Schooling in the mother tongue in a multilingual environment
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When Unesco decided to launch a world campaign to safeguard the ancient monuments of Nubia, public opinion was fairly soon able to appreciate the results. Within a few years it was possible to choose the technical procedures, assemble the necessary funds, co-ordinate international action and that of the responsible authorities in the countries directly concerned. And now the reconstituted temples of Abu Simbel stand on their new site, secure from the waters. Similarly, when it is a question of prevailing upon a group of States to combine their scientists’ knowledge and their material resources for the purpose of exploring together a little-known ocean or continent, once the campaign is completed it is not difficult to appraise the outcome. In both cases the results are too clear to be called in question.

On the other hand, if the Organization sets itself the aim of promoting equality of access to education for all peoples and for all individuals, or of adapting educational systems and the content of education to the needs of present-day societies, by what signs and according to what criteria is it possible to assess the relative magnitude of the successes and failures? Within one and the same country, the extent to which opinions are divided concerning any reform or any proposal for a reform of education, is only too well known. All the more, in the international context, a consensus is rarely obtained. Since the earliest days of Unesco, those who are responsible for drawing up its programmes have always been divided between two schools of thought. Some consider, in regard to education, that international action is bound to be slow and that it will only be possible to assess its efficacy in the relatively long term. Others maintain that it should be judged on rapid results. The first are doubtless wise men, who have learnt from the experience of the past. But the second, who represent governments which are themselves
subject to the pressure of public opinion, know that they cannot wait too long. Time passes, time presses. Thirty years; the age of Unesco; the average life span of a generation of men. No philosophy is capable of standing up against the urgency of cruelly felt needs. It is for this reason that appraisal of the results achieved by Unesco in the service of education regularly forms part of the resolutions adopted by the delegates of Member States.

In 1957, at the request of the Economic and Social Council, Unesco undertook, at the same time as the other Specialized Agencies of the United Nations, to make an appraisal of its activities in certain areas recognized as essential. From 1957 to 1959, each of the organs of Unesco—the Secretariat, the Executive Board, the General Conference—in turn indicated its full approval of the project but, due to lack of time, experience or conviction, the Secretariat alone made an effective contribution to the carrying out of this task. Among the twelve areas of work selected, two related to education: the first, the development of school and higher education, and the second, the development of out-of-school education. The whole field of education was thus covered.

In respect of both areas, the study followed the same pattern: definition of the problems, retrospective study of the efforts made and methods used, calculation of the costs incurred, assessment of results, future prospects. In short, a methodical and conscientious endeavour. But while, in the historical part and the account of the programmes envisaged for the near future, the tone of the report remains objective, how can the assessment of results—which is an essential factor in the study—have other than a subjective value, made as it is by officials who are too absorbed in everyday activities and too subject to the instructions received from governing bodies to be able to view the matter in proper perspective and exercise sufficient freedom of judgement? It is therefore not surprising to find the same cautiousness prevailing on every occasion: ‘The assessment of results’, it is said in the introduction ‘might give rise to very justifiable hesitations’. And further on: ‘It is difficult to assess the relative efficacy of the various methods.’ Then, above all, this comment of capital importance: ‘The assessment of the results achieved by an intergovernmental organization cannot be complete without a wide consultation of all its Member States, and this was ruled out by the shortness of the time


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allowed.' And, lastly, one of the conclusions, the honesty of which can only be admired: 'The present assessment is therefore founded upon the judgement of the Secretariat. In making this assessment the latter proceeded with the utmost objectivity. . . .'

This objectivity is shown by the straightforward admission of certain failures, such as the pilot project of the Marbial Valley (Haiti) or the fundamental education project in Dujailah (Iraq). Moreover, nobody would think of doubting the Secretariat's impartiality. On the other hand, nobody is prepared to admit that the results achieved by a massive literacy campaign can be assessed in the offices of an administration on the basis of the reports of a few experts on temporary mission. A long and careful study, carried out on the spot before and after the experiment, is needed to enable valid conclusions to be reached.

Therein lies the value of another appraisal report, which was drawn up recently thanks to close co-operation between Unesco and the United Nations Development Programme (UNDP), on the progress achieved in regard to adult literacy. Of all Unesco's major undertakings in the field of education, this is undoubtedly the one which has most constantly come to the fore, on account of the extent and urgency of the needs to be met, the boldness of its ambitions and the volume of the means employed. After launching, in its earliest days, a world campaign against illiteracy and for the promotion of 'fundamental education', which combined the teaching of reading and writing with instruction in new techniques in agriculture and hygiene, Unesco, disappointed by the meagreness of the results, found itself towards the year 1960 at a crossroad: either it could persevere, without great hope, in a massive campaign on a world-wide scale or it would have to seek, through a selective and better directed action, the means of achieving objectives that would be limited but more certain to produce results.

As is known, the second alternative was chosen, on the recommendation of the World Congress of Ministers of Education on the eradication of illiteracy held at Tehran in September 1965. This date marks a turning-point in the annals of Unesco. The new world experimental programme, worked out on the principle of functional literacy, is distinguished by two main features. On the one hand, efforts would henceforward be made to bring about a closer adaptation to the economic development needs of the populations concerned. On the other, efforts would be concentrated on an experimental basis on a small number of countries and, in each of these countries, on
categories of illiterate adults presenting the greatest possible homogeneity. It was expected that these experiments would permit of the elaboration of curricula, teaching methods and staff training methods which, at a later date and in the light of the results recorded, might possibly be applied in other countries.

The vital importance of a critical assessment of results is thus readily apparent. Ten years after the launching of the programme, Unesco and UNDP, who were responsible for the operations, entrusted a team of independent experts with the task of collecting the information and observations required for an impartial judgement. This task was carried out during the years 1974 and 1975 and has now led to the publication of an ample and substantial report, the chief merit of which is that it submits to the same criticism, with the same freedom of expression, the measures adopted both by the national authorities in the States associated with the programme and by the international organizations which conceived it, with the result that a real assessment, in the full sense of the word, is at last available.

It must be admitted that the judgements passed by the authors of the report are sometimes extremely severe; they go so far as to call in question the very objectives of the undertaking, and they conclude that, in the present state of affairs, there is nothing for it but to give up the idea of extending such disappointing methods to all the countries affected by illiteracy. But this verdict, however discouraging it may seem, is not the most interesting point for us. It would be a mistake in any case to give way to pessimism. The outcome of experience, even if it is negative, is never lost, and when considered calmly the lessons drawn from a failure are no less valuable than those drawn from a success. In our view, for the subject with which we are concerned, what is most important is, first, that the risks of an objective assessment have for once been taken, but also that the critical analysis was applied both to the behaviour of the Member States and to that of the international organization. If, for each of Unesco’s major projects in the field of education, such a precise instrument of measurement were available, how much clearer and more firmly established the future of international co-operation would become! And how much easier it would be to elaborate the problems and approaches and the methodology, the need for which is so often felt.

A tendency to exultation does not befit international organizations; expressions of self-satisfaction are less and less tolerable, even if they are based on comparatively serious reasons. We read, for instance, in a recent Unesco publication that the spectacular increase in the number of teachers, which tripled between 1957 and 1976 in the primary schools of Latin America, was achieved ‘thanks to the programme of the Organization launched in co-operation with the States concerned’. This statement is probably excusable coming from a Secretariat which had spared neither its time nor its efforts and whose competence is beyond question. It is the expression ‘thanks to the programme’ that is liable to give rise to hesitation and doubt. No one would think for a moment that the celebrated Major Project on the Extension of Primary Education in Latin America or the activities of the Regional Office of Education at Santiago had no effect on the progress of education in this part of the world. The question remains, however, whether it is to Unesco or to the States concerned that the chief merit should be ascribed. The rapid increase in the number of primary teachers is clearly the result of political decisions and financial efforts made by governments, parliaments, and nations as a whole. As for Unesco, its role—by no means unimportant—consisted in prompting, encouraging and assisting these governments and nations. There we have the whole problem. In this difficult issue, the last word may be found, it seems, in the appraisal report of 1960: ‘Finally, the most important result of Unesco’s work will have been that of bringing public authorities, instructors and educators to understand the urgency and the scope of crying needs. . . .’

I may perhaps be allowed to interrupt my remarks at this point to recall an episode, which occurred about twenty years ago, in my career as an international civil servant. While acting on behalf of the Director-General, in the latter’s absence, I was called upon to receive, at Unesco’s Headquarters, a very highly placed person from a very powerful State. I had been warned that his visit would be tantamount to an inspection. Once the courtesies had been exchanged, this visitor asked me point-blank which of all the Organization’s activities, present or past, seemed to me the most important and the most useful. As I hesitated to express an opinion, one of my colleagues, who was present at the interview, replied in substance: ‘I come from a country where the proportion of illiterates is overwhelming. Up to the past few years, the public authorities accepted without too much difficulty a situation which they regarded as
necessary evil. But since Unesco has come into action, no govern-
ment of my country would dare any longer to refuse the highest
priority to education.' This reply visibly produced a profound
impression on the person with whom we were talking. At the time, I
myself thought it adroit; but later, on reflection, I realized that it
expressed a very serious idea.

In trying to assess Unesco’s efficacy, recourse can be had to a
numerical estimation, such, for instance, as calculating the number
of conferences or symposia it organizes, the amount of information
it disseminates, number of the experts it sends on mission, works
it publishes, or establishments it assists in creating. These figures,
and many others besides, have of course their value, but they are
unlikely to carry conviction when we have to do with sceptical or
even merely critical minds. For it will always remain to be shown
that these meetings, these missions, these publications, and all
this impressive apparatus of institutes, centres or offices, have a
real effect on education as it is put into practice throughout the
world. Yet no one can question the fact that Unesco exerts an
influence, to an extent that probably varies according to particular
countries, but in all the sectors of education, from research up to
political decisions which can only be taken by governments. This
indirect and in a way invisible form of action will perhaps be judged
as the most important and the most praiseworthy by future historians.
Ever since it came into existence, but especially since it has acquired
experience and authority—that is to say during the past fifteen or
twenty years—Unesco has been quick to pick up the messages
coming from all quarters and to discern, in the different currents of
thought, those elements that can give fresh impetus to its action and
strengthen it. At first glance one does not always grasp the full
implications of some formula that is slipped into a resolution; then
one gets used to it, repeats it, discovers an unsuspected meaning in
it; from one conference to another, the formula—and with it the
ideas it covers—gains ground. It ends by compelling acceptance,
at least for a time, until a new formula takes its place.

It would be very interesting to draw up a chronological list of
these formulae and these dominant themes which have in turn
guided, supported and given substance to Unesco’s educational
undertakings. Suffice it to recall a few examples. First of all, ‘funda-
mental education’ which appeared at the time of the Preparatory
Commission of Unesco, in the heyday of the world-wide campaign
against illiteracy. Has it disappeared for ever from the Organization’s
Thirty years in the service of education

programmes? In any case, 'functional education' seems to have taken its place in the year 1965 or thereabouts. When the word and the idea of 'development' assumed their known importance in the United Nations resolutions, Unesco seized the opportunity of hitching education on to economic development; but it was obliged to spend a mint of patience and energy in convincing the international financing bodies that education could and should be an essential factor in the expansion of the economy. To turn this precious achievement to account, it then remained to induce the governments of Member States to integrate educational needs in their development plans. Hence the principle of 'educational planning' which from that time has inspired Unesco's programmes. The years 1961–63 mark important steps forward in this connexion: the adoption at Addis Ababa of a plan to extend school enrolment throughout Africa; at Karachi of a similar plan for South-East Asia; establishment in 1963 of the International Institute for Educational Planning.

Up to that point, efforts had been confined to the quantitative aspects of the problem, namely to the number of schoolchildren enrolled. But a few years later it became clear that the objectives determined at Addis Ababa or at Karachi would not be attained. Thus, in 1970, the rate of enrolment in primary schools which, for the whole of Africa, should have been 75 per cent, was not more than 49 per cent, despite the enormous efforts made by the States concerned. As for the quality of this education, some governments recognized in their reports, with a blunt frankness, that it had never been so deplorable, because of the overwhelming proportion of unqualified and untrained teachers whom they were obliged to employ to cope with the increase in school enrolments. To make the picture even gloomier, a sharp dissatisfaction began to manifest itself, arising from the fact that school leavers were seen to be unfitted to meet the needs of the economy. Unemployment and underemployment prevailed among adolescents leaving school.

It was in these circumstances that three new objectives received high priority in Unesco's programmes: quality of education, teacher training, adaptation of educational systems. This amounts to saying, in plain terms, that school enrolment can, if necessary, be slowed down, provided that education is adapted to the real needs of the country and that greater care is bestowed on the recruitment, training and further training of teachers. Of these two conditions, by far
the more difficult is that relating to the adaptation of educational systems to the real needs of the country. This implies giving up the models imported from abroad, whether from former colonial powers or from highly industrialized countries, in which the standard of living, the organization of society and the economic structures have nothing in common with those of the Third World. And the idea has already emerged, particularly in Africa, that the time has come to revert to certain traditional practices and to find in the customary forms of education the bases of an education that, while modern, is nevertheless fully adapted. Unesco was not slow to echo these new aspirations: in 1974, the General Conference included the safeguarding of ‘cultural identity’ among its priority objectives.

In regard to development, this has never ceased to be at the centre of Unesco’s concerns. But the first notion of a development tailored to fit the economy has been replaced by the broader notion of a development which is at the same time economic, social and cultural, and wholly directed to the advancement of man himself or, in other words, a humanism of development.

This brief review of past activities extending over thirty years, necessarily incomplete, gives some idea of the extraordinary abundance of formulae and ideas, principles and projects, which Unesco has so much difficulty in keeping under control. It is, however, by accepting them and by making efforts to integrate them in a single programme, that Unesco can perform a function which is peculiar to it: a standard setting function. To avoid any misunderstanding, it should be explained that the expression ‘standard setting’ does not apply solely or especially to international regulations, drawn up in the form of conventions or recommendations. As far as education is concerned, Unesco’s action in the matter of regulations has been extremely modest, for it has been confined up to the present to the Convention against Discrimination in Education, adopted in 1960, and the Recommendation concerning technical and vocational education, which in a revised form dates from 1974. Education is undoubtedly a field in which the sovereignty of States is still too sensitive to lend itself to precise obligations.

On the other hand, the International Conference on Education, which the International Bureau of Education (IBE) organizes every two years in Geneva, on behalf of Unesco, has never ceased to adopt at each of its sessions recommendations which are not in the nature of regulations and which impose no obligation on States. Considered as providing practical advice, they constitute a sort of guide for the
use of educational authorities and teachers. We need only look through the list of subjects with which they deal to range over the whole field of education: training and further training of teachers, organization of pre-school education, preparation of programmes, educational research, teaching of reading, writing, mathematics, classical and modern languages. . . . Nothing, or practically nothing, is omitted. In the vast sector of adult education, in which it had more to learn than to propose, Unesco has nevertheless performed an important standard setting task by convening, at regular intervals, three major international conferences: the first at Elsinore in 1949, the second at Montreal in 1960 and the third at Tokyo in 1972. From one conference to another, it has been possible to appreciate the evolution of ideas and the changes in attitudes, both among educators and among the public authorities. At Elsinore, the voice chiefly heard was that of the most advanced countries of Europe and North America: the United States, Canada, the United Kingdom and the Scandinavian States, in which adult education is the concern of trade unions, co-operatives, the churches and voluntary associations. The intervention of the public authorities seemed to them neither useful nor even desirable. Eleven years later, at Montreal, an impressive majority declared itself in favour of the opposite point of view: without on that account discouraging private efforts, the conference stated that adult education, an essential factor in all education, should henceforward be integrated by the State authorities in the national educational system. Lastly, at Tokyo, agreement was reached on two fundamental principles: on the one hand, adult education should be included, in the same way as school and university education, in the general perspective of lifelong education; on the other hand, the objectives and methods of adult education and its teaching staff, should be radically different from those of education designed for children and adolescents. Seemingly, Unesco's role was confined to providing a framework for this extensive joint discussion; but, in taking the initiative of convening these conferences and in ensuring the publication of the resolutions they adopted, Unesco nevertheless exercised its standard setting function. It is no longer possible today, for governments, for non-governmental organizations or for the teaching profession as a whole to disregard the principles and standards worked out at Tokyo.

