

Project for the reform of the technical and vocational education

Proposal for the debate



Ministry of Education and Science
SPAIN

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PROLOGUE

The Project for the Reform of the Educational System presented in June, 1987, as a "**Proposal for the debate**" drew up the broad outlines of a pattern concerning an overall transformation of the educational system from pre-school to technical and vocational educational branches, going, of course, through primary and secondary education.

The book pointed out a diagnosis on the key problems within the Spanish educational system. The surviving existence of two diplomas at the end of EGB, and the insufficient social valoration of vocational training as well as its limited flexibility and lack of adaptation to the productive needs, stood out in the summary contained in that text together with some of the most serious obstacles to improve the efficiency of our educational system.

These deficiencies don't stand isolated but they affect directly the remaining components of Spanish education: They greatly distort the final stage of the present EGB, they determine the current academic Bachillerato or High School which appears as the reverse of an insufficiently valued vocational training, they affect, finally, adult education, burdening our universities with exorbitant responsibilities. Responsibilities which can only be explained in the part absence of quality educational courses different from university education.

The outlines of a deep transformation in T.P. education are sketched in the project, pointing out that such transformation should lead to the tightening of the links with the labour world and a greater adaptation to modern professional propies.

However, the synthesis of the reform of vocational training proposed by the project didn't expound completely all the different aspects implied in such reform. Not only the diversity of spheres which must be included—from basic professional education to the different varieties of specialized professional training—but the manifold implications contained in the project regarding to the labour, organization or technical fields, required a fuller and more detailed dreatment.

This document aims at completing and specifying the description of a pattern of which only the broad outlines had been drawn up.

Vocational training has a share in a character common to the entire education system.

It is expected to favor the development of the students personality and at the some time to assure the professional qualification which will permit he student the access to the economic world and the labour market.

But this double requirement is more vividly stressed on this branch of the educational system than in the others, except for University education.

The Alterations in the economic development and the acceleration of the technological innovation rate u nder went by our country as by the rest of the world, from the mid-seventies on, combined with a demographic structure, peculiar to Spain in this case, have a particular impact on technical and vocational education, in this context, should and can be a valuable tool in service of active employment policies.

A sufficient professional education should and can be a response to the technological challenge and to international economical competition.

This proposal which follows faithfully the sketch laid out in the project of the reform, of which must be considered as complementary incorporates new concepts which clarify doubts. It defines the connective mechanisms of the different components in Professional training with each segment of the Educational system, draws up a more concise staged classification and definition of the ways to access to each of these educational stages. All this with permanent reference to the contributions which are being brought forward in this field from the EEC.

The proposal now in the reader's hand is in no way the closedown of the debate but fosters it in this specific field. No country can boast of having found the perfect formula. But one thing is for sure: In this searm that we share with the rest of the developed countries, the progress is only possible with the cooperation of all the institutions and social forces.

This cooperation which has to materialize for the first time in this debate, turns out to be essential in order to give solutions which as well as count on a broad support, prove to ve effective.

José María MARAVALL HERRERO
Minister of Education and Science

TABLE CONTENTS

	<i>Page</i>
PART I:	Introduction.
PART II:	Notes for a diagnosis.
	2.1. Summary of the present situation. 21
	2.2. Changes in technology and in the economic structure. 23
	2.3. Some international trends. 27
	2.4. Some conclusions. 31
PART III:	Main features of the new. Technical and Vocational Education System.
	3.1. Features of the system. 35
	3.2. Basic vocational training. 39
	3.3. Specialized vocational training. 41
	3.4. Professional Modules. 43
	3.5. System of qualifications. 51

PART IV:	Proposals for the organization of the Technical and Vocational Educational System.	
	4.1. General features of the organization.	57
	4.2. Access to Modules of 2 nd level.	59
	4.3. Access to Modules of 3 rd level.	61
PART V:	Main implications of a new Technical and Vocational Educational System.	67
PART VI:	Summary and conclusions.	73

PART I:

INTRODUCTION

Social Change and Updating

1.1. The growing social and technological changes undergone by the developed countries are bringing up an important challenge to all the social and specially to the educative institutions. This challenge is particularly outstanding in our country, which has to stand up at the same time to a modernization process of its productive structure as a consequence of its entrance to the European Community.

1.2. The modernization of any productive structure depends the human resources available to a country, on its creativity and initiative, on its knowledge, capacities and skills.

1.3. Young and adult people training and preparation faces nowadays new problems and new qualification needs arisen from the technological development and from a productive structure which gets more complex every day.

The educational system stands up to updated knowledge, techniques and professional requirements stemmed from the deep changes in the profile of the labour market. For this reason it is necessary to broaden the training chances of every person endowing people with a greater capacity to cope with the new requirements by means of suitable professional adaptations, at the same time as it makes possible their promotion and access to higher educational and qualification levels.

Local resources

1.4. Together with the internationalization of the economical processes and the labour market another trend, apparently contrary to that one, comes out: The trend to use the natural, financial and especially human resources available in each locality and region in order to generate a new kind of economical initiatives suitable to be concreted in small-sized and medium-sized enterprises which are able to promote local and regional development. This trend, frequently associated with the so-called self-employment, makes up, a new challenge to the Vocational Training systems too.



1.5. The problems pointed out before justify the need to design a new technical and Vocational Education System which adequately regards all the involved dimensions. A system which offers solutions to the new problems, able to propiciate an atmosphere in which the students feel moved to acquire professional knowledge and which makes easier the devotion of greater resources and efforts to Vocational Training on the part of the Administration as well as the companies, organisms and social agents responsible for it.

1.6. A Vocational and Technical Education System which makes possible the progress of individuals, being this an important tool for the economic development as it improves the competitiveness of our productive system, cannot be the sole responsibility of Educational Administrations. Nor can this be attained with a simple reform of the schooling curricula in the present Educational System. It needs the commitment of all the agents involved in the training process: Public Administrations, trade unions, business managers... It requires, as well, a broad prior debate on which a consensus capable to guarantee the required prompting to its design and implatation, can be articulated.

Educational and Social Ains

1.7. Consequently, regarding all the stated problems, the Technical and Vocational Education must have the following ains:

- To provide greater and better chances and choices of Technical and Vocational Education to all levels and all students.
- To answer the requirements of the productive system endowing the citizens with the knowledge, capacities, attitudes and skills needed in the qualification levels a knowledged by the social agents and homologated in a international and European context.
- To answer the expectations and needs of the stu-

dents, as to endow them with a greater initiative capacity to respond to the changing demands of the working market and to make casier the transit to active life from the different levels and modalities of the Educational System.

- To make possible the permanent training and promotion to higher level qualifications for all the individuals, avoiding the obstacles which hamper this promotion.
- To allow and favour regional and local development by means of a sufficient flexibility in its training curricula.
- To favour the contribution of the different social agents to training and serve along side with this, as a stimulus to workers and managers; so that the first ones can progress in the system as they acquire a higher training, and the second ones devote a more intense effort to improve vocational training.
- To contribute to the formulation of a system of professional certifications which makes possible to recognize as a whole, the educational, training and professional experience levels attained.
- To provide itself with an structure in which permanent up dating mechanims are included and make unnecessary the expensive and difficult periodical global reforms.

1.8. The present Document draws up the broad lines of a technical and vocational Education model that aims at responding to all these challenges together. Technical Professional Education is the generic name chosen in this model to designate all the formative processes in which, from the corresponding levels of current and basic Educa-

tion, specific vocational training and the training in and for a job are developed (see chart 1). The choice of this only denomination, in spite of the fact that this name is kept for the technical branch of Higher Secondary education in other countries, intends to point out the firm and Pasting connexion of all its components and that it essentially belongs to the Educational system in the strict sense.

