureau is in charge of the curriculum development and provision of the textbooks for all course in vocational education and partially in vocational training. A general manager in cooperation with his three deputies administrates the activities of bureau. Of course more than 330 experts from different organizations and universities collaborate with them. Table 9 indicates the number of specialists involved with the bureau's activities.

The organization of bureau of curriculum development has been designed based on the division of the disciplines in the VET system. Because of some similarities between the vocational education and vocational training in terms of curriculum development, there is only one group in charge of both activities. Thus, the bureau is divided into three sections: industry, agriculture and services.

Diagram 3 shows the structure of the bureau. For each subject a curriculum development team is organized, which comprises 7 people including: a faculty member (PhD) from university, a lecturer from technical college (at least with MS/MA degree), a teacher from technical high school (at least with BS/BA degree), a curriculum specialist and a subject specialist both from the bureau of curriculum development, a specialist from the bureau of vocational education, and an expert from related industry.

Curriculum development is based on the job analysis approach to meet the overall industry needs. There is also concern to develop curriculum based on competency-based training (CBT), but it needs a mechanism to provide a dynamic relationship between workplace and education in order to meet the needs of labor market.

4.3 Bureau of Vocational Training and Bureau of Vocational Education

The implementation of new upper secondary education system in terms of educational planning such as preparing facilities and procurement of equipments, granting permission for establishment of a VET high school, funding the programs, carrying out the nation-wide examinations, and so on are the responsibility of academic and training branch and its bureaus.

4.4 The research centers

In 1988 when the bureau of research and planning was established in the technical and vocational education branch some opportunities for conducting research in vocational education and training were created. Then in the 1990s the Ministry of Education paid more attention to the research affairs by establishing the research council for making policy in research area. In 1996 the Institute for Educational Research (IER) was established in Tehran. To develop a capacity for educational research across the country, the IER organized a research council at all provincial education departments to conduct research at the local levels.

A special research group in IER is committed to design and conduct research in VET domain. Moreover, the Research and Educational Planning Organization established a Research Institute for Curriculum and Educational Innovation (RICI) in 2001. This institute is also concerned with the VET issues in curriculum area and has conducted some research in this field.

4.5 The VET staff in Ministry of Education

Because the secondary school system is now organized following a comprehensive approach, it is not possible to distinguish the staffs who are in charge of VET programs from other teaching staff in secondary education. However to give an indication of the status of human resources in VET schools, in table 10 the distribution of upper secondary education's staff by level of educational attainment and type of occupation is shown. From the experience it can be deduced that in VET tracks the picture might be the same as in secondary education system, with little differences in proportion of workshop technicians.

The table 10 shows that 57.88% of staffs are in teaching position. This ratio for the whole education system of Iran is 65.7%. Teachers with BA/BS or higher degrees constitute 92.4% of teaching staff, while this ratio for management staff (principals and vice-principal) is 82.5%. According to the upper secondary schools regulation, all teachers and principals should have at least a BA/BS degree, thus the proportion of under-qualified teachers is at least in order of 8%. However, because of miss-match of teachers' field of specialization and the subjects they teach, the rate of miss-qualification should be higher, especially in VET tracks.

5. The performance of the new VET system

5.1 The improvement of VET indicators

The implementation of the new VET system provided more opportunities for students to choose vocational education and training programs, this was partially achieved through provision of facilities in cooperation with other ministries and organizations. Table 11 and figure 2 shows that the total proportion of vocational students to the academic students has decreased from 12.8 percent in the beginning of the 1990's to 11.9 percent in 1994, on the outset of the new system, and then the proportion constantly has taken a sharp increase to reach to 28.3% by the end of the decade. According to the Third Development Plan, this indicator should be increased to 35 percent at the end of 2004.

In 1990's, the enrollment of students in vocational training (*Kardanesh*) has increased more rapidly in comparison with the vocational education branch. This is shown in table 6 and figure 1. It seems that the participation of other public bodies in *Kardanesh* program has been more extensive.

5.2 Efficiency and effectiveness of the new VET system

The statistics on the flow of the students indicate that during the period of 1992-1998, in which the new system was gradually implemented, in comparison with the old system, the rates of drop-outs and repeaters have fallen sharply. A study shows that during 1980's the ratio of wastage for male high school students was 1.74 and for female students 1.54, comparing with 1 in waste-less cases. It means that production

of a male high school graduate required 74% more resources than it was necessary. At that time, the rate of high school dropout for boys was 49.8% during four years of study in theoretical tracks of upper secondary schools. There are some evidences that show for VET tracks these indicators were worst.

After implementation of new system the rate of dropouts fell sharply (less than 12% during three years of study), and the ratio of wastage, in academic year 1999-2000, for vocational education branch estimated to be 1.157 and for vocational training 1.203, while for theoretical tracks it was 1.093.

However, the improvement of efficiency suffered severely when in 1999 a drastic change in educational rules and regulations occurred. One of the changes was replacement of flexible semester-unit courses (in which each unit course is independently evaluated) by year-round unit courses that in the first grade their evaluation were inter-dependent, and failure in some courses may require the eligible student repeat once more all the courses of the first grade, even though he/she has successfully passed the other courses. The published results of examination of the first grade in upper secondary schools shows that in academic year 1999-2000 the proportion of boys and girls who failed to promote to 2nd grade were respectively 39.66% and 22.1% (for both sexes 31.06%). In academic year 2000-2001 these ratios were slightly improved: for boys 37.02%, for girls 21.73% and for both sexes 29.79%.

The direct and side effects of these policy changes on the VET in new secondary system are not evaluated yet, but its immediate effects on VET is the sharp decrease in numbers of applicants for the vocational tracks. As it is illustrated in table 12, while the rates of enrollment growth in vocational training and vocational education branches for boys in 1999 were respectively 18.04% and 7.2% annually (for girls 24.02% and 17.45%), next year, when the new policy enacted, the growth of enrollment in vocational education stopped in 2000, and for vocational training became negative (for boys -41.78% and for girls -34.85%).

Furthermore, on the whole, because the rate of transition from 1st grade to 2nd grade decreased sharply in 2000-2001, one of the consequences of change of educational policies, a large number of young people were pushed out of schools to labor markets. The estimated number is in order of 220,000 persons more than the regular number which usually drop out of schools.

The issue of the effectiveness of VET programs and the follow-up of its graduates, in old and new secondary education, has not been investigated thoroughly. In 1995, a nation-wide follow-up study revealed that the chance of employment for graduates of the VET and theoretical tracks is the same. But in this study the socioeconomic background of the graduates was not controlled. Recently a follow-up survey has been carried out in Tehran on the graduates of vocational training (*Kardanesh*) in the fields of electronics and computer. Two years after graduation 52% of girls and 25% of boys

were unemployed and 28% were studying at higher education institutions. This study also has no control group, which makes the comparison of alternatives options impossible.

