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CONTRIBUTION OF TECHNICAL AND VOCATIONAL EDUCATION
TO THE
DEMOCRATIZATION OF EDUCATION
AND
SOCIAL PROGRESS

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1. Technical and vocational education and society

Questions of the democratization of education and the contribution of education to social progress, justly, were and are in the centre of activities of Unesco and its member states. The problems of securing equal access to education, of equality of the different patterns within primary and secondary education, of including all parts of the population into the educational system as well as the development of the contents of education according to the social requirements and individual interests have a key function concerning the democratization of education.¹⁾ The special contribution of technical and vocational education to the democratization opens another dimension of consideration - the social working process.

There is no society which can exist without work. "Labour is the source of all wealth. And it really is the source - next to nature, which supplies it with the material that it converts into wealth. But it is even infinitely more than this. It is the prime basic condition for all human existence, and this to such an extent that, in a sense, we have to say that labour created man himself."²⁾ Work is not only the source of all wealth and necessary for life. At the same time work is that activity in the course of which

1) Cf. Tanguiane, S.: Education and the problem of its democratization, Prospects, Quarterly Review of Education, Unesco, Paris, Vol. VII (1977), No. 1, p. 14 - 31

2) Engels, F.: The part played by labour in the transition from ape to man, Selected Works, Vol. Three, Moscow 1970, p. 66

man puts his ideas into practice, the main field of man's proof, of development and realization of man's aptitudes, interests, inclinations and social relations.

Thus, the qualification of man for his participation in the working process, which is to be realized by technical and vocational education on the basis of a solid general education, is a task of enormous social importance. Besides the right to education which is internationally recognized (even unless realized everywhere) it is, likewise, necessary to realize the right to work which includes the right to technical and vocational education considering the highly developed social division of labour. When discussing and elaborating the "Recommendation on the development of adult education" within Unesco in 1976 this close connection between the granting of the right to education and of the right to work was recognized and included in the recommendation.¹⁾

The realization of the principles recognized as correct, however, is, above all, no problem of the educational system but a problem of entire society. Although in most of the Unesco member states a technical and vocational educational system traditionally developed which largely or completely meets the demands of economy on qualified workers (on the qualification levels of skilled workers, foremen and technicians), among others, technical and vocational education often suffers from the productive work

1) Cf. Recommendation on the development of adult education, "UNESCO 1976" para VIII, 49.

having been a domain of slaves, serfs and paid workers for centuries, if you want, since the ancient slave-owning society and, thus, having not or only little been appreciated in society. Although various decisions and recommendations were made within the framework of Unesco¹⁾ and in the member states themselves these negative traditions exist in many countries still today which is expressed, among others, in the social esteem of skilled workers as well as in the overemphasis of patterns directed to academic education within the educational system. The social position of productively working man, of the skilled worker in production, administration, agriculture and services industry decisively depends on the political role which is played by the working class in any country and on the degree in which the manually and mentally working people take part in the exercising of power either directly by means of representatives of their interests in the various workers' parties or/and by means of different forms of joint management in the enterprises and institutions. It depends therefrom:

- if the education of producers has priority or if the formation of the personality has an equal position within technical and vocational education,
- if the process of the change of the working class from a class which mainly physically works to a class which more and more physically and mentally works is consequently carried out,

1) Cf. Interaction between education and productive work, International Conference on Education, 33th Session, ILO/UNESCO/38/5.

- if the respect to the productive work and the productively working people is developed in all spheres of society,¹⁾
- if technical and vocational education and their graduates hold an equal position within the educational system, the working process and within society as a whole.

This shows that the objectives for the individual spheres of society also including technical and vocational education are decisively determined by the character of the policy of society. As Mr. M'Bow, the Director General of Unesco, stated it is not possible to hold technical and vocational education, above all, responsible for the problems of society²⁾ as for instance mass unemployment, hunger, economic underdevelopment etc. but educational policy has to be primarily seen in connection with the respective political and socio-economic as well as cultural and ideological background. It decisively influences the technical and vocational policy, sets decisive premises within the framework of which technical and vocational education of each country may exist. Such a point of view does not negate that the educational policy in general and technical and vocational education in particular influence the spheres around them and cause

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- 1) Cf. Recommendation No. 73 to the ministers of education concerning the interaction between education and productive work, Draft final report of the International Conference on Education, 38th session, ED/BIE/CONFINTED/38/S p. 4, para. 5c
 - 2) Cf. M'Bow, A.: Address at the opening of the thirty eighth session of the International Conference on Education, Geneva 1981, ED/BIE/CONFINTED 38/Inf. 5, p. 5

changes. But these possibilities of influence are not primary. Of course, they may change society by evolution but not by revolution.