CHART 1:

COMPONENT	DESCRIPTION	EXAMPLE
GENERAL EDUCATION	Abilities, attitudes and common general knowledge. They aren't specific of any particular activity.	Communication, reasoning calculation capacities, etc...
BASIC VOCATIONAL EDUCATION	Basic technical abilities and knowledge related to a professional branch.	Training on mechanics, electronics, computer science foreign language, etc...
SPECIALIZED VOCATIONAL TRAINING	Abilities and knowledge related to a profession (great variety of jobs) grouped according to their training affinity.	The required specific training for the up keep or machinery.
OCCUPATIONAL VOCATIONAL TRAINING	Abilities and knowledge peculiar to a specific job.	The one required to the up keep of a Press workshop.

This chart must be considered as a model, being its basic objective to permit the discussion and the design of the Technical and Vocational Education. As it will be seen later, this methodology is very useful for the treatment and discussion of the main problems arisen.

A Single Integrated System

1.9. Therefore Technical and Vocational Educations conceived as only one system immersed in the Educational System, although a part of it has to be developed out of the schooling context, but without losing its connection with it.

The Educational Administration and the schooling community are responsible for all levels of General Education; the productive centres must be responsible for the occupational training. As for basic Vocational Education, the educational centres must seek the support of the productive world and other public Administrations, and with these, in a different way, must share the field of Specialized Vocational Training. The success of the reform here of proposed probably lies on the right and balanced sharing out responsibilities among the different agents.

1.10. This project, which essentially affects young people from the different levels of the Educational system, intends to be, as well, an instrument for the permanent training of those young and adult people which are no longer in this system.

So the project aims at Starting the way to overcome the present gap existing between the two specialized vocational training systems: The present Controlled Vocational Training and a great part of the so-called occupational training. Their crystalization into concepts and administrative frame works lacking a sufficient coordination, proves to be useless to face the technological changes and the evolution of the labour market, which, on the contrary, are creating the objective conditions so that both of them converge in only one integrated Technical professional system.

PART II:

**NOTES FOR A
DIAGNOSIS**

2.1. SUMMARY OF THE PRESENT SITUATION

V. E. 1

2.1.1. The first level of Vocational training teoretically has the purpose to offer a semi-specialized technical training which serves as a basis for a subsequent specialization, whether in the second level of Vocational training in the job or in the occupational vocational training system. It is expected, as well, to complete the current training students must have gone through in EGB. However it has proved unable to fulfil this two-folded aim. The existence of two diplomas at the end of the EGB urged great part of the students which had not got the shoding graduate diploma to VE 1. In this way, the idea that VE 1 was a lower rank section adequate for less qualified students spread out and was the cause of social attitudes according to which lower value was put down to VE 1 in comparison with high school. On the other hand an schooling Vocational Training for students from 14 years of age onwards who find difficulties to alternate their work with the training beause of their age, with complementary functions to make up for the missing traineeship, is nor feasible neither functional of course. In fact, on Educational option thus conceived usually ends as a way of an insufficient general training and deficient Vocational training.

V. T. 2

2.1.2. Vocational training-2, of which students in general are more motivated and have better material resources, has undergone an out standing expansion in the last years, and has rendered better results not only in the academic field but also in the working world as it increases the choices of obtaining a job.

However there are some deficiencies in V.T. 2:

- Excessive strictness of a highly controlled and strongly academic system.

- Lineal conception with limited possibilities for intermediate professional opportunities.
- Obsolescence of some specialities alongside with the absence of other related to new technologies.

Occupational Training

2.1.3. Outside of the controlled educational system, the so-called occupational vocational training has been developed over several years. This name has been used to designate the offer of courses organized by the National Employment Institute (INEM) and other Public Administrations. They have been, in general, short duration courses aiming at training the student for a particular job. So it is a training to be classified between the specialized Vocational training and the occupational vocational training according to the terminology expounded in chart 1.

Attempts have been made to articulate the coordination between controlled and uncontrolled or occupational vocational training through agreements between the Ministry of Education and the Autonomous Educational Administrations, but they have not been sufficiently functional in order to face the requirements and objectives of Vocational Training today.

In fact, there is a clear trend of Occupational Vocational training to allow for the obtaining of knowledge and for exercising a profession in a certain field. Therefore, it goes in for more and more polyvalent orientations, and more closely related to the context of Basic Vocational Education. This situation is setting the conditions to define the **specialized training system as a whole** in which, even though the different Administrations and social agents can have specific functions and tasks, a general common design should be carried out favouring collaboration among their diverse agents and higher profit from training resources.

2.2. CHANGES IN TECHNOLOGY AND ECONOMIC STRUCTURES

2.2.1. The technological changes bring up specific requirements concerning the setting of a new design of Technical and Vocational Education. The exponential development of technology in the present historical period makes essential to inquire into the features of the applications of new technologies to Goods and Services production, and from these, to draw up the broad outlines required from future technicians and consider its implications in the training field.

2.2.2. There has been a deeper research on the repercussion of new technologies in the industrial and Services sectors. Therefore the conclusions here after expounded must be considered as essentially applicable to the mentioned sectors.

Repercussion of technological changes

2.2.3. The main implications of technological changes are summarized below:

- The use of micro-electronics and the rapidly growing introduction of data processing resources are making a great step forward towards the automation in the processes of Goods and Services production.
- This automation of the processes is bringing about a fast decrease in the number of jobs requiring a long period of manual training. In other words, a polarization process towards two extremes: A lower level in which a prior specialized training for a job is not necessary to a great extent, while it still requires a solid general basic education; and a higher level of high qualification which aims no longer at exercising a particular profession but at a training on certain area with a more general approach.

– People nowadays and to a greater extent in the future, will face changes which will affect their working capacity: changes in technology, professions, and jobs (most of which haven't been created yet), due to reorganizations of business and whole productive sectors, which will make necessary frequent professional retrainings. Their preparatory training aims at the necessity greater polyvalence, greater capacity to organize one's own training and to face new situations.

– The New Technologies are being the cause of a remarkable fragmentations and decentralization of the productive processes which make possible external collaboration on the numerous services required by the companies. A growing importance of this kind of services and part-time work done at home can be pointed out, from which a considerable increase of autonomous work arises.

Agriculture and Health

2.2.4. Lekenise technological changes have several effects on another productive sectors. Thus, a growing weight of the training aspects in productive commercial and financial management of exploitations arises in the agricultural field related to the needs of Spanish farmers within the framework of the European Community.

2.2.5. In the Health sector, the decrease in the number of direct manipulation procedures for diagnosis and treatment of the patients, is clearly the direct effect of technological changes. But the physical gap existing between the sanitary professional and the patient implied in this trend, must be compensated by the social demand for the decrease of bureaucracy in sanitary services.

2.2.6. Further more, a sector of services to people – children, elderly people, handicapped...– has arisen from which new professional modes are resulting.

Social changes

2.2.7. The crisis of full employment and the reorganization of the labour market, of which the final outline is hardly foreseen at the moment, are two important features of modern societies. The present unemployment of young people is only an expression of this phenomenon which takes its shape as well in early retirement, in the disappearance of great Companies and industrial reconversions in partial and seasonal employment and in the under-economy.

2.2.8. The increase of the services to people, communities and institutions makes up a trend which apparently can not be stopped while the industrial and agricultural sectors are decreasing. The sector of services includes an heterogeneous group of activities which embraces the more traditional ones together with the most up dated ones, as the so-called fourth sector (information and communications).

It is to be presumed that the active population will rapidly and progressively redistribute among the productive sectors. The size of the companies and the character of the workers with or without a salary is going to pass through important changes. The number of "new business managers" must be increased in an exponential way even though many of these companies are going to enjoy a very relative autonomy as they will work in the sphere of great management conglomerates.