It is again to this standard setting function that the dissemination and exchange of information should be linked, this being one of the tasks in which Unesco has acquitted itself with the greatest success,
particularly with the assistance of the International Bureau of Education. By establishing and maintaining with its Member States and among the latter a constant flow of information on recent experience or on projects in progress throughout the world, the Organization does not put forward any example to be followed or recommend any solution or model; it confines itself to providing information to the responsible authorities, to inducing reactions, to stimulating the imagination of educators, and to suggesting subjects for educational research. However, this discreet form of action has its value. Many of the principles or standards adopted during Unesco meetings would be liable to remain at the stage of pious hopes if the exchange of information did not relate them to reality by constant references to actual conditions. This is the case, for instance, with lifelong education or with innovation. These key words have acquired much prestige, but agreement is far from having been reached on their exact meaning and on their practical applications. The studies and publications of the Institute for Education at Hamburg bearing on lifelong education, and those of the IBE bearing on innovation, have the great merit of bringing a breath of fresh air to these abstract notions.

Unesco has often been reproached with dissipating its efforts and resources; and it is true that on a careful reading of the statement of its programmes, one is unpleasantly impressed by the multitude of different projects, all of them probably useful in one way or another, but which do not look as if they could link up to form a great educational undertaking. It was for the purpose of remediing these serious drawbacks that the General Conference recently decided to draw up a medium-term plan, designed to cover certain specific objectives. The decision is too recent and experience is too short to allow of an appraisal of its consequences. Over the past thirty years, Unesco has however tried on several occasions to encourage the undertaking of large-scale studies dealing either with education as a whole or with large sectors of it. The results are contained in three works, published between 1963 and 1970. In fact, none of these works was produced by Unesco itself or represents the opinions or principles of the Organization. The authors retained an absolute freedom of judgement. But nothing could have been accomplished without Unesco’s help and without the more or less direct co-operation of its services. In return, the facts assembled, the situations examined and the results obtained in the course of these studies have largely influenced certain sectors of Unesco’s programme.
The object of the first of these inquiries was access to higher education. Conducted by an American expert, Frank Bowles, under the dual auspices of Unesco and the International Association of Universities, it resulted in the publication of two substantial volumes, one devoted to a comparative analysis of the different systems, and the other to a particular study of the position in each of the twelve countries chosen in the various regions of the world. Although in principle it was confined to the process of admission to higher education, the survey undertaken by Frank Bowles necessarily led him, in examining from peak to base the age pyramid and that of the various levels of education, back to the time when guidance is first given, which determines a child’s future. It is around his eleventh year that everything is decided: if he is encouraged to take up certain subjects, he will have the best chances of reaching the university; but if he is encouraged to take up others, his chances will be almost nil. Moreover, in this decisive choice, merit plays a far less important part than does social origin. Thus, starting from a very specific question, the author was obliged to raise some of the most serious problems involved in any educational system, such as equality of opportunity, guidance, drop-outs, examinations, selection. So true is it that each level of education governs, to a great extent, all the others, and that an educational project can only be appreciated in its totality.

The origin of the well-known book by Philip H. Coombs, The World Educational Crisis—a Systems Analysis, published in 1968, is a working paper prepared for an international conference held in the United States, on the initiative of its government. Unesco did not take part in this project. But the organizers of the conference had requested the International Institute for Educational Planning, of which Philip Coombs was at that time director, to prepare the background report, and it was in this way that Unesco came to afford its assistance. The preliminary inquiry lasted more than a year, and it was in 1966 and 1967 that the necessary facts and observations were assembled, that is to say, well before the disturbances which occurred in a number of universities and in highly differing countries drew attention to the crisis which threatened the most renowned institutions. From then onwards, Philip Coombs’ book was to become tantamount to a warning for some and a demonstration for others.

1. Access to Higher Education, Unesco/IAU. The first volume was issued in 1963, the second in 1965.
This study, of which the principal author, as well as his collaborators, were economists and sociologists rather than educators, appears as the application to educational systems of the concepts and methods in use in the social sciences. As in the other sectors of production, education takes in children, whom it submits to its particular treatment and, once they have been processed, sends them out to take their place in society. This way of viewing education was bound to surprise and even to shock many teachers, unaccustomed to considering their function in industrial terms. This probably explains why the welcome they accorded this book was at first only lukewarm.

However, over and above the systems analysis, the author draws the attention to a number of situations and proposes solutions which are essentially of interest to the professionals of education. While taking care not to underrate the extent and the particular character of the needs of the developing countries, he does not on that account consider that the most highly industrialized countries are secure from the crisis; his conclusions apply as much to the latter as to the former. The crisis that he announces is therefore of world-wide magnitude. Moreover, the rigidity of the systems, the force of habit and the mistrust with which teachers regard any change, prevent education from adapting itself to the changing conditions and requirements of society. Education thus suffers from a fundamental inadaptation. As far as the countries of the Third World more especially are concerned, it is clear that they must reject foreign models which are not made for them and must themselves seek solutions in keeping with their needs; in this connexion, out-of-school forms of education may prove very efficacious. From the foregoing, the author concludes that there is need for a positive strategy, of which he indicates the main lines. Viewed from an unusual angle, we thus find marshalled a large number of topics which, while they are not all new, take on an added significance from the fact that they are ordered in a logical sequence.

The third of the works we should like to mention was commissioned by Unesco from a group of distinguished experts from different countries. The report of this commission, usually referred to by the name of its chairman, Mr Edgar Faure, was published in 1972 under the thought-provoking title of Learning to Be. In this case, the whole of education, in all its aspects, was submitted to a critical examination, following an extensive inquiry carried out on the spot in various regions of the world and a long consultation with a great number of experts. Most of the principal ideas considered in the Edgar Faure report had already been the subject of study by Unesco,
but sporadically and without the support of so systematic a discussion. The great merit of this report is that it puts forward its criticisms and suggestions in the context of a global conception (one might even say, of a philosophy) of education. Consequently, certain well-known ideas, such as that of lifelong education, are for the first time given a clear and precise definition. Similarly, the hitherto ill-explored field of out-of-school education opens out into a 'learning society'. What Philip Coombs called a positive strategy emerges in a great variety of strategies, the only common feature of which is that they all give an important place to change, or more precisely to innovation. Lastly, while on the one hand, the Edgar Faure report evinces confidence in international co-operation and aid to education, on the other it levies very severe criticism at current methods.

This book caused a considerable stir. It was submitted on two occasions to examination by the representatives of Member States—first during a session of the General Conference and then during the following session of the International Conference on Education. Although largely approved by many delegates, it was also in some quarters the subject of guarded and even unfavourable comment. This was hardly surprising. The severe judgement passed by the commission on educational systems was bound to shock governments, in particular those of Eastern Europe, which do not admit to any sign of crisis in their countries. The approval shown by the said commission for out-of-school education, as, for instance, in its reference to a future 'learning society', disturbed those who thought they heard in it an echo, probably muffled, of the arguments advanced by Ivan Illich against the school as an institution. Then again, some representatives of the Third World regretted that sufficient attention had not been paid to the particular needs of their countries.

Other recommendations, which concern State policies less closely but which are of the greatest importance for the future of education, are no more certain to achieve the hoped-for results. Although everyone agrees with the principle of lifelong education, which embraces in a single educational project pre-school education, school education at all levels and adult education, including literacy teaching, few countries seem ready to draw the inferences from it. With regard to innovation, which is the keyword of the Edgar Faure report, agreement in principle barely conceals the reservations, whether on the part of the responsible authorities or of the teachers themselves. The report concludes that there is a need to renew from top to bottom the
objectives, methods and means of international co-operation for the purpose of assisting education. Here, it is not Unesco alone that is involved; the entire United Nations system needs to be reformed, at least as far as aid to development is concerned.

With Learning to Be, Unesco had at its disposal a set of coherent recommendations, calculated to enable it to give a direction to the whole of its education programme. From what we have mentioned above, there are no grounds for hoping that this will be the case. The book will of course remain as a major work of reference, and it will undoubtedly be quoted when this appears to be opportune. But it seems most unlikely ever to be a guide, whether for States or for international organizations.

When speaking of Unesco's standard setting action, of which this work might provide a good example, one must not suppose that it is always the outcome of unanimity. A consensus is far from being reached on all the resolutions of the General Conference. The conventions themselves are sometimes adopted by the bare majority required. In the texts emanating from Unesco, there is often a formula, the expression of an idea or a principle, which gives rise in certain States to the strongest reservations and even the most serious misgivings. Within the span of a few years, theories in vogue in some countries or group of countries may replace contrary theories which had hitherto been considered as accepted. The history of Unesco, like that of other organizations of its kind, is full of such changes, which optimists take as a sign of progress.

Among the conclusions reached by Philip Coombs, at the end of his study, was one to the effect that the developing countries were more likely than the others to strike out in new educational directions, so long as they dropped 'their folklore and their inhibitions'. But what is this folklore, and what are these inhibitions, if not the respect for ancestral customs and traditional beliefs? And now, in the most recent Unesco documents, we often find passages in praise of 'endogenous' cultures and education. This word, the origin of which is not clear, at least in this context, lends itself to unfortunate misunderstandings. If it is intended to mean cultures or forms of education which go back to the origins of a people or of a national heritage, how could one disagree? There would in fact be nothing new in it: Unesco has always recognized the diversity, originality and equality of all cultures. A substantial part of its programme is concerned with the study of cultures through international co-operation. On the other hand, if the term 'endogenous' denotes, as the dictionaries say, that which
develops from within a system, then all fears are justified. A culture which only developed within its own system of values, which refused to be accessible to others and enrich itself by exchanges and borrowings, would be condemned in advance to waste away. At best, it would leave a few traces in the works of ethnologists and in museum showcases. Similarly, a system of education closed in on itself, indifferent to the experiments being carried out in the rest of the world, could only become ossified. Neither such a culture nor such a form of education could make the slightest contribution to the work of Unesco, whose first objective is to promote exchanges among all peoples and to advance their mutual knowledge and understanding.

Between the legitimate concern to put an end to the undue importation of foreign models, to protect cultural identity and, on the other hand, the no less legitimate concern to promote understanding and co-operation among peoples, Unesco, whose duty it is to set an example, will doubtless find the narrow way in which it should tread. Powerful political interests are at stake. But surely an international organization has precisely a responsibility for reconciling the policies of States with the requirements of its own mission.
Towards a better transfer of knowledge and values

The author of these lines owes it to his age and his North African childhood to have begun the study of history in a school near Oran, the overwhelming majority of whose pupils were of Arabo-Berber or Spanish origin. The first lesson, indicative of a whole system, began with the famous words: ‘Our ancestors the Gauls . . .’. The term ‘history-of-France’, as a single word, was considered as designating not the specific subject but the type, so that I remember some of the more curious pupils asking the schoolmaster questions about the ‘history-of-France’ of Germany, England or the United States. However, one subject which we were not taught, for a very good reason, was the ‘history-of-France’ of Algeria. This subject was to wait another half century and pay dearly for its place in official syllabi. The problem at that stage would be the content which it should be given and the language in which it should be taught. The Gaulish ancestors extolled in Lavisse’s little textbook were to have been proscribed in the meantime, as guilty of aspiring to ‘assimilate’. We must admit that their fall from grace was very largely merited. However, the unbiased stock-taking which can now be engaged in, on either side of the decisive dividing line drawn by the independence of former colonies, cannot be satisfied with a univocal condemnation. Lavisse’s virtuous effort to make the history of his own country serve as a model for all obliged him to arrange its content in such a way as to present an exacting progression from the obscurantism of the olden days to the freedom of modern times, by way of Voltaire and Rousseau, the combats of the bourgeois Revolution and the institution of a secular

1. This paper was presented by the author to a Unesco expert meeting on ‘The Preparation of a Programme of Concerted Research on the Conditions Pertaining to the Transfer of Knowledge’, Paris 10–19 December 1975.
régime. The same school-teacher presented me, as a prize, with a *History of Labour* in which prominence was given to Étienne Marcel and the insurrection of the silk-weavers of Lyons. As recently as 14 July 1975 an African head of state re-established diplomatic relations with the French republic with an explicit reference to the taking of the Bastille: perhaps a memory of a colonial education in early years, of the kind which I myself received, although on a different side.

Anyone wishing to draw a lesson from this anecdotal introduction might consider the following ideas: (a) fallacious nature of a transfer of knowledge which tends to depersonalize the recipient; (b) consequent need to ‘decolonize’ not only its background and methods, but also its language and content; (c) ambiguity, however, as regards those parts of the content which, since they involve values held to be universal, would be freely adopted by the recipient.

The experience referred to above is set in a much larger context, one in which the direct colonial relationship is usually no more than a memory, but in which relationships based on force still exist, and are perceived existentially; where unsatisfactory transfer of knowledge is not only blamed, or to be blamed, on technical failures, such as the omissions or interference which can disrupt the operation of an information system; but where such short-comings, immediately described as errors or abuses, call forth reactions which extend far beyond the particular quarters held responsible to implicate the entire operation of what is known as education or culture.

**Attempts at definition**

All too often education is seen merely as a one-way organization of the relationships between young people and adults. Its content, which in such cases is no more than an apology for education, is a package of attitudes, received opinions and ready-made solutions. In our view, on the other hand, education should be defined as ‘the transmission of creativity and the creation of transmissivity’ (if one may risk such a neologism). The advances made in the sciences of education in recent decades are far from having done away with a basic error, which is the legacy of centuries of complacency.

The problem is further aggravated in countries where a large part of the message to be conveyed (roughly: everything connected with the operation of modernity) is less of their own making than received
from the centres of technological and scientific revolution, which are still nearly all foreign.

The result is a pernicious distortion of the national culture. For culture is none other than the community's endeavour to discover ways of expressing itself—and meanings. What is likely to happen when the resources which underpin this activity, the methods of analysis and even some of the languages used, are of foreign origin? The 'transmissivity' to which we have just referred then begins to operate, at least in part, against identity.

It should be added that this transfer from the outside world is effected in a way which is far from satisfactory. Genuine communication postulates some homogeneity of background, and this is by no means the case for the parties concerned in a world where inequalities are so blatant. But how far should we take the homogenization of the semantic background to different cultures and nations which is seen as desirable in this context? Should we allow it to deprive a nation or a civilization of the very uniqueness which we have striven so hard to preserve? Once again we are faced with a dilemma, and not the least grievous! To the defects inherent in any transfer of culture, which are everywhere deplored, are thus added even more serious defects, where most of the 'tricontinental' peoples are concerned, and even more pressing questions arise for them, in this connexion, than for other peoples.

The ambivalence of aggression

The world as a whole is only just emerging from a period of overt imperialism and is facing almost everywhere, and not only in the spheres of foreign trade, economics or technology, the consequences of unequal exchange. This inequality is also operative in respect of science, teaching and concepts. Those concerned may well denounce a situation as hegemonic, imperialist or neo-colonialist; these epithets produce little change. It may, indeed, be wondered whether the righteous indignation which they express is not in the nature of an alibi for the remorse of the borrower or imitator. For there is no need to have recourse to subjective recriminations directed towards countries, classes or ideas engaging in expansion, in order to assess the extent to which that expansion damages, and finally deperson­alizes, those who might be called its clients—using that term in its various senses.
Towards a better transfer of knowledge and values

For most peoples in the world today it is thus a question of breaking off a relationship which places them, whether openly or tacitly, whether with or without their consent, in the position of a client. This relationship of clientele is all the more pernicious in that it involves not only power and material interests or services, but also knowledge and values.

Recent research in the sociology of knowledge has shown the extent to which the context in which conditions arise, and the direction given to invention and communication, reflect conflictual historical elements.

