

Modes of co-operation

International co-operation may be bilateral or multilateral. At the inter-state level, priority should be given to co-operation in the literacy area. It would be particularly useful to establish a system for expert exchanges in this field, initiate projects for comparative research, produce teaching materials and media, organize conferences on literacy problems, study contemporary methods and techniques in use in each country, and publish research findings and other texts in professional periodicals. Co-operation can also take the form of setting up research and data and information centres concerned with literacy, in order to facilitate and accelerate the dissemination of useful information. Universities and institutions for adult education have particular significance in this effort and co-operation can be organized directly among them. Cooperation may also be extended to include industrial and trade firms, particularly those engaged in the production of printed matter, paper and other technology and media involved in extending literacy. Social and humanitarian organizations, particularly trade unions concerned with raising the level of workers' general education, enjoy a distinctive place in bilateral and multilateral co-operation. Co-operation can involve mass media, particularly radio and television. In bilateral and multilateral co-operation, non-governmental organizations, particularly those professionally interested in problems of adult education (associations of adult educators, teacher associations, associations of institutions for adult education, etc.) also enjoy a special place.

Bilateral co-operation in the field of literacy is particularly vital for those countries with numerous immigrant workers for whom, with their children, functional literacy is vital to ensure their successful integration in their new social and cultural environment. In that regard, considerable attention should be given to the experience gained so far.

Unesco plays a key role in co-ordinating international cooperation in the field of literacy, most particularly where non-governmental organizations are involved i.e. those specifically concerned with problems of literacy and adult education: the International Congress of University Adult Education (ICUAE), the International Council for Adult Education (ICAE), the European Bureau of Adult Education (EBAE), the Asian and South Pacific Bureau of Adult Education (ASPBAE), the African Association for Literacy and Adult Education (AALAE), the Arab Literacy and Adult Education Organization (ARLO), the Inter-American Federation for Adult Education (FIAEA) and the Council for Adult Education in Latin America (CEAAL). Most of these are concerned primarily with institutional members.

Part two

The Relationship between Work and Adult Education

The Role of Knowledge in Modern Economic Development

In the modern world economic development and knowledge must go hand in hand. In other words, efficient economic development is inconceivable without knowledge. Knowledge helps to increase the material and spiritual wealth of a society. It is a fundamental factor in the global economic competition. To shut off the flow of information, the flow of knowledge means to opt for a road which does not lead to survival and more dynamic development.

As A. Marshall pointed out quite some time ago, knowledge is the most important production driving force. It is only with the help of knowledge that people can come to grips with changes affecting all walks of life. Scientists point out that the future of the humanity rests with the development of human abilities, i.e. the promotion and expansion of useful knowledge contributive to the upgrading of human life. The idea that the education, the expansion of knowledge, is just a "consumer product" (T. W. Schultz, 1985) is gradually overcome.

Modern sociologists emphasize that knowledge has become a "primary industry" permeating all branches of human activity: it is a prerequisite for all other forms of activity. In a certain sense, knowledge, embodied in education, determines the socio-cultural standing of both the society and its individuals. Our time is characteristic of the fact that knowledge is being systematically incorporated in industry and economy as a whole. Towards the turn of the century, rather than serve only as a basis for the creation of the material wealth, it will also become the condition determining the quality of human life. Knowledge is not a purpose unto itself; its purpose is to facilitate human life and work. Knowledge allows us to take part in the management of the development to a fuller degree (R. Stojanovic, 1987). The importance of education for the application and processing of new knowledge, mastering and management of new technologies is tremendous. It is conducive to the emergence of new methods and innovations encouraging economic and social development.

Knowledge Needs To Be Redefined

Experience shows that in the past knowledge was classified and built into the educational curricula in different manners. Some authors (V. Milic, 1994) point out that some philosophers and scientists give evidence of persistently favouring

theoretical thought and underestimating the technical thought especially if it is directly related to the material production. For this reason modern authors set out to redefine knowledge and incorporate in the body of knowledge not only the theoretical, but also the technical knowledge and skills, notably those needed for material production. Work in the material production sphere is increasingly saturated with theoretical knowledge. The elements of intellectual labour gain more and more ground even in the activity of those producing material goods.

As of the middle of this century economically healthy societies have been drawing attention to the role of knowledge and the need to raise the level of graduate knowledge as an important element of their performance and efficiency. Developed countries with dynamic economies invest large sums of money into diverse forms of flexible education of the employed. In the world of work there is no place for those "at the bottom", that is "at the bottom" of the educational and competence ladder. The number of employed persons without primary education or with primary education only has substantially dropped and the number of university graduates among the employed is rapidly increasing. A new phenomenon is emerging and is described as a knowledge-based economy. Capital owners perceive in educated and creative workers a new resource helping to sustain production dynamics and successful competition on the world commodity market, i.e. a road to capital accumulation. The nature of work is changing rapidly. There are ever more jobs requiring creativity, generation and dissemination of information. According to some authors the force of knowledge is manifested in various ways. Two examples testify to this: the manufacture of semi-conductor chips involves 70 per cent of knowledge (research, design, testing) and not more than 12 per cent of manual work. This applies also to the production of some medicines where the share of manual work does not exceed 15 per cent, and that of knowledge reaches as much as 50 per cent (P. Drucker, 1987).

Knowledge-based economies emphasize the inter-dependence of technology, education and business. It determines the nature, quality and organisation of education which needs to face new challenges. Particularly important among these challenges is the one which relates to the opportunity given to the employed to refresh their knowledge and skills and avail themselves of continual vocational education. The changing nature of work will force people to go back to education, be retrained or permanently upgrade their knowledge and acquire new knowledge. Some authors envisage that every five years four out of five persons in the industrialised world will perform jobs different from those they have performed during the preceding fifty years. Most will have to be reeducated, sooner or later, to learn how to perform new jobs (J. Dennison, 1988). Old qualifications will suffice for work only in unchanging economies.

The changes emerging from the multiplication of scientific knowledge make it necessary to redefine the relationship between general and vocational education. It is necessitated not only by technological changes, but also by the tremendous expansion of knowledge. So far andragogy has largely omitted to study the curriculum of education and the relationship between general and vocational education. The division of education into these two branches started as a historical process at a time when the developmental level required narrow specialisation and there was no awareness of the need for broad spiritual culture. Production was the key factor which induced a change and the need to subject the relationship between these two forms of education to redefinition. Narrow specialisation was suited to the craftlike form of work, but is far from suited to the modern production characteristic of rapid changes. To maintain conventional vocational education would mean to hamper economic development. Modern economic development, the changing nature and substance of work demand that general and vocational education be brought closer together. Both forms of education maintain the humanistic values of knowledge. General education ceases to be unduly abstract and removed from real life, and the vocational education is rid of excessive manual features typical of craft-like mode of production. Vocational education does not relinquish high specialisation but it is now based on sound general education. In this manner vocational education at various levels acquires a humanistic aspect. An ever larger share of humanities in vocational education curricula should help to avoid narrow technical specialisation. On the other hand, inclusion of subjects related to work in general education curricula makes the latter, shall we say, increasingly vocational. The interaction of general and vocational education requires andragogy to redefine them and, more than that, to scientifically and professionally compound curricula taking due note of both work and personal development.

There are two schools of thought addressing the curriculum design. The first lays the emphasis on "how": how to learn, acquire knowledge, underlining the need of "learning to learn". The choice of the contents is left to the individual. The second lays the emphasis on "why". It looks for reasons, points at the universally applicable principles, conclusions, understanding of the world and human thought. Its protagonists point out that the human brain "craves" for content rather than method, especially such contents as are conducive to the understanding of the general principles of the universal and human existence. They make it necessary to reverse the hitherto prevalent learning practice which accorded priority to the learning of method over the learning of conclusions. The protagonists of this school of thought believe that conclusions ought to be addressed first

(E. Turner, 1988). The dichotomy of "how" and "why", we believe, is not justified with regard to the choice of contents, their shaping into curricula and syllabi and their mastering. The two approaches need to interact. If only the methodic approach were kept, the question "how", man's humanistic aspect, his quest for the purpose of existence and work, his eternal question "why" would be lost. The contents and their substance would become of secondary importance, and the method man's chief cognitive support. On the other hand, if "how" were neglected, the possibility of an adequate answer to "why" would become much lesser. The respect for "how" is particularly important in the process of organised education and learning.

Characteristics to be Developed through Education and Learning

When selecting the contents and designing the curricula it is important to establish which characteristics and skills should be encouraged during education and learning. Opinions vary as to the nature of these characteristics. Some authors (J. Dennison, 1988) refer to the following characteristics and skills deriving from the general education:

1. Ability to communicate. based on multidimensional literacy covering, in addition to the basic skills of reading, writing and listening, appropriate knowledge of the computer languages giving access to information available in new dimensions.