Female inequality

2.2.9. Finally, it should be pointed out that women still have, due to their disadvantages in the field of vocational training special difficulties to join the labour market; for instance, they don't receive much vocational guidance towards professions with views to the future, they fill jobs which often require a change in their qualifications profile because of the progressive use of new technologies and which hold limited prospects of vocational training.

Therefore professional guidance for women must aim at the diversification of professional choices in the field of manual crafts and at the training of women in trades related to new technologies.

2.3. SOME INTERNATIONAL TRENDS

The developed countries, specially the European ones, are undergoing similar technological and social processes. Therefore they face similar challenges while restating their vocational training policies and strategies. The underdeveloped countries themselves dramatically affected by the impact of changes in the world financial organization, must design training policies which share the formulation of the ones in the developed countries. A confluence of the principles, criteria and methods related to vocational training is taking place in practice. The international organisms are in pelling to this confluence. These are some of the ideas and trends carried out by several organisms such as the UNESCO the I.L.O., the O.E.C.D., the European Council and the European Community.

Relevance of current education

2.3.1. The convergency of General Education and Vocational Education or Training is based upon the conviction that the best vocational training a good current education. The last one, however, must decrease its academicist character and approach a more real knowledge specially in the productive field. On the other hand, vocational training must become more polyvalent and stop being a training for the use of specific materials, machinery and procedures.

2.3.2. Technical and Vocational Education is understood, nowadays, in its broadest sense as a process which lasts from the early years of scholarship up to the whole active life of a person. It is advisable to integrate general knowledge on technology as a constituent of the basic education of any student. On the other hand, the Technical and Vocational Education System must meet the needs of permanent training on different aspects of updating of knowledge and professional requalification.

2.3.3. As for the contents of curricula, attempts have been made to avoid excessive specialization by means of a

more versatile teaching, and the adoption of a modular structure adaptable to a great extent and to make possible the scheme between training in the schooling centre and apprenticeship in the companies.

The task of solving the unemployment problem is not to be carried out by the Technical and Vocational Education System. However, it must be emphasized that a closer relation between the Educational and productive system grants the achievement of a more functional Technical and Vocational Education and favours the exercise of a particular profession. There are some agreements in this context.

- The school nor can heither should adequately provide all the specialized training required to attain a professional qualification.

A process of reorganization of the functions fulfilled by the organisms responsible for Education and other public organisms related to the working world, and the main agents of the productive system (employers and workers) has been taking place.

Both of them claim a bigger share in the responsibility of Technical and Vocational training: The Educational system tends to assume a stronger responsibility as to define and impart a training as broad and solid as possible, and the organisms and agents of the working world claim a closer approach of the professional training devices to reality and to present and future needs of the productive system.

- It is necessary for vocational Education and training to approach local working markets.
- Every Technical and Vocational Education System with claims to be functional has to answer to manifold interests, sometimes apposed to each other, which surpass the Educational sphere. The State must create a

framework in which they can meet and a kind of organization, with suitable representation of the different interests, to supervise the system and guide its development.

2.3.4. All the countries and most particularly the ones integrated in the Europea Community are reorganizing their Technical and Vocational Education Systems. However the comparative survey of these, does not lead anyone to dispose towards one or another national device. Their present structures are due to a greater extent, to a historical heritage than to the new ideas and tendencies which are attempting to make their may into very consolidated systems.

Even when the absence of a solid and stable structure of vocational training is to be regretted in our country, this gap makes up an advantage. It is possible now, to design a device and build up the bans of a system capable of responding to present and future needs without greatly mortgaging the current vocational training. This new system, must not be inspired in any particular country bur fully benefit from the experiments carried out in other countries and, moreover, from the close cooperation in this sphere with the other countries of the European Community.

2.4. CONCLUSIONS

Factors of TVE System

Some considerations arisen from the accomplished diagnosis are listed below which should be taken into account to draw up a design of TVE.

2.4.1. The new design must prevent vocational training from becoming a second-rate academical way for those who cannot study the general one.

2.4.2. The utopian temptation to "reproduce" the jobs, as they are in the productive world itself, in the Educational System must be avoided.

Connections between the educational and the productive systems

2.4.3. There must be a wide and flexible supply in two senses: accessible to all (different ways for diverse personal situation of young people and adults) and easily adaptable to the demand as an immediate consequence of which arises a polyvalent training.

2.4.4. The new system must furnish the student with a great capacity for initiative to face the changes in the working world as well as the sociocultural changes, and this implies the need for an increase in quierd education and basic training for the whole of our young people.

2.4.5. Specialized Vocational Education is the component of Technical and Vocational Education (see chart 1. page 8) of which design seems to be a key for the future system. It must guarantee the polyvalence of the whole training, through its bonds with the Educational system, alongside with an easy adaptation to the actual requirements of the productive sectors, by means of its link with the working world.

2.4.6. The Technical and Vocational Education System entails a shared responsibility, as it furnishes young

people with a solid basic training as the same time as it frust fulfil the functions listed below:

- Shape into professional outlines and training curricula the data obtained from the permanent study of qualification requirements and their territorial dimensions.
- Favour the direct experience into companies for students and teachers.

These aims are enough reason for the bousinen managers, trade unions, local and autonomous administrations and the central administration, particularly the labour and Educational administrations, to coordinate the functions and tasks they have to cany out in the framework of an integrated design of technical and Vocational Education.

PART III:

**DISTINCTIVE
FEATURES OF THE
NEW TECHNICAL
AND VOCATIONAL
EDUCATION
SYSTEM**

3.1. FEATURES SYSTEM

Present situation

3.1.1. The present Technical and Vocational Education System has placed the basic Vocational Training and the Specialized Vocational Training (see chart 1) exclusively in a secondary way similar to but out of the academic high school way, being the explicit responsibility of the last one to prepare the student for the University.

In these conditions the Basic Vocational Education hasn't got much relevance: it appears mixed up with and diluted into Specialized Vocational Training as if it were only one of its complements, and therefore its contribution to a polyvalent Education is a short one. Alongside with this only part as the students acceded to this Basic Vocational Training those enrolled in vocational training courses, and this way students from College preparatory Course Bachillerato/Highschool lack, in principle, any basic vocational training as the EARP (Technical and Vocational Training Activities) haven't really got this character.

3.1.2. This system fits a productive organization of which the great diversification of professional modes was a distinctive feature, in which the production of goods and services required the skilful handling of particular tools and equipments and the accomplishment of repetitive tasks in fragmented processes which required very little decision capacity from the workers.

New modes of production organizations

3.1.3. The present situation is clearly different from the foreseeable future of the productive organization. An evolution is taking place towards a great flexibility in the organizative modes of production with a clear prevalence of decentralization and a progressive removal of the direct participation of the workers in the processes. The control, adjustment and supervision activities are acquiring increasing importance. On this stage, production is featured

by the use of scientific and technological knowledge which has become the main factor of change in all the productive centres, even for the activities of lowest qualification level.

3.1.4. The new framework requires a different educational system which a broad and solid basic training is guaranteed to all the students, able to be the main pillar of professionalism and polyvalence, and of a basic system of Specialized Vocational Training designed to answer the technological requirement here in expounded.

The requirements of the present social and productive systems to be fulfilled by any Vocational and Technical Education System, sum up a group of specifications which define and shape it. According to these principles the system must:

a) Allow the promotion of the students.

Any Educative System must allow the training and qualification progress of the students. This requires the lifting of the academical disposales which force the student to early and non reversible choices, and an organization able to foresee the connection among the different training stages.

b) Enjoy great flexibility.

The Vocational and Technical Education System must be able to answer the rapidly growing technological changes, as a consequence of which, professional modes are rapidly changing too.