5.3 The improvement of girls' participation in VET

Table 13 and Figure 3 show the proportions of enrollment in VET programs at secondary education according to gender. As can be seen in this Table the trend of girls' enrollment growth for both VE and VT is the same, but the proportion of those who have chosen VT branch is greater. Therefore, in comparison with boys, the proportion of female students in VET increased from 20.1% in the beginning to 36.8% at the end of the decade. This picture shows that the new system has succeeded in making the formal vocational education and training system more equitable for girls. However the new vocational education and training system, concerning the equity aspects, still needs more attention and investment. The geographical distribution of the girls' enrollment is very imbalanced. The same is true for enrollment of girls across different fields of study.

The comparison of the rate of high school girls' participation in VET program with their share in the labor market shows one of the important forthcoming features of the labor market of Iran. The rate of participation of the female high school graduates in labor force in 1996 was 14.2% (for all secondary tracks), while the share of female students in enrollment of VET in this year was 31% and increased to 36.8% in 2001 (the respective rates for female students enrollment in all tracks of secondary education were 47.8 in 1996 and 49.2 in 2001). This trends will bring about a positive shift concerning the female shares in labor supply in near future.

5.4 The improvement of private sector participation in VET

The private sector participates in VET in two ways: 1) by establishment of non-profit schools, and 2) through collaboration of the Ministry of Education with enterprises.

- ***The non-profit VET schools***

Non-profit schools have been established according a specific law approved by parliament in 1987. They are tax exempt private institutions that invest in education but are not authorized to earn profit. They are granted some public facilities such as teachers, cheap credits, and lower rate charges of electricity, gas and water supply. In table 14 the trend of growth of students in VET non-profit schools is shown. These data indicates that the rate of enrollment growth in non-profit VET schools is higher than public school enrollment during 1997-2001 and as such, the proportion of students in these schools to total enrollment in VET has increased from 3.7% in 1997 to 4.1% in 2001.

It seems that the participation of private sector will be promoted in the future because in the Third Development Plan it has been emphasized and the Ministry of Education is preparing a bill for changing the status of non-profit schools to for-profit institutions, in order to anticipate the private sector investment in VET initiatives.

- ***The VET schools in vicinity of enterprises***

Table 15 shows the number of students and schools in vicinity of firms during the last four years. As can be seen in the Table both number of students and schools has decreased during the four last years. This means that either there is no interest for companies to cooperate with the Ministry of Education, or the economic situation prohibits the new employment and the employers are reluctant to engage in new commitments.

According to the regulation pertaining to the establishment of VT (*kardanesh*) schools with the cooperation of enterprises, the following points should be considered and agreed upon:

- Provision of premises and a suitable educational environment (classrooms, workshops, laboratories, libraries, etc.);
- provision of equipment and financial resources;
- teachers (for common and specific courses) and other staff;
- a statement specifying the extent to which the institute's equipment and facilities could be used in training;
- the method of instruction and training;
- the subjects required by the institute and the changes in curriculum suggested by the institute; and
- participation and cooperation of the institute's experts in curriculum development and provision of the content and materials.

This list of obligations on the part of participating institutions indicates that the procedure for cooperation is not as it should be to increase participation.

6. Summary and conclusions

6.1 General education

During the past two decades, enrolment in the education system has experienced a steady growth at an annual rate of 3.6% (for girls 4.6%). In 2001, the enrollment was 17.9 million, which is around 29% of total population in that year. Due to this steady growth the average years of schooling of labor force that was 2.98 years according to the National Census of 1976 was enhanced to 6.19 in 1996 and 6.74 in 2000. This provides a better foundation for skill development of labor force.

In 1996, of 23.08 million total population of 6-19 age group, 17.9 million were in school (77.5%). Of 5.2 million non-student population, 1.45 million were employed and 469,043 were unemployed seeking jobs. These figures imply that, if in 1996 full enrollment had been achieved for the school age population, the jobs 1.45 million of them occupied in that year would have become available to adult job seekers. This indicates the potential capacity of the education system to partially control the existing unemployment crisis.

The number of early school leavers and drop-outs in different years during 1992-2000 varied between 820,000 to 1,400,000 (5.1% to 7.9% of total enrollment), which is an indication of the internal inefficiency of the school system. The estimated supply of labor force through general education system that in 1992 was 144,000 new job seekers, reached 305,000 in 2000 at an annual growth rate of 9.8%. The share of those with high school diplomas in the population of newcomers that was 15.2 % in 1992 increased to 52.8% in 2000. It seems that there is a relative improvement in the level of educational attainment of labor supply.

The population forecasts indicate that the population of the school age group 6-17 is decreasing at an annual rate of 2.2% from 20.5 million in 1996 to 14.6 million in 2011. The implications of these changes for labor markets, as well as skill development programs are diverse and need more research. Some apparent effects will be the diminution of participation rates of 10-19 years age group in the labor force, the bigger share of high school diploma holders in the labor supply, and the growth of female participation in the labor force.

If enrolment projections hold for the age group 10-19 years, the supply of this group to the labor market will decrease sharply during the next decade. Policymakers of education system should therefore shift focus to the improvement of the quality of skill development programs. While the current focus of the curricula is on rote-learning, stockpiling facts and individual competition to get better marks required for acquiring higher certificates or degrees, the labor market demands mastery of skills in reasoning, problem solving, and creativity as well as team work, discipline and observance of rules and regulations. The recommendations in this respect are:

- In the educational reform initiative that is now in its planning stage emphasis should be placed on the positive characteristics relevant to work, the so-called “core competencies”, and on mathematics, science and technology (specially practical subjects), information technology, foreign languages. These are the basic requirement for skill development in later stages of student’s life.
- Investment for development of universal and compulsory general education should be given high priority to prevent early school drop-outs. In absence of such an initiative, drop outs from the education system will enter the job market

without acquiring any skills or being apt to take part in a rigorous training programs.

- The improvement of positive attitude formation in students toward work requires a fundamental reform in centralized process of admission to universities, public as well as Islamic Azad University. The current system is mainly based on administering a nation-wide test, that evaluates only the accumulated facts in the memory of students, regardless of their field of study. It pays little attention to any other capabilities and skills they might have acquired. Reforming university admission policies should weaken the general eagerness for collecting mere degrees and guide the talented students to skill development programs.

6.2 VET at upper secondary education system

The current capacity of the upper secondary school system for providing vocational education and training to young adults in the age bracket 14-17 in 2001 is 326,000 students (in grades 10 and 11) in vocational education and 401,000 students in vocational training branches. This constitutes an annual capacity near 727,000 students in two grades. Thus the upper secondary school has the potential to produce annually about 350,000 semi-skilled and skilled graduates and junior technicians. If in 2011 the share of VET in upper secondary education reaches 45-50%, which seems feasible, the number of graduates would become to 480,000-500,000.