2. Critical thinking with extensive scientific method and elements of logic allowing individuals to analyse and judge proffered arguments, ask relevant questions and distinguish between rationality and rhetoric.

3. Interpersonal abilities based on the ability to interact with other individuals at different levels. They are particularly important in some areas of work such as services, but also in other spheres of professional life.

4. Ability to take decisions in a society will largely depend on the knowledge and understanding of how that society functions. These aspects of general education cover, in addition to contemporary social processes, the historical events which have influenced the social development.

5. Ethics and values will gain in importance in knowledge and information-based economies in a world going through biotechnological revolutions and at a time when the balance between the state and the individual undergoes radical changes. The concern for moral questions is a duty to be shared by all. It is a new challenge for educators at all levels. Dennison says that failure to establish a link between the ethics and the technological development, will take us into the land of "barbarity with a human face" (J. Dennison 1988). Characteristics out-

lined by Dennison refer to the communicational, cognitive, participative, interpersonal and moral framework. The choice of contents should contribute to developing individual abilities and characteristics allowing to judiciously determine the direction of one's own and social development.

The choice of the educational contents is also a moral issue and not only an economic and cognitive one. The acquisition of knowledge should contribute also to developing the awareness of one's responsibility for one's own and social evolution, the awareness of the need to live and survive together. The introduction of new technologies does away with a broad range of repetitive and routine jobs but requires in return a higher level of education and competence, demands enterprise, initiative and flexibility. It is therefore imperative that the social institutions do not hamper the initiative and creativity relating, above all, to the provision of alternative possibilities for education and learning. In knowledge-based economies education and learning can be organised in a new manner. New technology modifies the system of knowledge and information transfer and the role of the teacher, especially in adult education and learning, appears in a new light. The quality of education and learning depends, among other things, on the qualifications and competence of those charged by the society to promote it. These are not only teachers, but also all those managing education at different levels.

Knowledge Application in Economy

Rather than ensuring the acquisition of knowledge at different levels alone, it is necessary to provide conditions for its efficient use. To have knowledge is not the only prerequisite for its use. Research shows that unused knowledge perishes. Knowledge is not only forgotten: it can also grow obsolete. An efficient use of knowledge depend in numerous factors: the social climate, material and moral incentives to those having knowledge to use it, the ability of work protagonists to channel this knowledge and incorporate it in developmental plans. Longitudinal studies in Yugoslavia (1972, 1976, 1980, 1984) show that the available knowledge is inadequately and inefficiently used. The working hours and qualifications of the personnel are inadequately used. The findings show that the higher the educational level of the employed the lower the percentage of the proper use of their working hours and their professional knowledge. The reasons for this are an inadequate deployment of specialists and an inadequate organisation of work. Skilled persons perform jobs below their competence level and this gives rise to dissatisfaction, frustration, declining work motivation and many other difficulties (I. Simeunovic, 1985). The percentage of those satisfied with

their jobs decreases as the level of education increases. Experts waste their energies performing non-professional and routine jobs. When competence goes unappreciated and when creativity and innovative effort are not encouraged people lose interest to master and acquire new knowledge. They are inadequately committed to continual professional education. The findings of the study show that by and large knowledge is globally on the increase, that there is an ever-larger number of better educated and more competent employed but that the application of this knowledge does not improve. This affects adversely both the society and the economy. We believe that similar examples can be found in other social environments as well. The upshot of such attitude to knowledge application is lack of profitability, rut and stagnation if not the outright slump of the economy.

What Needs to be Done to Base the Economy and Science on Knowledge

Steps to be taken depend on the circumstances prevalent in every social environment but it is possible to single out some fundamental common elements. We believe that they are as follows:

1. Relieve education and culture of the political tutorship and arbitrary decisions lacking scientific and professional basis.
2. Pursue a holistic educational policy, i.e. devote equal attention to the education of children, youth and adults.
3. Accord equal attention to education and science. Education and science are two sides of one and the same process which is the production and processing of knowledge.
4. Promote the competition of knowledge, ability and creativity.
5. Question the holding of jobs by uneducated and incompetent people.
6. Revive establishments for adult education and learning. Request a reasonable material, manpower and research balance between the education for the young and the education for the adults.
7. Organise andragogical services in adult educational institutions and larger companies so that their competence and knowledge could help to raise the professional educational standards and forgo arbitrariness and poor amateurism.
8. Intensify research in all areas of adult education. There is no valid reason why the answers to numerous questions about the adult education and learning should not be pursued through research.
9. Promote enterprising, creative and innovative activities through knowledge and efficient education and provide material and moral incentives to this end. This is a *sine qua non* of any progress.

10. Without knowledge it is impossible to adopt new moral and aesthetic values contributive to the greater wealth and better quality of life. This includes knowledge about health care and protection of the environment gravely imperilled by the rapid scientific and technological progress.

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Middle Management: A Revolution in Adult Education

Medium-level personnel in production, according to the nature of their work, constitute a significant link between a vast number of the labor force with lower qualifications and highly educated (academic, technical, and other) personnel. Such at least is the situation in Yugoslavia. There is a tendency in Yugoslavia, and in many other countries as well, to provide medium-level education for all immediate producers. Reformist tendencies and attempts to reconstruct the curriculum and examine the validity and efficiency of medium-level education are emerging, including the education of medium-level personnel in production. It is only natural that within these endeavors the function of social-humanistic curriculum is particularly stressed.

Many documents which include a programmatic basis for the reform of educational activities in Yugoslavia start from the principle of a universal education and development of the human personality. This is particularly evident in the General Act on the School System of 1958. In the theoretical sphere, Yugoslav andragogic literature accepts the principle of *integral education*, which brings together the social-humanistic contents of general education and the contents of vocational education. That is why we approach consideration of the position of the social-humanistic content in the programs of education of medium-level personnel in production as only one aspect of an entire and complete process of upbringing and education.

Since space is limited, we shall not go into any reexamination of the definitions of the notion of "social-humanistic" contents. We shall start from the factors which determine the necessity for considering the position of the social-humanistic content in the programs of education for medium-level personnel in production. Let us first mention some of these factors: (a) the technical-technological process; (b) the social situation of medium-level personnel in production or self-management – participation; (c) free time – the development of creative abilities of a person in his or her free time.

The increasingly rapid development of science and its application in production, which characterizes the twentieth century, has brought into question many concepts of education and educational structure. It should be emphasized, however, that in the course of existence people have always been under the influence of technology, and that he has been advancing and developing alongside with technology and its influence on society and culture. This influence has become

considerably greater and more manifest today. Owing to the joint action of science and technology, the ideas of accessibility of distant civilizations and cultures have been changed. Technical development has produced immense material and social forces. It has also brought negative tendencies which manifest themselves in alienation, in the tendency toward ownership, not in the sense of ownership of means in order to realize human potentialities, but in the sense of owning the technical means to attain social status in a given milieu. That is why in many countries the debate is now unfolding in the field of education on the role of social-humanistic content in the formation of an integral personality.

On the other hand, the contents of professional character are no longer predestined for specialists in narrow professional fields only, but represent a substantial potential in the universal education of human beings. The elements of the professional and social-humanistic contents are in permanent interaction. Such tendencies result from the development of science and technology, and from the new progressive movements in social relations.

Science and technology are increasingly influencing the human personality, the daily life of individuals, not only in the course of their work, but in their family life and free time as well. Therefore, while selecting the contents of education for medium-level personnel in production, we have to discard the technical and pragmatist concepts which resist a more integral education of personality. The advocates of such concepts, which still exist in certain systems of vocational education, consider that the main point is to prepare an individual for the successful performance of work operations. As a consequence of such concepts, social-humanistic contents are curtailed in the program of education. Literature has recorded a quotation by Henry Ford, which illustrates such pragmatic orientation: "I do not care whether one comes from Sing-Sing or from Harvard."¹

Still, even the industrially most advanced countries are again placing an accent on the significance of social-humanistic education. "Without a humanistic education the modern man [sic] of the technological world is no longer able to comprehend the final purpose and meaning of his own specialist work activity."² The vocational-specialist education should be complemented by those wider social-humanistic contents which will enable individuals and social groups not only to produce more efficiently, but also to participate more successfully in and decide on the social problems, both in the sphere of labor and of social events. Also, through education, we can contribute to the creation of a social climate in which every individual becomes a subject, and takes an active part in the determination of his own destiny and that of society on all levels of decision-making.