To accomplish this specification it is necessary to distinguish clearly inside the Vocational and Technical Education System to the training component which is subject, a greater extent, to technological changes, that is to say, specialized vocational training.

c) Adapt to its background with flexibility.

This answers one of the most important general aims essential to the Technical and Vocational Education System: to Allow and promote regional and local development through the putting into practice of general training programmes in this field.

d) Be based upon the organization drifted from the new technological framework.

The new system of Technical and Vocational Education must take shape not only to meet the needs of the current technological-productive framework but the ones as the forever able future as well. This brings up the necessity of inquiring into the main trends of technological development, the organizational and management modes to be noted and foreseen in our country, as these contribute to define the requirements of training.

e) Be self-arranged.

The technological changes demand a Technical and Vocational Education System capable of permanently updating and renewing its aims and contents. This cannot be fulfilled by means of the usual periodical reforms of curricula and the educative structure.

Links with the productive system

3.1.5. The Educative system, and very particularly the Technical and Vocational Education, must meet the needs of the productive system. However some details must be pointed out as regard to this statement, generally accepted nowadays:

- It seems necessary for the Educative system to meet the qualification needs of human resources which will be required to face the development of the country in a long or a medium term. Nevertheless, the Educative

system is not likely to meet the needs arising from the situation of the labour market, except in a subsidiary way and in collaboration with other agents.

– The educative system must get in touch with the productive system by means of its capacity to answer the main trends of economic development, expressed by scientific, technical and cultural knowledge as well as basic capacities and skills. The whole project for the reform proposed by the Ministry of Education and Science attends to answer this demand.

– The close link existing between companies and educative networks, herein underlined, as well as the concretion of vocational training in the diverse territorial spheres, can not imply the reduction of Technical and Vocational Education to a diversified in «training a la carte». The productive world through the different Administrations and the companies and trade unions themselves, must share with the Educative Administration the responsibility for the design of a global framework of essential qualifications in the medium and long run, alongside with the training structures from which those ones result.

3.2. BASIC VOCATIONAL EDUCATION

Its presence in the compulsory secondary education.

3.2.1. The Basic Vocational Education which can be defined as the collection of basic knowledge, abilities and capacities related to a wide range of professions, guarantees a polyvalent training as it is constituted by general theories and abilities common to a group of techniques or professions.

3.2.2. The basic Vocational Education at the compulsory stage of secondary education should be concreted into a curriculum embracing:

- A practical and potentially professionalizing dimension of traditional subjects. This points out the prominence of the scope and significance of basic Education (language, modern language, natural and social science, etc.) in order to face a future professionalization.
- A general technological Education for all the students, included as a specialized area in compulsory secondary Education. This technological Education must be referred not only to the training on diverse techniques but to the study of the social and productive backgrounds in which these are applied.
- The statement of objectives to facilitate the immediate incorporation into the work force of the students, as it is advised by the corresponding orientations and programmes of the European Community, which demands a closer connection between the school and the working world, considering it as an object of study and a pedagogical resource for all subjects.
- The insertion of diversified and optional educative contents which embrace activities or experiences prior to the exercise of the corresponding profession.

The training for a wide range of professions of level-2 concentered in specialized Vocational Training Modules which start at the end of compulsory education, can be supported by a stage of secondary education (12-16 years of age) with be already mentioned features.

Its presence in high school or Bachillerato.

3.2.3. The insertion of Basic Vocational Training in the post compulsory stage of secondary Education should lead to a Bachillerato diversified in two ways:

1. Various modalities of bachillerato which allow the student to chose different fields of knowledge and of productive activity.
2. A system of optional subjects in each modality which makes possible, mostly in the last course, to aim more clearly at particular university careers and/or particular professional modules of the 3rd level (*).

Thus, the optional subjects of Bachillerato will have to meet the needs of university education alongside with the needs of the particular professional branches.

3.2.4. Finally, Basic Vocational Education must be exclusively restricted compulsory secondary Education or to Bachillerato. The professional modules of which the main content, undoubtedly must be specific vocational training, will meet the possibility and perhaps the necessity of including as well some contents of Basic Vocational Education which could not be incorporated with the educational stages followed, before these ones.

(*) Some examples: in a scientific or technical modality, an optional subject or zootechnic or phytotechnic in a course of Bachillerato should be adequately linked with many professions of the agricultural-farming sector (Hortofruticulture, Forest exploitation, Phitopathologist, etc.) and an optional subject on health biology would link with professionals of the health sector (Laboratory technicians, Environmental health technicians, etc.).

3.3. SPECIALIZED VOCATIONAL TRAINING (SVT)

3.3.1. Specialized Vocational Training can be defined as the group of abilities, knowledge and capacities related to a profession, considering this as the competence in the practice of a more or less broad range of similar jobs (professional field). As it placed between the basic vocational training and the occupational training, includes the features of programming, systematic and critic apprenticeship, and evaluation peculiar to the Educative system, while it is defined in direct connection with the productive system.

Even when its concretion into professional modules must always be a provisional one, the Specialized Vocational Training must be set up with reference to a framework of professional branches and fields which have been approved by all the institutions and agents responsible for it.

The jobs should be grouped in professional fields with regard to their training affinity instead of considering their belonging to a particular productive background. Even when materials and equipments will still be of great importance in many of these new professional fields, the nuance of this new approach results from the study of systems and processes transferable to several productive backgrounds. One of the most important innovations related to the present situation in which metal, glass, timber or trades are the criterion of differentiation among branches, specialities and professions, rests on the fact mentioned before.

3.3.2. The Specialized Vocational Training must link the school with the working world.

It must be developed both in the educational centre as well as in the working world. The companies will carry out

a major rate in the definition of their different specialities. The Educational centres must provide more permanent and less subject to technological obsolescence teaching staffs pedagogical capacities and didactical resources (laboratories, workshops, etc.). They must be supported on their own resources, not withdraw from their specific role which cannot be fulfilled by any other institutions. The companies have to provide the students with direct knowledge of the technical labour problems, contributing with their specialist, and updated material resources (machinery, systems, equipments).

A Specialized Vocational Training, conceived a link between the school and the working world implicitly involves the requirements of flexibility and adaptability mentioned before. It not only intends to satisfy the needs of the productive system by means of the creation of new specialities but goes further in this field. Finally, a Specialized Vocational Training thus designed makes easier the updating of the teaching staff in the sphere of technical knowledge and abilities.

3.4. PROFESSIONAL MODULES

3.4.1. The professional modules are a specific concretion of the organization of Specialized Vocational Training. A professional module consists of teaching and training on a particular range of knowledge and activities which make up a coherent nucleus as Specialized Vocational Training and which fulfil the training required to practise a profession. (See chart 2.).

The modules, thus conceived, would be organized into the technical-practical knowledge areas which allow the acquirement of the capacities expressed in the professional outlines. In this way, the training objectives of each area can be coherently defined with a satisfactory integration degree.

3.4.2. The qualification degree of the professional modules should fit those established in the European Community. In this way, the students who follow these modules will be entitled to the corresponding homologated professional certification in the European labour market, according to the criteria drawn up in the Resolution on July, 11th, 1980, of the European Council. (See chart 3.)

In the present document the degrees of the professional modules are always related to the corresponding degrees in the European Community. Particularly modules 2 and modules 3 are those in training modules which lead respectively to level 2 and level 3 professions and qualifications according to the EC criteria.

3.4.3. Professional modules should be considered in close relation with the labour world and should meet both the requirements of technological changes as well as the detected opportunity or need of an specialized professional field.

CHART 2: TERMINOLOGY

Occupation: The exercise of a particular job which requires a range of knowledge and abilities.

Profession: Capacity to exercise a more or less wide range of similar jobs (professional field).

Professional Field: Range of occupations of the same level which can be exercised by means of a profession and an additional training in the working world.