Therefore, theories postulating "worldwide crises" in different fields without considering the political, ideological, economic, social and cultural spheres only little promote international co-operation because they generalize crises or problems of some of the member states for all states and, thus, deprive themselves of the beginnings of the solutions which in different fields are already available in many countries. Such a point of view accepts that there are, by all means, global problems of mankind which, likewise, concern all states as for instance the protection of peace, the necessity of a worldwide disarmament, problems of the protection of the environment and others.¹⁾ But it denies that such ostensibly worldwide problems also exist in the field of economic policy (recession, inflation), employment policy (unemployment), social policy (existing of "problem groups" as for instance women, migrant workers, national minorities, physically and mentally handicapped and many others), morale (increase of delinquency, drugs, violence, terrorism) and in other fields.²⁾

Although it is difficult to find common points of view for the future technical and vocational educational policy because of the

1) Cf. Approved Programme and Budget for 1981-1983, 21 C/5, Unesco Paris 1981, General Resolutions, p. XI - XXVI

2) Cf. Pansek, S., The Future of Educational Planning, IIEP, Paris 1981, p. 1 - 2

different social, economic, cultural and other prerequisites in the Unesco member states an important work was done within the framework of Unesco in the last few years; the "Revised Recommendation concerning technical and vocational education"¹⁾ was elaborated in order to better succeed in future with the standards of the technical and vocational educational policy generally accepted all over the world. This "Recommendation" excluding the mechanical transfer of other educational systems, contents, structures and means is an important "logistical" help in the application of internationally accepted basic principles the realization of which is a sovereign decision of the member states. If international decisions are reasonably and carefully considered, included and realized, the security in the determination of national educational measures will be increased and, at the same time, the real possibilities of international co-operation improved, as for instance the mutual acceptance of final examinations of technical and vocational education, the elaboration of textbooks and teaching aids which can be jointly used, etc.

Despite the general agreement to the basic principles of the "Recommendation" it is still unsatisfactorily realized on international scale. Therefore, the process of the elaboration of a convention on technical and vocational education is going on in accordance with the decision of the twenty-third session of the General Conference of Unesco in Sofia.²⁾ A new essential

1) Cf. Revised Recommendation concerning technical and vocational education, Unesco 1974

2) Cf. Desirability of adopting a convention on technical and vocational education, Unesco, General Conference, Twenty-third session, Sofia 1985, 23 C/28, p. 9

essential impulse could, thus, be given to the question of the democratization of education and of the contribution of technical and vocational education to social progress.

2. The position of technical and vocational education within the educational system

The question of the contribution of technical and vocational education to the democratization in connection with the educational system as a whole is, first of all, a question of the position and status of technical and vocational education within the educational system, of the ratio of general education and technical and vocational education or, with other words, a question of equivalence of technical and vocational education and general education. The equivalence of general education and technical and vocational education is, of course, closely connected with the question of social appreciation of technical and vocational education and of manual and mental work as a whole. In countries in which productive work and technical and vocational education are not considered to be equivalent to general education this condition based on socio-economic, political and ideological reasons often leads to education facilities, teaching staff, suitable teaching aids, workshops, etc. which are only available

to an inadequate extent and the leavers of technical and vocational institutions are discriminated against leavers of academic educational institutions in their further working life. Another large part of young people does not get any technical and vocational education or any other education after having finished the general compulsory school. These unskilled young people form an essential part of the unemployed in the industrially developed countries which suffer from a high unemployment which causes other problems concerning increasing delinquency, drug abuse and other signs of a "lost generation". If general education and technical and vocational education shall be made equivalent, various points of view have to be taken into consideration. An important aspect is the organization of an educational structure in which technical and vocational education is an integral part of a system of lifelong education, in which the barriers between the different educational levels and fields, between education and professional employment, school and society are cleared away. There are still educational structures at present which distribute the children among general educational patterns of different kind already after the fourth or sixth forms. For a part of the young people, the "practical" general pattern of less value is then followed by a technical and vocational education, which is of deadlock character as far as the further educational pattern is concerned. Only few of these young people may, then, acquire a still higher education with the help of additional educational patterns. Sociological investigations

showed that in reality the choice for academic or technical and vocational educational patterns which is officially made according to one's "aptitude" often is a socially determined selection. But on international scale the opinion was more and more accepted that the pupils are generally educated together for 9 - 10 years (connected with the elements of a general technical/polytechnical education) before the decision for a particular kind of special education aiming at a job will be made. Although this educational structure is nationally realized with very different variants and contents it essentially better secures the articulation, participation of pupils when deciding on their further educational pattern than in the first model. Nevertheless, it might also happen here that the pupils of the technical and vocational directions are discriminated against those of the academically orientated educational directions despite the same period of education unless an equivalence of the final examinations is guaranteed by respective stipulations. An important criterion for the establishment of the equivalency of technical and vocational education and general education is: to secure the smooth change to the university section. It can be reached by various possibilities:

- By accepting technical and vocational education as essential element for university admission with the acquisition of missing theoretical prerequisites in preparation classes being possible,
- by the direct change from technical and vocational education to technical colleges or similar infinite university institutions,

- by the connection of technical and vocational education with the academic educational pattern (apprenticeship plus university entrance level),
- by certified correspondence study patterns which are carried out in connection with paid leaves for studying and releases from working and others.

Equivalence, nevertheless, is not only a matter of a possible university entrance. On the contrary, it is a matter of providing for the securing of a high level of technical and vocational education and further education which has to result in the moral and material acceptance of the leavers of technical and vocational institutions by society. According to the "Recommendation" of 1974 the increasing of the level of technical and vocational education means:

- penetration of technical and vocational education with elements of general education (as well as general education has to be connected with elements of technical and vocational education or general technical education),
- realization of a broad basic technical and vocational education for all learners, creation of basic vocations in training fields in which this is possible,
- close connection of technical and vocational specialization with the modern large-scale production (if available) or agriculture, administration and service facilities,
- organization of a system of technical and vocational education and further education being based upon each other according to the principle of lifelong education.

An increase of the level of technical and vocational education, however, requires the provision of the necessary financial resources and of qualified staff according to that of academic education.

