

THE IMPACT OF INDUSTRIALIZATION ON EDUCATIONAL ASSUMPTIONS AND OPPORTUNITIES

1. Important always to realize what we are talking about.

“Industrialization is going on rapidly all over the world is a phrase on everyone’s lips; but we hardly ever stop to think what this means.

We must first examine what the words themselves mean; in other words, we must form a clear idea of exactly what has been happening, and is continuing to happen.

Secondly, we must see if there have been important results in the re-arrangement of human relationships; because it is these relationships (in family, and vocational or cultural associations) that impose a special character on civilizations, and thus determine to a large extent the use to which schools and other consciously formative influences are put.

Thirdly, we must see if new types of *persons* are required to carry out the processes of industrialized and urbanized living. We must try to discover if the new roles and functions which we see around us can be exercised effectively by those people whom

we used to call "cultured", "educated", "well-trained". We must discover if different kinds of *understanding* and *working* are required, as well as different items of knowledge. We must also see if the new kinds of persons who may be required by industrialized and urbanized living can be recruited just as well as our former leaders from among the same categories of persons, e.g. from the "ruling classes", the "aristocracy", the "intellectuals", and the "leisure class" or "white-collar professions". (Some of us may think we know the answers to some of these problems; but we shall formulate our conclusions better if we see the whole study of industrialization in its wider human context). Therefore we must also take account of the two important complementary facts: that the abundance produced by industrialization releases untold thousands from manual drudgery in every country, thus raising their standards of material living, and raising their standards of material living, and raising their expectations of "first-class citizenship"; (2) that industrialization in any part of the world arouses the understandable envy of the underprivileged nations and communities alongside, making them worship industrialization as though it were a god or magician, giving them the answer to all human dilemmas and the cure for all man's ills.

Fourthly, we must ask ourselves what part the schools (from kindergarten to university) can be expected to play in all this. Can they go on, for example, teaching the same "special" subjects and professions to that group of persons whom we have always called "educated", and give a different kind of upbringing to those who are not exactly leaders? Can we have the same pre-professional studies in any pattern of schools designed to take note of the fact that, for example, "democracy" entitles a child to claim admission to any profession or any civic status to which he has the ability and energy to climb? If we include, as we sometimes pretend to, "opportunities for all" in our school systems, do we really offer all children an opportunity suited to their special needs, or merely a massproduced minimum package? (Examples: music, athletics). Have we faced up to the problems of what it means to be "equal but different"? (Men

and women, urban and rural, books and hands and emotions or human relations).

Fifthly, are we really facing up to the consequences of what we considered in the second question asked above? Are we truly taking note of the fact that education must be both social and life long? (N. B. Lifelong re-learning, necessary—partly because of maturation, partly because of rapid changes in the modern world, partly because of human readjustments which are consequences of industrial and urban readjustments. E. G., gap between the generations; social, vocational, and geographical mobility with U. S., as an example).

Sixthly, should we take realistic account of the fact that two countries in the world (U. S. A. and U. S. S. R.) are either semi-consciously, or with deliberate intent, shaping their social and scholastic systems to utilized industrialization? The Americans are doing this as though industrialization were a special accessory to life, like a fancy gadget in the kitchen or in the garage. The Russians are using the schools in such a way that "industrialization, the state, and the school are only different aspects of the same thing"; what difference if any lies between these two approaches, if they are continued with full logic to their consequence? An answer to this question is vital both for the Americans and for the Russians within their own countries. Still more is it vital for the uncommitted world, which is really the greater part of making still.

How can the school help to give us conscious control over our own direction—with flexibility, yet with the retention of humane traditions and sensibilities? How can they help us to regain what we have lost? (Riesman, William H. Whyte, Vance Packard, Sargant).

We must suppose that industrialization is any longer a thing happening in only a few places, like Pittsburgh, Detroit, the British Isles, Western Europe, and Japan. The whole world is drawn in, and the whole population in any part of the world. (E. G., fruit in California, cotton in Egypt and Sudan, fruit and sugar in Puerto Rico, eggs and bacon in Denmark). At

least this consideration will make us see, once and for all that industrialization is not just a gadget. It is a reconstitution of the whole of human society; as such it is, or demands, a new civilization. Previous technologies were civilizations, slowly building formative opportunities and humane perceptions and values into the daily roles and institutions of mankind. If we atomize perceptions and skills, and disintegrate specialized knowledge and sympathies too much, we develop hysteria or bewilderment or pre-communist chaos. I believe we can see this developing already in many parts of the world.