The implementation of the VET in new upper secondary education system, especially in regards to the establishment of *Kardanesh* branch and five-year AA/AS VET programs, provided more opportunities for students to choose vocational education and training programs. As the statistics concerning the performance of the new system show the total proportion of vocational students to the academic students decreased from 12.8 percent in the beginning of the 1990's to 11.9 percent in 1994, at the outset of the new system, and then the proportion increased sharply to reach to 28.3% by the end of the decade. According to the Third Development Plan, this indicator should be increased to 35 percent by the end of 2004. In 1990's, the enrollment of students in vocational training (*Kardanesh*) increased more rapidly in comparison with the vocational education branch.

The statistics on the flow of students indicate that during the period 1992-1998, during which the new system was gradually implemented, in comparison with the old system, the rates of drop-outs and repeaters fell sharply. However, the improvement of efficiency suffered severely when in 1999 a drastic change in educational rules and regulations occurred. The direct and side effects of these policy changes on the VET in the new secondary system are not evaluated yet, but its immediate effects on VET is the sharp decrease in the numbers of applicants for the vocational tracks. Furthermore, on the whole, because the rate of transition from 1st grade to 2nd grade

decreased sharply in 2000-2001, one of the consequences of the changes in educational policies was that a large number of young people were pushed out of schools to labor markets. The estimated number is in the order of 220,000 persons -- more than the regular number drop outs.

The issue of the effectiveness of VET programs and the follow-up of its graduates, in old and new secondary education, needs more investigation. From an equity point of view, female participation in VET programs in comparison to male participation should be considered. The proportion of girl students in VET increased from 20.1% in the beginning of 1990s to 36.8% at the end of the decade. This picture shows that the new system has succeeded in making the formal vocational education and training system more equitable for girls. However, the geographical distribution of the girls' enrollment is very imbalanced. The same is true for enrollment of girls across different fields of study.

The rate of participation of female high school graduates in the labor force in 1996 was 14.2% (for all secondary tracks), while the share of female students in the enrollment in VET in this year was 31% and increased to 36.8% in 2001 (the respective rates for female student enrollment in all tracks of secondary education were 47.8 in 1996 and 49.2 in 2001). This trends will bring about a positive shift concerning the female shares in labor supply in the near future.

Taking into consideration the present skill development capacities and related issues, as well as future challenges, the following recommendations concerning the VET programs of the Ministry of Education may be provided:

- In the division of tasks between the TVTO (that is in charge of non-formal TVET) and the ME (which is responsible for formal VET at general and secondary education) complementarily of programs should be maintained. Otherwise, it results in a waste of resources and time of students and trainees. A way to operational this policy is to implement a modular approach to curriculum development in most of the TVET programs.
- To provide adequate facilities for practical and skill development courses in TVET branches at the secondary level, in line with the enrollment objectives endorsed by the Third Development Plan, it is recommended that the Ministry of Education develops an apprenticeship device that makes use of the training capacities of production sectors for skill development (rather than utilizing of other public training centers' capacities).
- Decentralization in TVET programs, concerning needs assessment, tri-partite collaboration in planning and implementation stages, and financial and administrative affairs should be regarded as the first priority in the process of TVET improvement projects.

- The issue of internal efficiency of education system, concerning the rates of drop-outs and early school leavers, especially at upper secondary level, needs an urgent policy decision.

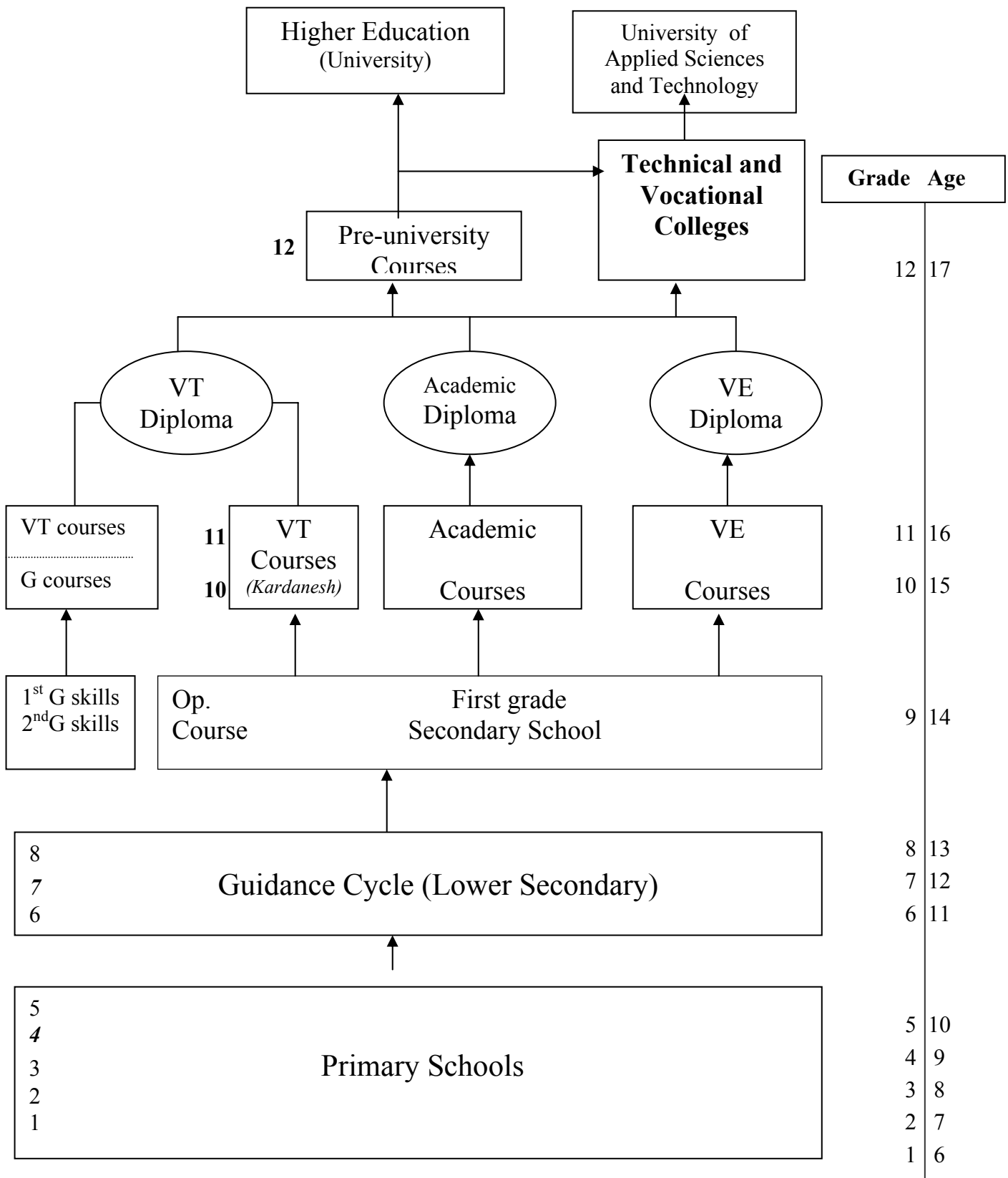


Diagram 1: The structure of the new secondary education system

Abbreviations: V: Vocational; E: Education; T: Training; G: General; Op: Optional; 1st G: First grade skill certificate; 2nd G: Second grade skill certificate

Source: the Iranian Ministry of Education (1996).