In addition to the question of securing the equivalence of technical and vocational education a pivotal question of the democratization of education is the problem existing in many countries of incorporating large parts of the population which are often called problem or fringe groups into or excluding them from technical and vocational (or higher) education.

The education for the vocation and the job itself belongs to the basic prerequisites necessary for securing the earning of the living for the great majority of the population.

Therefore, the provision of a sufficient number of training places is of great importance in each country. The objective demanded in the Unesco Recommendation and other UNO documents of guaranteeing a free choice of career can only be realized on the basis of a job offer which is larger than the demand, i.e. the number of young people of one age-class which is conditioned by demography. Furthermore, the training places have to correspond to the social requirements of the vocational and qualification structure which can be foreseen for a long term, i.e. both concerning the individual branches of economy and the various territories. The education of too many juveniles within particular vocational fields which does not secure a large number of the graduates any job within the vocation learned serves neither the individual nor society as a whole. On the other hand the shortage of training possibilities

in vocations which future calls for leads to a retardation of the economic and, thus, the social development. It stands for reason that the developing countries which have to solve problems of general education and technical and vocational education step by step within a short period of history for which other countries need one hundred years and more cannot meet the requirements mentioned within a measurable space of time.

The educational system and technical and vocational education in particular have, however, to be influenced by the stage of development reached and foreseeable for future of the productive forces, especially, since this level reached is the source for the resources necessary for the educational process. The development of a lot of formerly underdeveloped countries into agriculturally and industrially developed ones within a short period of history proves that such a development is not impossible. But this requires special social and political prerequisites within the countries themselves and the support by the international community, not least the help by the UNO and its special organizations. In this connection the realization of a new international economic system, the democratic re-organization of cultural relations, of mass media and others might result in an essential step forward. Considering all difficulties in connection with the development of technical and vocational education in the developing countries which requires intermediate steps including functional literacy courses, short education courses and long-term general education and technical and vocational education organically connected with each other it is, however, necessary not to lose

sight of the basic orientations and objectives formulated in the "Recommendations" of Unesco and in respective decisions of ILO.

Both many developing countries and economically developed countries can often not fulfill to the necessary extent one of the main demands of the democratization of education, namely the equal right of each juvenile and member of society to learn a vocation and work within it.

Large parts of the population as for instance women and girls, members of national minorities and migrant workers, premature school leavers, physically and mentally handicapped, unskilled and unemployed receive no or only an insufficient technical and vocational basis and further education. In this connection there is an especially aggravating socio-political problem namely the increasing unemployment among the youth in the countries with a ^{labour market economy.} ~~free enterprise system~~. In addition to the economic loss for society this means a millionfold loss of possible development of personalities. Many vested human rights cannot be exercised.

Technical and vocational education which is not used falls into oblivion, becomes obsolete and is passed by scientific progress. In addition to the problem of mass unemployment there are problems of the qualification and vocational structure, the problem of the so called segmented labour market. In many countries with a ^{labour market economy} ~~free enterprise system~~ the possibilities of employment for women, national minorities, children of foreign workers, for

premature school leavers are limited to few vocations and jobs.¹⁾ Other economically and socio-politically developed countries made special favourable regulations which are worth imitating for the technical and vocational education of girls and women, mothers with children, in case of an occurring pregnancy, of handicapped and for cases which require the accommodation in a boarding house because of the training far away from the residence. Thus, a lot of countries successfully work at the problem of opening up further jobs for women in those vocations and spheres within which they could not work before, especially in technical vocations. These countries reached a participation of women in the working process of 90 per cent and even more. The recommendation of the Unesco symposium on opening up to women of vocational training and jobs traditionally occupied by man (Frankfurt, FRG, November 11-13, 1980) which is to extend compulsory education to technical and vocational education in economically developed countries should for instance be thought over. Thus, the problem of remedying discrimination when starting technical and vocational education because of the race, sex, religion and national differences (e.g. migrant workers, minorities) might essentially be reduced and the right to education and technical and vocational education, put into practice for the people concerned. The experience of a lot of member states of Unesco shows that

¹⁾ Cf. Education, work and employment - II, Carnoy, P.; Segmented labour markets, Unesco; International Institute for Educational Planning, Paris 1980, p. 30

social security will be essentially increased if both, the rights and the duties of the young people, on the one hand, and of the responsible people of the government, educational system and economy and of many other participants, as for instance the trade unions and youth organization, on the other hand, are laid down within general legislation, labour law and education law as well as within the framework of a specific youth legislation. Thus, it can be better prevented that technical and vocational education is used for the social selection of special classes and strata under the mask of "talent theories". Even within technical and vocational education itself existing forms of discrimination between male and female, white and non-white, natives and foreigners, healthy and disabled might be overcome where these forms exist.

The decision of the twenty-third general conference of Unesco concerning the elaboration of a convention on technical and vocational education could also be an essential starting point here in order to get ahead with the question of the democratization of education and, in particular, of technical and vocational education.

The democratization of technical and vocational education does not only comprise the status of technical and vocational education in society, the question of equivalence of general education and technical and vocational education as well as the question of accession without discrimination but has also a particular content which is connected with the development of the personality and the determination connected therewith of the contents,

knowledge and skills which are to be imparted and men have to dispose of for being able to take part in social life.