The school-teacher à la Jules Ferry—the pride of the republican education system—although assigning himself a neutral role in politics and religion, played a militant part in the French campaigns of the late nineteenth century. He played it, *a fortiori*, in Senegal or in Kabylia, and there on behalf not only of the republic but also of republican France. Although British imperialism was free of any desire to 'assimilate' its colonial territories, one need only read the biography of Ram Roy in India, or later those of Gandhi, Vivekananda or Nehru, to realize that even in such exceptional cases—exceptional because these were strong characters, devoid of any tendency towards weak complaisance—behaviour, one might even say style, may be influenced by the attraction of a Western model, and even by the fact of familiarity with it. Comparison of the work of two great Egyptian writers, Taha Hussein and Aqqad, is equally instructive in this respect. And who is not aware that the division of Africa into French-speaking and English-speaking areas, although it no longer always determines political affinities, encourages differing attitudes, expressions and patterns of behaviour and feeling which often lead to the creation of artificial divisions between segments of the same ethnic group which the accidents of history have split between one and the other of these two systems. For instance, could the thinking of Presidents Nkrumah and Senghor—to take two champions of African cultural identity—be dissociated from the educational systems to which they were respectively subjected? If this influence is so marked in such outstanding personalities as these, what is to be said of lesser spirits, the vast majority? It must therefore be taken as obvious, as generally admitted and rarely arousing indignation, that the fact of belonging to a certain linguistic area, which in fact means a certain area of cultural expansion, to some extent conditions not only the intellectual or aesthetic preferences of the persons concerned, which might be considered reasonable,
but also their attitudes towards history, even if, as is often the
case, such attitudes are expressed in the form of contradiction or
defiance.

This is the situation to which certain broadcasting stations respond,
if one may venture to say so, by making every effort to retain or extend
and influence which, under cover of the French language or the
'American way of life', for example, or a particular interpretation of
socialism, seeks to establish groupings for purposes which are far
from being purely cultural. Although this is a patent reality of today's
world, and one which often gives rise to protestation, it has few
effective opponents. That is why the pressure of Western models, far
from diminishing with the official passing of the colonial empires, has
in many respects increased. And the justified reaction which it calls
forth in the persons affected by it does not seem so far to have been
matched by an appropriate practical strategy.

There is, of course, no doubt that the acquisition of foreign
languages which compel recognition on account of their widespread
use, of their cultural content or of their ideological repercussions—and
I refer here to English, French and Russian, among others—offers
an advantage to the inhabitants of more restricted linguistic areas
and particularly to those of the Third World. The experience of the
preceding generation, however, shows that the values which were
propagated by this means more than deserved the anti-imperialist
struggle. How, in fact, can these languages and cultures be dis­
sociated from the scientific and technological revolution of which
they are the main vehicle and at the same time the main ben­
eficiaries? Many militants campaigning for 'tricontinental' liberation
see access to this revolution and to the opportunities which it offers
and the ideas which underlie it—hence also to the languages in
which they are expressed—as the prerequisite for any kind of pro­
gress.

However, this obvious advantage has an equally obvious negative
side:
When the foreign language or system also takes over areas of cultural
or scientific creativity, thus raising for the citizen of the Third
World the formidable problem of divided linguistic loyalties and
the lack of firm moral and intellectual foundations.
When it prevents the individual citizen from exploring his own
cultural heritage and deprives him of the ability freely to choose
what pleases him from other world cultures.
When the progress of research or development in a particular
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towards geographical area or foreign civilization makes the adoption of its models a pre-condition of, and almost a yardstick for, success in the field concerned.

The French or German reader is no longer surprised, when reading the bibliographies for one or another of the natural sciences—physics for example—or for a social science such as sociology or linguistics, by the overwhelming preponderance of English sources. In certain specialized fields the research worker knows that he can only be effective or at least acquire a reputation if he adopts the other language by means of translation or by direct drafting in that language. In such cases adoption of the language is the outward sign of at least partial and temporary acquiescence in the system. If this is true of many European research workers, what of their Indian or Arab counterparts? Their only chance of taking some part in the extension of knowledge, and thus in the scientific development of their own country, will be to make their own contribution rebound from an alien cultural field, whose influence is felt throughout the world, back onto their own national terrain. Whether the material projected in this roundabout way is of a scientific, literary or ideological nature, it is only too clear that it will have lost much of its impact and authenticity in the process.

We repeat that such illogicalities provoke more indignation and argumentation than constructive action and corrective teaching methods to put them right. For not only does their ambivalence disturb even their victims and inhibit even protestation, but they may appear to be the logical conclusion of the trend towards world uniformity, a trend which one might consider to be natural if the historical reasons underlying it were not so easily discernible. By an unfortunate contradiction, the more successful the movement towards world unity, the more tyrannical its simplification and reshaping of the world appear to be. Could this movement in fact be a cover for monopoly and domination?

We must look facts in the face. A system can only counter tendencies towards entropy, that is to say, the degradation inherent in all use of its own energy, by increasing its own stock of information at the expense of that of other systems. Without wishing to carry too far an analogy borrowed from the natural sciences, and which is worth no more than any other analogy, the relevance of this particular one to the social sciences should not be minimized. The centres of activity in the history of the world have not only drained other world regions of their resources in the form of raw materials,
the supply of cheap labour and the extension of their own influence. Part of this process has always been, and still is, the continual acquisition of information both on themselves and on others, and the exploitation and transfer of this information. Today most of the activity connected with the dissemination of scientific or technical models, the use of the mass media and of certain favoured languages, could be described as unilateral accumulation of information in the interests of economic, social or cultural dominance.

But there is a rectification to be made at once to this analogy borrowed from thermo-dynamics. General though it be, and only to be apprehended if we are able to stop well short of relating it to the intentions and responsibilities of individuals and groups (these exist, but we are not concerned with them here), this phenomenon is not ascribable to the nature of things nor to the so-called workings of fate, but to a historical situation of which we should analyse some components in order, if possible, to counteract the effects.

Opposition and its weaknesses

At best, the persons or groups affected by these vicissitudes have sought to alleviate the ravages of the dominant national, economic or cultural systems by struggling against them. Different varieties of nationalism, socialism, or popular culture, to which countercultures must now be added, rise up together or, more often, in isolation, against a depersonalization which is held to be the result of the imbalance of strength relationships or of an unconscious collusion going so far as to distort the content of a whole discipline (for example, psychoanalysis and, at one time, sociology as far as Soviet opinion is concerned; anthropology in the opinion of various ex-colonies), or even of values long considered to form an integral part of the national heritage (Confucius) or to be of universal significance (Shakespeare and Racine in the eyes of the Chinese cultural revolution).

Leaving aside the last-named case, since our information regarding it is neither sufficiently direct nor sufficiently sifted, let us see how a newly independent nation seeks to decolonize its teaching methods. It reintroduces the use of the national language, wholly or partially, as the language of instruction for some sectors of education. Its
own history and literature are seen as offering the most justifiable, and indeed the easiest, areas for this rehabilitation: the first because it favoured the usurpations of the colonial power, and the second because self-knowledge and self-appreciation are among the prerequisites for rehabilitation. On the other hand, the natural sciences, even in their applied form, continue for a long time to be dependent upon the most commonly used world language. The greater the specialization, the greater the need for toleration of usurpation. Does this imply resignation to usurpation in respect of what constitute, precisely, the most competitive areas of activity in the world today? Unfortunately, one is tempted to believe so when one sees the economic models prepared by the industrialized nations accepted without sufficient critical examination by those concerned: whence the large number of failures. Without wishing in any way to underrate the praiseworthy efforts made by any particular country to reinstate its own language and exalt its cultural heritage, one may wonder whether, in the circumstances, this does not mean dropping the essential for the accessory.

Since decolonization seems to be in a fair way to decentring politically the world’s balance, or at least to showing up as an anomaly or an abuse the unequal relationships deriving from the existence of centres of dominance, a similar decentralization is being sought on the cultural plane. But, since decentralization has not yet succeeded in resolving the contradictions posed for it by the growing tendency towards world uniformity, by the unity of the progress of the natural sciences, and by the use of the mass media on a worldwide scale, these efforts towards decentralization are still, in too many cases, sporadic and ill-prepared, and sometimes based more on emotion than on reason.

In many cases, these efforts tend to exalt the past achievements of the national cultures, to exalt cultural heritages and legacies, and—while this is the expression of a legitimate new awareness of identity—they generally leave in abeyance the question of how these achievements and acquirements can be put to use in the modern world. A past, however glorious it may be, can only be upheld by innovation, and this depends on a meaningful dialogue with the outside world. The real question that arises is not, therefore, which parts of the cultural identity to be protected should be safeguarded from external aggression, but what kind of change based on those elements that are authentic and specific will render such aggression powerless—I almost said pointless.
Generally speaking, the problem of cultural transfer seems up to now to have been considered by the recipients in too emotional, too unrealistic and insufficiently radical a way. Too emotional when a minister from the Third World, opening an international congress, inveighs against anthropology, suspected of having served as an escort to imperialism (but could not the same be said of the steam locomotive, electricity or the internal combustion engine?) Too unrealistic when the recipients imagine that they can assimilate the values deriving from an international cultural exchange while at the same time freeing themselves from the individuals or groups that have produced those values. Too unrealistic when they disregard both the physical impossibility of putting this assumption into practice and the deculturation which is the logical result. Insufficiently radical when, under the spell of the apparent universality of natural science, they subject their own approach (for example in the matter of planning) to external models, for which the vehement language employed elsewhere cannot constitute an effective corrective.

We are thus led to pursue further the analysis of the evil and the quest for remedies.

Suggestions which might follow from the foregoing findings

If full account is taken of the above observations—and it is difficult to see how this can justifiably be avoided—an effort will be made to organize the transfer of knowledge in such a way as to avoid any confusion with the projection of influence. This task has so far been only partly assumed by decolonization.

Suitable ways should be found of extracting much scientific content—and here we have in mind not only the natural sciences but also the social sciences—from the languages in which these sciences are expressed, thus freeing them from contexts which are inevitably linked with the dominant entities.

There seems to be no way of escaping the attraction exercised by the major vehicular languages of our time except to have recourse to a metalanguage. This alone would provide a foundation for genuine internationalization.

The difficulty of making transcriptions into a metalanguage should not lead to a new kind of esoterism, for the role of those with responsibility for culture should be to decode the transcriptions and then to
restate them in the national languages, thereby making them accessible not only to the real or so-called élites, but to the majority of educated citizens.

Although there is in theory no reason why works of art should not be treated in the same way, the fact remains that, unlike factual, conceptual or methodological content, the message of a work of art does not lend itself to any reduction. Far from de-specifying this kind of work, care should be taken to accentuate its specificity in order to increase its capacity to transmit a message which can be used as a point of departure by the community receiving it. Is this what has happened up to now?

Unfortunately, neither museography, despite its recent advances, nor the comparative history of literature, nor even orchestral music (which already is an international language, albeit scandalously monopolized) are rendering in this matter the service that might have been expected of them. And let us not speak of the 'art market'!

The choice of messages and the use made of them would be subject to criteria based on service to the receiving community, and this would lead to the free reorganization of established hierarchies, which at the moment reflect the superiority acquired by one individual, class or nation over another.

This defensive measure should not, however, be a substitute for sustained action to encourage the creativity of the systems in question. Such action implies a critical assessment of their characteristic features and of the conditions in which they can accede to what is modern and universal. In the main such assessment seems hardly to have begun.

Emphasis on the specific and on its access to international confrontation should lead to the establishment of a truly common heritage, no longer based on the monopoly of some, the resentment of all the others and the consolidation of false hierarchies.

Whether in respect of the search for a universal language, of the explicated isolation of the specific, or of the objective establishment of common values, there is an obvious need for international concertation. It would represent the counterpart for the efforts expended, by all those taking part in it, for the defence of their own identity and authenticity.

For true universality can only be achieved by carrying differences to the utmost, and differences are only valid in terms of the unity of the aspirations of mankind.
Comments on and applications of the foregoing

The presentation of knowledge in a universal form is already being considered in certain sectors of research, in connexion with the indexing of documents or the analysis of their content, and it is the subject of advanced research in the United States, the U.S.S.R. and Europe. But it should not remain the privilege of the overdeveloped. The use of metalanguages—by their very constitution free of a power to influence that would be likely to render them suspect—and the generalization of the use of computers, seem today to offer a real chance of following up the suggestion regarding a universal language which so many great men of the past have made in their time.

Let us see what Condorcet says in defining, in his *Esquisse d’un Tableau Historique des Progrès de l’Esprit Humain*, what a universal language should be. This was in no way a reference to the French language, although it was at that time used by all cultured élites as a matter of course. What he wanted was a conventional language, capable

of expressing by means of signs real objects or clearly defined groups which, made up of simple and universal ideas, are the same or can be formed equally in the understanding of all men; and also of expressing general relationships and ideas, the operations of the human mind, those which are peculiar to each science and also the processes of the arts (p. 233 of the 1933 (French) edition).

It could not be better put. The emergent nations, and even the majority of the industrialized nations, would do well to reflect on a project which might spare them the pseudo-universality of English or French or one or two other languages. The apparent difficulty of such research at this stage cannot make us forget that every language, including those that are looked upon as archaic, has as great a potential as the most complex and makes use of logico-mathematical structures which are connected with its own vision of the world while at the same time extending (or rather being capable of extension) towards the most elaborate varieties of formalism. Perhaps one of the tasks of tomorrow’s educators will be to develop to the full and to systematize such transitions. To those who would cite the difficulty of learning a second language we could easily reply that traditional education imposed upon the child and indeed still makes him learn even more arduous subjects (for example, Sanskrit grammar, Arabic prosody and
the celebrated rule for the agreement of the past participle in French, not to mention Chinese ideograms).

Our third suggestion, which the democrat should bear constantly in mind, is in fact a corollary of the previous one. The growing technicity of knowledge and procedures is too easily exploited by minorities which are subject either to narrow corporative interests, or to domination by a class or nation, or again—and this is even more common—to artificial complexities, which are invoked as a reason for unwillingness to share the information in question. One of the tasks of education tomorrow will be to extend not so much the use of specialized knowledge as its intelligibility and hence its control by the general public.

The reinstatement of the specificity of cultures is a response to the increasingly marked determination on the part of the humiliated and dispossessed not to sacrifice their cultural identity in order to gain access to knowledge; and, on the other hand, to the hope that a future world civilization will be based, not on a trite cosmopolitanism, but on the full range of the world's multiplicity of original cultures. The educational systems in the various countries of the world should therefore be urged to consider 'world-wide humanities' and no longer only the classical humanities (in the sense of a return to Graeco-Roman, Hebrew, Arab or Chinese origins, for example). The study of foreign languages (apart from its obvious practical advantages) should then be undertaken not only because a certain language is 'useful' (and the word useful is only too often a cover for selfishness and sterility in such cases), but for its own sake, and because exploration of the individual character of that language offers the student a means of getting to know himself and enriching his own individuality by comparing it with others.

It is clear that this is likely to involve some reshuffling of accepted values, and for two reasons. So-called 'masterpieces' in fact often owe their status to an agreement between tradition and domination. So true is this that many 'tricontinental' cultures, and even Western ones, are excluded from this conventional pantheon. But the restructuring of the world which is now taking place, and the introduction of new criteria thus introduced—often criteria of combat—will no doubt make possible some salutary reassessments. It seems to us an obvious fact that this should lead neither to a levelling down nor to cultural demagogy, and that the creation of a 'treasury' or 'Bible of humanity'—to borrow the noble phrase of the nineteenth-century Romantics—compiled in an objective way and open to public
discussion, should be one of the goals of all education. The world will never need true ‘classics’ more than when it tries to recreate itself on the basis of free dialogue and radical innovation.