Table 1

**Enrollment Trends by Level, General Education System of IRAN,
Period 1978 – 2001**

<i>Academic Year</i>	<i>Primary Education</i>	<i>Lower Secondary Education</i>	<i>Upper Secondary Education</i>	<i>Others (*)</i>	<i>TOTAL</i>	
					<i>% Of Female</i>	<i>Number</i>
1978 – 1979	5019279	1535263	1087559	317329	38.2	7959430
1988 – 1989	8262441	2724606	1573017	242927	43.3	12802991
1998 – 1999	8667147	5294672	4286323	240089	47.0	18488231
1999 – 2000	8287537	5172516	4404778	276293	47.2	18141124
2000 – 2001	7968437	5027224	4477324	301224	47.7	17774209
2001 – 2002	7513015	4953894	4462378	966480	47.9	17895767
AVG. annual rate of growth 1978-1988	5.1	5.9	3.8	-2.6	6.1	4.9
AVG. annual rate of growth 1988-1999	0.5	6.9	10.5	-0.1	4.4	3.7
AVG. annual rate of growth 1999-2001	-4.7	-2.2	1.4	59.1	0	-1.1
AVG. annual rate of growth 1978-2001	1.8	5.2	6.3	5.0	4.6	3.6

Source: The Ministry of Education, 2002, "Year Book of Education Statistics, 2001-2002", Bureau of Information Technology, Tehran

(*) Including: exceptional children education, normal colleges, formal adult education and pre-primary education.

Table 2

Status of Employment and Education of 6-19 Age group in 1996

(in thousands)

Age groups	TOTAL Population	SUB-TOTAL in-school	Out of School Population						
			SUB-TOTAL out-of-school	By Level of Education Attainment			By Economic Status		
				Illiterates	Less than HS diploma	High school graduates	Non-Active Population	Employed	Unemployed (seeking job)
6 – 9	6891	6297	594	530	65	0	594
10 –14	9081	7921	1160	341	808	11	792	265	103
15 – 19	7115	3688	3427	398	2547	482	1880	1181	366
TOTAL	23087	17906	5181	1268	3420	493	3266	1446	469

Source: Naficy, A H. 2000, "The Analysis of the Shortcomings of Relationship between Education Systems and Labor Markets in Iran: Recommendations for Improvement", Research and Educational Planning Organization, Tehran

Table 3

General Education Drop-outs and Graduates, 1992 – 2001

Year	Drop-outs and early school leavers (Grade 1 to 11) *			High School Diploma Graduates who do not continue schooling						
	Total enrollment	Number of drop-out **	% of Enrl.	11 Years Graduates *			12 Years Graduates *			Total Non-continuing High school Diploma ***
				Total	Non-continuing	%of total	Total	Non-continuing	%Of total	
1992	16325191	828635	5.1	-	-	-	210203	23324	11.1	23324
1993	16887133	1089859	6.5	-	-	-	235771	4620	2.0	4620
1994	17377219	1058547	6.1	-	-	-	272543	12018	4.4	12018
1995	17579891	1311270	7.5	59435	12415	25.2	253325	-27393	-	-14978
1996	17906840	1140856	6.4	164864	79597	7.5	317310	10509	3.3	90106
1997	18125487	1014623	5.6	204536	60681	38.9	338266	16612	4.9	77293
1998	18248142	996109	5.5	366600	59455	16.6	254754	-92969	-	-33514
1999	17864831	1417830	7.9	506522	230116	11.7	390904	66868	17.1	296984
2000	17472985	1001640	5.7	722766	280960	31.8	403443	40094	9.9	321054

*- **Notes:** a) grade 11 drop-outs belong to old upper secondary system in which high school diploma was awarded at grade 12, b) high school diploma with 11 years of study belong to new upper secondary system, and c) high school graduates with 12 years of study are either graduated from pre-university courses or graduated from grade 12 of old secondary system.

** - Total number of drop-outs and early school leavers is calculated by following formula:

$$Dt = (Et - Et-1) - (FGFt - Gt-1)$$

In which D= drop-outs and early school leavers; E = total enrolment (grades 1- 11 or 12); G = graduates with high school diploma; and t = time.

*** - The negative figures of non-continuing high school graduates is due to return of graduates of past years to continue their study in higher education.

Source: Naficy, S. 2002, "The Effects of Distribution of Educational Attainment of Labor Force on Economic Growth in Iran", A MS Thesis, Institute for Research and Training in Management and Planning, Tehran

Table 4
**Probable Job-seekers Joining the Labor Market among Drop-outs and
 Graduates of General Education System, 1992 – 2001**

Year	Drop-outs and school leavers (Grade 1 to 11)			High School Graduates who do not continue schooling			Total probable Job-seekers
	Total Number	Probable job- seekers		High School Diploma	Probable job-seekers		
		%	Number		%	Number	
1992	828635	14.8	122239	46061	47.8	22026	144265
1993	1089859	14.7	160219	23324	47.6	11109	171328
1994	1058547	14.6	154985	4620	47.4	2190	157175
1995	1311270	14.6	191138	24433	47.2	11523	202661
1996	1140856	14.5	165764	52204	47.0	24529	190293
1997	1014623	14.5	146880	71190	46.8	33307	180187
1998	996109	14.5	144117	76067	46.8	35565	179682
1999	1417830	14.5	204890	137147	46.7	64035	268925
2000	1001640	14.4	143972	347828	46.4	161396	305369

Source: The number of drop-outs and graduates of general education system from table 3. The rates of participation of drop-outs and graduates in labor market are based on the observed rates in 1986 and 1996 national census for corresponding age groups, adjusted by ratio of girls participation in schooling during 1992-2000.