The development of the personality is always determined by the maturity degree reached of the social development within a concrete period of history. Among others, it depends on the portion of the productive results which is available for the satisfaction of needs and the development of the personality of the individual. This is expressed in both the distribution and utilization of the concrete material results of the production (e.g. housebuilding, reduction of the working hours) and the organization of the production and working process promoting the development of the personality (reduction of heavy physical and unhealthy work, including of intellectually creative elements, etc.). On the other hand the further development of the personality qualities, at the same time, is an essential condition of the economic and social development, the achieving of the economic and social objectives is more and more directly determined by the qualification and education of the working people, their being conscious, discipline and creative power.

The individual's attitude towards the vocation learned and executed plays quite an essential role for the development of the personality within and by technical and vocational education. The acquisition of a vocation is one of the main elements of the socialization of the personality, its inclusion into the respective system of social relations. The vocation as a concrete sign of a historical development which is of high durability as well

as of an increasing dynamics is based on the social and enterprise division of labour and shown as a complex of knowledge, aptitudes, skills, habits, attitudes, behaviour which in their complexity are the prerequisites for the successful execution of complicated work within one or more fields of work. The development showed that the vocation is an essential basis for the development of the creative powers of people and the execution of a vocation essentially determines people's life. Conventions and practices which lead to an excessive cutting up of the action within one's job and, thus, to an activity of limited image within the vocation, i.e. which destroy the social reference of vocation - job are, however, to be rejected. These dequalification tendencies can systematically be reduced or even removed by various measures as shown by examples from several countries (e.g. by changing the contents of work, the technological course and the organization of work, periodical change of jobs, etc.). In a lot of countries the spontaneous influence of the scientific and technological progress lead to the polarization of the qualification demands of the workers. Proceeding from the respective demands on the development of the personality each society has to answer the question whether and how to inhibit this challenge.

In this connection the imparting of a high occupational versatility is most favourable for the development of the personality. In accordance with the Unesco Recommendation of 1974 a broad basic vocational education, comprehensive knowledge of mathematics, natural sciences, general technology and social sciences

as well as aptitudes to acquire new knowledge and skills without help are necessary for this. A lot of European countries are going to put the concept of broad basic vocational education or even of the basic vocations into practice or to continue improving it. In countries which are going to build up a national system of technical and vocational education it is essentially important to devote oneself to the development of the vocational and the vocational status connected therewith because this is essentially important for the development of the personality, for social security and prestige of the working people. The development of economy and especially of the division of labour are to be analyzed in order to develop the respective image of the vocations on this basis. The concepts of a shortened technical and vocational education designed for an immediate help, as for instance the MES system of ILO (Modules of employable skills) can, at best, be intermediate solutions. Such concepts do not replace in any case a systematic general education and technical and vocational education for a long period of time.

The development of the personality also includes the systematic development of the ability and need of permanently acquiring general and technical education within the various periods of technical and vocational basic and further education. In this connection political education is of particular importance. It should enable the individual "to develop capacities for decision making and the qualities necessary for active and intelligent participation, teamwork and leadership at work and in the

community as a whole."¹⁾ The development of the personality does not least mean to realize education also within technical and vocational education in the spirit of international understanding, co-operation and peace as well as concerning the safeguarding of the human rights and basic freedoms as fixed in the respective Unesco Recommendation of 1974.

3. The connection of technical and vocational policy and economic policy under the aspect of the democratization

In each country the task of technical and vocational education is to secure the reproduction of the workers according to the qualification and vocational structure of the respective country. On the basis of the qualitative and quantitative needs of economy and other social spheres it is necessary to mostly synchronize the social demands to technical and vocational education with the individual vocational interest considering the criteria of the democratization already mentioned. In this connection a one-sided adjustment of technical and vocational education to short-

¹⁾ Cf. Revised Recommendation, see above, II, 8

term economic requirements as well as a "separation" of technical and vocational education from the employment system have to be avoided.

Despite economic and socio-political problems in the various areas of the world there is an increased pace of scientific and technological progress at present.

These processes are, first of all, characterized by the increasing importance of informatics, the microelectronics' delving into economy, the increasing number of industrial robots, the quick changes within the technologies as well as the question of energy and raw material production and many other things. These processes develop in a very differentiated way within the individual spheres of economy and individual enterprises and machines of an entirely new generation will exist together with morally dated machines for a long period. "Scientific and technological progress in its basic tendency leads to higher qualification demands on the skilled workers but it is no constant straight-lined and uncontradicted development."¹⁾

In some countries different theories of the workers' splitting up into those ones who are to be qualified more and other ones who are to be qualified less are derived from this contradictory development of the qualification demands on the workers and are

1) Rudolph, W.: The increase of the influence of education and further education on the scientific and technological creative power of the working people, in: Creative power and scientific-technological progress (Schöpfungsfähigkeit und wissenschaftlich-technischer Fortschritt), Berlin, 1936, p. 237

socially realized by gradual technical and vocational educational systems. Considering the contribution of technical and vocational education to the democratization, the organization of technical and vocational education should, however, be uniform even in case of occasionally occurring polarization tendencies;

A tendency of higher qualification in any case requires more theoretically and scientifico-technologically orientated educational contents. Tendencies for devaluating the qualification also requires a broad technical and vocational basic education especially from the social point of view with considering the guaranteeing of a broad occupational versatility and mobility, under the restraint to often change the job or to change the production or other spheres of activity. Furthermore, the question how to prepare the young people for life and the job within the respective social order becomes more and more a question of them being enabled to actively take part in the scientific and technological progress, to master the physical, mental and moral demands connected therewith and to use its results for an ingenious organization of one's own life. Scientific and technological progress requires more and more an overall conception of all parts of the educational system. School has the task to impart sound and relatively stable basic knowledge. Technical and vocational education as subsequent step has consequently to be based on these achievements. Under the new demands concerning content, lifelong education and qualification processes become a social standard and education at school and within first technical and vocational education more and more loses its "final character".