If the work, due to the necessary division of tasks, has lost some qualities of the autonomous work activity – if the work tasks are heteronomous (subject to the laws

which are determined by some other factors, beyond the immediate producer), then it is necessary for the worker-producer to be enhanced to such level of the collective consciousness as will enable him to participate actively, on that higher level, in the management of the process of production. This in the contemporary conditions is the only way of attaining what has been lost – the awareness of being a subject in a creative and productive effort. In other words, it is necessary for modern industrial production to create such production relations within the factory itself, as will enable the worker to acquire a complete consciousness about his (her) own active participation in the life of the work collective and in its all essential production tasks.³

Today, one can say, for the first time in human history, that a new revolution is about to begin – the revolution which is manifested in self-management and in workers' participation in decision-making, which is leading to new, more humane relations among individuals. This social situation creates circumstances in which people become more conscious of their own value. It conditions a changed attitude not only toward the system, but also toward the contents of education. The system of the workers' self-government in Yugoslavia requires personnel with more universal education, broader views, and a higher level of general culture. Medium-level personnel in production also need education for self-management, education which helps enable them to take an active part in management and decision-making. The significance of social-humanistic contents is thus increased. The social-humanistic contents, together with contents of another nature, ought to enable the man to live in society, and not only to adapt himself to that society, but to alter it in a creative and positive manner.

An antithesis between professional and social-humanistic education at the present stage of development of civilization is untenable. The rapid change in technology has brought about the necessity for man to change his professional orientation in the course of his working life. Social-humanistic contents in education facilitate such reorientation by training people to think correctly, to plan the course of their own educational action, and to contribute to their ability to undergo a permanent educational process. The contemporary person of the second half of the twentieth century is considered to be educated when he or she has adopted the methods and techniques of, and developed positive attitudes toward lifelong learning. "The man [sic] who acquires his education in 1965 will be uneducated in 1976 unless he continues to educate himself alongside with his daily activities. Therefore, we ought to think about a revision of the educational programs, along with the entire work scheme, to plan learning throughout the lifetime for all of us who are able to make use of the advantages of education."⁴ The development of technology has contributed to the reduction of work hours. In their free time, people devote ever more attention to social-humanistic education. The increased number of free hours enables an individual to devote his full at-

tention to the development of his own potential capacities, inward forces, and realization of his desires, interests, and needs. Thus the social-humanistic content of education, during free hours, will appear as a means of realizing the given aspects of man's totalities.

We have enumerated the scientific, technical-technological, and other factors which contribute to an even stronger emphasis on the significance of the social-humanistic contents of educational programs. What is the nature and place of this content in the program of education for the medium-level personnel in production in the educational institutions in Yugoslavia? The attitude toward this content has been changing progressively, along with the development of the social entity of the Yugoslav community. After the introduction of workers' self-government, social-economic knowledge became important in the curricula of education for medium-level personnel in production, both for those who already are in the production process, and for those who are about to enter this process. It should be noted that after 1950 there have appeared within the adult education system in Yugoslavia new institutions (workers' universities) whose basic task is the socio-economic education of the working class. It is understandable that the functions of these institutions have been gradually extended, so that they have become institutions for an integral adult education. In the framework of the people's and workers' universities, special forms of activity (centers, chairs, schools) dealing with the problems of social-economic education emerge. A characteristic example of this is the establishment of higher workers' schools whose curricula are oriented toward sociology, economics, and problems that arise from the practice of workers' and social self-government. The duration of studies in these schools is two years, and they train medium-level personnel engaged in immediate production to become organizers of selfmanagement activities in economic organizations (enterprises, factories, and so on). The professional-technical knowledge is complemented by the social-humanistic content. Social-humanistic contents are adopted also in other forms of adult education in Yugoslavia (secondary schools for vocational education for adults, preparatory courses for adults for entrance examinations to the universities, centers for general and social-economic education in the people's and workers' universities), which develop programs which vary greatly both in their duration and in the nature and depth of the subjects they deal with.

A special characteristic of the Yugoslav adult education system, from the aspect of educational scope and contents, is to be found in a very explicit tendency toward the integration of the professional and social-humanistic contents. This tendency is particularly evident in the elaboration of the process of self-management. Thus the social-humanistic contents, the contents "for education of the self-managers have been gradually developing as a component of vocational

education."⁵ Efforts are being made to provide for the social-humanistic education of technical personnel, including medium-level personnel in production. Predominating is the concept that social-humanistic contents should not be considered as something isolated from the educational contents for the given occupations. However, in some schools at the middle level which are designed for young pupils, there were and still are disproportions among educational contents. These disproportions are most manifest in those schools and types of education which train medium-level personnel in production (secondary vocational schools of different types and industrial apprentices' schools). The curricula of some secondary schools tend to "push aside" the social-humanistic contents (mother language, literature, foreign languages, history, economics, and so on), in favor of scientific contents or subjects related to the practical activity of the future worker. This phenomenon is reflected in the reduction of hours during the week for subjects in social and humanistic sciences (for instance, foreign languages, history, and the like) or in their total deletion from the teaching programs and curricula. These weak points presented, inter alia, a reason for the radical reform of medium-level education in Yugoslavia, including the education of medium-level personnel in production. The most significant principles of that education are now the subject of a discussion whose realization can be expected very shortly.

Some of the constituent republics have already worked out common starting bases for medium-level education, which allow considerably more room for social-humanistic education than was the case in the curricula at earlier stages. It is pointed out that the "common bases of medium-level education should secure a given level of knowledge, general culture, social-economic education, and competence for work and self-management to all those who complete any of the verified forms of medium-level education."⁶

Conclusion

Social-humanistic contents have a special place in the formation of an integral and harmoniously developed personality. Outdated and unacceptable is the concept of a division between vocation and the social-humanistic education. Both the professional-technical and the social-humanistic contents of education should find their place in the common bases of medium-level education (which includes the education of medium-level personnel in production). The latter contents are particularly important for the realization of the concept of self-governing socialism in Yugoslav society. Their inventive integration in the programmatic structures on the medium level and their creative realization constitute a significant

task of educational institutions, and of social and professional organizations in general.

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The Significance of Lifelong Learning of Engineers and Technicians

The Approach to the Problem

The subject containing the word "significance" points to a more general approach and consideration of the matter. Therefore, we chose just this approach in our contribution.

There were many verbal and written debates on the significance of lifelong learning on the world educational stage during the last decade. The intensity of these discussions has not yet declined. It became rather fashionable to talk of lifelong learning and appeal to it as to the "magic stick" that should dismiss every obstacle in various fields and at different levels of the organized education and instruction. In such discussions it often appeared that the wrong interpretations of permanent education, and the very idea of the life long learning was proclaimed a phenomenon of our days.

It should be mentioned that the idea of lifelong learning dates as early as the Eastern and Greek civilizations, in educational thought of socialist utopists from the renaissance and is most completely expressed in the views of the great Czechoslovak pedagogue J.A. Komenius who had fixed the same limits "for life and learning". Since then we have seen the idea in pedagogical projects of the French Revolution (1789-1795), among the socialist utopists, particularly R. Owen and the representatives of the 19th century workers' educational movement. Classics of Marxism had given their contribution to the idea of lifelong learning. Lifelong learning has been part of the sociological, pedagogical and philosophical debates of the 20th century.

This reference to the history serves to point out that lifelong learning is something that is not new at all. However, the endeavours of the society nowadays, to make this idea come through, to become the reality for the majority of its members is new.

During the last decade UNESCO spared no effort to promote the conceptions of lifelong learning in the member countries. Non-government organizations, among which the Union of Engineers and Technicians, on their international and inter-regional meetings have considered the problem of lifelong learning. However, in spite of all these efforts there are different terminological and conceptual comprehensions and problems. In some countries lifelong learning is meant to include just the education obtained at the post-graduate level. Such atti-

tudes are particularly expressed in North America. As a consequence of this interpretation centers for continuing education are being formed at universities for the education of various professional profiles. Elsewhere, lifelong learning means only the education intended for adults, or just the education obtained in practice. Some authors define the education as a system or principle, and lately some define it as ideological movement.¹

Those propagating lifelong learning point it out as the process of existence (human existence).² We consider that lifelong learning can not be bound to any educational level or its beginning connected with primary, secondary or higher education as considered by a number of authors. That means that lifelong learning can not be equated with the education of just one age group (young or adults), because it includes all categories. It is implicated as an idea. Instruction and education start from the very birth and last to the end of life. With this regard the very idea marks the life long process.

Lifelong learning is understood as a philosophy of education, a conception of education which is the basis for all learning, regardless of the level or age category. If this view is accepted i.e. lifelong learning as the philosophy of education, then it obviously has certain implications to the educational system, its structure and organization, program orientation, and position of the subject in the educational process.

Experts in various fields, particularly engineers and technicians, emphasize the importance of lifelong learning. In a number of countries the approaches and strategies to realise the aims of lifelong learning are developing. This is the case in Yugoslavia, whereas lifelong learning has been the conceptual basis of the law and other documents regulating the status of education.³ The Union of Engineers and Technicians of Yugoslavia has lately systematically carried out the work on the means and strategies for the realization of lifelong learning in the frame of their profession.⁴

There are several factors emphasizing the significance of lifelong learning as a whole, and that of engineers and technicians in particular.