Table 5

Projection of School Age Population, Enrollment and Gross Participation Rate, 1971-2011

Years	School Age Population (in 1000)				Student Enrollment (in 1000)				Gross Participation Rate (in %)			
	6-10	11-13	14-17	6-17	Primary	Lower Secondary	Upper Secondary	TOTAL	Primary	Lower Secondary	Upper Secondary	TOTAL
1971	4281	2161	2539	8982	3232	...	1447	4679	75.5	...	30.8 (*)	52.1
1976	5050	2450	3050	10660	4769	1369	942	7079	94.1	43.9	30.9	66.4
1981	6004	2985	3663	12652	5283	1750	1086	8120	88.0	58.6	29.7	64.2
1986	7110	3508	4400	15018	7233	2300	1278	10810	101.7	65.6	29.0	72.0
1991	7897	4404	5244	17545	9788	3542	2031	15360	123.9	80.4	38.7	87.5
1996	8772	5528	6249	20549	9238	5189	3588	18015	105.3	93.9	57.4	89.8
2001	6551	5138	7364	19053	7513	4954	4462	16929	114.6	96.4	60.6	88.8
2006	5956	3574	6237	15767	6117	3979	5427	15523	102.7	111.3	87.0	98.5
2011	6387	3600	4628	14615	6547	3852	4392	14791	102.5	107.0	94.9	101.2

Sources: For population: Alizadeh, M. et al, 2002, "The Population Forecasts: Aggregate Provincial Data for 1996-2011", Institute for Research and Training in Management and Planning", Tehran. For enrollment projections: Naficy, AH, 2003, "General Education Forecasting Model: A Practical Tool for Policymaking", Institute for Educational Research, Tehran

(*) In 1971, the rate of participation stands for lower and upper secondary education together

Table 6
The Number of Students, Graduates and Schools in Kardanesh Branch, 1997-2001

Year	Number of Students					Number of Graduates					Number of Schools
	Male	%	Female	%	Total	Male	%	Female	%	Total	
97-98	131706	58.2	94435	41.8	226141	0	0	0	0	0	527 2007 ...
98-99	191520	58.6	135030	41.4	326550	0	0	0	0	0	
99-00	236935	59.0	165072	41.0	402007	20507	51.7	18861	48.3	39368	
00-01	240419	59.9	160646	40.1	401065	55968	52.6	50495	47.4	106463	
01-02	244222	59.6	165591	40.4	409813	

Source: Ministry of Education, Bureau of Vocational Education

figure1 : the number of studrnrs in kardanesh in the lasr five years

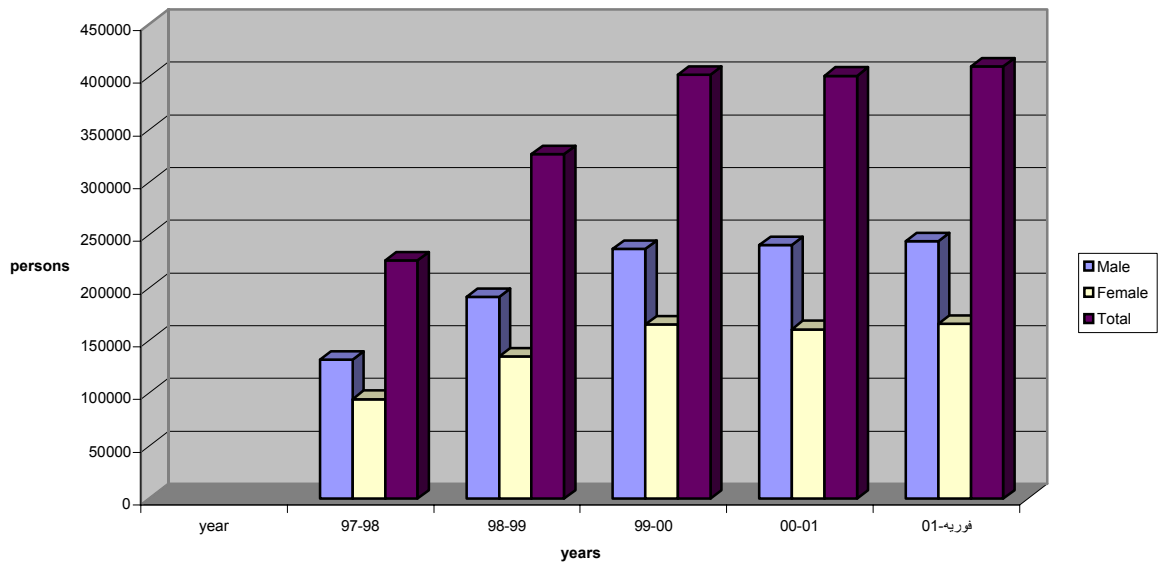


Table 7
**The Enrollment in 2nd and 3rd Grades of Vocational Training Branch
(Kardanesh) by Main Field of Training, 2000-2001**
(fields with more than 1,000 students)

Main Vocational Training programs		Student Enrollment		Main Vocational Training programs		Student Enrollment	
		Number	%			Number	%
Electricity and electronics	Home Appliances	20179	4.92	Auto repairing	Auto-mechanics	10190	2.49
	Electrical Motors	6300	1.54		Car Electricity	8362	2.04
	Electricity (industrial)	15564	3.80		Subtotal	18552	4.53
	Electricity (buildings)	10118	2.47	Arts and Handicrafts	Carpet Design	4094	1.00
	Industrial Electronics	5927	1.45		Carpet Weaving	1128	0.28
Subtotal	58088	14.17	Painting		6967	1.70	
Computer related skills	Computer Application	46453	11.34		Photography	4195	1.02
	Drawing by Computer	5150	1.26	subtotal	16384	4.00	
	Data Banks	1630	0.40	Metal works	Plumbing	1827	0.45
	Computer Programming	1381	0.34		Model Making	8924	2.18
	Computer-based Publishing	1347	0.33		Welding	3532	0.86
Subtotal	55961	13.66	Metal Milling		1322	0.32	
Finance and Adm.	Accounting and Book-keeping	38718	9.45	subtotal	15605	3.81	
	Office Works	10928	2.67	Agriculture	Tractor Maintenance	1818	0.44
	Subtotal	49646	12.11		Farming	1289	0.31
Health education	home management and child care	47309	11.54		Poultry (Industrial)	1620	0.40
	Training Aid-Nurse	2192	0.53		Husbandry (industrial)	1539	0.38
	subtotal	49501	12.08	subtotal	6266	1.53	
Clothing	Dress-making (ladies)	33123	8.08	Masonry	4411	1.08	
	Needle Works	7093	1.73	Carpentry	2885	0.70	
	subtotal	40216	9.81	SUB-TOTAL	315772	77.05	
drawing	Drawing (Building) 2nd	16873	4.12	Other Programs	94041	22.95	
	Drawing (Building) 1st	16017	3.91	GRAND- TOTAL	409813	100.0	
	Drawing (Industrial)	5583	1.36				
	subtotal	38473	9.39				

Source: Ministry of Education, Statistical Year Book 2000-2001

Table 8
The number of students and graduates in vocational education, 1997-2001

Year	Number of Students					Number of Graduates				
	Male		Female		Total	Male		Female		Total
	Number	%	Number	%		Number	%	Number	%	
1997-98	185655	73.8	65850	26.2	251505	28723	64.6	15729	35.4	44452
1998-99	197516	71.4	79304	28.6	276820	38781	66.4	19665	33.6	58446
1999-00	212039	68.9	95758	31.1	307797	55535	69.0	24984	31.0	80519
2000-01	219051	67.1	107196	32.9	326247	67111	67.1	32864	32.9	99975
2001-02	221959	68.0	104427	32.0	326386	-----	----	-----	----	-----

Source: Ministry of Education, Statistical Yearbooks of relevant years.