This fact has to be taken into consideration to a higher degree. In case of a correct concept technical and vocational education will always have to show a relative stability of the contents imparted, first of all, concerning the bases and less concerning special training. Therefore, technical innovations will first play a decisive role within continuing technical and vocational education because a quick putting into practice of the learned is secured. The incorporation of new special contents in technical and vocational education will only be possible and effective after a longer period of time. Thus, the dynamics of the scientific and technological progress cannot only be met via technical and vocational education. This is only possible together with further technical and vocational education. Therefore, it becomes more and more strategically important in all countries.

For carrying out an efficient technical and vocational education policy a close co-operation of the responsible people within general education, technical and vocational education and economy is a must. In this connection the principle that practical technical and vocational education is carried out with the latest machinery and equipment which will be decisive in the coming years is of special importance. As only medium-size and larger enterprises dispose thereof, in this connection the obligation of these enterprises to a technical and vocational education directed to future of the youth becomes especially clear. A close connection between units of technical and vocational education and productive work in the enterprises promotes the

organization of technical and vocational education itself, the employment of graduates, the development of the personality of the young people and the efficiency of technical and vocational education. As for the very different participation of medium-size and large enterprises in technical and vocational education in the member states of Unesco the question arises if and by which measures the enterprises which have not taken part in the process of technical and vocational education to a sufficient extent can be caused to make their contribution to the necessary extent. This question seems to be of great topicality for many developing countries because of the education practices of multinational groups of companies.

A long-range planning of technical and vocational education is an essential prerequisite for the contribution of technical and vocational education to the democratization. It also depends to a high degree on the inner and outer efficiency of the educational system.

In many countries the implementation of the systems for the long-term planning of the entire national economy is worked out. There are often long-term programmes or conceptions, e.g. national development programmes for the supply industry, housebuilding, protection of the environment as well as economic strategies and orientations. They give important criteria for the long-term determination of educational performances. The basic problem is the relation of the short-, medium- and long-term pre-determination because of the long term of the educational process. The planning

in technical and vocational education requires a period of more than five years according to the structure of the educational system, the education patterns and stages and of all material and technical as well as personnel conditions necessary for this. Although this period of time and the consideration of all influencing factors complicate the planning in technical and vocational education there is no alternative scientifically substantiated to the planning in technical and vocational education which has to be aimed at contributing to the better and better meeting of the requirements of all members of society, to the all-round development of the personalities, their social, intellectual, physical aptitudes and talents. In this connection it is also necessary to consider the principle of the democratization, i.e. that technical and vocational education must not exclusively be directed to the development of a specific working ability of the worker directed to the activity but has to develop the personality as a complex of abilities and social activities which also become efficient outside the working process (in the family, within social life, during spare time, etc.).¹⁾

1) On principles and methods of the planning in technical and vocational education, cf. Purgand, W., Rudolph, W., Burkhardt, U., Hoffmann, K.H.: Policy and planning in technical and vocational education, Unesco, Paris 1982, ED-82/43/56

4. Conditions for an active contribution of technical and vocational education to social progress

Each technical and vocational education system is integrated in the reproduction process of whole society of its respective social order and, subject to the character and objectives of the whole policy of the given social order when determining its own objectives, contents, means and methods. If technical and vocational education shall contribute to social progress, i.e. first of all to the reduction of existing differences within society as well as to the improvement of the material standards and cultural levels of all people, special social conditions will be necessary for this. Participants in a lot of Unesco conferences and authors examining special questions of education for Unesco again established that real democratization of education as prerequisite of social progress can only be reached as a part of various social and economic changes, i.e. the democratization of society is both objective and prerequisite.¹⁾ As technical and vocational education has become a basic condition for the execution of a job the connection of the right to education and the right to work is of decisive importance. The personal freedom of the individual cannot develop without putting the right to work into practice. In the today's highly mechanized world the right

¹⁾ Cf. Tanguiane, S.; see above and Hummel, Ch.; Education today for the world of tomorrow, Unesco, Paris 1977, p. 100

to work cannot be safeguarded without completely putting the right to education into practice. At the same time in this case existing social class differences are reproduced instead of being removed. If technical and vocational education shall fulfill its task to achieve an increasing and steady securing of the social, material and vocational perspectives of all members of society connected with a further development of their learning and working conditions, a lot of principles will have to be applied and realized, as for instance:

- The realization of technical and vocational education for each member of society as a basic human right. This means also to extend compulsory general education from general compulsory school to technical and vocational education and to guarantee all working people the possibility of taking part in measures of technical and vocational, political as well as cultural further education.
- Free technical and vocational education connected with a manifold material help for the learners. Equal access to education does not mean equal chances of education¹⁾ unless comprehensive supporting measures are granted by society for the learners, especially for the members of the so called problem groups.
- Equal position of technical and vocational education within the educational system, i.e. the guaranteeing of the articu-

1) Cf. Faure, E.: Among others Learning to be, Unesco, Paris 1978, p. 72

lation within the educational system and avoiding of a "dead-lock" character of technical and vocational education.