How should these new options be exercised? Academic tradition, which has been most reluctant to abandon its ‘golden centuries’, its ‘great works’ and its ‘great authors’, is still inclined to make a fetish of the contribution of a particular artist or thinker, claiming in this way to summarize the successive phases of a movement. It no longer, of course, teaches history by battles or politics by reference to court gossip. But it always reduces philosophy to a succession of commentaries on proper names, or to a confrontation of ideas duly ascribed to such and such a person. In fact the reality of an epoch and, we believe, its deepest significance relate less to ‘contributions’ or ‘achievements’, in other words, to more or less individual performances, than to its potentialities. And how often have these potentialities been stifled by governments, styles, trends or authorities, not to mention our own obsession with classification and conceptualization, and left even now to moulder, unfulfilled and forgotten? Their rehabilitation and updating, quite apart from the aesthetic and scientific interest of bringing these ‘lost languages’ back to life, seems to us the only way of arming group identities in the present for the battle for universality. Such restoration, of course, should be preceded by objective investigation which is entirely free of sentimentality and vainglory.

The purpose of the sixth suggestion is to broaden still further the realistic programme of research on which this action would be based. The scientific and technical revolution, the now world-wide form of a movement which was born in Western Europe towards the end of the eighteenth century and long monopolized by a handful of nations, is the distinguishing feature of a human era to which all cultures and ethnic groups know they must attain as a matter of life or death. But for this attainment it is not enough that the ‘tricontinental’ countries should play the part of workers, clients or even beneficiaries. True integration postulates active participation, and one of the least questionable criteria of such participation undoubtedly consists in invention (or re-invention), whether in the form of discovery by the engineer, scientist or thinker or, more democratically, in the ‘tricks of the trade’ evolved by the workman on the shop floor.

One of the prime objectives of national and international authorities concerned with the acquisition of knowledge would therefore appear to be to establish the extent of such participation and its main
tendencies at present; from this to extrapolate situations likely to arise in the future; to determine whether or not a particular culture has a significant relationship with scientific or technical invention and, should temporary deficiencies or negative relationships be discovered, to infer the educational, social and political reforms needed to change this situation for the better.

This is by no means to advocate a narrowly technical or economic approach, as is all too often done by the enthusiastic neophyte or by suppliers with vested interests. On the contrary, the criterion of invention, by making it possible to assess the role of the human element—both generally and in its specific forms in different cultures—in one of the most dynamic processes of our age, also justifies its control and personalization, two possibilities among others of neutralizing its harmful implications both for society and the natural environment.

General approaches

So far we have emphasized the content of, and the languages used in, scientific and cultural transfer, because we saw this as the surest way of getting to the crux of the problem; but of course it can and must be tackled in other ways and from other angles.

Problems of Organization

The suggestions outlined above regarding content and delivery systems obviously entail some reference to the agents, the instruments, the materials and the circumstances involved in the transfer. Examination of these aspects, within their national and international context, and of their relationships with each other and with content and languages would seem to fall squarely within Unesco's sphere of competence. This aspect of the problem should be discussed at the meeting, taking advantage of this invaluable opportunity of hearing the views of each delegate. One might even go so far as to suggest that, instead of the socio-historical framework within which the foregoing considerations were set, the meeting might take the analogy of information science for the purpose of ordering the data in terms of bodies of information, circuits, shifters, codes, etc. The merging of these two approaches might offer considerable advantages.
Although all contemporary cultures tend towards that international status which alone can set off their characteristic features to the greatest advantage, would not the neutralization of works thus exchanged and incorporated into the common heritage of all be tantamount to depersonalizing and, to some extent, nullifying them? The value of the content of many works is indeed almost indissociable from the context or movement to which they belong, and both have their positive and negative aspects (cf. the works of Hegel, Wagner, Nietzsche, and, more recently, Heidegger): are they themselves rendered suspect by the negative aspects of the intellectual climate or circumstances in which they were produced?

This leads us to another subject for concern. Criticism of the dominant cultures has hitherto come from people who were deeply committed to the rehabilitation of the nation, the class or the individual. However effective and well justified this may be, it is impossible to deny its subjectivity (or should we use the word pseudo-objectivity, which is another way of saying dogmatism?) and if this is so, what is to provide the moderating counterweight? Who will guarantee objectivity in the selection and transposition of the various messages and in so doing their usefulness for the nations concerned and mankind in general?

Common values, whether in the field of science where they are called truth, or of aesthetics, have emerged, after many vicissitudes and by dint of much compromise, from a complex interplay of influences and from a competition in which recognition is given to obvious effectiveness or else is awarded by habit or by a consensus which may be more or less slow to emerge, more or less general and more or less influenced by chance. The theory of relativity, the fragments of Heraclitus and the work of Dostoevsky are as dissimilar as one could wish: they represent three different schemes of values. Without wishing to recognize them as such out of a smug conventionality, it would be neither pointless nor rash to consider them to be valid. The fact that they have had their ups and downs on a kind of world market has not placed them in an unduly privileged position nor have they been coloured by their initial connexion with a particular ethnic group, situation or movement: Jewish emigration from Nazi Germany in the first case, the emergence of the pre-Socratics in the second and Panslavism in the third. It is by no means certain that they would have achieved the same world-wide status if they had
originally been subjected to a process of selection by their country of origin. They were destined to achieve this by their own intrinsic force, irrespective and in spite of the political authorities in power at the time, rather than with their help. The proposed equation between culture and nation (understood as meaning governments and régimes) does not, therefore, inspire us with any confidence.

It must be understood, however, that we by no means exclude the possibility of using such messages to serve the needs of a particular nation and that we would by no means wish to dilute into a bland cosmopolitanism the international values which should all, in our opinion, be rooted in a particular specificity and authenticity if they are to have any chance of achieving true world significance. There are two possible ways out of this impasse. The first is to concert efforts, within the context of an international institution, to encourage the free flow of cultural messages throughout the world. This is obviously one of Unesco’s tasks. The second requires the active existence of an intelligentsia with virtues and short-comings and, above all, with an obvious function working in the same direction and similarly characterized by specificities (in the plural) and universality (in the singular). The freedom of exchange, transmission and discussion which the existence of such an intelligentsia entails seems to us bound to act as a both necessary and sufficient corrective to the no less necessary—but on its own insufficient—action by States to rationalize the transfer of knowledge and works.

The reader will have noted our insistence on direct contact between specificities—whether the specificity of the work, the language or the intellectual—as a counterpart to the flow of data and abstracts over a wide area of knowledge. We therefore propose, in brief, to break down the international transfer of knowledge and values into two operations, one involving the analytical decomposition of the object transferred, which enables it to be reconstructed and manipulated by the recipient, while the other, conversely, entails contact between subjects whose originality has been restored to them—two distinct operations, two styles and one might almost say two ethics.

THE ROLE
OF THE SOCIAL SCIENCES

The social sciences seem to us to have a very important part to play. The social sciences alone, taken in a broad sense (to include the so-called humanities), are able to provide suitable methods and
mediation between the efforts of States, international institutions and the intelligentsia. It will have been noted that in all we have said so far we have leaned very heavily on the social sciences, and in particular on cultural anthropology, the sociology of knowledge and social history, sectors whose material has been enriched by present world trends, more especially by decolonization, to the point of almost completely changing their outlook.

No study of the transfer of knowledge and values in this day and age can afford to lose sight of the overwhelming and encouraging fact of the passing of the empires and the arguments on the subject of a new world order. At this level of general consideration of future developments, or one might prefer to say at this utopian level, two of the major currents of public debate flow into each other: the one concerning the pollution of the biosphere by industrial growth and the one concerning the deleterious effect on cultural and scientific transfers of relationships based on force. Both are concerned with the ill effects of uncontrolled progress. Neither implies any renunciation of progress on the pretext that it has become oppressive and destructive—that would be 'throwing the baby out with the bath water'—but rather the correction of those effects of progress which stem from misuse, excess or injustice.

If they are to make a worthy contribution to study of the problem, and thereby to the outlining of solutions, the social sciences must obviously be decentralized without, however, abandoning their underlying aim of comparison and synthesis on a world scale.

But while this view, which is opposed to any European- or American-centred outlook or any other kind of 'centrism', appears to be fairly widely accepted, if not always put into practice, there is another objective which will require an ethically more delicate and scientifically more difficult approach since it involves, with the most obvious practical consequences, that dialectical relationship between the specific and the universal which has been thrust into the forefront of attention in our times.

This aspect is going to occupy a large place in the programme of research to which we now come.

Outline of a research programme

We believe that the foregoing considerations have a large number of theoretical or practical implications, but we shall only formulate
Towards a better transfer of knowledge and values

those which seem to us most useful for purposes of illustration or most likely to set new developments in motion.

One of the Unesco resolutions called for the critical examination of cultural transfers as they operate at present, either in respect of projects undertaken by Unesco or in respect of a particular country and its transmission or reception of such transfers. The range of factual information at our disposal does not allow us to do more than recommend this survey in our turn. It could obviously be derived from a country-by-country and problem-by-problem assessment and from a general inventory on which a justifiable formal structure could be built.

The framework for research outlined above might nevertheless be taken into account: (a) content to be transferred; (b) the problem of the vehicular languages; (c) questions of organization and procedure (morphologies of transfer); (d) respective roles of national and international bodies; (e) the role of the intelligentsia and the social sciences.

As it would be hard to envisage such a vast programme of cultural anthropology/sociology being completed within a reasonable time-limited, particularly if critical assessment is to be included, we suggest that its application should be limited to a specific field, which could be that of the phenomenology/sociology of the expert in the field.

It is in fact hard to see how the empirical accumulation of experience, any more than occasional ‘evaluations’ or a simple list of ‘successes’ and ‘failures’, could replace a systematic survey of this question. I had the honour of suggesting this to Unesco as early as 1963. If, rather than being entrusted to national or international bodies, this work were carried out by four or five individual research workers, each operating quite independently, on a clearly defined area or problem, it would supply useful material for subsequent action by the agency, which could compare the results of this survey with more comprehensive information giving more nearly exhaustive coverage.

CULTURAL SPECIFICITIES
AND TECHNOLOGICAL INVENTION

The latter term will be taken as meaning both scientific discovery and the industrial patent type of invention. Together with this, consideration will be given to technical knacks and know-how, etc. developed on the shop floor.

To what extent do the world’s various cultures contribute to invention? There may be a positive or negative relationship between invention and specificity. Corrections may need to be made or
processes need to be speeded up. Although the critical assessment of education, particularly technical education, has made headway of late, it does not overlap with the test we propose here, which has, to our knowledge, never been carried out before.

**THE EFFECTS OF THE EXPERIENCE OF THE THIRD WORLD ON THE KNOWLEDGE OF INDUSTRIAL SOCIETIES**

It is no doubt encouraging to point to the interaction between different cultures in the past, for example, to show how the East helped to hand down the Greek heritage to the West while at the same time enriching it; but it would be much more useful, and of much greater immediate interest, to show how these communications operate in our own times, sometimes in a less one-sided way than the continuing existence of relationships based on force might lead one to fear.

This does not simply mean—useful though it would be—adding new fields of study to those already well established, such as the revitalization of the plastic arts in the West by negro art (cf. Picasso), or of symphonic music by jazz or non-European folk music (cf. Bartók), not to mention marginal ideologies or practices which draw their inspiration from the East.

The aim will be, more significantly, to study the repercussions of recent developments in the Third World on the ex-colonial powers' knowledge of themselves and their own history, it being our opinion that the scars inflicted on the countries of Europe, among others, during the industrial period are by no means limited to economic alienation, pauperization, and other scourges, but also included depersonalization and cultural degeneration. A new light can be thrown on the history of a State, a province or a class by the Third World, this new and richer interpretation being indeed only a foretaste of the increasingly two-sided exchanges with the rest of the world which genuine decolonization should bring with it, to the great benefit of both theory and practice.

However, there is no indication that the necessary reciprocity of information which is essential for the creation of a world semantic field and can thereby redeem the transfer of knowledge both from its monstrously one-sided character and accordingly from its all too frequent failures, has as yet emerged from the realms of philosophical aspirations. The reasons for this should be determined in each individual case. Analysis of the factors holding back progress would lead to the search for means of remedying the situation.
TOWARDS A BETTER TRANSFER OF KNOWLEDGE AND VALUES

POTENTIAL AS AGAINST ACHIEVEMENT

Cultural values are presented for international exchange as achievements (masterpieces, outstanding performances), while scientific knowledge is generally transmitted in encyclopaedic form and in the form of established facts.

There are good grounds for believing that the cultural forces most likely to enable each of those parties involved to effect a breakthrough are to be found not so much in these obvious achievements as in the creative potential which has been neglected, ignored or repressed by actual history, for the good reason that such breakthroughs are more often based on the release of potential than on deduction from accomplished fact. Some of the dynamism of the Third World lies precisely in this celebration of potentiality.

ACCORDING TO WHAT CULTURAL FRAME OF REFERENCE CAN WE DEFINE OURSELVES?

Without wishing to call in question the nation-based division, sanctioned in the eyes of many societies, particularly those of the Third World, by the recent victory of the nations over imperialism, it must be admitted that political identity does not always coincide with cultural identity.

The latter often engulfs political frontiers, partaking of a wider area of civilization (cf. the Arab world, Latin America, etc.). On the other hand, cultural identity may itself comprise cultural sub-sets defined by their regional basis or level (e.g. native cultures, and peasant, worker, or marginal cultures). Finally these diverse elements or levels are themselves defined and will increasingly be defined in relation to an emergent world culture.

The investigation in such cases of the combination of these different allegiances and intensities would seem nowadays to be the necessary preliminary not only to any practical action, but also to any awareness or self knowledge.

As a corollary and corrective to this research one might raise a more directly theoretical problem, although one which offers many possibilities of practical application.

World history has until now been dominated by territorial questions which themselves correspond to the concept of societies seen as units and thus belong in the domain of macrosociology. The idea of 'socialism in one country' does not seem to us to contradict in this
respect another saying which might have been thought to have lost its relevance: *cujus regio ejus religio*. We shall forbear to scrutinize this concentration on the spatial—although psychoanalysis could tell us much about this—and we shall merely note that the trend in the world at present is for microsociology to give the expansion of ideas and forms at different levels of society or the mind increasing precedence over their division between different territories and societies seen as units.

Third World nationalism, which has succeeded in breaking up the colonial empires, now faces, within the framework thus created, powerful new international movements which are finding a response within groups and in behaviour patterns. This is understandable if one remembers that in the final reckoning the planet itself is becoming our only frame of reference.

If this remark is justified, there are many conclusions to be drawn from it which could be applied to the transfer of knowledge and values.
The national policies of the newly independent countries of the Third World were aimed mainly at the eradication of hunger, disease and ignorance. These problems figured prominently in the promises made to the people in the efforts to mobilize them into political action against the colonial régimes: in the post-independence blueprints for national reconstruction also they continued to occupy an important place. Most of these countries, in fact, had set their sights higher; in a decade or two they were hoping to attain the level of affluence which Western Europe, North America, and a few other countries had taken some two hundred years to achieve. However, they soon realized that their basic problem was poverty—a grim reality which could not be wished away and which did not yield easily to cookbook recipes offered by the growing tribe of development experts. Twenty-five years of experience of developmental change, in which there were many heartbreaks and frustrations but also a few conspicuous successes, involved several major shifts in priorities, alterations in strategies, and experiments with different sets of the development mix. Education continued to enjoy high priority in developmental planning and none of the alternative strategies underplayed its importance. It was looked upon as a major developmental goal in itself and was also expected to contribute meaningfully to the processes of national development and social transformation. That the expected payoff did not come about is a different story. The causes of the sterility of education and of its many dysfunctional aspects need to be examined in depth.
The colonial heritage

A major paradox of the newly independent countries is that long after
the colonial powers folded up and left their erstwhile territories,
colonial styles of thought and modes of action continue to persist,
though in a slightly modified form. The native political élite—mostly
Western-educated and Western-oriented—looked upon itself as the
inheritor of the Raj. The life styles of many of those who were
socialized into the political culture of austerity and sacrifice during
the struggle for national independence changed dramatically when
they occupied positions of power. There was a visible gap in their
professions and practice. Their people-oriented postures notwith­
standing, they indirectly and even directly contributed to the legit­
imation of the imperial pattern of goal setting and governing the
country. The thought-ways and work-ways of the senior admin­
istrators were cast in the colonial mould. They belonged to the thin
upper crust—the high-privilege stratum—of society. Without overtly
rejecting new ideas—especially in respect of social justice and
egalitarianism—they deftly managed the situation in such a way that
the colonial institutions continued to be nurtured (and even expanded)
and the new experimental institutions (gingerly set up as a concession
to the whims and new-fangled ideas of the political bosses) were
allowed to languish (and even die) for want of imaginative guidance
and financial support.