Table 9
**The Number of Full Time Official Experts and Part Time Curriculum
 Groups Members in the Curriculum Department for VET**

Educational Qualification	Full-times Professionals	Support Staff	Part-time Groups Members	Total
PhD	1	-	39	40
Master Degree	19	-	131	150
Bachelor Degree	9	2	153	164
AA/AS Degrees	-	-	14	14
H S Diploma and lower	-	11	-	11
TOTAL	31	13	337	381

Source: Data received from the Curriculum Department .

Diagram 2: The organization of the Curriculum Department for VET

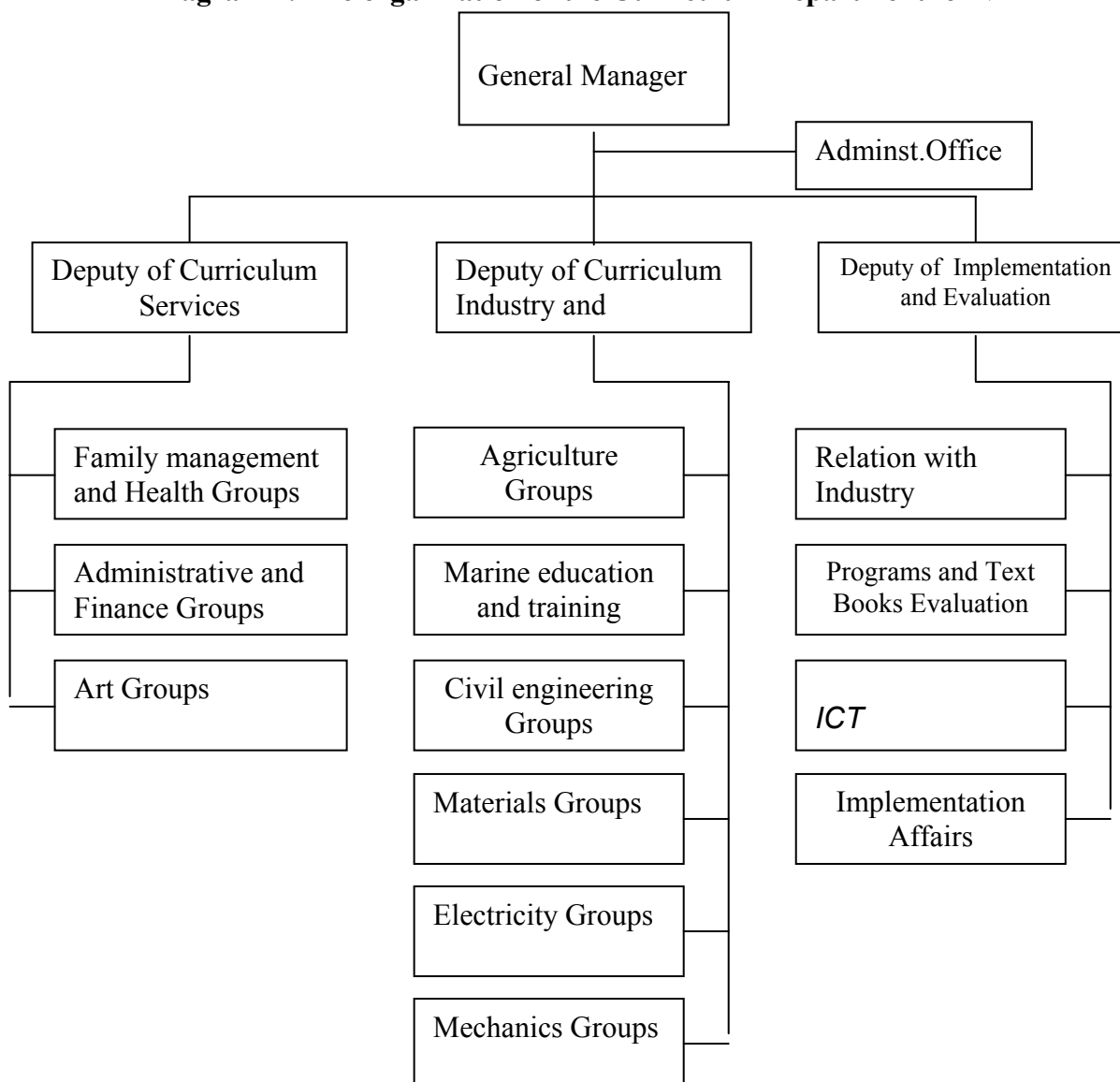


Diagram 3: The Organizational Structure of The Ministry of Education (Focused on VET)