In order to group the different jobs into professional fields, criteria of educational affinity are applied. This criteria aim at the definition of general theories abilities common to several techniques and set up the link between the working world and the educational system.

The range of occupations related to a particular productive background are not the ones to be considered similar, but those ones sharing a common trunk of knowledge and abilities from which a coherent area of **Specialized Vocational Training** denominated Professional Module can arise.

Professional Module: Group of knowledge, abilities and capacities organized on criteria of Educative Afinnity which make up a coherent area of **Specialized Vocational Training** and which culminates the training required to have a particular profession.

Professional Branch: Set of professions grouped according to criteria of Educative Affinity. A professional branch embraces a set of professions sharing a common trunk of knowledge and abilities from which an area of **Basic Vocational Education** can arise.

CHART 3: QUALIFICATION LEVELS IN THE EUROPEAN ECONOMIC COMMUNITY

1st LEVEL: The student accedes to this level through compulsory schooling and initial training. This initial training is acquired in a school centre, in the framework of extra-school training structures, or in the companies. The amount of theoretical knowledge and practical capacities is quite limited. This training must prepare the student for the exercise of a relatively simple profession, and so its average duration can be very short.

2nd LEVEL: The student accedes to this level through compulsory schooling and vocational training. This level implies a complete qualification for the exercise of a very particular activity with capacity to use the tools and techniques related to it. This activity is mainly exercised with regard to a work of execution which can be autonomous as far as it is confined to its own techniques.

3rd LEVEL: The student accedes to this level through compulsory schooling and/or school technical training or any other training of Secondary Education; this training requires a greater amount of theoretical knowledge than the 2nd level. This activity is mainly related to a technical work which can be exercised in an autonomous way and/or implies responsibilities of framing and organization.

4th LEVEL: The student accedes to this level through general secondary or vocational training and through post-secondary technical training. This technical training of a higher level is acquired inside or outside the framework of school institutions the qualification arisen from this training implies knowledge and capacities belonging to the high level. Usually it doesn't require the mastery of the scientific grounds of the different implied subjects. Through these capacities and knowledge it is possible to assume, in a generally autonomous or in an independent way, responsibilities of conception and/or Administration and/or Management.

5th LEVEL: The students accedes to this level through general or vocational secondary education or completed high education. This training usually eads the student to exercise in an autonomous way the professional activity (as a salary earner or an independent worker), implying the knowledge of the scientific basis of the professions. The qualifications required for the exercise of a professional activity can be integrated in these different levels.

The appropriate procedures to detect these needs must not be confined as it is nowadays, to impart the specialities demanded by the centres as regard to the preferences of the students.

3.4.4. Even though the diverse modules must be highly specified, the Specialized Vocational Training system, of a modular structure, must embrace the general features listed below.

- The objectives and contents of the different modules must be inevitably articulated with the whole educational system and designed with reference to the corresponding basic Education.
- The professional modules should be adaptable to the centres. To this end, the public Administrations will define in close commitment with managers and trade unions, the professional profile of each module, the requirement for the access to it, the main areas of knowledge involved in it, the scope of training in the working centre and the technical-didactic resources considered as essential to fulfil the objectives. The Autonomous or local Administration or the Centre itself, in collaboration with the companies and regional or local organisations, will complete the designs and concrete the requisites for the access to the corresponding tests, and will manage the training practices required, as well as the concurrence of the experts needed to impart them.

In the working out of the professional modules, provisional adaptations will be provided to allow students with any kind of sensorial motive or psychological disability to follow them and to prepare for the exercise of certain professions in spite of their handicaps.

The 1st level

3.4.5. The first qualification level includes a group of occupations of simple execution which do not require

therefore neither theoretical knowledge nor practical skills different from the ones acquired at the end of compulsory Education. The number of these occupations is of great importance in the labour market. There are plenty of them in each economical sector and they are commonly believed to be the most rapidly increasing ones in the developed countries. Compulsory secondary Education must let all the young people know the ways to find a job and furnish them with a good knowledge of the general skills involved in a broad group of occupations of the 1st level.

We can not ignore the fact that in days to come some young men will not have got the certificate corresponding to compulsory secondary Education on account of which they will not have the basic general knowledge required to attain this first qualification level. As regard to the present situation of the labour market, this group would tend to be unemployed, if educational curricula are not designed to prevent their withdrawol from the working world, promoting their social and labour insertion. This kind of programmes are the first application field of the so-called "social guarantee" which according to the European Economic Community must necessarily be worked out in each member state and of which the first and most important aim is to endow young people with a satisfactory degree of qualifications in the first level. Although it can generally be stated that the first level only requires the basic vocational training corresponding to compulsory Education, it is obvious that many young students will have insurmountable difficulties to find their first job, if they do not receive any professional initiation whether in the schooling centres or in bridging-programmes between the Educative system and the working world.

Consequently, even when one cannot properly talk of specialized vocational training of first level, there must be programmed an educational-training offer which aims at the recovery of a comprehensive compulsory Education for

those students who have not satisfactorily completed it and at a socio-professional initiation to favour the transit to the jobs comprehended in the first level.

This group of programmes must be developed with the collaboration of all the educational centres and of another type of qualified centres and with the commitment of the public Administrations which, as a last resort, must be responsible for the social guarantee. The collaboration of the companies and other entities will have to be safeguarded by means of existing mechanisms such as training contracts (for students over 16 years of age), remunerated labour practices with subsidized training. These should be the objectives to be aimed at in a new design of the sector of the IVT (Inter Vocational Training) allotted to meet the needs of these young students in years-to-come.

Modules of the 2nd level

3.4.6. This modules prepare the student to exercise a relatively limited range of jobs. Which require some apprenticeship and specific qualification of which the main component is the execution. The specific qualification must allow of a relative autonomy in the techniques inherent in it for the exercise of a particular professional activity.

The structure of modules 2 must be very variable and their contents, resources and structures will depend, to a great extent, on their own peculiar characteristics. In any case the importance in these modules of the practice in the companies can be underlined. Most of the times, only one year of specialized vocational training is required to attain the second level of qualification after the end of compulsory Education. (See Annexe.)

Modules of the 3rd level

3.4.7. These modules accomplish the preparation to exercise a range of jobs of a certain technological level. The contents of these modules are linked to the previous studies to a greater extent than the contents of modules 2, and generally tally the modalities and optional subjects studied in Bachillerato.

The qualification they provide must allow the students who have gone through these studies to insert into the productive world as an intermediate technician prepared to exercise a job in an autonomous way and/or which involves programming or coordination responsibilities. The modules of the 3rd level aim at training a polyvalent professional, with an overall and coordinated view of the mechanical, administrative, electrical, technical-sanitary, etc... systems, on which he operates; capable of bearing in mind the function and mission of the different elements of which they are formed.

The modules 3, in general, will comprehend two complementary training areas. One is developed in the schooling centre and the other in working centres through the agreements on collaboration which have been concluded.

The training in the Educational Centres will have to include an area of work, companies and training for the working life organization and an area of technical specialization in the professional sector. Training in the working centres will include the exercise of the programmed training practices alongside with the study of the relations between the companies and other institutions. (See Annexe.)

3.5. A SYSTEM OF QUALIFICATIONS

3.5.1. One of the main features of any Vocational Training system is the way in which it is articulated as a System of professional qualifications.

Obviously, Spain should enjoy a similar system the Ministry of Education and Science shares with other administrative organisms and organizations the responsibility for the elaboration of this system.

It accepts, as well, that a wide consent of the social agents is required on this subject, as it is aware of the fact that these agents will be of decisive importance when defining it and putting it into practice. As there is an obvious link between a system of professional certifications and the Vocational Training System, the Ministry of Education and Science can contribute favouring the agreements which will make it possible. Taking this into account, we can understand the meaning of the statements below.