In my next two talks I hope to deal with:

- (a) the effect of industrialization on the recruitment and training of different categories of *persons*; and
- (b) the consequences of this for the *curriculum*, for *methods*, and for the shaping of a child or adult's learning experiences in a formal *system*.

Dr. EDMUND KING.

Brief Outline—*Second lecture* in the series on *The impact of industrialization on educational assumptions and opportunities*.

The effect of industrialization on the recruitment and training of different categories of persons

Introduction

In the first lecture we saw that all previous technological arrangements (including the pre-industrial farming life) organized people's lives and institutions in such a way that a civiliza-

tion was established, to perpetuate, improve, and justify technological and governmental arrangements.

Part of the essential character of civilization is the division of the population into special categories, so that the functions of living together and of governing can be effectively carried out. For the management of the uppermost and highest-rewarded occupations, special categories of persons are to be trained in special ways. It is this kind of training we usually refer to when we talk about "educated" persons or "the educated classes".

The other categories of citizen and/or worker have usually been educated in different ways. We must not suppose that they received "no education". The work of anthropologists has shown, on the contrary, that in every stable society each category of persons have received a tightly-organized preparation for life, in life; and on top of this, each craft or skill has often been taught by induction, systematic copying, and formal precept.

1. One conspicuous result of the advent of mechanization is that the types of occupational skill have been changed enormously, and in most cases, the formative opportunities that went with those occupations have been lost.

Though there are losses attached to this process, there are also gains. One of these is the relief from merely manual endeavour and day—long druggery. The other is found in the fact that modern industrial and urban life needs a high level of instruction in its workers, so that an efficient nation needs an educated population. A third gain is derived from the abundant productivity of modern industry, which makes it possible for most of the population to have good food, housing, and clothes; thus they come to demand what was once a privileged and "different" training, and they demand it *for everyone*.

2. The outstanding example of this process is the U. S. A. Although the relatively low standard of existing provisions at the beginning of this century, and indeed up to the end of the First World War, is shown by the fact that the average length

of schooling received by *all* Americans over 25 in about 1955 was about 9 years; the outstanding feature of this century has been an enormous extension of the high school provision. Therefore, well over 75% of Americans now reach their 18th year in school; about two-thirds of them reach college (mostly "junior college" now); and more than one-third of them graduate from College.

This apparently simple statement covers much confusion. Partly because industrialization tends to make people think in terms of *quantity* and numbers, it is easy for ill-informed Americans to suppose that everyone has a good and equal opportunity—simply by going to an institution called a "high school" or college—and this is one of the myths that, until the last few years, has been widely current in the U. S. A. But (a) even within, any one high school, not all the offerings are of equal educational, social, or vocational value to the child or to the community; (b) the high schools within any one district or city may vary among themselves, sometimes considerably; (c) the districts vary enormously in their financial resources, their social and educational initiative, and in their ability to attract and retain good teachers; (d) the expansion of this provision in quantity has meant a neglect of questions of quality, so that although it is true that in 12 years of education most Americans get about as much general education as most Europeans do in 10, the able American child is usually about 2 years behind his European counterpart at the age of 16, and may be anything up to 4 years behind at the age of 18 or 22. (Hutchins, Conant, Hechinger, King). There are many social gains in the American Style of education (though they are not universal—as Hechinger says); but there are also many disadvantages as far as general factual knowledge and the understanding of humanity's problems are concerned.

To some extent these difficulties might be remedied by providing "college" for everyone, though no one can pretend that "college" today means the same thing as in the 1853 institutions called "college". Differences are accentuated at this

level (Princeton story). (Hutchins and clowns; "driver education" in California, and at Michigan State University.)