I. Social and Economical Factors

In the whole world efforts are made to engage as many people as possible in education. However, apart from that a considerable number of the population gains its education under different conditions (material, teaching staff, school facilities, etc.). The educational level causes social differences. Investigations indicate that the differences in education gaining have their start in the family.⁵

The right in acquiring some education is the pre-condition of the right to work, and in this connection the chance to realize a higher standard of life, better and more successful use of cultural goods in the spare time, a better education for children, etc. Lifelong learning requires searching for the paths and possibilities to include as many people as possible in the education under equal conditions.

From the education standpoint the young in Yugoslavia, and in many other countries are privileged. They are given a longer and more qualitative education, and therefore the advantage and concurrent abilities at the labour market. This expansion deepens the gap between generations because every coming generation is offered a higher quality education than the preceding one. Democratization of the society is confronted with the problem of narrowing the gap existing between generations especially in education. Lifelong learning with different strategies and ways of realization is one of the modes in achieving it by giving one the opportunity to go back to education (to learning), to equalize in educational rights. This is true not only for professional education, but for cultural and humanistic education as well. Returning to education gives one the opportunity to participate more successfully in cultural and technical achievements in one's spare time.

The long duration of schooling (up to 25 years of age) is placing the young population in an unsuitable social position, because their inclusion in the world of work is thus delayed: they are deprived of the chance to decide about the products of social work, or about the directions and ways of social and economical development. Yugoslav society is particularly interested in including the young in selfmanagement, by giving them the opportunity to interchange work and education.

In many countries including Yugoslavia, a balance is being restored between the education gained before stepping into the world of work, and that gained after. From the social and economical point of view it is not right that total means allocated for education be spent for the education of a minority of young population to the disadvantage of the rest of the population. Too much time spent in educational institutions prevents young people from forming the work force which would serve society and themselves. Lifelong learning with its different approaches calls for an earlier inclusion of young into the world of work. It also offers them opportunities to go back to education after a certain period of time – to continue where they stopped enriching the educational process with their experience. Individuals are thus given the chance to complete their knowledge and to determine the rate of their progress.

II. Scientific and Technological Factors

The scientific and technological revolution brings radical changes to every aspect of social and individual life. These changes lead to alterations in the human-nature relationship; in character and substance of work; in people's role in the production process. They help in the development of creative progress in which education has the leading role. However, neither science nor technique are autonomous spheres. They usually appear in the context of certain social relations and class characteristics. The development of science and technique is not a sufficient universal tool which can solve all problems. K. Marx himself denied the absolute role of technique within the social development, pointing out the role of human action. It does not mean that technique should be stopped in its development or that scientific progress should be slowed down, or that technique would not exist if not handled by people. The scientific and technological progress request of the contemporary man to arm himself with knowledge by which he can regulate and direct social process in agreement with progressive orientations and ideals.

The multiplication of knowledge and scientific discoveries which have increased rapidly since the world stepped in the 20th century strongly influenced the development of education. This phenomenon points to the necessity of more frequent changes in program structures at all educational levels. It shows the way to create elastic and dynamic teaching programs by completing them with new contents and new inventions. This very fact stresses the significance of lifelong learning.

The next phenomenon, quite opposite to the former one, is "obsolescence" in knowledge. It is found in all professions and is particularly present in engineers' professions. According to some calculations the knowledge of electroengineers, who completed their studies in 1955 was only applicable by 30 per cent in 1965, and its applicability by the 1960 generation was about 55 per cent. Similar percentages were found by chemical engineers. By the mechanical engineers from 1955 was 40 per cent in 1965, and by the 1960 generation it was 65 per cent.⁶ In this regard knowledge appears to be a significant factor in technical and technological progress. But if it is not refreshed or completed and restructured, the experts, especially engineers and technicians can be an obstacle to further technological progress. To avoid such situations, the possibilities are considered to make the continuing education, after acquiring a diploma, compulsory as a part of work and life. Individuals should not be allowed to exempt themselves from it. In many countries, such responsibilities in practice are regulated by law. Institutions that give diplomas on condition that the recipients agree to lifelong learning later. In France, for instance, "Institute for Nuclear Technology" gives

diplomas only under the condition that students attend courses for improvement of their knowledge. This diploma includes the date of issue and provides the space, where the courses completed in the future will be registered.⁷

Apart from the social and institutional endeavours some authors call for individual responsibility in lifelong learning. The eminent Professor C.O. Houle of the Chicago University, who has dedicated his work to the problem of lifelong learning recommends that ethical codes for every profession include the obligation for each expert to constantly care for his own continuing learning throughout his life.⁸

The "obsolescence" of knowledge does not refer to professionals only but also includes others. In this regard science strongly affects not only changes in knowledge, but also changes in human values. Returning to education and to new possibilities to learn is one of the elements in the formation and acceptance of positive and progressive orientations.

Successive accumulation of knowledge and efforts in its assimilation leads to increased participation in intellectual work, and stimulates the linking of work and education. Work places for professionals at all levels require more education, leading to prequalification and preorientation. The interaction of changes has been observed in technique and technology as well as in knowledge. Therefore, it could be concluded that – no matter the level of tuition in earlier days, one could not have been provided lifelong knowledge. Those who complete their studies today will be in situation to change their professional orientation.⁹ This requires a closer collaboration between educational institutions and economy in the design of the continuing education of professionals.

Lifelong learning reduces the barriers of geographic and social mobility. Research indicates a correlation between educational level, geographic position, and social mobility. Those at higher levels are given better chances with respect to geographical mobility, and to changes in social status meaning quicker progress in their profession and the opportunity of changing profession. It is particularly important in given conditions of existing regional differences in development, unequal arrangement of certain branches of the economy resulting in oversatiation in some professions and profiles within professions. This process is characterized by specific manifestations within the profession of engineers and technicians. The development of institutional networks and forms of continuing professional education, closer collaboration between science, education and the economy should help overcome difficulties.

III. Psychological and Pedagogical Factors

Lifelong learning is strongly supported by people's psychic characteristics. Realization of the concept of lifelong learning has also contributed to abandon the famous "theory of plasticity" according to which the education is successful as measured by anatomical and psychological maturity. Although this theory has been produced through classic experimental investigations carried out by E.L. Thorndike and his co-workers¹⁰, negative attitudes regarding the possibility and efficiency in later learning has survived for a long time. The concept of lifelong learning requires serious study taking into account the social and psychological aspects in each period of people's life. Preparation of the plans and programs, organization and realization of the educational process has to be based on real needs, motives and interests, which are different and specific in each period of life. Time is quite differently experienced by adults and the young.

Investigations carried out in the Soviet Union on intellectual development in adulthood show that the groups of examined persons whose work demanded constant intellectual efforts (engineers, planners, etc) have given far better results in mind development, memorizing and attention. They showed superiority in development of verbal and logical thinking, memorizing with sense and distributive attention.¹¹ The results of not using intellectual functions in dimensions of developing people's abilities is one of the potent psychological arguments regarding learning as a lifelong process. It means that exercising the intellectual functions is a contribution to intellectual progress which prolongs and stops the decline in middle and later age. It can be concluded that effective and productive lifelong learning should have a psychological base.

The concepts of lifelong learning require joining and integrating all levels and all aspects of the formal and non-formal educational system. The roots of the conception that education is mostly intended for children and youth are pretty deep. As a result of it – school and out-of-school educational systems were formed. This tendency has not been neglected in Yugoslavia. It is particularly characteristic for higher educational institutions. At our universities there are traditionally no university extension structures, which are found in some European countries. Lifelong learning requests educational institutions and centers of different profiles and levels to make learning possible for both young and adult. Meeting this request means school transformation (particularly professional ones) with regard to program structure and to internal organization. Middle level education in Yugoslavia has been resolved through the creation of school centers which were organized on the basis of economic requirements, and in cooperation with factories in such a manner that the educational or school centers have be-

come educational agents for the workplaces. However, such changes have not yet reached higher educational institutions.

The concept of lifelong learning requires not only institutional but also subject matter integration. It would be negative to implement lifelong learning through a chain of monotonous courses. Lifelong learning makes sense when one learning unit is linked with the other ones.

Accumulated educational units are recognized in the world of work and in further education in the case of someone's return to education. Freshening of the acquired knowledge will be proportional to the time interval between completed education to recurrent education.

The concept of lifelong learning and its realization is based upon a stable scientific basis. New opportunities are open for pedagogy, andragogy and psychology through the broadening of learning and education for both adults and youth. Lifelong learning of engineers and technicians extends these possibilities.