Education is a telling case in point. Powerful currents of new
thinking that should have inspired meaningful innovations and
invested a social purpose into the system, became only the sub­
jects of unending but sterile debate. Dated philosophies of
education—absorbed by the educational élite some decades back
in high prestige centres of learning abroad and often rejected by
their progenitors after they had outlived their utility—continued to
guide the educational system. It is instructive to have a close look
at some of the textbooks that discuss the philosophical and social
foundations of education. As much as two-thirds of their content
is devoted to expounding a liberal philosophy of education developed
in the West three to five decades back—approaches that were
valid for their time and social milieu—with little or very cursory
discussion of changes in the thinking and practice of the countries
in which these concepts originated. The remaining one-third is
often a curious amalgam. As a concession to nostalgia for the country’s
past, there is often a brief treatment of its ‘native’ philosophy of
Theories and goals of education

There are some passing references to new international thinking such as Unesco inspired ideas, and also the inevitable but invariably superficial discussion of Ivan Illich, Paulo Freire and others. What is almost always missing is a critical and penetrating discussion of the relevance of these theories to the contemporary reality of the Third World and to the specific needs of different countries within it. Thus, we find a situation in which there is an awareness of new thinking in the educational world but only on an intellectual plane. Decision-makers in the field of education, with their conditioned minds, are prisoners of the pattern founded on obsolete ideas that held good in a colonial setting but are unsuited to the new ethos.

The persistence of a part-feudal and part-colonial class structure partially accounts for the relative durability of the colonial system of education. The ruling class, as suggested earlier, has consciously or unconsciously adopted some of the life styles and interests of the old rulers. It has a vested interest in the perpetuation of élite institutions through which their wards could pass to qualify for positions of privilege in society. Even those who uphold the principle of equal educational opportunity for all and find existing disparities in income and wealth revolting, choose only the ‘best’ when it comes to choosing educational institutions for their sons and daughters or grandsons and granddaughters. Their choice is understandable and can perhaps even be justified. For particular family reasons some may be required to send their wards to residential schools; others may have a distaste for sub-standard institutions that offer little or no education. Even if we were to accept their alibis, one fails to understand why they did so little to evolve a common school system of quality, with residential facilities in some of the schools. The upwardly mobile groups—new aspirants to élite status, though perhaps on lower rungs—look upon the élite as their reference model and emulate its behaviour patterns. If they cannot have—or afford—the best, the next or the next best is acceptable to them. What they are after is a school which is also a status symbol—an institution that has some of the decorative frills of quality schools—and where, hopefully, the standard of instruction is a shade or two better than that available in the schools for the children of the common man. This explains the mushroom growth of institutions with high pretensions but low performance. The egalitarian urge of the common man to receive education and the emotional acceptance of this by the élite is all too easily satisfied by the setting up of inferior
institutions at different levels. Those who have had no access to education accept these with gratitude: to them any education is better than no education. They are too simple and unsophisticated to be able to distinguish between education and non-education.

The nexus of political power and money power, supported by those from the middle and lower middle classes who aspire to enter the charmed circle of the privileged, has contributed to the preservation of the colonial pattern of education and has so far blocked the transformation of the system envisioned by leaders like Nehru. Addressing the National Educational Conference in 1948, shortly after the attainment of independence by India, Nehru (quoted in J. P. Naik, 1975a, p. 3) said:

Whenever conferences were called in the past to form a plan for education in India, the tendency, as a rule, was to maintain the existing system with slight modifications. This must not happen now. Great changes have taken place in the country and the educational system must be in keeping with them. The entire basis of education must be revolutionized.

Nehru meant what he said: he was not given to empty rhetoric. But even he, with his enormous power and tremendous prestige, could not make a dent in the colonial educational system. The system did not respond to the new urges and aspirations that were being fanned by the winds of change. Nor did it visualize for itself a meaningful role in the tasks of national reconstruction. Despite efforts—mostly feeble and half-hearted—no revolution in the system of education was achieved. Forces determined to maintain the status quo proved more powerful. Nehru certainly was not the only leader of the Third World to give such a call; similar sentiments were echoed by others also. But they also failed to produce the desired results. It is thus that the colonial legacy is still with us in the Third World. Deeply entrenched interests have been able to defeat almost every single progressive and people-oriented innovation and effort at fundamental structural modification.

Theories and goals: the Indian case

Education does not operate in a vacuum. It draws from the cultural heritage of the society and also from the outside influences to which the society is exposed. While it is influenced by traditions rooted in the society’s past, it has continually to innovate and to adapt to
the contemporary milieu. K. G. Saiyidain, an eminent Indian educationist whose thinking was influenced by Gandhi and Zakir Husain, has rightly observed (Saiyidain, 1965, p. 207):

... good education could only be given in a good society and the impact of the school on the child is powerfully conditioned by the forces operating in the wider life of the nation and the world outside the school walls.

A system of education, thus, assumes a concept of man and a concept of society and has explicit or implicit notions of how the two interact with and depend on each other. Education is inspired by ideological postulates that derive from society. But its function does not end in transmitting the cultural heritage, and in promoting the ideals and values held by the society. Given a purposive orientation education can be a powerful instrument for reshaping society (Zakir Husain, quoted by Syed Mir Quasim, in Radhey Mohan, 1974):

Our future as a people will depend in no small measure on the ideas and principles which inspire education and on how its evolution helps in the growth and development of the democratic way of life, on how it provides for the full growth of development of individuality, and on how it harnesses harmoniously-developed individuality to social ends, on how it probes into the secrets of the self, and how it masters the mysteries of selfishness.

To quote Zakir Husain once again: ‘... school does not exist in a vacuum. It is an integral and sensitive part of society. The school looks for examples in the life of the society around and takes after it’ (Zakir Husain, 1952). No educational system, therefore, can operate without being influenced by the norms and values of the society. At the same time it has to make certain critical choices and to pick up certain moral options and to work towards evolving an approach and a content aimed at creating ‘good man’ and ‘good society’. The concepts and principles underlying a system of education may not always be articulated in clear and precise terms but they are there nevertheless. No one concerned with the quality of education and its impact on the course of the evolution and development of society can afford to ignore them. Many of the goal transfers, dysfunctions, and disincentives that plague educational systems in the Third World are products of contrary pulls and pressures exerted by differential values and principles in different strata and segments of society. Often there is an absence of fit between the explicit and the implicit and the overt and the covert in respect of these basic assumptions.
In pre-independence India three different strands of thought were visible.

The first had nativistic and revivalistic overtones. This school of thought tended to reject everything that was foreign or not enshrined in the ancient heritage of the group. Thus Hindu revivalists set up a number of schools and institutions of higher learning modelled on the *gurukula*\(^1\) system of ancient India. These centres tended to insulate the students and teachers from the forces operating in the wider society; emphasized an austere life calculated to ensure the purity of the body, the mind, and the soul; and concentrated on the teaching of sacred texts comprising mostly Vedic and Upanishadic literature, philosophy and theology. Initially these institutions attracted students in fair numbers, but within a decade they declined in popularity. Many of them closed down; sheer pressure of survival forced others to admit modern learning within their curricula. A few such institutions survive in post-independence India. To gain respectability they claimed and obtained university status. Today they continue to function as vestigial remains of the past, and are permitted to have a lingering existence only as a concession to the upholders of tradition. Other such institutions have been turned into centres of Vedic, philosophical, or theological learning with a limited focus. The powerful revivalist lobby has inspired the setting up of new universities and institutes for classical learning. Those performing the teaching function have had to admit new academic disciplines in their instructional programmes. To preserve their separate identity and ensure transmission of their cultural heritage the Moslems also set up parallel institutions of the same type. Their fate appears to be no different from that of Hindu institutions. It may be noted in passing that British Orientalists and Indologists had inspired setting up a few schools and colleges of the traditional type separately for the Hindus and the Moslems. Institutions were also set up for the three important indigenous systems of medicine prevailing in the country.

The second major experiment was aimed at indigenization of education. Institutions of this character did not consciously set out

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1. The *gurukula* system required the student to stay away from his home at the house of a teacher. Direct, personal, and continuous contact with a teacher naturally produced a great effect on the scholar during the formative period of his childhood and adolescence.

The Arya Samaj leader, Swami Shraddhananda, tried to revive the system by establishing a *gurukula* in 1902 at Kangri, a village opposite Hardwar on the banks of the Ganges.

The keynotes of the *gurukula* life and routine are austerity, hardihood, and endurance.
Theories and goals of education

to reject modern learning of foreign origin. Their principal objective was to make education more relevant to Indian conditions and to impart to it a nationalistic flavour. In many ways they were different from official universities which were modelled on the pattern of British universities. Their structure was simple and there was considerable flexibility in their curricula and teaching methods. Important among such institutions that survive to this day are the Kashi Vidyapith, the Gujarat Vidyapith, and the Jamia Millia Islamia—the last one being a Moslem centre of learning with a secular character. In a sense these institutions carried the spirit of a well-known statement by Gandhi: 'I do not want my house to be walled in on all sides and my windows to be stuffed.' Gandhi had said, 'I want the cultures of all the lands to be blown about my house as freely as possible. But I refuse to be blown off my feet by any. I refuse to live in other people's houses as an interloper, a beggar or a slave' (Gandhi, 1966a, p. 15). In free India the character of these institutions has been diluted. In terms of prestige and the quality of their academic offerings they do not measure up to the older official universities. With some exceptions, in their student body as well as faculty they have had to admit the rejects of the normal university system. Token tributes were paid to their pioneering work but no financial or even moral support was extended to them to strengthen their individuality and to reinforce the spirit which inspired their creation. The teachers as well as students were demoralized. They also clamoured for university status which was conceded to them. They continue to exist today as pale imitations of the stronger universities which were themselves built on foreign models.

The third stream was that of schools, colleges and universities set up on the colonial model—London and Oxbridge. Their purpose is expressed in Macaulay's well-known minute. He wrote in 1835, 'We must at present do our best to form a class who may be interpreters between us and the millions whom we govern—a class of persons, Indian in blood and colour, but English in tastes, in opinions, in morals and in intellect' (quoted in Muhammad Shamsul Huq, 1965, p. 33). These institutions were expected to produce a Western style educated class which would help the rulers govern the country and would also hopefully take over the responsibility, in time, to give some education to the rest of the community. This expectation was amply fulfilled though there was also an unintended consequence. While they produced an efficient civil service to run the administration they also produced nationalists who seriously upset the
serene rhythm of British rule and ultimately won freedom for the country. Some of these institutions had a special character, for example Aligarh Muslim University combined modern learning with Islamic learning and Banaras Hindu University emphasized Hindu knowledge in addition to the growing disciplines of foreign origin.

Free India has experienced a phenomenal growth in education, especially at the secondary and university levels. To meet the surging demand for education, which has increased with every passing year, more and more institutions have been set up. But this quantitative growth has resulted in a decline of quality. The pattern, by and large, remains colonial. With the exception of Jawaharlal Nehru University, the Indian Institutes of Technology, and some Agricultural Universities, no new general type university embodies any new concept in educational thinking, nor does it represent dynamic initiatives to invest new social meaning or purpose into the system. Even some of these institutions belied the expectations. A great opportunity of reshaping the educational structure of the country through new institutions, with a different character and spirit more in tune with the changing times and changing needs, has thus been lost. Set up in a hurry to meet compelling pressures, these institutions rather than become instruments of problem-solving, have become centres that generate new problems whose dimensions and costs in terms of the future cannot be estimated.

It is not as though the leaders of Indian educational thought were unaware of the deficiencies and inadequacies of the system. Notions such as education for life, relating education to the social environment, building into the educational pattern work-experience and training of skills, the desirability of evolving a system that does not alienate the educated from the people, the necessity of organically linking the students and teachers to the community through meaningful programmes of social service, and so forth can all be found in the writings of Gandhi, Zakir Husain, K. G. Saiyidain and J. P. Naik. Viable alternatives were also offered. But the voices of these leaders were not heard with the respect they deserved and the experiments generated by their fresh thinking never got a fair trial. In consequence, but for quantitative growth, we are where we were on the eve of independence. Schemes such as those of Basic Education—relating education to the immediate environment and with a high content of work experience; Rural Higher Education Institutes—institutions specially created to relate education to living
rural contexts; introduction of work experience and social service in all schools and colleges; provision of intensive citizenship training programmes; creation of alternative channels of education; and so forth were allowed to languish and die of neglect. Where they continue to exist, they have a minimal and marginal role.

For the time being the colonial pattern has triumphed, but it is unable to cope with the problems it is generating. Education has become an acephalous monster, an immobile colossus. It is cracking up because it is unable to take a measure of the problems that are growing in their complexity and of the crises that are increasing in their intensity.

**Crises of education in the Third World**

It is evident that education in the Third World is undergoing a deep crisis. It is unable to respond adequately to the far-reaching attitudinal and value changes that are sweeping these societies. It has neither been able to fulfil the new urges and aspirations of the common man nor has it been able to produce trained capacity that can handle pressing national problems with expertise and commitment. Education seems to have become a burdensome charge on the national revenues without delivering, even partially, the results expected of it. It is a field where the input is a mountain but the output is a mouse. Quite evidently a major overhaul of the entire system and introduction of radical new strategies is indicated, but the governments concerned do not appear to have the political will to take the bull by its horns.

Every newly independent country is keen on expansion of education. But the first question that should be asked in this connexion appears never to be asked. That question relates to the objectives of education. Julius K. Nyerere has rightly commented (Nyerere, 1968):

> ... we have never really stopped to consider why we want education—what its purpose is ... although over time there have been various criticisms about the details of curricula provided in schools, we have not until now questioned the basic system of education which we took over at the time of independence.

It is essential to redefine and broaden the concept of education. The sooner the people learn to distinguish between diploma/degree and education and between school and learning the better will it be for education.
It is curious that while there is an increasing demand for education, there is also mounting evidence of erosion of confidence in the system as such. Books like the World Educational Crisis: A Systems Analysis (Coombs, 1968), School is Dead (Reimer, 1971), Pedagogy of the Oppressed (Freire, 1972a), and Deschooling Society (Illich, 1973) are read with attention and awe. This is serious social criticism. It questions the very foundations of the social order and seeks to examine the crisis not only in education in particular societies but in the entire human civilization. On a lower level the chorus of criticism is joined in by students, teachers, parents and educational policy-makers. Each of these groups realizes that much of what goes by the name of education is not real education. Diplomas and degrees are considered worthless, yet the craze for them does not abate. Devious means are adopted to obtain educational qualifications, learning being the least important of them. Education is tending to lose all meaning and purpose because of the general loss of confidence in it.

Educationists themselves are partly to be blamed for this. They over-sold education and made far too many untenable claims for it. Over the years the school has taken up many new tasks, without properly estimating and fortifying its capacity to discharge them. It is trying to act as the guardian, mentor, and instructor of those under its charge. It has taken upon itself the responsibilities of the family, the locality, the community, and the religious organizations. Naturally its performance is poor and inefficient. Even in respect of social change education appears to believe in its capacity to do what it obviously cannot. By itself education cannot bring about social change. It is a necessary but not a sufficient condition for change. The potential of education as an instrument of change, however, has not been exploited in many Third World countries.

Education continues to be elitist in character and is oriented to the maintenance of the status quo. Few developing countries have been able to attend to the question of equal spread of education among the different sections and strata of the society. The present system, according to J. P. Naik, is characterized by single-point entry, sequential promotion, full-time instruction, and exclusive utilization of professional teachers (Naik, 1975b, p. 46–53). This makes education prohibitively expensive, increases the rate of drop-outs, and bars the doors of learning to those who either do not enter the system at the right age or for one reason or the other are unable to continue their studies. The deprived and the dispossessed
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in the society are the worst sufferers in the process. In any case rather than contribute to social mobility and equality, it results in the perpetuation of social differences and in class formation. At best it helps ambition to climb privilege. Contrary to the claims that education is a mobility multiplier and social equalizer, perceptive critics have observed that it legitimizes inequality. The disadvantaged remain and become more disadvantaged.