- Organization of the content of technical and vocational education in a way that it facilitates the horizontal and vertical articulation within the educational and employment system on the basis of general education and basic vocational education which are to be as comprehensive as possible and, allows the access to other parts and spheres of the main educational system on all levels.
- Avoiding of a too early choice of career or decision on the educational pattern. A social selection should be prevented and the development of so called problem groups avoided by the equal incorporation of all parts of the population in technical and vocational education.
- Incorporation of all social forces concerned as well as of teachers, scientists, engineers, skilled workers and many other people in the process of the determination of the education contents with considering general standards internationally accepted ("Recommendation concerning technical and vocational education", conventions). Extension of the rights of the learners to have a say in the efficient organization of the training process and evaluation of the performances.
- Creation of a close connection between technical and vocational education and the modern working process aiming among others at the enrichment of the content of works within the social working process and exercising an influence on the change of the

technique in the interest of the workers concerned and on the extension of the co-management of the workers.

- Creation of a positive public opinion on productive work and the work of skilled workers by measures within ideology and policy as well as in the mass media.

The realization of the principles mentioned in social reality shows from the technical and vocational education's point of view the way how to change scientific and technological progress into social progress.

Technical and vocational education as the special education for the majority of the working people must not have any character or value of secondary importance.

Without doubt, many other aspects such as the improvement of the material conditions at the institutions of technical and vocational education, the increase of the qualification of the teachers and instructors as well as their adequate remuneration, etc. also belong to the above mentioned conditions.

In this connection it has, of course, to be taken into account that a lot of economically underdeveloped countries can only realize these principles step by step and even this only with great efforts. But also in these countries technical and vocational education can contribute to the increase of the material and cultural living conditions of the population and participate in the process of becoming similar of the different social classes and strata and of the gradual overcoming of the essential differences between mental and physical work, the differences

between the towns and the country.

Technical and vocational education can essentially contribute to lowering the costs within the educational process itself as well as to the development of national economy as a whole especially where it is closely connected with the working process. Not least technical and vocational education as important social sphere has to co-operate in the question of securing social progress which is, without doubt, most important at present, the preservation of peace. In the nuclear age social progress will only be possible if universal peace is preserved. The dialectical relation of peace and progress has essentially changed its character compared with that of pre-nuclear age. Today the prevention of the nuclear catastrophe and the preservation of peace themselves mean social progress and are its first basic condition. The necessary contribution of technical and vocational education to the preservation of peace and promotion of understanding among the peoples is pointed out in the preamble of the Unesco Recommendation concerning technical and vocational education of 1974. As the past has already shown an essential contribution can be made to international understanding and, thus, to the preservation of peace as defined in the "Revised Recommendation concerning technical and vocational education" by including the development in the network of international cultural and scientific relations, by promoting the international exchange of opinions and experience on both bilateral and multilateral levels as well as within the framework of Unesco and other special organizations of UNO.

5. The contribution of technical and vocational education to the democratization of education and to social progress in the GDR

Like the educational system in other countries the GDR's educational system is closely integrated in the existing social order that means in this case the advanced socialist society and is subject to the character and the objective of the entire policy of this social order when determining its own objectives, contents, means and methods.

On the basis of the social property of the means of production the socialist educational system of the GDR aims at the realization of a high education of the whole people. The development of an all-round and harmonically developed personality who consciously organizes social life, changes nature and leads a fulfilled, happy and humane life in accordance with the basic principles of the democratization this objective of education proceeds from the fact that no differences between boys and girls or the members of the different classes and strata are allowed in the realization of the equal right to education.

The joint education of girls and boys in the same manner is a basic principle in realizing the equal right to education:

- Girls and boys are consistently educated according to the same curricula and the same pedagogic and methodic principles on each level of education.
- Girls and boys are educated according to the principle of co-education on each level of education. The thorough conviction

that girls and boys, women and men have to have an equal social position is developed by co-education.

The ten-class general polytechnical secondary school which has been developed step by step from the eight-class primary school since 1959 is the main piece of the educational system of the GDR. On the basis of uniform central curricula, textbooks and evaluation standards it imparts a scientific well-grounded general education which is directed to the preparation of the girls and boys for the vocation and any continuing education as well as for life as a whole. In the GDR general technical education is an integral part of general education. It is imparted to all children, boys and girls in the like manner. General technical education is realized by a training of mathematics, natural sciences and social sciences closely connected with life, i.e. as training principle as well as by special polytechnical subjects. At present about 3,000 full-time teachers and instructors as well as 26,000 part-time tutors impart basic working skills and insights into the production processes to more than one million of pupils in more than 5,000 socialist enterprises. General technical education prepares the pupils for their future trades, but as element of general education it does not anticipate technical and vocational education. Thus it is in strict conformity with the "Revised Recommendation concerning technical and vocational education" which was adopted by Unesco in 1974 and requires this education being a necessary element of primary and secondary education.¹⁾

1) Of. Revised Recommendation concerning technical and vocational education, see above, Para. IV, p. 19

The indiscriminate incorporation of girls and boys into general technical education is instrumental in helping to overcome dated traditional ideas when choosing one's career. This, first of all, becomes clear in the high percentage of girls in technical vocations compared with other countries.

According to the constitution, in the GDR all young people have the right and the duty to learn vocations as well as trades and professions requiring higher education after having attended general secondary school.

The undermentioned four patterns are open to the leavers of the ten-class secondary school for their further education:

- two years of technical and vocational education to become a skilled worker at the same time acquiring the technical college entrance qualification,
- three years of technical and vocational education to become a skilled worker at the same time acquiring the university entrance qualification (A-level examination),
- two years of attending an extended secondary school finishing with acquiring the university entrance qualification (A-level examination),
- three or four years of technical college education preparing for medical and pedagogic trades.