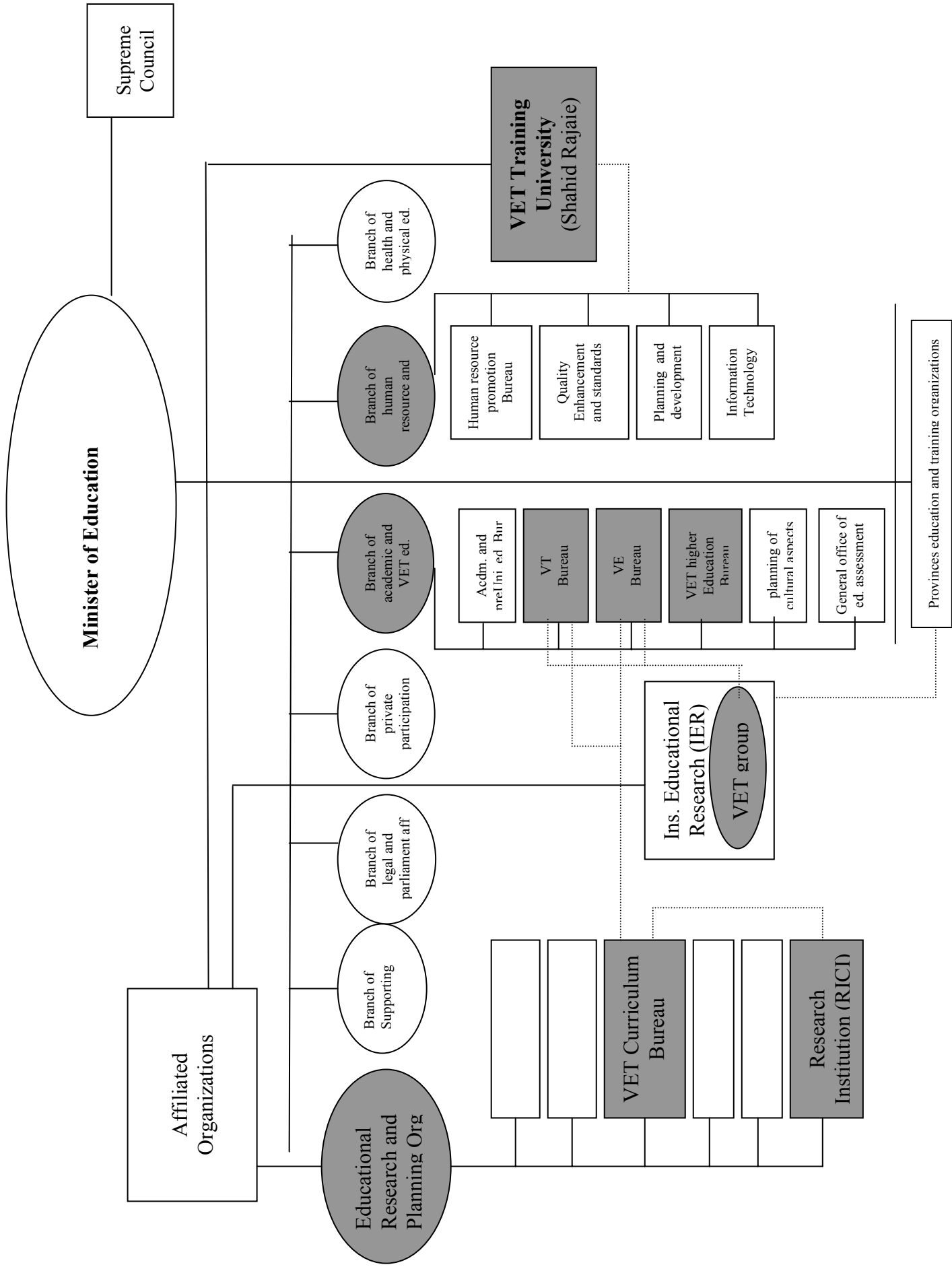


Table 10
**The Distribution of Secondary Education Staff by Type of Occupation and Level
of Educational Attainment in 2001-2002**

Type of Occupation	Lower than HS Diploma	High School Diploma	AA/AS degrees	BA/BS and Higher Degrees	TOTAL	
					Number	%
Teacher	128	2249	9332	142373	154082	57.88
Workshop Technicians	63	229	226	275	793	0.30
management staff	29	1536	5202	31974	38741	14.55
Other staff	5328	21779	12542	32946	72595	27.27
TOTAL	5548	25793	27302	207568	266211	100.00
%	2.08	9.69	10.26	77.97	100.00	

Source: Ministry of Education Statistical Yearbook for 2001-2002

Table 11
Comparing the proportion of enrolled students in VET and Academic branch in Iran during the 1990s

Year	Academic		Vocational Education		Vocational Training		TOTAL	
	Number	%	Number	%	Number	%	Number	% of VET
1990-1991	1589405	87.4	230061	12.6	-----	----	1819466	12.6
1991-1992	1770410	87.2	260576	12.8	-----	----	2030986	12.8
1992-1993	1995549	87.7	279681	12.3	-----	----	2275230	12.3
1993-1994	2292177	88.2	295763	11.4	12615	0.5	2600555	11.9
1994-1995	2406813	87.5	294584	10.7	48135	1.8	2749532	12.5
1995-1996	2077268	86.3	247943	10.3	82317	3.4	2047528(*)	13.7
1996-1997	1989040	82.8	239418	10.0	172582	7.2	2401040(*)	17.2
1997-1998	2081627	81.3	251505	9.8	226141	8.8	2559237(*)	18.6
1998-1999	1911451	76.0	276820	11.0	326570	13.0	2514821(*)	24.0
1999-2000	1905737	72.9	307797	11.8	402007	15.0	2615541(*)	27.2
2000-2001	1836181	71.6	326247	12.7	401065	15.6	2563493(*)	28.3

Sources: Ministry of Education, the Bureau of vocational education and training, (2001)

(*)- Only students of the 2nd and 3rd grades.

Figure 2: The proportion of students enrolled in Academic in comparison with VET in the 90 th

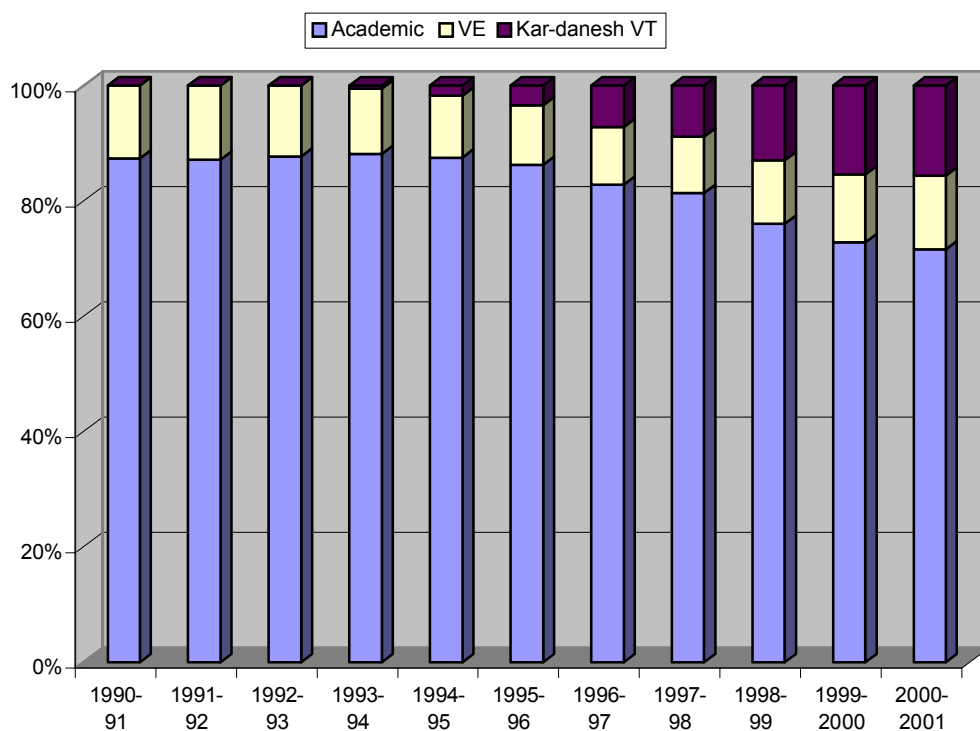


Table 12
**Changes in Enrollment in 2nd Grade of Upper Secondary Schools
during 1998-2000**