Hence, many indications of widespread mistrust or disquiet:

- (a) low social esteem and remuneration of teachers —unique in a highly developed nation; though teachers are never paid enough anywhere they are esteemed. Cp. U. S. S. R. (Flesh, Quackery, *migration to good districts*).
- (b) Despite all talk about education, "real life" starts in bussiness.
- (c) Despite all talk about life adjustment, three levels of values;
 - (i) founding fathers, and liberal traditions;
 - (ii) sheltered oasis of school "sharing" & c., permissiveness;
 - (iii) extra-curricular life of children and adults in modern America of "business is business". (Alexander story).

So no one can say that the U.S. has resolved its difficulties, though Americans are so adaptable and so willing to criticise themselves in private that a nation-wide reappraisal is taking place (partly but not entirely under Sputnik's influence). (He-chinger, Conant).

3. It has been worth our while to pay so much attention to the U.S.A., because of its world-wide hegemony in so many spheres, and especially in relation to Puerto Rico. But it is of much greater importance to pay attention to events in the world at large.

One result of industrialization has been the emancipation of women, the education of girls, and the political and social

equalization of women. BUT SHOULD THIS MEAN IDENTITY OF OFFERINGS TO BOYS AND GIRLS? (India, & c.) (U. S. S. R. originally tried it.)

Are there lessons in this for the recruitment and education of children differentiated by other criteria?

4. The recruitment of children from different social backgrounds has revealed very clearly that cultural and social attitudes formerly attributed to the study of "liberalising subjects" are not automatically (or even directly) associated with such study. Influence of homes, etc. It is now necessary to *teach* in schools those mannerism, values, etc., formerly "picked up" at home. It is not enough to teach subjects to pass exams, or to graduate—we must make them *viable* in society so as to reach first class stature, and must enable them to be adaptable to all kinds of social situations. ("Gentlemen are often viable in only one"). Otherwise children (and adults) could be trained, but not educated.

5. The recruitment of children from higher to underprivileged groups introduces special difficulties not always perceived:

- (a) *solidarite ouvriere* in France vis-a-vis *Bourgeois* schooling; cf. also Harvard situation and College Board.
- (b) problems of choosing wrong jobs, formerly "prestige", and in some countries, overproduction of formally educated people. (Italy, Austria, Denmark).

6. The failure of educative systems to produce enough people of *the right type* can lead at least two kinds of development:

- (a) intervention of industries (SENAI in Brazil, and other agencies in France, etc.)
- (b) increased Federal or other intervention (NB. History

of Federal intervention in U. S. A. —not necessarily a bad thing).

- (c) excessive reliance on importation of two kinds of person—highly skilled, eg. into U.S., from Europe; or unskilled labour, e.g., U.S., from Mexico, Puerto Rico, and Europe.

It is painfully easy for a rich and powerful nation to live in an unrealistic and unintentionally unjust relationship with its neighbors, often because of faulty assumptions in educations and social philosophy. British Empire in past. U. S., now?

7. But the spread of industrialization to other countries is closing up the world into one system. We can no longer export trouble or import cures for our own. Very often, in extending our industrial influence, we forget that all we export is gadget and consumer expectations, without the values on which our society is really based. What America exports, for example, is not the real America of kindly people eager that all should have a full opportunity and presuming that they are helping others to have this, but the often trashy world of things and machines making both producers and consumers fit the machines.

As I have already said, the “outsiders” see few or no *values* in our exports; they may see only machines and material advantages. They therefore *could* plan their societies and their industrial development in such a way as to conserve their values and use our machines as a sort of slave-system to serve them; but what all too often happens is that human beings are forced to serve the machines. So industrialization is used to perpetuate one kind of dictatorship after another, with increased control over the population because of armies, control of transport, radio, and factories.

8. Finally we have to note that some nations have been entirely restructured to serve the purpose of industrialization, with a rebuilding of the educational system to suit it (Japan, U.

S. S. R.). Schools part of the total mobilization for industrial development.

Dr. EDMUND KING.

Brief Outline—*Third lecture* in the series on *The impact of industrialization on educational assumptions and opportunities.*

The influence on curriculum, methods, and the structure of the educational system

Introduction

The first lecture dealt with general influences, which of course affect the whole background of social organization upon which the educational endeavour is based. The second lecture covered the problems of recruiting a much larger personnel (pupils and teachers) into education; of course, this entailed some observations on the curriculum changes which may be necessary to suit these new members of the educated body. Finally, we come to consider some problems of curriculum and structure.