Conclusion

The idea of lifelong learning is deeply rooted in the history of human civilization. Bringing this idea to life became the imperative of the present. Social, economic, scientific and technological factors all contribute to the need for and the foundations of lifelong learning. Professional engineers and technicians require the most suitable ways and possibilities to accomplish the idea of lifelong learning. The choice of ways and the intensity in realization of lifelong learning will be determined by the specificity of social system; by the level of social, economical and cultural progress in each country. In spite of this fact, creative studies and the application of experience may make the development shorter and spare us needless wandering. Comparative studies of lifelong learning of engineers and technicians, as well as the implementation in each country would be most valuable.

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Recurrent Education: Comparative Studies

The idea of recurrent education became current at the international level in the mid-twentieth century. At that time, in the industrially developed countries, efforts were beginning to be made to democratize education as much as possible. The socialist countries, starting from Marxist ideas about the connection between work and education, tried, with varying degrees of success, to democratize education, to alternate work and education, and to stimulate the return to education from the world of work. To this end individuals were offered material and social incentives. Despite this, in the majority of socialist countries there has been no theoretical elaboration of the idea of recurrent education and, in the past, no conception of lifelong education had been worked out. In the industrially developed countries of the West, the idea of a more flexible approach to the distribution of time for work and study is more widely accepted. The Swedish economist, G. Rehn, was a proponent of this concept and Sweden was one of the first countries to formulate the concept of recurrent education as a result of discussions held on the occasion of the reform of higher education which began in 1968.

The Organisation for Economic Co-operation and Development (OECD) has acted as a driving force behind projects and studies on recurrent education (see *Organisation for Economic Co-operation and Development (OECD): Educational Activities*). Initially, three countries were selected whose teams would work together to develop a strategy for recurrent education: Sweden, France, and Yugoslavia. In the 1970s recurrent education gained a broader international dimension. The circle of countries interested in recurrent education gradually expanded. In 1970 discussions on recurrent education took place in Stockholm among experts from the three above-mentioned countries, to be joined in 1971, in Yugoslavia, by representatives of Norway, the Federal Republic of Germany, the Netherlands, the United Kingdom, and the United States. In the course of 1971 discussions on recurrent education were held at OECD headquarters. In 1973 an international meeting of experts on recurrent education from Europe and North America was held in the United States. In 1975 the ministers of education of Western Europe held discussions on recurrent education. Individual countries, including Sweden, Norway, the Federal Republic of Germany, the United Kingdom, Australia, and Yugoslavia, have been preparing studies which present the conceptual framework of recurrent education. More and more countries are becoming interested in recurrent education. Certain international organizations are

also adopting the concept. The contribution of the International Labour Organization (ILO) has been particularly important in arguing in favour of leave of absence for education as a new form of social right of workers (see *Paid Educational Leave for Adults*). In Council of Europe sources, recurrent education is designated as a "fundamental principle" of the implementation of the philosophy of lifelong education. From the theoretical point of view recurrent education is most clearly defined in OECD documents of 1973 and 1977. In these sources recurrent education is seen as an alternative to the conventional education system which is aimed mainly at the young. It favours the alternation of work with education and other social activities.

Comparative studies show that there are great differences from one country to another in discussions of recurrent education. This is caused by the socio-economic system, the degree of economic and cultural development, tradition, the philosophy of education adopted, and so on. These differences may be divided into two groups. The first group includes more modest and careful approaches to recurrent education which seek the expansion of conventional adult education, but without touching the traditional education system and, especially, without provoking social changes which would threaten the social and class structure. These views are found especially in certain authors in the United Kingdom, the Federal Republic of Germany, and the United States. The second group includes more radical approaches which link changes in education with changes in society. Individual authors from Sweden, Norway, the Netherlands, and Australia may be classified in this group. They are aware of the interdependence of work and education and point out that one of the main problems of recurrent education is collaboration between education on the one hand and the manufacturing sector and the public services on the other.

Comparative studies show that the aims laid down for recurrent education in individual countries are very different. It is possible, however, to identify a number of common elements present in the aims of education in every country. In a number of countries (Sweden, Norway, France, and in part the United States) it is stressed that a fundamental aim of recurrent education is the establishment of a balance between the education of the young and the education of adults. This aim of equality applies not only to the age but also to equality on grounds of sex and race. Individual authors from some countries (France, Sweden, Federal Republic of Germany, United States) want recurrent education to be directed at "special groups", which, in fact, means poor and working-class people. For these people the task of recurrent education is to compensate for missed opportunities in youth. Recurrent education, of course, also has other, broader aims – to develop and improve people's ability to face the problems of modern society in a world that is changing rapidly. The concept of recurrent education

will, by virtue of its aims, be in the service of those social forces which prescribe those aims. Recurrent education is not a model which will change an unequal society into an equal one. Education may contribute to that transformation if changes in society and education take place in parallel.

Comparative studies also show that there are different views of recurrent education as a system. These views can be divided into three groups. The first group consists of concepts in which recurrent education is considered as an extension of the "formal" education of adults. A second group of concepts considers recurrent education as a system which will exist alongside the formal educational system. The third group of concepts considers recurrent education in the context of a single system of training and education. This third group of ideas is the most accepted. Recurrent education is neither a separate education system nor a new kind of education, rather it is a strategy and an approach to education which makes possible its link with work and its alternation with work and other social activities.

In some countries (Sweden, Norway, the United Kingdom, France, and the United States) considerable attention is given to explaining the relationship between recurrent education and adult education, and to the economic dimensions of recurrent education. Concepts of the economic dimensions of recurrent education are polarized, from those which deny the economic justification of recurrent education, to those which consider that recurrent education would be more economically justified than the present education system. This latter point of view is supported by analyses carried out by the OECD demonstrating that recurrent education will not absorb more resources than the present educational system.

Any social and political revolution brings radical changes in the fields of training and education. This was the case with the October Socialist Revolution, the Yugoslav Socialist Revolution, and the Chinese Revolution. Although in countries with a socialist social system (except Yugoslavia) there is no discussion of recurrent education, this does not mean that elements of recurrent education do not exist in practice. Linking work and education is one of the fundamental components of the aims of training. In socialist countries education alongside work is well-developed and takes various forms and combinations of forms: correspondence courses, evening classes, education in shifts, condensed instruction, consultative system of study, and supervised private study. For all these forms and methods of study there are social privileges, including leave of absence for education as a new kind of social right. In some socialist countries (Hungary, Romania, and the Soviet Union) legal provision is made for workers to return to education after a fixed time. There are material and moral incentives

for those who are working and studying. All these are elements of recurrent education although they are not designated as such.

Comparative studies show that there are common elements in the definition of the psychopedagogical dimensions of recurrent education. This, according to numerous authors, would strengthen motivation and interest in further education. There is agreement that experience gained in the field of adult education may be used successfully in the organization of recurrent education. There is also agreement on the need for research leading to the elaboration of new theories in the framework of educational science. This suggests that recurrent education is acquiring international dimensions at both the theoretical and practical levels. This is true both of countries with advanced capitalism and in countries with a socialist social order. It is also taking root in the developing countries. There are, of course, differences in the basic aims which different countries take as their starting point. However, emphasis on the importance of linking work and education is the dominant characteristic of recurrent education, regardless of the fact that this term is not used in some countries.

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Adult Education and Social Change with Special Reference to the Role of Adult Education in Reducing Unemployment

The question that is the subject of this chapter is a broad one, and therefore some of the problems involved will only be hinted at here. The main problem is how to make adult education keep step with social change and become one of its fostering factors. Related to this is the role of adult education in reducing unemployment in a community. It is vital to define the role of adult education in new social conditions. These conditions are changing so fast that education cannot keep pace with them. This can be a barrier in the democratisation of social relations. That is why defining ways of future development of the education system, and adult education in particular, is both a professional and a moral obligation of those engaged in this field. We are witnessing numerous social, economic and cultural changes: the democratisation of society, accelerated development of science and technology, growth of entrepreneurship, emancipation of individuals and social groups, etc. For this reason, adult education should be viewed from the perspective of the future, whose foundations we are laying today. Trying better to understand the interdependence between adult education and social change, we are encountering traditional views and beliefs, such as the belief that adult education has to do with backwardness, with too much emphasis being put on its remedial function and with an assumption that when this backwardness is eliminated there will no longer be any need for adult education. Another traditional view is reflected in the fact that adult education is placed in the context of ideological work, which obviates the need for its critical re-examination, as the goals are set in advance either by the party or by the state. Such a philosophy of education, as history shows, has not produced positive results.