3.5.2. A System of Professional Qualifications creates a link between the specialized vocational training system and the working world as far as it relates the professional abilities acquired with those required in fact by the productive system.

Traditionally there has been a great gap between the academic qualifications granted by the Educative system and the professional ones accepted and developed in the labour world. It is convenient to fill in this gap. The System of Vocational Qualifications will play a decisive role to "syntonize" the training choices with the needs of professional competence.

3.5.3. Alongside with this aim, the System of Vocational Qualifications plays a major role in strengthening a workforce with professional competences recognized and

adapted to the labour market requirements. From the educational point of view, it must be underlined, as well, that a suitable System of Vocational Qualifications would stimulate the Vocational Training students and the workers in general to improve their qualifications.

Finally, a system with these features would grant a reliable and truthful recognition of professional competences, and, at the same time, would help the managers to recognize the qualifications attained by the workers in the Educational system or in the companies.

3.5.4. To fulfil the aims already mentioned a system of Vocational Qualifications must abide a series of requisites summarized below:

- Adapt to our labour and productive realities and to the needs of the students, providing chances of progress in the qualification and the training fields.
- Allow the students to prove their knowledge, abilities and capacities, acquired either in the Educational System or in their professional activity into an integrated system.
- Be easy to access to and to be understood and acceptable for all of those social sectors concerned.

3.5.5. A system of vocational qualifications is based upon the occupations of a country, organizing and grading them according to the vocational qualifications needed to exercise them, defines the procedures to access to them and requires to be operative the adequate structure, organization and resources. Anyway. This system must be flexible, avoid any kind of bureaucratization and grant the students the obtaining of the certifications corresponding to the profession they exercise in fact, but these certifications should not become an indispensable labour requisite for this practice.

According with this organization, there are several requirements to put it into practice:

1. Create, from the labour, reality of the country, a basis of data on the tasks corresponding to a wide range of jobs (occupational catalogue) in all the productive sectors, including the self-employment.

2. Classify, characterize and evaluate these tasks according to the qualification levels established in the European Economic Community taking into account our own system of labour categories. Thus a significant range of professions can be tipified, as the reference framework for new professional requirements.

3. Define the standards to obtain vocational qualifications:

- a) Kind of test which have to be passed.

- b) Vocational training and/or experience required for the certification.

- c) Authorized institutions to issue each kind of certification.

3.5.6. The roles previously mentioned can be performed by a National Committee of Vocational Qualifications inside the General Council of Vocational Training and by means of an active collaboration of the social agents and Administrations involved.

3.5.7. Attempts have been made in Spain to match the diplomas granted by the Educational system with the professional world; the organization of a system of professional certifications has proved to be a difficult task and it would be advisable to undertake its development with caution, always with reference to the countries which, like

Spain, are member states of the European Economic Community.

3.5.8. The magnitude of the project would tally with the advantages stemmed from it, and which would be enjoyed by the Vocational Training System, the employment and the economic development of our country. It must be pointed out the fact that a System of Vocational Qualifications not only regulates and adjusts the professional qualifications but is an essential tool to improve them and a stimulus to the training progress.

A network of vocational qualifications/certifications will be to the advantage of all the agents involved: the business managers will know the capacity of each worker, it will give the workers an incentive to progress. The training of the students of Vocational Training will be recognized and accepted by the labour market and the trade unions and professional Associations will be able to carry out their functions more effectively into a clearer and more rational framework of labour relations.

"A System of Vocational Qualifications which evaluates the professional quality and competence will encourage a higher professionalism and show the citizens in general that the apprenticeship is a permanent process throughout the life of each person. It can, in short, create the incentive of training ways and opportunities available to any one through his working life." (*Working Together. Education and Training* . Report presented to the British Parliament by the State Department of Employment and Education, 1986.)

PART IV:

**PROPOSAL FOR THE
ARRANGEMENT OF
THE TECHNICAL
AND VOCATIONAL
EDUCATION SYSTEM**

4.1. GENERAL FEATURES OF THE ARRANGEMENT

4.1.1. The Technical and Vocational Education is structured on two levels: The first one is based upon a basic training equal to the first cycle of Secondary Education and culminates in a group of professional modules of variable duration which grant the access to the second level of qualification.

The second level of Technical and Vocational Education requires a basic training equal to Bachillerato and is completed with a series of professional modules which grant the access to level 3. (See chart 4.)

Access to the Modules

4.1.2. The student can access directly to the professional modules either through the required basic Education proved by the corresponding certification or through "Admission requisites" fulfilled by the person who wants to follow these studies.

As regard to the essential y professional nature of the modules, as well as to the necessary function they must fulfil in a training policy for adults to grant the professional qualification of the workers, the admission requisites established for the modules must be different from the academic ones and should not be strictly related to the standards and achievements accomplished in the Educational system. The access to the modules neither can nor must be blocked up to any real or potential worker who could profit from them. Particularly the labour experience and abilities sufficiently accredited can grant a worker the admission to a particular professional module.

Admission Requisites

4.1.3. The admission requisites, as an option parallel to the academic standards, will depend on each module and can include an examination or text directed to provide a guarantee that the student-to-be will be able to profit from

the module. The examination must not deal with contents which have already been academically accredited.

4.1.4. The examination, in general, must warrant:

a) A specific standard of General Education materialized into:

- Linguistic competences.
- Competences of logical reasoning.
- Capacities of mathematical calculus, whenever they were necessary.

b) A standard of Basic Vocational Education which comprehends the group of minimum knowledge, abilities and skills required to get successfully down to the specialized training which will be imparted in the particular module.

Each module will include the list of knowledge, abilities and skills which, related to the mentioned contents, will be summoned in the admission test.

4.1.5. A positive assessment at the end of a professional module will grant the student the corresponding certification which proves him to have attained a particular vocational qualification standard.

4.2. ACCESS TO MODULES OF LEVEL 2

Those students who have gone through compulsory secondary education will proceed directly to these modules.

Provisions have been made for the access to these modules for those people who, from the working world, aspire to progress in their qualifications as well as for those who want a "horizontal" vocational retraining. In both cases the access will require the fulfilment of the admission requisites. In the first case (desire for a progress in the qualifications) there will be an examination which can accredit the basic vocational training required. In the second case (vocational re-training). The admission requisites, without dismissing the possibility of a partial examination will put the stress in the accreditation of the second level of qualification in the labour activity previously exercised.

4.3. ACCESS TO MODULES OF 3rd LEVEL

4.3.1. The access requisites of Modules 3 must be similar to those of Modules 2: either specific academic conditions, in this case having completed the Bachillerato, or the fulfilment of particular admission requisites, which guarantee that the student will profit from a module of this level.

Candidates for Modules 3

4.3.2. Even though the situation of potential students of Modules 3 is highly complex. Three different groups with different requisites for the access to the modules can be outlined:

1. Students who have gone through and completed Bachillerato in any of the modalities which grant direct access to the particular module of the third level.
2. Students who have gone through and completed a professional module of the 2nd level with no professional experience.
3. Students from the working world with professional experiences related to the module they want to access to.

For the students of the third group the only possible way of access to Modules 3 is the fulfilment of the admission requisites referred to in paragraph 4.1., according to which the required professional experience must be accredited as well as the basic vocational education standard necessary to profit from the modules.

For the students comprehended in the first two groups there are different academical possibilities for the access which will be discussed further on.

Options of academical organization and Access

4.3.3. The organization of professional modules of the 3rd level and the definition of their admission requisites, cannot be carried out without specifying, at the same time, the relation of these modules with the varied modalities of

Bachillerato and modules of the 2nd level. Similarly the specification of this relation can not be carried out without stating exactly the character of Bachillerato and of the modules of 2nd level. Therefore, all the educative organization and the resulting inter relation between Modules of 2nd and 3rd level and modalities of Bachillerato must be integrated with a common criterion, into a coherent system.