1. One of the most important changes caused by industrialization (even before the days of mass education) was a shift in interest. The earliest education was a matter of charity, and designed to prepare boys for the priesthood; i. e., it was both vocational and a path to a holy life. Later, when education was first offered to the masses, it shared something of the same concern. It was designed to *save souls*; and if it offered anything extra it was still designed mainly to lead to Church. This emphasis is very clearly seen in England (teaching to read, so that people could read in the Bible; but not always teaching to

write). But after the French Revolution especially there was a feeling that a modern and progressive state should teach subjects *useful* for citizenship, especially for the leaders of the citizen body. Emphasis on *useful* subjects had been in the air since the Renaissance; but about the time of the Industrial Revolution, which became well-developed in England from about 1775 onwards, the emphasis on *useful* subjects became much more marked.

One group of useful subjects in an industrial civilization was, of course, the elements of reading, writing, and arithmetic. But over and above the day-time provision much opportunity was provided in various ways to learn technical subjects in the evening (in England), and in school (in France, during the Revolutionary period), and later (much more) in special schools (in Germany).

2. Some countries, where the tradition of the Classics and of "liberal" learning was strong (like Spain, Italy, and Britain to a large extent), either neglected scientific schooling or left it to adult schools. But Germany did not. It early included scientific ingredients in the school curriculum, and instituted technically or commercially-oriented "middle" schools—to bridge the gap between the elementary schools and the university—oriented higher schools. (Gymnasium, etc.)

Because of the social and economic ambitions of the rising middle class, many of these "middle" schools (or their equivalent) soon began to take on the characteristics and subjects of the socially esteemed upper schools—and eventually to lead to universities. *The struggle to achieve equality is still going on*; we can see it in Italy; here the Classical high school's leaving diploma will admit to any department of the University, while the diploma of the supposedly equivalent "liceo scientifico" will admit only to "inferior" faculties such as science and commerce. (What a contrast to the United States!)

3. However, by the 1830's and 1840's a change had come over even the most highly esteemed prestige schools. Rugby had introduced such strange subjects as modern languages,

science, and what we would call "shop". In the United States, the Morrill Act, the Smith—Hughes legislation, and subsequent measures all had the same purpose—to persuade states by means of grants to increase their provision of technical and agricultural science. All this was influenced by the Civil War, but not exclusively so. The development of education in the old lands was not as technically or vocationally oriented as Franklin would have wished even before the Revolution.

All over the world at this time there was a ferment of educational activity designed to make less well developed countries catch up with the technologically more advanced ones. The supreme example of that was JAPAN. The whole social system, as well as the national religion, was changed and the whole educational structure was rapidly built up as a piece of technological apparatus. (1868 onwards).

It could be said that the introduction of compulsory universal education in Britain from 1870 onwards was a result of German and other European competition in technology, as shown by the Great Exhibition of 1851. There was a gradual introduction of upper-level courses in technological or pretechnological subjects, and institution of new university courses. (Exactly the same tendency in the United States.)

4. Despite all this activity, the actual introduction of technically-oriented subjects into the curriculum was a slow growth. What happened was that the old prestige subjects maintained their prestige, and often gave their former pupils up to industry and commerce only at the university level of later (after "college", as in the U. S.). However, the countries that were in the lead in technology had decided otherwise; all kinds of care for "useful" training at any levels, especially in Germany.

But there were many trends in the same direction which did not always come to the surface in educational theory. Practicality, usefulness, and social purpose were present in the U. S. A. (Cp. Wheeler) long before Dewey voiced them. Therefore, revolutionaries like the Russian communists quoted both the U. S., orientation and the German "work school" equally.

5. Marxist theory, being based on the assumption that the patterns of production and distribution determine human perceptions and aspirations, takes it for granted that there must be an intimate relationship between industry, society, culture, and education. "Industry, politica, and school are only different aspects of the sam thing."

Therefore, the proper logic of Marxism would demand that school should be an instrument equally of society and on industry, and be part of the industrial conveyer-belt.

6. The importance of adult education and the concept of a life-long, continued education. The need for schools to prepare for such opportunities, and to adjust their own juvenile preparation into a realistic anticipation of them —particularly as mass media, advertisements, and technological pressures have so much influence during adult life.

7. Brief conclusion.