This brings us to the question of the social relevance of the formal system of education and also of the social commitment of its products. It is now well-known that the colonial type of educational system divorces participants from the society which it is supposed to be preparing them for. As Gandhi succinctly put it, ‘The higher he [the student] goes, the farther he is removed from his home, so that at the end of his education he becomes estranged from his surroundings’ (Gandhi, 1966b, p. 38). Similar sentiments have been expressed by Julius K. Nyerere. He has said: ‘Our education must counteract the temptation to intellectual arrogance; for this leads to the well-educated despising those whose abilities are non-academic or who have no special abilities but are just human beings. Such arrogance has no place in a society of equal citizens’ (Nyerere, 1968). Almost everywhere in the Third World the educated are alienated from manual labour. As Gandhi (1966b, p. 38) observed:

Whatever may be true of other countries, in India at any rate where more than eighty per cent of the population is agricultural and another ten per cent industrial, it is a crime to make education merely literary and to unfit boys and girls for manual work in after-life.

And what kind of values are promoted by the so-called modern education? They are the values of an urban, competitive, consumer society. Notwithstanding the radical postures adopted by some of the educated, they find it difficult to relate themselves to their less unfortunate fellow-man, they have little of the community spirit found in traditional society, and not many of them have the service and sacrifice ethic.

Consider also the prohibitive cost of education. Because of lopsided priorities elementary education gets far less than secondary and higher education. Their training being unrelated to manpower needs and not having any consideration for imparting specific skills or sharpening problem-solving capabilities, the products of secondary and higher education swell the rosters of the unemployed for general category jobs. Most of them are unemployable for tasks
that need specialized skills. The information packages that are doled out to them turn their minds into receptacles of knowledge rather than its creators.

No effective methods have been found to fight the obsolescence of knowledge. This adds to the dysfunctional character of education.

Finally a word about the equality of educational opportunity and the extension of the principle of social justice to the field of knowledge. It is true that secondary and higher education cannot be viewed as a right, they are privileges to be earned. But how do we select those who should receive secondary and higher education? The tests commonly used so far depend almost exclusively on verbal skills and are weighted in favour of children from the upper crust of society. Few educationists in developing countries appreciate the fact that educational achievement is more a matter of social environment than of genetic ability. Some Third World countries reserve places for the children of the under-privileged in the educational institutions and also give them some financial support. Having done this they feel that everything that had to be done has been done and that the ends of social justice have been met. Most of those so favoured are bewildered by the new environment in which they are placed. No special effort is made to usher them gently into the academic ethos of the institutions to which they are admitted. The institutions fail to provide for preparatory, supplementary and remedial education for them. Unfortunately the necessary peer group support is not also forthcoming. It should not be surprising therefore that some of them get distracted from studies and the performance of others is indifferent to poor.

This is indeed a gloomy picture, but almost everywhere in the Third World education is encountering serious difficulties. Most of them emanate from the contradictions built into the system itself, others arise from \textit{ad hoc} political decisions born out of arrogance rather than wisdom.

\textbf{Education for the future}

Mankind is moving towards an unknown future. This future, it appears, will have many surprises and shocks. The crises that the contemporary society is encountering are likely to increase in their frequency and intensity. With rising population and dwindling resources human society will have to face new tensions and frus-
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The business of living will become more and more grim with every passing year. The world order will be put to a severe strain. To meet the challenges of this future we will need knowledge and skills of the highest order. Highly developed problem-solving capability will be needed not only in the fields of science and technology but also in the fields of human relations and management. It is a pity that the educational system is cracking up at a time when it should be responding creatively to the challenges of the contemporary human predicament. It is no time to throw up our hands in despair and write off the situation as beyond repair. The formal educational system must be renovated and regenerated, and new channels of non-formal education should be found. This cannot be done only by tinkering with the curricula and by reforming the methods of instruction. Serious reflection on the philosophical and social foundations of education is needed. This has to be followed by resolute and purposive action to harmonize the philosophy and goals of education to the new urges and needs of contemporary society.

First, we need to set our priorities right. If we accept the philosophy of 'education for life' and 'education for self-reliance', the emphasis must shift from secondary and higher education to elementary and adult education. Our programmes have been weighted in favour of literacy which has often been considered synonymous with education. This is wrong. As Gandhi said: 'it is not literacy or learning which makes a man, but education for real life' (Gandhi quoted in Prabhu and Rao, 1967, p. 388). What we need most is intensive citizenship education. Higher education is important, but it can achieve little if its benefits are confined only to a few and the large masses remain steeped in ignorance and superstition. A programme of this type will need deep social commitment and all those who have had the benefits of education will have to lend a helping hand in making it a success. There is a great deal of talk about involving the youth in the tasks of national reconstruction. An imaginatively drawn programme of citizenship education will perhaps be the most fruitful area to draw the youth power.

It is now acknowledged that education is not just teaching of specified subjects within a set framework. The content of education therefore needs serious consideration. Methods of instruction are equally important. On this theme Nyerere (1968) has some sane advice to offer in his thought-provoking statement 'Education for Self-reliance'. He makes a plea to relate education to the locality.
and the production processes and emphasizes the necessity of
developing a service ethic. The highest good, according to him,
is the service of others. Another voice from Africa supports this
view. Kajubi (1970) would like the school to be related to community
needs and society. Continuing education of parents is considered
essential by him for the meaningful education of boys and girls.
He also pleads for developing non-school learning. The desirability
of out-of-school learning through group activity and interest groups,
clubs, skill centres, and free schools has been emphasized by others.
While the school system must be reformed and made less expensive,
it is essential to search for effective alternatives which would extend
educational activities on a much wider scale. These alternatives
should take cognizance of the fact that the educational process
does not terminate with the attainment of a diploma or degree.
Education today is viewed as a lifelong process. In an era of unpre­
cedented explosion of knowledge its continuous renewal and updating
is a must. Channels for this will have to be found.

The future of mankind lies in a sane and just world order. National
greed and selfishness will lead to violence and destruction. In
gearing education to the needs of the future a strong component
of international goodwill and understanding will have to be built
into it.

A fresh look into the philosophy of education is thus indicated.
By itself education will neither bring about a revolution nor will it
transform the moral order. Its roles will essentially be preparatory
and supportive but even these are important to enable us to move
towards a preferred future.

It is time we began to think seriously about such a future and
prepare a new design for living. The society of the future will
obviously have to be built on a service and sacrifice ethic. It will
underplay consumption and emphasize social services. We shall
have to move from conspicuous consumerism to conspicuous austerity.
In re-thinking development we shall have to think of the quality of
life. Education will have to be geared to these new social goals.
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Bibliography


Beyond the conception of school as a factory

Jean-Marie Hamelin

In his book *La Révolte Contre le Père*, Gérard Mendel declares that ‘to every level affected by scientific and technical development there corresponds a technological ideal which tends to make institutions function in accordance with its own technical model. Thus there is today, inevitably one might say, a tendency to regard the school as a machine that ought to “run smoothly” regardless of the individuals who are part of it, teachers and taught alike, and who are consequently perceived as components, mere cogs in the machine’.

**School as factory**

Industrial civilization demands, and by means of the protestant work ethic and the education system, creates in its own image a modular, fractionated, alienated man, living outside himself under a borrowed identity, an outsider. The morality of work requires and moulds a type of man mass-produced by the education system. In each case the fractionated, functional, passive organization man is the ideal paradigm.

In the industrialized countries of the West, school is made in the image of this type of society and its industrial model and serves their ends. Its—often unconscious—ideology and its educational régime help to fashion the normal man of the mechanical world.

This type of society and its technological ideal are reproduced and perpetuated by schools which produce worker-consumers and aim only to develop the knowledge and skills that respond to the specific needs of industry.

I quite agree that schools make a contribution to the economy after their own fashion. The real trouble is that this is its only role and above all that the school tacitly accepts an ideology of
work and a conception of man that are being radically challenged throughout the world. The education systems of the rich countries operate at very high cost from both the economic and social points of view: almost a third of the budget of Quebec, for instance, is devoted to education.

No educational system has taken up the challenge of training for the labour market, yet things go on as before under their own momentum with increasingly meagre results. How could a challenge of this kind be met when knowledge, particularly in the experimental field, today becomes obsolete so quickly?

In the United States, since the fifties, Hutchins in *The Learning Society* and Whyte in *The Organization Man* have been proclaiming the failure of the system. Whyte writes: ‘A large part of the U.S. educational system, is preparing people badly for the organization society—precisely because it is trying, so very hard to do it. . . . He [the student] didn’t learn what business can’t teach him, because he was too busy learning what business could teach him, and teach him better.’

This observation remains unheeded even today. The labour market continues to be badly served and human development has no place in schools because schools are engaged in turning out consumer/producers. This is brought out in the report of a commission of inquiry into the teaching of the arts undertaken for the Government of Quebec in 1968. The report, now consigned to oblivion, says: ‘The aims of the advanced industrial society and its ideology are an integral part of its production system. In such a society the various educational agents have up to now aimed to produce a normal man, that is, a man adapted to this type of society: a man who produces and consumes as prescribed by society. The great leap that tomorrow’s society has to take is that from normal to normative man. The externally-controlled man of our advanced industrial societies must give place to the self-reliant man capable of basing his personality and conduct on values that he can create and make his own.’

If any further argument were necessary, it should be recalled that, more and more in an automated society, wage levels increase with the level of education reached without being related to qualifications obtained at school. In the industrialized countries, a stage has been reached where university graduates are being hit by underemployment.

Characteristic of the ‘factory’ school, where the accent is on
'training' rather than on human considerations, is a misuse of technology, of sophisticated methods of instruction and expensive hardware in expensive buildings. As with the industrial model, this tendency is confirmed and encouraged by scientific research, here known as systems theory or the systems approach. It is the logical outcome of the mechanical world and of a scientific humanism which is taken too much for granted. Robert Lattès in the preface to *Stratégie pour Demain* gives a very apposite warning: 'Thus, every mercantile, economic, quantitative model of reality works to the detriment of all non-mercantile, social and qualitative aspects of that same reality.' Moreover, the Unesco report *Learning to Be* also mentioned the inadequacy of this approach, where the human factor is touched upon only in its secondary, measurable aspects, observing that another point of view was needed, one which went beyond the purely systems conception.

The malaise of education, not to say its bankruptcy or death, is due to the fact that it mirrors the industrial model, from which the human element is missing.

**Miseducation and the school as culture**

'Compulsory miseducation' as represented by the American education system was denounced by Paul Goodman in the United States of America in 1954. An educational revolution is urgently needed. We have the means of achieving it.

Under the onslaught of an irreversible movement backed by a powerful technology the world is becoming one and interdependent. It should, however, be stressed that this phenomenon of globalization coincides with an increasingly noticeable tendency towards differentiation. At the level of everyday experience, national identities and ethnic characteristics are assuming great importance. Global options are running up against demands for local, regional and continental responsibilities and autonomy. The old dilemma of man caught between the individual and the collective is again facing him everywhere.

A new international economic order is being born and the industrial countries are increasingly acknowledging the need for it. The economy should serve not only man, but all mankind. The book title *Utopia or Death* of 1973 echoes the *Suicide or Survival* of 1958. Preoccupied with the stock market index, market trends and gross national product, economists, financiers, and all too often politicians
as well, are unconcerned about the human factor although it alone can light the way for the profound changes heralded at the beginning of the new era.

The new circumstances make the established institutions obsolete and they need to be reinvented. School being virtually a natural institution in a developed society, it too has to be rebuilt.

In the industrialized countries of the West the education system is a recent invention. A system of education which is compulsory, universal, free and prolonged is a response to the needs of an urban, industrial society which is now on its way out as a result of advances in technology and the emergence of a new awareness. Previously defensible up to a certain point, the system is now both outmoded and dangerous. The school now needs to rediscover a universal tradition that makes room for the imagination, for the gratuitous, for culture and for human considerations.

No matter what system is adopted with a view to economic growth, this ‘culture’ school represents the path ahead for industrialized and developing countries alike.

Such a school favours human development in all its aspects through the mediation of the intellectual act. The school is an especially favourable place for adults and young people to meet and share the cumulative tradition of the past which makes man what he is. Human knowledge and organized learning help the educationist to achieve this end. Techniques are only a means; educational activity centres upon the spoken word and upon unified knowledge set in its proper context.

In a school of this nature, education is the influence exercised by one person upon another, usually by an adult upon a young person, in order to stimulate the younger generations and make them eager to catch up with and in some cases overtake the human race. The full status of a human being is thus acquired gradually over a long period and by a tireless effort to integrate the physical, emotional and spiritual resources, the conscious and the unconscious, which, combined, united and orientated in relation to external knowledge, will lead to the full development of the individual.

It is a matter of great urgency that the ‘education system’ should no longer be subjected to the inhuman, or at best a-human, work ethic. Industrial work does not involve the whole man. It would be wrong to abandon the adolescent or a young adult too early in this complex and frequently hostile world. Young people need a place to reflect, to get things into perspective, to acquire human know-
ledge; this is what an educational institution should be, a place which concerns itself with the complete development of the child.

The man of culture

Today's mechanical world and technological man have created a need for, and defined a conception of man in the modern context which may suitably be called scientific humanism, or in a similar sense, technical humanism. I concede that, up to a point, science and technology contribute to the development of a form of humanism. They are essential parts of humanism, but the whole of humanism is greater than those parts. Science is biased towards exact truths and objectivity, while culture is biased towards man, an approximate, imprecise, contradictory, partial being.

Scientific humanism tends to confine us within gestures, work, objects, to the detriment of words, art, communication, individuals, i.e. the act of doing to the detriment of art, the external to that of the internal, the useful to that of the gratuitous, the functional to that of the cultural. Man does not live by science but science lives on man and kills him. Man lives by hope, knowledge, self-awareness and the spoken word.

To be cultivated means choosing something and delving deeply into it; it means having learned to judge, to experience, to appreciate and to share one's joy with others. Culture embraces the whole of man; it embraces all men. The man of culture is an heir to a tradition who, in the unity and solidarity of local particularisms, accepts the challenge of the human condition.

The man of culture is conscious of sharing the fate of past, present and future generations for he knows that, left to our own resources, we cannot work out our own salvation. Now that prosperity can no longer be divided because it is world-wide, mankind can transcend technology and material things and can unite.

Man's ultimate and sole challenge is himself. The effort to rise above this challenge is the mark of the man of culture. Every civilization, as Fromm has said, fashions an artificial world superimposed on the natural universe. If man is to fulfil himself, however, he must keep in touch with the fundamental facts of his existence, he must be able to know the exhilaration of love and of fellowship, as well as the tragic loneliness and the fragmentary nature of his existence.

I, for my part, cherish great hopes because the end of the rich heralds the rise of youth and the triumph of creative life.
I. M. Omari

Cross-cultural studies on the abilities of children

In developed countries of the West there is a long-standing tradition in psychology tending to dramatize and sentimentalize individual differences which carries over into research on children. This includes racial, sex, class, and cultural differences. In these bourgeois, stratified, capitalist societies human differences are inferred on the basis of performance in intelligence and other performance tests not directly relatable to school learning. Intelligence—whatever it means—is what is highly valued, and its possession ensures greater educational and occupational opportunities for the individual. But what is intelligence? The best scientifically defensible and viable definition is the circumlocution: ‘Intelligence is what intelligence tests measure.’ It is assumed that these man-made tests measure a human trait called intelligence which is relatively independent of formal instruction and objective historical antecedents. This assumption has led to dangerous and unsupportable conclusions about the nature of the distribution of this human quality across human populations. For instance there are wild claims that manifestations of individual and group differences on I.Q. tests are reflections of inherited ability differentials. This has led to related beliefs that intelligence determines future performance in schools and places of work and that the upper-class children and whites inherit more of this human attribute than other populations (Jensen, 1969). This type of talking has tremendous implications for schooling and international peace. The present paper attempts to show how observed human differences are a result of tasks used by drawing upon experiences of researches in Africa.
Do Africans conceptualize reality differently?