In the late 1950s and early 1960s, most European countries adopted the philosophy of lifelong education, and, on this conceptual basis, many countries carried out reforms of their education systems, proclaiming their unity. In practice, however, this unity has never been achieved. I do not know of any European country that has achieved this unity in a satisfactory way. The hardest hit by the social and economic crises of the early 1970s was, most of all, education, and especially adult education. Notwithstanding all the proclamations, resolutions and lip service paid to it, education policy was more and more marginalised from the financial, manpower and research aspects. Attention was mainly paid to schools and universities. Efforts to integrate adult education into a unified system of education has not yielded positive results in Yugoslavia. The hope we

have entertained since the 1960s, that the school will create and fulfil new educational needs for all age categories, has not been realised. Yugoslav experience shows – and other European countries have also had similar experiences – that adult education cannot be successfully integrated into a unified education system without damage to its quantitative and qualitative development. Experience, which can be a subject of further re-examination and critical observation, shows that it is much wiser to develop an education system "on two tracks", i.e. as both a system of education of the young and a system of adult education in their formal and informal versions. The implementation of a prudent education policy can only be achieved through their co-ordination at the social-community level. What is disturbing is the fact that, in Yugoslavia's experience, official (state) education policy feels no responsibility for adult education but transfers this responsibility to social organisations (especially labour unions), firms or simply lets individuals worry about it. This does not help adult education reach a status equal to that of schools and universities in the unified education system of a country. This situation makes it difficult for an adult to enjoy the right to education and learning, the exercise of this right is an essential precondition of exercising other rights, such as the right to work, the right to participate in social affairs and the right to self-realisation.

Social deformations, particularly the bureaucratisation of society, lead also to deformations in adult education. There is a tendency to "scholarise" adult education by insisting on traditional educational forms in education policy, because only these forms stand the chance of being financed by state-controlled funds. Alternative forms and innovative approaches to adult education do not meet with universal acceptance or gain much support. It is important to "descholarise" not only the system of adult education but education policy altogether. Only if the systematic, organisational, manpower and financial dimensions of adult education are understood as inseparable parts of a holistically pursued education policy, will the equal social and geographical conditions of approaching education as a universal human value be created. Only in this way will this value become functional in achieving social, economic and cultural goals. There is reason for optimism, that social and economic changes call for an intensification of adult education, which means that the time of adult education is at hand. However, it should not be forgotten that the new concepts will be opposed by advocates of traditional education policy, which will only help to emphasise the need to clear the path towards these new concepts.

In societies, whose economies are based on knowledge, education and learning, the corner-stones of progress and of the improvement in the quality of life can be found. There are consequently many countries seeking new ways of integrating adult education into their economic and social trends. In countries with

static economies, the climate for adult education is not favourable, and knowledge is underestimated in comparison with other values. The history of social crises and economic recessions shows that knowledge has been an important factor in overcoming them. The major question is: can education and culture help people attain personal happiness and avoid the traps set by the complex system of social relations and the bureaucratic method perpetuating such relations? People's participation in social and cultural life will increasingly become one of the main challenges as we approach the 21st century. It is important to determine to what degree education and learning can help people to participate in social affairs more meaningfully and to map out individual and social development. Education should help everyone understand and accept a vision of development in order to be active participants in this development – not only to accept changes but also to provoke them.

All this indicates that the adult education system – and even the education system as a whole – is not shaped only by its internal forces but also by external circumstances and pressures which we have neither studied nor understood sufficiently. Of the external factors important for shaping and understanding the system and process of adult education, we will mention only a few, focusing on how they operate on Yugoslav soil: demographic changes, the restructuring of the economy, changing work organisation and increasing free time.

Demographers predict that, in the more developed parts of Yugoslavia, the birth rate will drop (which is evident even now) and that the proportion of adults in the total population will increase. The percentage of old people will also increase, and that of economically active young people will decrease. This will carry important economic, social and educational implications. On the other hand, in the less developed parts of Yugoslavia, the proportion of the youngest age group will increase, which will entail new educational requirements: covering the whole population of the young with elementary and secondary education and increasing teaching space and teaching staff. The adult education institutions will have to intensify their programmes for young adults, programmes that will lead to qualifications and new qualifications facilitating their employment.

By the end of the 20th century, migrations of the population to the more developed parts of Yugoslavia will have become evident. This will directly affect the organisation and programmatic orientation of adult education. It means that, even in the more developed regions, adult education will retain its remedial function. Population migration and the need for bilingualism are creating new tasks for adult education, which through its programmes, appears as a factor contributing to the mobility of nations. These integrative processes, which are especially evident in Europe, are also of consequence for Yugoslavia as a federative community. Education is a precondition for achieving other types of

unity: political, economic, cultural, etc. Adult education, with its curricula and syllabi, can make for a better understanding of other nations and their cultures and for getting closer without being assimilated or losing identity, but with a new form of integration in conditions of versatility. Knowledge of languages is today central to normal communication and to a dynamic mobility of the population. We can see that Western Europe is encouraging such processes in large measure. As we approach the 21st century, adult education has to cope with more and more tasks in this area.

The second external factor that has a bearing on the adult education system is the restructuring of the economy brought about by the development of science and technology. The economic and social development, whose main vehicles are adults, is based on knowledge. That is why every country, including Yugoslavia, must take into account the complex interlinking between education and technological development. New methods of production and social change call not only for higher levels of education but also for a different kind of thinking, emphasising the importance of independence and creativity. An important question is whether the adult education system is ready to keep step with the rapid changes taking place in the economy and whether the adult education institutions have the information on the potentials of their environments, on technological breakthroughs, on the level of occupational mobility, on employment perspectives, etc.

The third external factor that deserves mention and which has and will have a bearing on adult education is work organisation. We are heading towards a flexible work organisation that will largely be responsible for a flexible education organisation. This will be manifested in part-time employment and self-employment. There will be a dispersion of a certain type of employment; more work will be done at home; and work and education will combine, or rather, alternate. The question is: how is the education system to react to these changes? It certainly cannot keep step with them, with the old organisation of the education system.

The fourth external factor which will influence adult education is free time. Its lengthening will continue to exert pressure on the adult education system. Free time appears as a framework within which numerous educational needs are to be satisfied.

The external influences outlined above also call for a change in the adult education system and its organisation and for training people so that they will be able to meet the new social and economic requirements by satisfying adequately defined educational needs. It is also necessary that the system's internal forces change and that its constituent parts become interrelated more meaningfully.

Observed from a broader viewpoint, adult education has three basic objectives: improving the ability to live and work; aiding self-realisation; and encouraging healthy social relations and stimulating social action. Only a holistic education policy on the local, regional and national levels can provide the conditions necessary to achieving these goals. Every education policy must define priorities, both in terms of the relation between young people's education and adult education and in terms of the relations between various aspects of adult education. Priority must be given to those programmes which in the short or long term contribute to the achievement of social, economic and cultural goals, as do programmes for elementary education, vocational training and advanced training and parents' education as a means of increasing their children's chances of being educated. Another approach is possible, which means giving priority to people frustrated as regards their education. This frustration can be economic, social or geographic, and it comprises the following groups: unemployed young people, including those who have left school prematurely; the rural population; the urban poor; unskilled workers with a low educational level; women, especially non-working housewives; the old; the handicapped; etc. This approach would bring the problem of education and that of unemployment as close together as possible.

Interdependence between Education and Employment

The development of a country is based, among other things, on two important elements: education and employment. These are two aspects of the same process. Scientists differ in their views on the importance and value of these two factors. Sources dealing with these problems show that several schools of thought exist.

1. The first theory is that of "human capital", whose basic tenet is the idea that investing in education results in the development of people's productive abilities.
2. The second theory goes even further by postulating that education not only provides the knowledge and skills needed for performing work functions but also makes for the enrichment of social values and provides social mobility, acting as a filtering factor and selecting the most creative and capable for particular jobs.
3. The third view makes the assumption that education is not a determinant of productivity, although people are selected for particular jobs on the basis of criteria that can be related to education. According to this view, education is a characteristic of jobs, not people.

4. The fourth view is closely associated with the third, and its main point is that the correspondence between education and employment is an illusion. It is, say the adherents to this school of thought, imposed on others by those with university degrees, who seek special privileges for themselves on the labour market (B.B. Sanyal, Higher Education and Employment in Europe: some selected issues, Higher Education in Europe, Vol. XIII, Nos. 1-2, 1988).

According to many indicators, economic and social tendencies today favour the first two views, although even these are encountering many obstacles in their implementation. Of these obstacles, we shall mention only the unchecked and unplanned expansion of education, especially on the university level. This expansion is caused by numerous factors. Economists seem to have been too optimistic in their prediction that investment in education would soon pay back. Such expectations have not been fulfilled, particularly not in those countries where the economy has neither experienced changes nor been capable of absorbing a large number of university graduates. The expansion of education on different levels was initially boosted by the belief that education is a fundamental human right. Those who had attained a certain level of education were asking for more, so that whole generations moved from secondary schools to universities, and numerous mistakes were made in the process. These mistakes had to do with the choice of occupation and with the lack of information about the pace of technological changes, about the needs for particular professions, about occupational mobility potentials and employment prospects, etc.