Pupils prematurely leaving secondary school because of health or performance reasons receive a technical and vocational education proportionate to their potentials.

All premature leavers of the secondary school have the possibility to improve their general education within the adult educational

system.

The ordinary two-year education for leavers of the 10th form of secondary school in skilled trades recognized by the government is the main way for the pupils who leave secondary school. The training is finished with an examination. The graduate gets the skilled worker's certificate and is, thus, entitled to carry out this vocation and to hold the respective name of the vocation. As a rule, the successful learning of the vocation is connected with the acquiring of the technical college entrance qualification. Thus, technical and vocational education is no "deadlock" within the educational system. On the contrary, the skilled workers may apply for a study within a branch corresponding or similar to the vocation learned or a technical college or attend university after one year of preparation.

Thus, under the specific conditions of the traditionally developed educational system of the GDR the principle of equivalence of technical and vocational education as well as of general education is corresponded with and a compulsory education and technical and vocational education: of at least 12 years realized. Compulsory technical and vocational education can, of course, only be executed if the necessary apprenticeships are available in the required quantity and quality. On the basis of socialist ownership relations in enterprises and institutions of industry, trade, agriculture, etc. the GDR secures the provision of these training places by means of a long-term planning according to the vocations taking the foreseeable need in economy and other

social fields of skilled workers, university and technical college graduates as the basis for the planning according to the vocations. Thus, a leverage between the educational and employment systems is avoided.

The planning of skilled workers apprenticeships for school leavers proceeds from the planning based on the real demand and has the definite objective in the GDR to secure a technical and vocational education for all school leavers who do not attend any extended educational institution (rule of the constitution).

The enterprises and local bodies are obliged to annually specify the plans of junior staff for a period of five years in order to maintain the education lead. Planning according to trades means that the social requirements of the foreseeable development period is analyzed and the training places necessary according to the requirements are made available. As far as the individual decision of the juvenile is concerned, thus, the framework is given within which he or she may decide on his/her career. This decision then secures him or her a job within the trade learned after having finished technical and vocational education or the study.

The problem of young unskilled or "social fringe groups" is avoided by supplementing the constitutional rule of the right to education by the obligation to learn an accepted trade. The decision which trade of the about 300 (with some 600 specializations) the boy or the girl would like to learn has, of course, to be made by himself or herself with the largely developed vocational guidance

and orientation system of the GDR giving more and more effective help.

With the practical realization of the duty to be technically and vocationally educated even in case of age-classes having a high birth-rate the GDR has undertaken to prove that it is possible in the industrialized countries to impart a full technical and vocational education to all young people.

Technical and vocational education is systematically based on the prerequisites created by the ten-class general polytechnical secondary school. It is aimed at the education of personalities of socialist skilled workers who may creatively meet the requirements permanently increasing of the social and economic development on the basis of a high level of vocational knowledge and skills. The aims, contents and methods as well as the organization of technical and vocational education refer to male and female juveniles in the like manner, i.e. there are no special vocations which are typical for women or no shortened technical and vocational education for girls.

The bases for today's modern technical and vocational education were laid in the first years after World War II. Traditional capitalist technical and vocational education was organized and realized within the individual enterprise, especially carried out in small and medium-size enterprises, first of all characterized by handicraft and a high portion of practical work in technical and vocational education in the interest of securing high

profits. This form of traditional technical and vocational education was overcome. A comprehensive network of educational facilities for apprentices was built up the most important type of which are the enterprise-run vocational schools. The enterprise-run vocational schools are state educational institutions in the socialist enterprises which include the facilities for the theoretical training (vocational schools with their classrooms and special classrooms) and for the practical vocational instruction (apprentice workshops, laboratories, simulation training classrooms, training places in the departments of the enterprises). More than two third of all apprentices are educated in the enterprise-run vocational schools at present. Thus, the modern material and technical basis of the enterprises (machines and plants) is available for the education of these apprentices. This close connection of technical and vocational education with the latest mode of production guarantees a quick and smooth transition of the boys and girls into the working process and render long vocational adjustment period superfluous. The enterprise-run vocational schools also take over the technical and vocational education of apprentices of smaller enterprises within their territories because they have more favourable material and technical as well as staff prerequisites. Apprentices of enterprises which do not have any enterprise-run vocational school (e.g. from commercial and service spheres of national economy) get their theoretical vocational training at local vocational schools which are subordinated to the District Councils. This also includes the apprentices

of the co-operative and private handicrafts the practical vocational instructions of which take place in the enterprises which are charged with the training of the respective apprentices. The concentration of technical and vocational education in the large enterprises requires that many apprentices cannot get their technical and vocational education in their places of residence. These apprentices are lodged in apprentices' hostels on favourable terms near their training centres. At present this refers to more than 30 per cent of the apprentices. With the building up of apprentices' hostels among others, it was possible to increase for many young people the number of the trades offered and, thus, to create better prerequisites for a free choice of career exceeding the limited offer in the home place. Thus, many possibilities are also open to girls and boys from rural areas to learn a vocation in the modern large-scale production or other large enterprises. In addition to the basic questions of the democratization mentioned, namely the equal access, the equivalence of the various educational patterns as well as the incorporation of all young people in one form of technical and vocational education or technical college and university education, the question of the organization of the educational contents plays an important role. Some time ago in this field, too, the GDR realized measures which are aimed at a fundamental new organization concerning the contents of the trades. The theoretical portion of technical and vocational education was increased to an average of two

days per week (this portion is subject to the character of the trade) and a broad vocational basic education was introduced for all trades.