While the intelligence-testing industry is not a widespread phenomenon in Africa, there has been some research using intelligence tests; comparisons of human groups seem to be slowly creeping in. Thus some such studies have led some researchers to conclude that Africans actually cognize, conceptualize and organize reality differently. The extreme form of this thinking is given by Carothers (1971, p. 103), who used spatial ability tests with African children, and said this:

It seems to me that in our Western European World the reality is essentially one of spatial and mechanical relations. The most striking thing one sees in Africans who have lived in the country and are not familiar with European background is their utter incapacity of dealing with spatial relations. . . . Reality for them is not a world of spatial relations but a world of spirits.

Such statements are very familiar in cross-cultural literature in educational psychology where people from two cultures are compared on the basis of their performance on common tasks. Biesheuvel (1969) repeated Cryns’ (1962) contention that ‘the Africans, both literate and illiterate, experienced difficulties in interpreting pictorial materials and that they failed to transcend the synthetic form of a perceptual gestalt, to form concepts, and to see parts of the whole’. These views are sometimes indirectly and partially perpetuated by some international consultants such as Bryan (1972, p. 35) where the following question is raised: ‘Is the ability to recognize (instructional) drawings and diagrams of familiar objects a function of cultural background, or are variations in abilities of individuals purely random and independent of their social setting?’ Here a question on individual and group differences is raised but not resolved. Consequently such a question perpetuates a characteristically bourgeois view of human populations and their abilities. Indeed some of these independent writers such as Carothers and Cryns are putting forward views characteristic of a literature heavily loaded with psychological defences of colonialism, racialism and their subsequent negativity with respect to human dignity and equality. The whole area of cross-cultural studies seems to need an overhaul because poisonous literature has infiltrated it, whereby African children are portrayed negatively as unintelligent, poor in the hard sciences, unlike children from industrial cultures. They are also portrayed as passive slow learners. This type of portrayal subliminally or directly induces feelings of inferiority and submissiveness which are the very evils that African
countries are attempting to fight. For instance Nyerere (1974, p. 47) says:

The first essential of a liberated man is an awareness of two things: his own manhood, and the power of man to use circumstances rather than to be used by them. He must have overcome any ingrained feelings of inferiority, or superiority, and therefore be able to cooperate with other men on the basis of equality for their common purpose.

It would seem that the vital task of teachers is to restore self-confidence in those they teach. This can be achieved in part by being more critical about current literature on the nature of man and distribution of human abilities across human population. Students and teachers reading this type of poisonous literature get discouraged in their attempts to improve their performances for they may ask: ‘How can I help somebody who is born unintelligent?’, ‘How can I be equal to those born more intelligent?’ Teachers and students in Africa need to be helped to resolve these questions by use of more scientific evidence to the contrary of current bourgeois views of man, his potential, and distribution of human abilities.

It is becoming very clear that the problem of individual differences, especially in I.Q. tests, lies in the tasks used to test people rather than in inherited differences among children and other human groups; consequently the focus should be on the manipulation of task variables and this is an area that educators can concentrate on.

For instance in African countries new curriculum materials should be subjected to more systematic experimental studies to ensure that they are appropriate for African children. Very often African countries import curriculum and test material from industrial cultures and unfortunately as Coombs (1969, p. 76) observed: ‘despite their [the materials] miscarriage in their countries of origin they are nonetheless exported and imported at great expense into less developed countries’. Yet educators complain about low abilities of children and falling standards of education in their respective countries, and very often the victims blamed are the teachers and the pupils. Psychological studies on curriculum related materials and ability tests suggest that African children and their teachers are not the sole victims but the imported materials carry values and skills foreign to the African children. But when practising teachers and those in training are subjected to painful reading of racialist or class-biased materials that portrays lower-class children as ‘unintelligent’, they believe it. Sometimes educators find it difficult to convince them
that intelligence is not inherited like money and land, and that the problem lies with human practice. Below are some examples which illustrate the importance of testing or teaching materials or procedures.

**Piagetian studies**

One dimension that has been of interest and debate is that of concrete-abstract reasoning. Price Williams (1962) used Nigerian Tiv children of grades 1 through 4 to study their concrete and abstract behaviours on sorting and classification tasks. Abstract reasoning tasks included sorting and classifying arrays of familiar objects into the poles of a continuum of tame-wild and edible-inedible objects. Concrete reasoning was tested using tasks involving classification of elements into those with legs, those with leaves, etc. His results showed that these rural Tiv schoolchildren manifested a normal developmental trend from concrete to abstract reasoning just like children from industrial cultures. Thus allegations that African children cannot form abstract concepts may be unfounded except when inappropriate tasks are used. Here familiar materials were used. This effect of using familiar materials got support in another independent study (Price Williams, 1969) where by using fine earth in conservation of continuous quantity the children exhibited accelerated development as compared to when foreign materials were used. Llyod (1971) has also found evidence supporting Price Williams’ findings by using alien and familiar materials to test conservation of discontinuous quantity. Thus use of familiar materials in both teaching and testing seem to be very important and lead to more reasonable conclusions about abilities of children across cultures.

Greenfield (1966) studied the use of concrete and abstract reasoning among the Wolof children. The task used was quantity conservation where children are tested as to whether they realize equality of quantity (e.g. water) irrespective of change in size, shape, and numerosity of containers. The children were asked to justify their responses by saying why they gave them. Their explanations were categorized into those implying perceptual reasoning, direct action reasoning, and transformational reasoning. The first two categories supposedly reflect concrete reasoning while the third reflects abstract reasoning. The results showed that young Wolof used perceptual reasons just like Western children during preconservation period. Furthermore ‘in most cases the Wolof children used a transformational
or direct action reason as the basis for justifying conservation just as American children do' (p. 224). She also observed that schooling and familiarization of the children to the task demands increased their performance significantly. Thus it does not seem that the African children were organizing reality differently. Types of tasks used and training seem to have tremendous impact on their behaviours.

In traditional conservation tasks children are asked to justify their responses using such questions as, 'Why do you say (or think) that thus and such is true?' More specifically, in conservation of quantity one is asked, 'Why do you say that this glass has more water than this?' Studies by Bruner (1973, p. 26) suggest that this type of question among Wolof children, especially the unschooled ones, 'met with uncomprehending silence'. When the question is changed to, 'Why is thus and such true?' it gets answered easily. To Bruner this differential responding to personified and unpersonified questions reflects lack of Western self-consciousness. In his own words, 'They do not distinguish between their own thought or statement about something and the thing itself'. This seems to be empty intellectual arrogance for there is no empirical basis for this conclusion. Furthermore, lack of manifestation of a behaviour does not amount to its non-existence. It depends on the mode of solicitation and objective antecedents of the subjects. It is more plausible that these children are not used to these why questions. Very often parents at home and teachers in the classrooms do not ask, 'Why do you' questions, and even when they do, an error is implied. Children therefore fear such questions which to them are objectively associated with punishment for the error. The children would rather keep quiet than make another mistake. The behaviours of these children must be explained in terms of their social background. As Luria reports in Cole et al. (1971, p. 188), 'a subject may not respond to the logical relations contained in a verbal problem . . . may respond to conventional situations in which their past experience dictated the answer'. However, Bruner's experiments suggest one thing to the teachers. That is, when they find that children are not participating in classroom dialogue they should change their mode of questioning rather than labelling the pupils as passive and slow. It was also important in Bruner's study that the behaviour of children changed as a function of training and schooling. They suggested that flexible teachers can be a very powerful agent of changes in children's behaviour and that even 'unintelligent' children can become intelligent.

Gay and Cole (1967) studied the learning of modern mathematical
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concepts among the Kpelle people of Liberia. They attempted to relate the learning of concepts such as estimation of time and distance, number and volume conservation, and various puzzle placements, to traditional modes of learning. They found that the pupils were not able to use the standard language of the school which was English. They preferred the pidgin English—a language of their traditional culture flavoured with connotative meanings. The study also showed that the children were largely using a memory imitative style of learning similar to that used within traditional family situations. Furthermore the teachers were using a similar mode of teaching—an authoritarian and assertive style that allowed no questioning or participation from pupils. Because of this, it seems, children failed to structure their school experiences in a logical sequence. Rather, Gay and Cole observed, they ‘accepted each item of experience or knowledge as an isolated gem connected in some mysterious way to the wisdom of accepted authority’ (p. 94). The authors reasoned that for the learning of modern concepts to be meaningful they need to be organized into logical and patterned experiences. Thus causes of behaviours here are attributed to human scientifically verifiable causal variables such as instructional procedures and not inherited attributes.

Pictorial depth perception

Another series of studies relevant to curriculum development is that based on Hudson's (1960) pictorial depth perception test (Fig. 1). In these pictures subjects are ordinarily asked three questions: (a) What do you see in the picture?; (b) What is the man doing?; (c) Which is nearer to the man, the elephant or the antelope and why? Children are categorized as three-dimensional (3D) perceivers if they say the man was aiming at the antelope and that the antelope was nearer to the man than to the elephant. Hudson's results indicated that African children experienced great difficulties in perceiving depth in these pictures. These findings have been replicated in various studies. The more recent one is the Unesco/Unicef/CEDO (Bryan, 1972) which used the first and the fourth picture (Fig. 1), and found that over 90 per cent of African children in Kenya were two-dimensional perceivers since they said the man was spearing the elephant and said that the elephant was nearer the man than the antelope is.
Omari and MacGinitie (1974) reviewed many studies based on Hudson’s pictures and concluded that there were two possible sources of errors in interpreting depth in the pictures. First, the animals were relatively unfamiliar to African children although familiar to tourists who can hardly be the common people in any culture. Second, imagined motivational relations between the characters (e.g. elephant being an enemy of man) lead to different inferences regarding what is going on in the picture. They hypothesized that use of familiar elements in the pictures and removal of enemical relations would enhance depth perception. They developed a version of the original pictures along the lines of their hypotheses as in Figure 2, substituting a cow for an elephant, and no aiming was implied in the interaction. Results confirmed the two hypotheses as there were significant differences in performance between two random groups that were tested using the two versions of the pictures. Furthermore performance increased, contrary to Hudson’s evidence, significantly with age. Thus it seems that the problem lay with
Cross-cultural studies on the abilities of children

Indeed as mentioned earlier familiarity of materials enhance performance in African children. Materials recommended by tourists and foreign intellectuals may not be exactly familiar to African children and curriculum innovators need to examine curricula illustrations more carefully to eliminate sources of errors in interpretation. For pedagogical reasons Omari and MacGinitie (1974, p. 539) recommended that:

Educational experience in developing countries might as well include carefully sequenced pictorial materials for formal or informal training in perceiving, organizing, and representing visual-spatial experiences.

If educators take it seriously that communication is at the heart of educational process, and pictorial information forms an integral part of any educational experience, then curriculum innovators need to experiment with their pictorial information first and familiarize the children with that mode of communication first before they integrate them into their curricula matters. Even the type of
questions asked about a picture makes a difference in performance. In an earlier study by Omari and Cook (1972) it was found that in the same Hudson pictures when the key question was: ‘Which looks farther from the man—the antelope or the elephant?’ rather than, ‘Which is nearer to the man, the antelope or the elephant?’, performance was enhanced significantly. This again suggests that teachers should not take their mode of questioning pupils as errorless. They need to be flexible. Indeed if variety is a spice of life flexibility in modes of questioning and in approaches to classroom instruction would pedagogically be highly desirable. But flexibility subsumes an ability among teachers to imagine a variety of possibilities in any given instructional move, and also teachers would need plenty of time to interact with learners. In developing countries it is not self-evident that ability and time are available to facilitate flexibility in instructional processes. There is need to build into the courses, especially at primary school level, the necessary flexibility so as to accommodate differing abilities and orientations of children rather than depending on teachers to improvise. However teachers should talk about school abilities rather than intelligence. They have control over the destiny of children as far as schooling is concerned. The area of intelligence and the literature on this topic seem to suggest that teachers have been made to believe by people like Jensen that they cannot ‘boost’ the I.Q. of children under their guidance. This pessimism is very dangerous.

It should be noted that the argument is not that there are no human abilities of different types and levels. Each society values and cherishes valuable abilities; individuals with exceptional and constructive talents and orientations are normally highly rewarded. The debate is whether it makes sense to talk about abstract intelligence, supposedly inherited and independent of environmental, cultural and historical antecedents. It is becoming increasingly clear that many of these tests of abstract reasoning, including the Piagetian and Hudson’s Pictures, measure acquired knowledge and logic. This has become verified by training studies that have shown that systematic training by knowledgeable and patient teachers lead to radical improvement in performances of children labelled as dull and unintelligent on the basis of I.Q. scores or other abstract tasks such as Piagetian conservation tasks. Thus heritability of abilities becomes a fake by a class of people intending to perpetuate a hierarchy supportive to them. The second debatable point is whether it makes sense to talk about intelligence and abilities other than
school abilities. If educators want to enable teachers to train children to the best of their knowledge and ability, then let these educators talk about what teachers can effect, control, and improve: this is school performance and not abstract intelligence. Let teachers use classroom tests to make instructional decisions, for in these they can have the power and the will to improve the abilities of children.

This does not mean that psychological tests have no place in instructional decisions. A distinction should be made between formal intelligence tests such as Wechsler and Stanford Binet and the more specific and informally used psychological tests for diagnostic purposes. Reference here is made to diagnostic tests such as those for reading, writing, arithmetic, visual perception, figure recognition and reproduction, and memory. These types of tests when wisely used can help teachers to identify and understand better the problems of pupils. However, when used in quantitative fashion for comparison purposes then the evils of dramatizing and sentimentalizing individual differences will always crop up. Tasks such as those in Piagetian studies and pictorial depth perception, and those for testing special aptitudes can be very useful when used for diagnostic purposes in order to improve curriculum and in structural decisions. When used for comparison of children across cultures they become less useful since it is self-evident that there is bias in favour of industrial cultures.

References


Elements for a dossier

Schooling
in the mother tongue
in a multilingual environment
Planning for national development calls for a wider appreciation of the national resources and the possibility of their utilization than what is conventionally done under the label of development planning. Both in theory and practice, development planning tends to be closely tied to national measures for material development. Recent reappraisals of the experience of development planning in poor countries generally indicate that the development of material resources cannot be accomplished without planned policies of developing human resources pursued at the same time. In other words, a broader definition of resources including material and non-material resources appears to be a precondition of more broad-based planning strategies for development. To be sure, as the concept of planning is extended to encompass social, cultural and human resources in addition to the narrowly defined economic resources, the task of planning becomes considerably more complicated. But then, the major burden of national development of the poor countries of our time lies precisely in their responsibility to face an unusually large number of problems all at the same time in a manner which has precious few historical precedents.

National planning is a matter of public responsibility and as such makes a heavy demand on public authorities. What makes the planning function so challenging in the developing countries is the fact that precisely the qualities of publicness and authoritativeness, in the general context of underdevelopment, are also expected to develop from a modest initial point and yet from this very point public authorities are expected to guide the most difficult integrated developmental enterprise in human history. Imagine, for example, a poor country where national development requires that the public authorities unify the nation, reduce population, increase national wealth and reduce mass poverty, increase the educational level of the people, develop the language resources of the nation to cite merely a short list. To recognize this agenda and its setting is to invite a sobering sense of patience when one wants to appraise the records of development of poor countries.

Language planning

Within the general agenda for national development, language planning is sometimes included in measures for educational development, since language as a social resource is obviously relevant for planning educational
development. However, the importance of language for a nation's development transcends the educational sphere. Developing nations consider language as a mark of identification, a symbol of cultural distinctiveness, in addition to the instrumental role of language in education, communication and cultural development. The significance of language in identity, integrative and instrumental terms implies that such a valued resource is unlikely to be left alone by the national political authorities. In fact, a careful examination of the recent history of national development in poor countries shows extensive involvement on the part of national authorities in the language scene. Similarly, besides national authorities, a large number of popular groups have been involved in social and political activities concerned with language substitution, promotion as well as development.