Many communities saw the expansion of education, and university education, in particular, as boosting their national or regional prestige. Economic criteria were not taken into account; nobody bothered about how all these young graduates would find employment. This led to an increase in the number of unemployed with university degrees. The labour market was not able to absorb all the university graduates. There was much disappointment among the young as their hopes for getting a job were not coming true. This gave rise to the "escape" of young professionals to communities with healthy economies. The universities did not base their programmes on the studied educational needs and capacity of the economy and society as a whole. This led to a disharmony between the development of education and the prospects for employment. In the countries with low levels of economic development, in the countries with static economies, this disharmony was even more pronounced. In the countries with central planning, the unemployment problem was, at least apparently, not acute. Other problems appeared there, such as under-utilisation of people's qualifications and expertise and "wrong" employment of individuals. Many people with university degrees had to be retrained in a "coming-down-in-the-world" fashion, accepting jobs below their educational levels or jobs they had not been educated for, which

brought about new difficulties, especially of a psychological nature. The expansion of education, resulting from an attempt to attain broader socio-political goals, was not employment-oriented, which, of course, made it difficult for young graduates to find jobs.

All these processes and tendencies have manifested themselves in Yugoslavia as well. The expansion of education in Yugoslavia started in the 1980s, when the generation born after World War II entered into secondary and university education. Some authors give the following reasons for this:

1. economic development was relatively fast in the postwar period;
2. education has been a medium of social promotion; and
3. the education system, especially after the 1970s, has been a shelter for the young generation because of the slow-down and increasing difficulties in finding employment (S. Bolcic, *The Development and Crisis of Yugoslav Society from a Sociological Perspective*, SEC, Belgrade, 1985).

Although the education system is not to blame for all the difficulties in employment because the problems involved are much more complex, the education system can still contribute to the bridging of the gap between education and employment. Economic development calls for the creation of a flexible education system that will be capable of keeping step with the rapid changes taking place in the economy and in society. The diversification of the education system is one of the requirements of economic development today. It presupposes a wide-ranging system of informal education, a flexible organisation of instruction and learning, specific programming according to the needs of social groups and individuals, moving education from traditional institutions into industry, etc.

By and large, the unemployment problem is much more complex than it may seem at first sight. Not even developed societies will be able to eliminate unemployment in the foreseeable future. Taking into consideration the fact that unemployment is a drastic form of discrimination and social injustice, much time and much effort and commitment on the part of various social factors will be needed to alleviate the problem.

Starting from the assumption that there is more than one type of unemployment, such as "voluntary", frictional, depressive, open, invisible, etc., we should stress that unemployment in Yugoslavia has its peculiarities, which deserve to become the subject of in-depth research. The most significant of these are: the slackening of economic development; the limiting of investments; the recognition of "internal" qualifications; employees having wrong qualifications for their jobs; the stifling of competition involving knowledge and abilities; creative potentials and professionalism not being the criteria for determining a person's social status; the employed population's monopoly to work and its specific egoism;

an inadequate education system and its extensive development (which we have already mentioned), etc.

There is no doubt that unemployment is restraining great human potentials, making impossible their further development and improvement. Joblessness has adverse effects on human abilities; here we primarily have in mind the obsolescence of knowledge, the non-use of human abilities, the drop in educational motivation, etc. We are convinced that, in solving the unemployment problem, each community has to bring changes into the labour structure and introduce new technologies and a flexible organisation of industrial and other activities so that there is more room for employment. Educational institutions cannot be excluded from this process. It is their obligation not only to "listen for" labour demands but also to study labour, the nature of occupations and qualifications in a systematic way in order to reach more complete harmony between the programmes they offer, the graduate school leavers and the prospects of employment. These are tasks about which the traditionally organised educational institutions knew nothing.

The restructuring of the economy inevitably gives rise to a surplus of unemployed and the need for their retraining. This is a well-known method of reducing unemployment. Retraining, however, is a sensitive economic, social and human issue. To what degree are people willing to be retrained, especially those with university qualifications? Each country attempts to reduce unemployment through vocational re-education and retraining. Those engaged in vocational retraining in Yugoslavia are the employment agencies and adult education, and formal education institutions, as well as firms and their associations. Participation of the adult education institutions in these activities is symbolic because they are prevented by the law, and in some cases they are not even allowed to take part in such activities. Bureaucracy has a logic of its own, which it is difficult to fight.

How Adult Education can Contribute to the Reduction of Unemployment

The question that European and other countries are faced with is how adult education can help individuals, groups and communities to cope more successfully with inevitable changes. It is clear that adult education alone cannot eliminate unemployment. It is only one of the elements which can help the labour force to be more mobile and better prepared for ongoing and future changes. Unemployment (temporary and long-term) calls for the fast training or retraining of job-seekers. The adult education institutions, with their programmes, organisation and infrastructure can contribute considerably to the reduction of unem-

ployment. However, this cannot be achieved with the traditional method of work and traditional concept of adult education. Carrying out these tasks entails systematic study and careful planning, and up to now – except in the fields of teachers' activity and instruction – those have not been strong points in adult education. Diverse approaches to planning are needed in the form of projects, development planning, participatory planning, etc. For adult education to fulfil those tasks, it is necessary for its institutions to show flexibility in organisation and programme orientation because that is the precondition of the interaction between the know-how market and the labour market. In order for adult education to contribute to the alleviation of the unemployment problem, it is necessary to define priorities in education, putting special emphasis on adult vocational training. This by no means implies that general education and cultural work should be neglected, as these can also contribute to economic development and the democratisation of various spheres of life. Priorities must be defined in each particular region, paying special attention to these regions with the highest concentrations of unemployed. Care must also be taken of those branches of the economy and those firms which have no future, so that the employees can prepare for other jobs that will occur with the restructuring of the economy. It is well known that when the economy stagnates or when economic activity slackens, the demand for education on the labour market increases, with a view to overcoming stagnation through new expertise. The educational institutions preparing young people for the world of work do not have enough experience for educational work with special groups of adults. They are simply not andragogically trained. What is needed is a totally different approach to the concept of learning, flexible forms of learning and education and an environment for learning in which individuals will be able to assist each other. It is a fact confirmed by other countries' experience that the unemployed are a relatively new group in adult education and that, from an andragogical standpoint, they are to be approached in a special way. In this process, care must be taken of the following:

1. Flexible learning environments must be created so that the educational needs of the unemployed may be more easily satisfied.
2. Flexible, broadly-oriented programmes should be drawn up on the basis of studied educational needs and potentials.
3. Individuals should be given "a second chance" to gain knowledge, skills and attitudes, while trying at the same time to replace the negative experience the unemployed had in their earlier education by a more positive experience.
4. The adult education institutions must cooperate with more than one real or potential partner in industry, trade, agriculture, the health service and profes-

sional associations so that human and material resources needed for carrying out tasks successfully can be mobilised.

5. The success of the adult education institutions is to be expected with a developed andragogical consulting service, which will conduct research and assist in the choice of the sphere of training and retraining. Special attention is to be paid to the andragogical function of vocational orientation. The experience to date shows that assistance in choosing one's occupation has not been adequate; no data on occupations or on vacancies according to occupations and qualifications are available.
6. If the adult education institutions are established as andragogical centres, they will be capable of meeting the increasing needs related to solving the unemployment problem. When we refer to the adult education institutions as andragogical centres, we think primarily that they should become places where communication and transfer of knowledge and skills should be made possible for adults, where the preparation and realisation of the process of education and its careful evaluation should be professionally based and where cooperation with the educational potentials of the community (cultural institutions, libraries, data banks with data on available jobs and prospective occupations, mass media, etc) should be established. The andragogical centres may promote new ideas, programmes, methods and forms of work and new methods of learning, or they may simply influence other institutions and firms in the community and their performance of educational functions. All this indicates that in today's conditions of work, the activity of the andragogical institutions should be professionally based. There is no reason whatever for gaining knowledge on a trial-and-error basis.
7. The andragogical centres, in the sense of the above description, are not possible without trained andragogical staff also working on the problem of the education, training and retraining of the unemployed. The current situation in this respect is far from satisfactory. This field of activity is an example of how people do jobs for which they are not trained.
8. The number of tasks that adult education is faced with calls for an intensification of research into the unemployment phenomenon. Only through research can arbitrariness in this field of social and educational activity be reduced.