For all male and female apprentices compulsory general basic education includes the following subjects: sports, civics, industrial economics, socialist law and bases of automation. The subject called "bases of automation" was newly created from the former subjects "bases of electronic data processing", "bases of process instrumentation and control engineering" and "bases of electronics" in the mid-eighties. The basic training and the vocational specialization based thereon serve the securing of a high occupational versatility and mobility because of the objective requirement to flexibly react on changes in science and technology as well as in the development of society as a whole. The high reserves of technical and vocational education produced with the basic subjects is of special importance because of the necessary qualification to lifelong learning. The education to peace is a general, compulsory principle of education in all institutions of technical and vocational education as well as at general schools.

Vocational basic education is followed by the vocational specialization. It is aimed at the apprentice being led up to the performance of the skilled worker at the end of his/her education. It includes contents which correspond to the specific requirements of the respective working sphere and result from the

division of labour within all vocations. On principle, education is carried out directly within the production and working process in close connection of learning and working.

The fact that the enterprises charged with the training of apprentices have to offer the apprentices a job within the vocation learned six months before the end of technical and vocational education is an essential socio-political achievement. Although the apprentices are not obliged to accept this offer a respective contract of labour is ordinarily concluded before the end of technical and vocational education. Furthermore, the skilled workers are eligible for a minimum wage within the vocation learned. These measures mentioned secure an equalization of the young skilled workers when starting their work. An important objective of the specialized training is to train the apprentices, if possible, at their future work places within the last few months in order to secure a smooth change to the normal working process. The realization of the rule of the constitution to secure a technical and vocational education or a university and technical college study for all young people as well as the measures above mentioned prevent in an effective manner that fringe or problem groups of young people without employment or any job including many women and girls and well known in many countries can actually develop in the GDR.

As for the quick progress in science and technology many vocations are subject to quick changes which is an important problem of all

industrialized countries. In connection with measures of the organization of work traditional vocations are often very much reduced or become altogether unnecessary because of measures of rationalization. In connection with the introduction of micro-electronics in many jobs, e.g. within administration, this affects many women. Therefore, the change of technical and vocational education which was directed to a narrow and limited field of activities was early earmarked in the GDR. In correspondence with the requirements of national economy several specialized courses were created to some extent for a large number of vocations which are based on a large-scale basic training (basic vocations). Comprehensive analyses of labour scientists and teaching staff of technical and vocational education showed that traditional knowledge and skills do not lose their importance even under the conditions of a modern production and are often the prerequisite for mastering modern machinery and equipment. Therefore, the GDR first of all concentrates its efforts on including new contents into the existing vocations and not so much on creating new vocations when adjusting the content of technical and vocational education to the requirements of science and technology.¹⁾

Thus, by the end of the eighties, 93 basic vocations will be created instead of 78 basic vocations available up to now.

1) Cf. Weidemann, B.; New regulation on vocations emphasized the high social importance of the skilled worker's qualification in: Technical and vocational education (Berufsausbildung), Berlin 1985, 3rd brochure, p. 106

According to the differentiated requirements of national economy the apprentices may be trained in 337 specialized fields within these basic vocations. At the same time new educational contents will be elaborated for all other vocations and new curricula, gradually introduced from 1936 to 1950.

This adjustment of the vocations to the new economic and social requirements executed in regular intervals secures in connection with adult education that the skilled workers will be able to solve the tasks of national economy within their vocation during a period of several decades. The specialized occupational commissions bear a high responsibility in reworking the curricula. Experienced teachers, together with economists, medical men, psychologists, labour economists and qualified workers as well as with representatives of the unions work in these social bodies. The specialized occupational commissions with their thousands of members which are taking part in their work are an essential element of the democratic process of the elaboration and realization of the curricula within technical and vocational education.

Technical and vocational education of the GDR makes an important contribution to the reproduction of the social structure of society at an ever increasing level. The whole rising generation of the working class and co-operative farmers pass through this part of the integrated educational system of the GDR. All foremen and a great part of the intelligentsia got a skilled worker's qualification.¹⁾ Thus, the skilled worker's qualification became

1) Cf. Rudolph, W.: The education of class-conscious, qualified skilled workers in: Unity (Einheit), Berlin 1932, 10th brochure, p. 291

the basic qualification of the working class, the co-operative farmers and in the handicraft. In connection with the guaranteeing of the right to work, thus, an essential guarantee for freedom, dignity and the development of the personality, for his/her equal participation in the social working process and, furthermore, in the socialist society itself is given.¹⁾

In the recent past the government of the GDR took a lot of measures in order to increase the contribution of technical and vocational education to social progress and to prepare technical and vocational education for the requirements of the new level of the scientific and technological revolution first of all for knowing the high and key technologies.²⁾

Thus, the principles of the democratization of education are protected and further developed even under the new conditions.

1) Cf. Kung, P.: The right to work - a fundamental human right in: Unity (Einheit), Berlin 1986, 2nd brochure, p. 11)

2) Cf. Wiedemann, B.: Preparing technical and vocational education for the new stage of the organization of the advanced socialist society when realizing the decisions made by the 11th Congress of the SED, in: Technical and vocational education (Berufsausbildung), Berlin 1986, 7th/8th brochure, p. 306 - 313