The requisites for the access to Modules 3 can only be defined on the grounds of this joint organization.

There are several possible ways to carry out this joint organization of post-compulsory secondary Education. Varied solutions arise from the choices made on two particular points: the character of the different Bachilleratos and the relation between modules of 2nd and 3rd levels. Each of these two points involves options which should be considered.

Nature of Bachillerato

4.3.4. In the "Project for the Reform of the Educational System" the Ministry of Education and Science pointed out that High School or Bachillerato had two kinds of objectives: ones of a more, preparatory nature, preliminary to other higher studies, mainly University studies; and others ones of a terminal nature, related to the value of Bachillerato itself and to the relation existing between its modalities and some professional outlines.

Concerning this, there are two possible choices. One of them consist of drawing the broad outlines of certain mainly preparatory Bachilleratos and therefore directed to higher University studies and designing some others as mainly terminal and directed in a straight way, through Professional Modules 3, to the exercise of a particular profession. However, this choice has a serious disadvantage, it conveys, almost necessarily, a division of Bachillerato in two different modes: those giving access to University and those leading to a job or to Professional Modules. This

setting out does not seem convenient, not only because it conveys obviously discriminatory consequences, but because in both modes of Bachillerato, the objectives peculiar to this educative stage would finally detract from it.

That is why, it is surely more advisable another choice, which does not make a distinction between mainly preparatory Bachilleratos and mainly terminal or professional ones. The Ministry of Education and Science prefers this second choice, acknowledging the modalities of Bachillerato proposed in the "Project for the Reform of the Educational System". According to this choice, the optional subjects offered to the students play the role of strengthening their preparation whether for particular university studies, or for their professional insertion through Modules 3.

Links between Modules 2 and 3 via Bachillerato

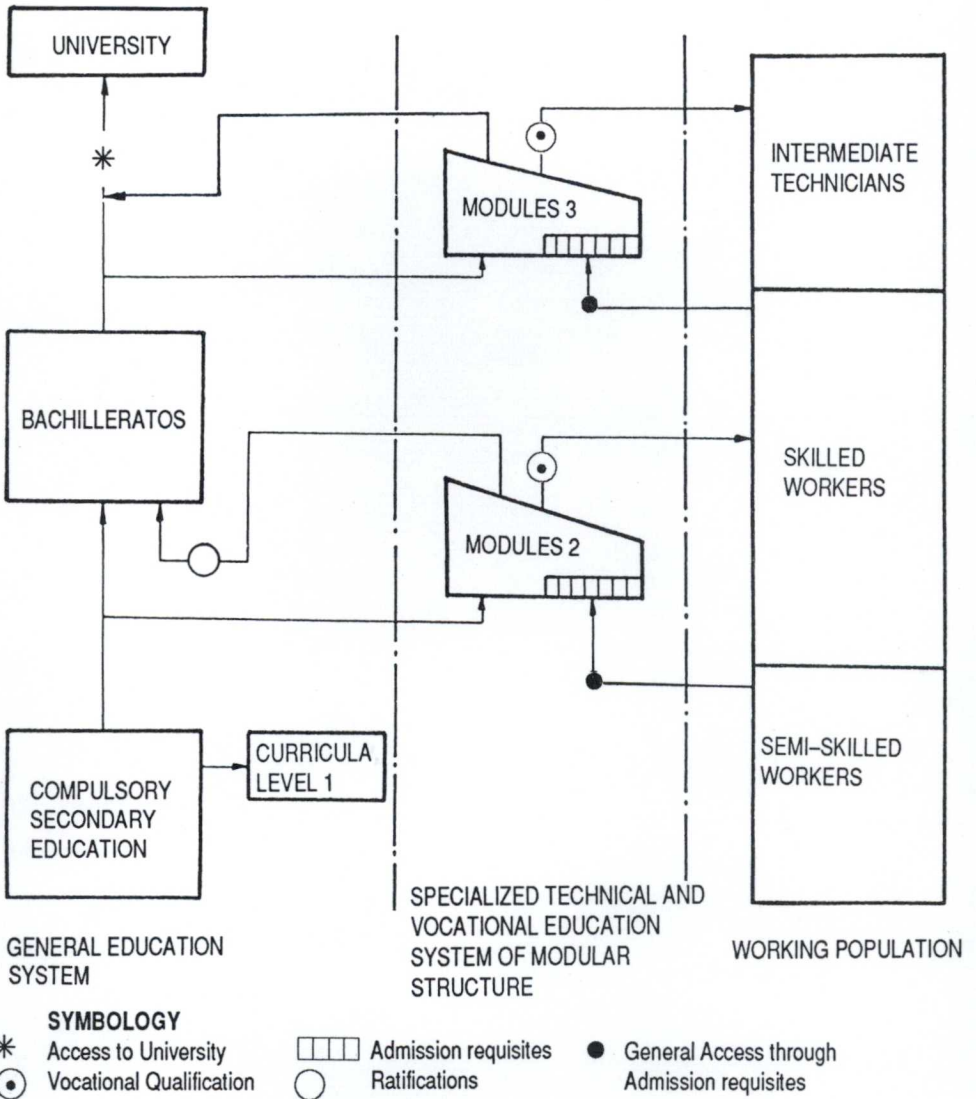
4.3.5. The relation between Modules of 2nd and 3rd level and particularly the access conditions from the first ones to the second ones is a matter which must be debated. A possibility for this access could be the linking through a "connecting course", which from particular Modules 2, would allow the access to Modules 3. It is a solution which, apparently, gives the system flexibility, allowing the transit from one level to another one, in the framework of technical Education. However, in spite of this outward appearance, the "connecting course" conveys some serious disadvantages. On the first hand, it should be shaped as a course of generic contents, exclusively programmed for students who want to go from Modules 2 to Modules 3, set up, this way, as an Education on parallel to that of Bachilleratos on the second hand, even when this connecting course is supposed to belong to the specialized Professional Training system, it would really involve a return to academical layouts of basic education, which really belong to a greater extent to the Modality of Bachillerato. Finally, the existence of this course would end up influencing the organization of Modules 2, endowing them with excessive academical contents and turning up to be, together with Modules 3, a

parallel system to Vocational Training, in which the deficiencies of the present system would be duplicated, with the resulting devaluation of these last modules.

As regard to the disadvantages already mentioned it is more advisable a different choice, in which, the academical requisites for the access to Modules 3 can be fulfilled only going through Bachillerato, without dismissing the route referred to in paragraph 4.1.2. According to this choice, the students who have completed a professional Module of the 2nd level, in order to acced to one of the 3rd level should go through the corresponding Bachillerato, after having ratified those subjects already passed in the professional Modules of the 2nd level. This choice tally with the nature of professional Modules of 2nd and 3rd level, which do not differ in the inclusion of new knowledge or abilities but in a Basic Training qualitatively different which can only be attained through Bachillerato.

4.3.6. Alongside with this, it would be necessary to articulate the connection between Modules 3 and certain University careers.

CHART 4: TECHNICAL AND VOCATIONAL EDUCATION MODEL



5. MAIN IMPLICATIONS OF A NEW SYSTEM OF TECHNICAL AND VOCATIONAL EDUCATION

5.1. The new system of Technical and Vocational Education will require some changes:

- a) In the methodology of technological training.
- b) In the structure and organization of the Educational centres.
- c) In the qualifications of the teaching staff.
- d) In the organization of a network of secondary education centres.
- e) In the curricula.