Branches		Enrollment in Second Grade			Annual Rate of Changes (%)	
		1998-1999	1999-2000	2000-2001	1999-2000	2000-2001
BOYS	Vocational Education	84998	91169	81759	7.2	-10.33
	Vocational Training	86884	102557	59713	18.04	-41.78
	Theoretical (Academic)	329565	353719	275835	7.33	-22.08
	TOTAL of 2nd Grade	501447	547445	417307	9.17	-23.78
	Enrollment in 1st Grade	750729	731829	877252		
	Rate of transition 1 st to 2 nd Grade	...	72.92	57.02		
GIRLS	Vocational Education	39005	45810	45827	17.45	0
	Vocational Training	63047	78189	50941	24.02	-34.85
	Theoretical (Academic)	428469	473884	415649	10.6	-12.29
	TOTAL of 2nd Grade	530521	597883	512417	12.7	-14.3
	Enrollment in 1st Grade	675894	672420	761214		
	Rate of transition 1 st to 2 nd Grade		88.46	75.2		

Source: Ministry of Education, Statistical Year-Book of related academic years.

Table 13

Girls Participation in VET during 1991-2001

Academic Year	Vocational Education			Vocational Training			TOTAL VET		
	Male	Female	%F	Male	Female	%F	Male	Female	%F
1991-1992	208122	52454	20.1	----	----	----	208122	52454	20.1
1992-1993	222035	57646	20.6	----	----	----	222035	57646	20.6
1993-1994	231098	64665	21.9	8739	3876	30.7	239837	68541	22.2
1994-1995	224912	69672	23.7	33188	14947	31.1	250100	84619	25.3
1995-1996	158280	62663	28.4	55961	26356	32.0	214241	89019	29.4
1996-1997	176679	62735	26.2	106842	65758	38.1	283521	128493	31.2
1997-1998	185655	65850	26.2	131706	94435	41.8	317361	160285	33.6
1998-1999	197516	79304	28.6	191520	135030	41.4	389035	214334	35.5
1999-2000	212039	95758	31.1	236935	165072	41.0	448974	260830	36.7
2000-2001	219051	107196	32.9	240419	160646	40.1	459470	267842	36.8

Sources: Ministry of Education, the Bureau of vocational education and training, (2001)

Figure 3: The proportion of girl and boy students enrolled in VET in the 90th

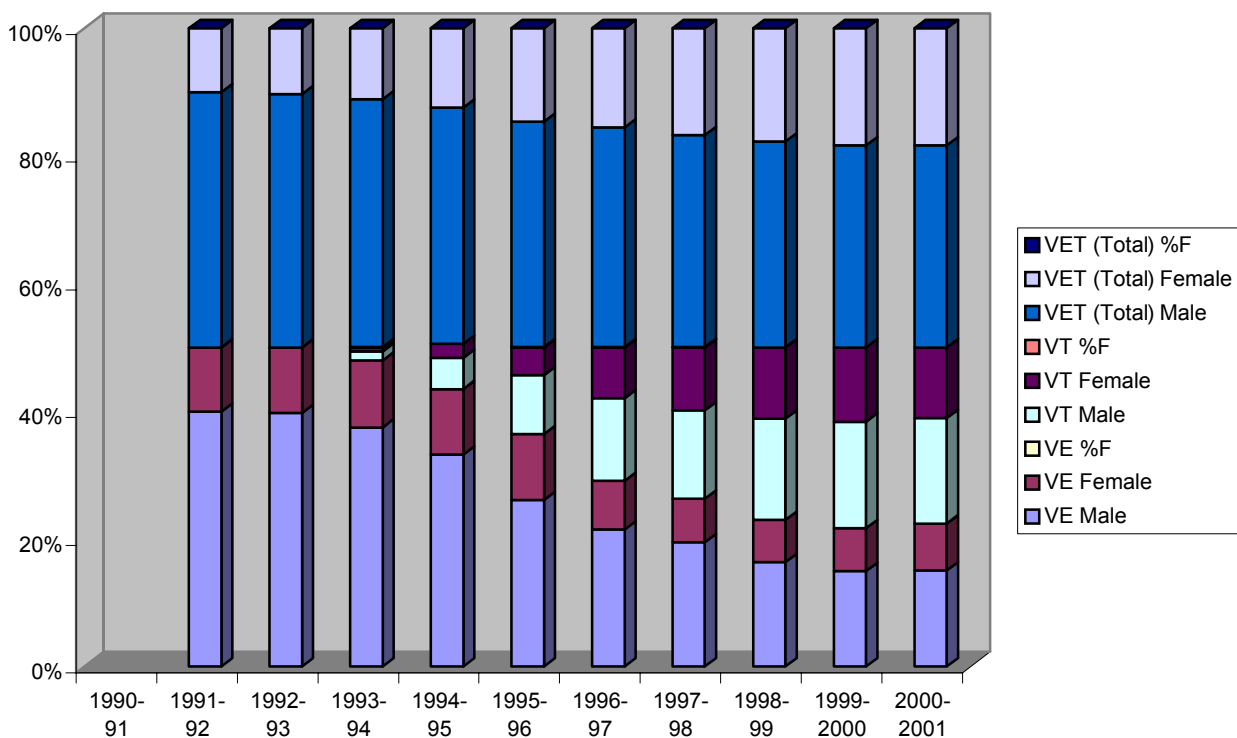


Table 14

Enrollment in Non-profit VET Schools, 1997-2001

Years	Vocational Education	%of total VE	Vocational Training	%of total VT	TOTAL VET	%of total VET
1997-98	8030	3.2	9728	4.3	17758	3.7
1998-99	8984	3.3	10730	3.5	19714	3.4
1999-00	11993	3.8	11988	3.2	23981	3.5
2000-01	14145	4.3	11308	3.1	25453	3.6
2001-02	16654	5.1	13876	3.4	30530	4.1

Source: Ministry of Education Statistical Yearbooks of relevant years.

Table 15

Number of students and schools of Factory-based schools

Year	Number of students	Rate of changes	Number of Schools	Rate of changes
1997-98	8474		96	
1998-99	5968	-29.6	76	-20.8
1999-00	6555	+9.8	52	-31.6
2000-01	-		52	0

Source: Ministry of Education, Bureau of Vocational Education

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Note: All of the references are in Persian, The titles are literally translated.

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