The modern world is characterised by a high degree of interdependence between the economy, technology, education and culture. Therefore, co-operation and learning from others and with others are becoming the imperatives of the times in which we live. It can be said that this is one of the conditions of survival. Creating a network of projects initiated by the Council of Europe as part of the project "Adult Education and Social Change" can be an efficient way of

learning from others and with others. Although each country is responsible for the state of its education, including adult education, the implementation of these tasks will be facilitated by an exchange of experience, contacts and cooperation with other countries. Today, in Europe, there is a favourable climate for such cooperation. We hope that the countries of Europe will earmark more funds for human development, for solving unemployment for education, which also has cultural dimensions and helps to create more meaningful connections between culture, creativity and economic development. We agree that adult education is a key to development and at the same time instrumental in that development.

It is obvious that the importance and complexity of the subject call for putting additional emphasis on some of the questions, which deserve to be discussed more thoroughly. Let us list these questions:

1. How can adult education be made to keep step with social change?
2. To what degree can adult education be integrated into a unified education system of a country?
3. How can the tendency of excessive "scholarisation" of adult education be eliminated?
4. How can an end be put to the prevailing practice of underestimating knowledge in comparison with other values?
5. To what degree can adult education help people to participate in social affairs more meaningfully?
6. Is the system of adult education capable of keeping step with the rapid changes taking place in the economy and in society, and if so, to what degree?
7. What changes should take place within the system of adult education in order for it to function efficiently?
8. What criteria should be applied in determining priorities in adult education?
9. How can the gap be bridged between the development of education and the employment potentials?
10. How should the surplus of unemployed, created by the restructuring of the economy, be redirected?
11. Can there be any interaction between the know-how market and the labour market?
12. How can an efficient combination of all the factors which have a bearing on the education-employment problem with a view to utilising human and material measures be fully achieved?
13. What are the ways of training andragogical staff so that the adult education institutions become andragogical centres with an innovatory orientation?

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Adult Education and Long-Term Unemployment: Yugoslav Experience

Yugoslavia has of late experienced a number of misfortunes. The rapid growth of unemployment is one of the more serious ones. True, unemployment presents no novelty in Yugoslavia but attempts at providing a quicker solution to the problem of unemployment or at least mitigating it were rendered ineffectual by the philosophy of social development according to which unemployment would disappear automatically on the road to an "ideal" society in which "equality" would reign. Thus the gap between ideal perception and the possibility of achieving full employment tended to widen. Restricted ideological outlook on social development, property, commodity distribution etc. resulted in abandoning unemployment problems to the action of blind forces and in placing them beyond the framework of societal control and of an integrative approach of various factors susceptible of resolving them.

In Yugoslavia, today, employment encounters numerous obstacles, particularly a declining economic development, obsolete technology, bureaucratization of economic and social life, an inadequate system of education, insufficient labour force mobility within Yugoslav space, workforce concentration in urban settlements and large agglomerations.

In Yugoslavia, unemployment figures have soared in the recent times. According to official statistical data, the percentage of unemployed was of the order of 17 per cent in 1988. In the period following World War II, economic growth recorded an upward trend despite the crises appearing in the mid-sixties and seventies. Until the beginning of the eighties the number of vacant workposts exceeded the number of job seekers. The situation has since changed substantially. The Yugoslav economy did not undergo any changes, restructuring and by the same token was unable to absorb the professional workforce emanating from the system of education. The number of university graduates steadily increased thanks to the extremely extensive network of secondary schools and establishments of higher learning. In the early sixties, Yugoslavia had favoured the philosophy of lifelong education which was a positive move but the early seventies showed that many obstacles stood in the way of the implementation of that philosophy. Education focussed on the formal system of schooling and under the impact of ruling party ideology the state assumed, by means of other laws and regulations, an ever greater role in the field of education. The mid-seventies witnessed a situation of uncontrolled and unplanned education, particularly on the

level of higher education. Investment in the area of education increased steadily but it paid off less and less, above all because the economy did not change and was incapable of absorbing the new generations of educated people and experts. Education in Yugoslavia was considered a basic human right. Those having attained a certain level of education wanted more so that entire generations were moving from the secondary school level to the level of higher learning. Numerous errors had been committed during this education drive. They occurred in regard to choice of area of knowledge, to the lack of information regarding the country's economic potentialities or of some of its parts, to informing about the pace of technological change the needs in terms of individual profiles of experts, the scope of occupational mobility, employment possibilities etc. A particular feature of the Yugoslav experience was that individual environments regarded the spread of higher level education as a sign of national and regional prestige. Economic and educational considerations were not taken into account. The establishments of higher learning served as a valve for keeping social tensions and explosions in check. As a result, there was a discrepancy between the development of education and employment outlets. At the same time, many young experts and other trained persons experienced disappointment because their expectations in terms of labour rights were not able to be fulfilled. Young people were seeking any sort of job regardless of their qualifications. All this led to the "wrong" employment of individuals. Many people who had earned their diplomas and acquired expertise, were compelled to retrain from "a higher to a lower level", to accept jobs below their capabilities or jobs for which they had no training, which gave rise to new difficulties, particularly from a psychological point of view.

Another specificity of the Yugoslav experience is the large share of young people in the unemployment figure. In 1988, the age group up to 30 accounted for 77.1 per cent of unemployed persons. Waiting time for obtaining a job is becoming longer and longer. Quite a number of persons have to wait for more than a years to find employment. In this situation, human potentials are hampered and their further development and betterment prevented. While the educational system cannot be held responsible for the problem of unemployment, an education system which rests on modern and well-organized foundations can nevertheless help to bridge the gap between education and employment. There is, in Yugoslavia, a need to diversify the system of education. This presupposes the setting-up of an intricate system of informal education with teaching and learning organized in a flexible way, individual programming depending on the needs of social groups and individuals, shifting education from classical institutions of schooling towards the industry and economy.

Unemployment in Yugoslavia has its own specific features which are reflected, inter alia, in a slackening of economic growth, and, in the recent years, in its visible decline, in a restriction of investments, in people taking on jobs for which they do not have the necessary expertise and qualifications or do not have the expert knowledge nor adequate training, in limiting the possibilities for a competition of knowledge and capabilities, in the tendency of those with a job to monopolize work and demonstrate egoism on the matter of employing young people, creative effort and professionalism were not criteria determining an individual's status in society.

In addition to other problems Yugoslavia is facing, let us mention those concerning the need to restructure the economy, decreasing the employment figure in state and social institutions. This will lead to a new surplus of employed, to the need of rechanelling them into new professions and retraining them. Although retraining is a delicate social, economic and humane question, in Yugoslavia it is designed to mitigate unemployment. Retraining is to be carried out by employment institutions, institutions dealing with adult education, enterprises along with their associations and establishments of the formal system of schooling. We must note with regret that the participation of institutions for providing adult education in these activities is of a symbolic nature (people's and workers' universities, adult education institutions in communes) for the reason that they are hampered by legal provisions, and in some places they are not allowed to engage in such educational activities. It goes without saying that neither in Yugoslavia can the problem of unemployment be solved through adult education alone but it can certainly help mitigate it. The unemployment situation in Yugoslavia (temporary and long-term) calls for rapid preparation, retraining. In carrying this assignment, the institutions of adult education must be flexible in terms of organization and programme orientation, they must proceed to a systematic study of the needs of their environment as this is essential for achieving an interaction between the labour market and the market of knowledge. To this end, the institutions of adult education must set priorities while moving in the direction of professional training which by no means implies the disregard of general education and labour culture. Priorities must also be set between individual regions, bearing above all in mind those in which the concentration of unemployment is the highest. It is also necessary to direct our attention to those branches of the economy and enterprises that are without any development prospects so that those employed there might prepare for other jobs.

If adult education is to contribute as fully as possible to closing the gap between education and employment and resolve the problem of unemployment, it also must undergo a change. There is the need to devise a whole new approach to the conception of learning, more flexible forms of learning and education, to

create learning environments in which individuals can help one another. The unemployed are a comparatively new group in the adult education area and from an andragogical point of view, they need to be approached in a specific manner. If establishments for adult education are founded as centres of andragogy, they will be in a better position to respond to increasing demands relating to the settlement of the unemployment problem. By this we understand the need of transforming adult education institutions into places (educational centres) susceptible of enabling communication and the transfer of essential knowledge and skills to adult persons, professional preparation and implementation of educational programmes, necessary cooperation with educational potentialities of the environment (cultural institutions, libraries, data banks relating to available workposts, employment prospects, with the mass media etc.). Andragogical establishments as centres of education are able to promote programmes, new ideas, methods and forms of work, new modes of learning and generally have an innovative bearing on other institutions in the commune, on enterprises and on the successful accomplishment of educational tasks within them. All this indicates the need of carrying on work in a professional way in the institutions of adult education. There are sound prerequisites for achieving this in Yugoslavia thanks to the efforts of universities.

The enormity of the task facing institutions of adult education requires an intensification of research work relating to andragogical phenomena of unemployment. It is only through investigation that it will be possible to find the reply to question concerning education-employment relationship. It is only through research work that it will be possible to reduce arbitrariness in this field of social and educational work.

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