5.2. Changes in the methods of technological training.

Professional Training must surmount the boundaries of the traditional training based upon standardized, more or less repetitive processes, to allow a training based upon more complex processes. The functional aspects of machinery, systems and equipments must be stressed in practices, so that the manual contacts of the students with them should not only involve simple repetitive operations.

It will be necessary to progress to unitary physical spaces for the traineeship on technological subjects which will have a tendency towards the structure Classroom-Workshop-Laboratory with more universal resources, and a limited number of machinery, devices and equipments suitably chosen. As for the didactical resources, there must be a major use of technical material: real plans, information on industrial and administrative processes, catalogues, technical booksets, and, in general, a wide range of infor-

Training on
complex
processes

mation present in the productive system and therefore must be of daily use in the teaching of specialized vocational training.

5.3. Changes in the structure and organization of the Educational centres.

This changes arise from the need to keep in touch, in a closer way, with the productive system, as well as to complete the designs in the local and regional scopes. The most important points of these changes are:

- a) Management of training into the companies, which will convey, on its side, the establishment of training agreements in the local and regional spheres, and the guardianship and evaluation of this training.
- b) Recruitment of experts on certain trunks or particular techniques of the professional modules, in the companies.
- c) Agreements for the establishment of teaching staffs in the companies.
- d) Design of modules regarding the productive reality of the centre background and favouring the collaboration of local management entities and Associations.

All these changes convey a new conception of the Educational centre and demand a remarkable increase fo their management capacity.

Evolution of the Qualifications

5.4. Changes in the qualification of the teaching staff.

Any Technical and Vocational Educative system which aims at connecting with the productive system must bring in important changes in the present qualification of the

Specialized Vocational Training teaching staff, which in some cases is not suitable enough for the productive framework of our country today.

With the actual changing rate of professions, the Specialized Vocational Training staff will experience much more frequent professional retrainings than in the past. Of course, their professional knowledge become obsolete much more rapidly than the ones of the other training components. Their techniques, materials, tools change completely in extremely short periods of time compared with the professional life of a person.

In this situation, the notion of discipline or subject bound to the speciality of a teacher, does not make much sense. It is just a matter of knowing techniques, applying and projecting particular devices and equipments, mastering a "savoir faire" corresponding to a basic vocational training. The last one must match the initial training. However, the craft teacher must consolidate it and change it into a permanent training process adjusted to technological changes.

The Educational Administrations will have to put at the disposal of the craft teachers the opportunities and resources required to make possible their professional up-dating.

A Homogeneous and Specialized Network

5.5. Changes in the organization of the network of secondary education centres.

The present organization of the network of centres must undergo some changes to adapt to the new technical and Vocational Educative System:

It will be necessary to advance towards a more homogeneous network of centres, filling the present gap between Bachillerato and Vocational Training. To this effect, the

new modalities of Bachillerato and the possibility of imparting them in the present high schools as well as in the Vocational Training ones, will make possible that both kinds of centres can offer different professional modules with little modifications in the places and a relatively low cost of installment.

But, at the same time, the Educational will have to move forward towards a greater specialization, concerning Technical and Vocational Education, in certain professions, especially in those most directly related to the productive background of the centre. This greater specialization in the centres which impart professional modules will stress their peculiarities and undoubtedly provide the teaching staff with a motivation to attain an adequate offer to meet the requirements of the background.

To this effect, new authorization criteria will have to be worked out for particular professional modalities or modules. There will have to be an adequate combination of criteria of productive activity in the area, projects for economic development, curricula of the permanent teaching staff and quantity of students to be.

Curricular innovations

5.6. Curricular changes.

The changes which should be made in the curriculum of the students are important ones and will give rise to new requirements of teaching staff and resources. Some of the curricular innovations can be observed in the present modalities of Bachillerato under experimentation and in the basic documents of the modules. Let's notice that:

- a) Subjects completely missing in the present curricula will have to be included in the sphere of Basic Vocational Education (Secondary education); for example: Administrative and computation processes, Automa-

tion, Computer science, Economy, Psychology, Technical design and laboratory, Materials science, Phitotechnic etc...

b) In the sphere of Specialized Vocational Training (professional modules) new techniques will be introduced the notion of subject is no longer adequate) such as CAD/CAM automation teleprocessing, computized techniques for diagnosis, Administrative and management projects, photomechanics, etc.; which will undoubtedly require to be taught the collaboration of the companies.

6. SUMMARY AND CONCLUSIONS

The new system proposed.

6.1. This proposal aims at combining the most important dimensions which participate in the design of a new Technical and Vocational Education system:

- The new social requirements have been taken into account, pointing out the demand for a more diversified system with a greater capacity to meet the needs of certain groups such as young people, women, unemployed workers and adults to join the working world, improve their training and keep in their jobs.
- The essential role of Technical and Vocational Education has been vindicated: to achieve the improvement of the human and material resources which are being required in the economic development and technology. The fact has been stated that together with the social and educational dimension, the Technical and Vocational Education must support, as well, the industrial and employment policies, the technological policy and the policy of regional development of the country.
- The Technical-Professional Education System designed must emphasize the necessity to close its links with the productive system. To this effect, the design points out that the acquisition of a solid cultural, scientific and technical basic training conveys a better vocational training than the acquisition of ephemeral techniques, and underlines the necessity to increase the training in the companies to complete the qualification of the workers.
- The differentiation of Specialized Vocational Training has been pointed out as the best mean to attain the self-regulation of the system, its flexibility and versatility; and a modular notion of this training component has been chosen, arisen from the notion of profession

Bachillerato and Professional Modules

and halfway between the strictness of the present curricula and the mere juxtaposition of thematic nuclei.

6.2. The proposal can take different shapes, depending on some options relative to the configuration of Bachillerato and the links between these and the two levels of Technical and Vocational Education.

The Ministry of Education and Science proposes a pluralist organization of Bachillerato, in three basic modalities, and with a wide margin of optionality which allows the student to attain a suitable training, both for the different professional Modules of 3rd level, as well as for the different University careers.

As for the connection between the different modalities of post-compulsory secondary Education the purely professional nature of the modules is suggested with contents from Specialized Vocational Training, so that the transition from the 2nd to the 3rd level can be carried out through Bachillerato, by means of the appropriate ratifications.

Access to the Professional Modules

6.3. The main feature of the professional modules, from the point of view of Educational organization, is the possibility to accede to them, both through an academic road as well as through professional experience with particular knowledge properly accredited. This flexibility in the conditions for the access to the modules endows them with an enormous potentiality for changing and progressing in the qualification of the workers and, in general, for the permanent training of adults. Thus, it is a flexible organization in the service both of the personal Education of young men and adults as well as of the requirements of technological change and, in general, of the productive system.

Thus, a profesionalizing model of TVE is drawn up, in which the essential educational elements are placed on

current Education, saving the professional qualification for Modules of short cycle and high specialization.

The professional modules proposed are really transition bridges from the Educational system to the working world and must be understood from an essentially professionalizing perspective, laid on a solid basic training.

Role of the Administration and Social Sectors

6.4. The Ministry of Education and Science, when choosing a purely professionalizing model of Technical and Vocational Education, is aware of having made an ambitious proposal, which attends to face the challenge of the problems arisen and to recover the role and prestige of vocational training in our society.

It is aware, as well, of the impossibility and inconvenience of undertaking with its own and only resources the reform of the whole Technical and Vocational Education system. In account of this, the Ministry of Education and Science underlines that the professional modules and the whole Specialized Vocational Training subsystem, in any layout finally adopted, should necessarily develop and articulate in the framework of a National Plan for Vocational Training designed and accomplished with the commitment of the Public Administration and the management and trade union organizations.

The General Council of Vocational Training will undoubtedly play an outstanding role in this task both on by itself as well as by catalysing debates and agreements among the different social sectors involved and represented in it.

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