The study of language planning is an attempt to capture a variety of activities pursued by authoritative institutions addressed to the language sector. Scholarly writing on language planning is rather recent in origin. Theories of language planning have been more concerned with the scope and object of planning rather than the techniques of planning. Empirical investigations of language planning have been mostly concerned with developing nations. While historical scholarship on language planning seeks to stretch the notion of planning to the point of including instances of deliberate influence, contemporary writing on developing countries tends to restrict the notion to nationally authorized co-ordinated activity addressed to solve collectively perceived language problems. For our purpose, it makes sense to draw a distinction between language change in general and nationally planned measures for changing the rank, function, and the content of one or more languages in a country backed by public sanction and encouragement for objectives pertaining to national development. Stated this way, language planning becomes a part of a more general system of national developmental planning.

Several steps are involved in the process of language planning in practice. The first step is one of valuation of language resources. In post-colonial settings, this implies a general devaluation of the colonial language and systematic attempts to displace it by one or more revalued national languages. This part of language planning involves the assignment of preferences to languages and relating these preferences to a functional ordering. For example, when a colonial language is devalued in general terms, its actual displacement may be ceremonial, or may extend to selected administrative, educational and communicative functions. In some cases, schedules of substitution may be specified in a time-table. However, such scheduling of gradual substitution may be made contingent on planned efforts to prepare the selected national language such that it can cope with the newly assigned function. The second step, not necessarily sequential, is then to plan for developing the preferred language. This involves evolving a standardized form of the language, improving the writing system and extending the capability of the language commensurate with the projected demands made on it by prospective user populations. Assuming that the productive problems of language development can be handled with competence by the planning systems, there still remains the third step which is usually identified as the promotional function of planning. The problem at this stage is to assure that the improved capabilities are matched by skilful promotion such that there may be readiness actually to use the new products with the expected skill and eagerness. In this sense, promotion means more than public relations and includes extensive systems of training, incentives and sanction.

Plans and planning

Language planning at the national level cannot be equated with simply making plans in the
sense of optimizing exercises. The real world of language planning in developing countries, or for that matter elsewhere, is characterized by a set of general objectives defined in the form of targets and a collection of programmes to reach the targets at a specified time-table. In practice, the targets shift, programmes change and the time-table alters whenever the authorities seek to reconcile conflicting interests. Theoretical discussions of planning assume that once the political authorities make their objectives known, experts in the planning office take over the instrumental function so that planning then becomes a matter of devising the most consistent and a minimal chain of action. Once the experts have come to judgement, it is the task of the administration to put it into practice. Practical experience suggests that this is a model of planning that is more respected in textbooks than in real national cases, including cases of economic development planning. In the case of language planning, the discrepancy is wider, if not for anything at least because language planners have not even sought after the technically ideal steps of composing a plan.

For a more realistic analysis of language planning we have to turn to a relatively softer theory of planning. This theory regards planning as an organizational device to process diverse demands in a manner that allows the attainment of a feasible and coherent sequence of objectives in a reasonable order of time. From this vantage point, empirical cases of language planning can be studied in terms of how language demands arise, how they are processed by national authorities, how demands are translated into policy objectives, what kind of programmes and projects are devised, what agencies operate to guide the policy operations, what outputs are produced, and what outcomes are accomplished at a specified time of evaluation. The emphasis here is on the analysis of planning as a series of co-ordinated policy processes subject to adjustments due to the very nature of the policy system. This way of looking at language planning is especially useful in studying those cases where the language problem is compounded by language diversity and rivalry and where the policy process is complicated by competitive organized pressures.

Planning institutions

Language problems encountered by developing nations are likely to vary depending on the colonial inheritance, the state of language diversity, the intensity of group perception regarding this claim, the state of development of the indigenous languages, the projected allocation of functions for languages, the desired relation between language, education and economy, and the ability of the national authority to bear the cost of language planning.

Colonial inheritance implies not merely the legacy of the domination of an alien language in administration and education but also the dominance of a small class of educated indigenous population who come to dominate language planning by virtue of their domination of the ruling centres of political and economic power. Most developing nations of Asia and Africa have experienced a certain dualism in the attitude to national language selection revealed by the ruling élites. Immediately after independence, the national élite's concern for displacing alien language was softened. Gradually, the promised time for displacement was delayed, especially in those sectors of language use where élite interests were at stake. Even when laws were enacted to encourage the use of national languages, the purpose was more to satisfy persistent demands by formal provisions than to make sure that the use of colonial language be actually displaced at the higher levels of administration, education, technology, law and business.

Where language planning has pursued a course of granting a formal status to one or more national languages and at the same time ensured the maintenance of a dual system of
élite and mass languages in various domains of use, this dualism has been strengthened by its congruence with economic dualism where the separation between the modern and the backward sectors has tended to increase in most of the developing nations. The entry of larger sections of population in education swells the ranks of people educated in indigenous languages while a privileged few attain education in the colonial languages and thus retain access to the more rewarding jobs in the public and the private sector in the mixed economy. Both in the economic and the language spheres, the nations remain divided and neither economic nor language planning either seriously seeks or shows competence to dispense with this division.

To be sure, the patterns of dualism in the language scene fostered by the intended or the unintended effects of language planning are not uniform either among developing nations or within nations. Ethnic factors may intervene to invest greater weight to an indigenous language if the political dominance of an ethnic group is accompanied by economic lag. In this kind of situation, as in Malaysia for example, language planning may be used for preferring the language of the politically dominant ethnic group in order to facilitate the entry of the members to preferred points of access in the economy, policy-making and the educational sphere. However, where inter-ethnic balance in linguistic terms is more problematic, compromise solutions are likely to favour a dualistic solution of the type analysed before. If we assume the most favourable legislative disposition to prefer a national language, it does not necessarily follow that language planning is likely to attend to the problems of developing the language in a manner which is consistent with the welfare of the largest segments of a developing country's population. Limited studies of the experience of language planning show that the responsibility of developing and promoting languages in developing nations belongs primarily to the ministries of education. These ministries appoint or sponsor specific agencies to work for and coordinate programmes of developing and promoting languages throughout the country. From this stage onwards language planning increasingly takes an administrative form with the difference that these agencies are invested with a productive and innovative role for which there are few routinized precedents.

As in many other cases of increasing bureaucratic role of managing productive public enterprise generally called either nationalization or socialization, the governmental enterprise of language planning is governed more by the logic of the State than the logic of socialization. However, unlike the public sector in the industrial field, the language planning agencies enjoy a considerably smaller share of national investment and attention; this is not surprising because in most developing nations based on mixed economy, the proportion of investment channelled to education tends to be small relative to national need and compared to the other major items of developmental expenditure. Usually, the larger part goes to investment for higher education. Mass literacy and primary education are more discussed than supported. Within education, language planning receives a small share of investment. Thus, in terms of the relative status and spending power, the agencies responsible for language planning nowhere approach the status of glory that is rhetorically ascribed to the role of national language and education in the broader statements of national politics and policy.

Planned development

Language planning agencies may be set up in the form of State-sponsored academies or, as one more commonly finds in the developing countries, in the form of administrative divisions. In strictly numerical terms, language scholars are likely to dominate more in the first type of organization than in the second although
this does not mean that their influence can be easily predicted from their number. Whether or not the scholars and experts are allowed to dominate, their services are extensively utilized in both kinds of organizations. A large number of scholars are engaged in various capacities at different operational levels of language planning.

One of the most important functions of these agencies is to prepare a co-ordinated set of programmes for developing the language and its use in extended domains as authorized by the legislative level. It is important to note that the agencies are likely to be authorized to intervene only in the cases of languages designated for such action and that in some countries their range of intervention is limited to national level official language alone. Generally, the programmes for language development are concerned with creating and ensuring a standardized form of the designated language, expanding the lexical stock of the language, preparing appropriate materials to help disseminate these innovations and reforms in the educational, administrative, communicational and other areas, and organizing proper systems of training of personnel in order to ensure the authorized use of the norms and products preferred and produced by the planning agencies.

Standardization refers to a uniformizing enterprise which requires selecting a variety of speech from multiple alternatives in the existing language so that the patterns of use will be regularized and predictable. It is a way of taking care of dialectal disorder which interferes with the objective of orderly development of language for national communication, education or even the prospect of acceptance by the projected new learners from other languages for whom the designated language will be a second language. The programmes of innovation and reform in the writing system are likely to be less complicated depending on the degree of success attained by the programmes of standardization. The experience of language planning in the last two decades in the developing nations indicates that perhaps the greatest energy of language planning is devoted to lexical increment and elaboration, especially terminological innovation, incorporation and standardization in the interests of educational, scientific, technological, administrative and other fields considered to be crucial for general national development.

The specific way in which the programmes of language development have been pursued in particular developing countries obviously differs from country to country and also within countries from phase to phase. To know the general outlines of the programme objectives is no great help in understanding why and how the variations between and within countries in the processes, products and outcomes emerge. Empirical studies of language planning have concentrated more on the social contexts and the products, mostly lexical, of planning. There is a good deal that remains to be investigated about the processes and outcomes of language planning. A beginning has been made in this direction by an international research project on language planning which surveyed the authorities, processes, products and the reception of these products by various target populations in Indonesia, Israel, India and partly in Sweden. It is not fair to generalize from one limited survey conducted in the early 1970s. However, taking into account a variety of reports and impressions published in recent years it is possible to raise, at least briefly, some questions about the nature and the direction of language planning in the developing countries of our time.

Systems of language planning in developing countries, despite mutual differences, appear to be directed more to the question of how to guard the authenticity of an intellectually enriched and bureaucratically supervised language than the question of adapting languages for mass education and communication. This has been especially so where the language designated for development has a classical source to readily fall back on and where the language experts of
the agencies cared more for classicalization than popularization. In such cases, the cost of standardization in one direction may be considered as excessive if one calculates the shadow price of extended learning time caused by classicalization and also the foregone social gains in the form of discouraging access to elementary education of new entrants. The grail of intellectual enrichment of language very often makes the planning agencies forget that there may be more sense in considering more appropriate standards relevant to the needs of the majority of population than to emulate the standards relevant to other levels of literacy and economy. In short, language planning agencies are neither interested nor competent to weigh alternative welfare considerations facing largely agricultural and non-literate societies. This is a function which belongs to the pre-agency planning leadership and perhaps there too it is difficult to consider the popularization alternative because it goes against its interests and also the currents of received wisdom regarding development planning.

Any observer of the comparative language planning systems has to admit that the record of language planning in many developing countries with respect to the quantity of word lists, scientific terminology, technical and administrative terminology and manuals, speaks of considerable accomplishment. The output of glossaries, dictionaries, encyclopaedias, teaching aids, and in some cases even textbooks is a point of pride. With respect to quality, however, the record would look much less impressive. The more interesting question is that a large part of these products lie unused and that no one knows when they are likely to be used. The point is that as in the case of import substituting strategies of industrialization pursued by so many of the developing countries the language planners also followed a path of language substitution without much thought given to the question of the social cost of this process. The drive was primarily to create additional capacity of the language concerned and little attention was given to the question of who will utilize the capacity and when. Not that a complete forecast can easily be made of the future terminal demand for these products but rather the problem is the magnitude of unused products and its social cost.

Evidently, these planning systems provided more than adequate incentives to produce scholarly language products but insufficient incentive to use these products. One part of the problem of course lies in the dual educational and language systems in many of these post-colonial countries where larger investments are made for higher education than for lower education and within the higher education system more attractive incentives are built in for education and research in colonial languages as opposed to national languages. The elitist bias in education is matched well by the élites’ bias towards what is now called international languages but formerly called colonial languages in these same countries.

Like the better-known cases of development planning, language planning in most of the developing countries appears to be governed by technocratic assumptions. One assumption is that development is measured by national product. The other assumption is that planning means a collection of programmes to implement a set of arbitrarily chosen targets by the national authorities. In addition, the process of planning involves the political contingency of the need for a series of compromises among power groups. Language planning in most of the developing countries based on mixed economies has been a part of this type of development planning. Its successes and failures do not fail to reflect this family resemblance. However, studies of language planning can serve the cause of national development if in addition to analysing the planning systems some alternative policy possibilities can be posed and discussed. The experience of language planning in developing countries is interesting because the record of more than one decade spanning so many countries is a good vantage point for considering a case for reappraisal.
A case in point: the Soviet experience with languages

About one hundred and thirty languages are represented in the multinational country of the U.S.S.R. These languages belong to the Indo-European, Turkic, Finno-Ugric, Mongolian, Ibero-Caucasian, Paleo-Asiatic and certain other language families. About 85 per cent of the population speaks Indo-European languages, which are represented by the Slavic, Iranian, Baltic, Romance, German and Indian language groups and by Armenian.

The East Slavic group includes Russian, Ukrainian and Byelorussian—the three most widespread languages; the people speaking these languages form three large nations which comprise about three-quarters of the Soviet Union's population. The East Slavic languages are also very much akin in terms of lexical stock, phonetics and grammatical structure. The Russian language, the language of the largest nation, is the native language of 129,015,000 Soviet citizens. There are also 40,753,000 Ukrainians and 9,052,000 Byelorussians. The Iranian linguistic group is represented by the Tajik, Ossetic, Kurdish, Tat, Talishi, Beluchi, Yagnob, Vakhan, Ishkashim and Yazgulyam languages and the Shugnano-Rushan language group, which includes the languages of six small Pamirian nationalities. The Baltic subfamily is represented by the Lithuanian and Latvian languages, the Romance by Moldavian, the Germanic by Yiddish, the Indian by Romany, and Armenian forms a separate group.

The Turkic subfamily of languages in the Soviet Union includes about twenty-five closely related languages and dialects, which are used by about 23,160,000 people. People speaking Turkic languages are distributed over a vast area, from the country's western borders to the north-eastern outskirts of Siberia. Most of them live in Central Asia, the region of the Volga, Siberia and in the Caucasus. Despite the large number of Turkic languages, and their considerable distribution, most of them have preserved common features.

The Turkic subfamily includes a number of languages of the Union Republics—Uzbek (used by 9,195,000 Uzbeks), Kazakh (5,299,000 Kazakhs), Azerbaijan (4,380,000 Azerbaijanis), Turkmenian (1,525,000 Turkmen),


1. Figures cited according to the 1970 census.

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Kirghiz (1,452,000 Kirghiz), as well as a number of languages of the autonomous republics: Tatar (5,931,000 Tatars), Chuvash (1,694,000 Chuvashs), Bashkir (1,240,000 Bashkirs) and Yakut (296,000 Yakuts). Included in the Turkic languages are also the Kara-Kalpak, Kumyk, Karachai-Balkar, Gagauz, Tuvinian, Uygur, Khakass, Altayan, Nogai, Shor and Karaim languages and the language of the Barabin Tatars.

Of the Soviet Union's present 130 languages, only 20 had a written form prior to the 1917 Revolution: Russian, Ukrainian, Byelorussian, Uzbek, Tajik, Armenian, Azerbaijan, Georgian, Moldavian, Latvian, Lithuanian, Estonian, Tatar and a number of other languages. The overwhelming majority of the population was illiterate. Illiteracy was particularly widespread among the people of Central Asia, the Far North and the Northern Caucasus. Primary schools, let alone secondary or higher schools, were rare in the national outlying areas of the former tsarist empire. Thus, in 1912, of the 74,569 children of the native population in Samarkand region, Central Asia, only 635 or 0.9 per cent attended school. In the Ferghana region, of 165,910 children only 805, or 0.5 per cent, could attend school. Almost all the nationalities of the former Russian empire were in fact deprived of the right to schooling in their native language.

Following the victory of the October Revolution, a programme was worked out on the nationalities question based on the premise that all peoples and their languages were equal. This programme paid particular attention to the role of the native language in the education of the masses. The resolutions of the tenth Congress of the RCP(B), in 1921, on the national question set as the country's main task its effort to put an end to the national inequality of peoples. Among other things, these documents emphasized the need to develop instruction both of a general educational and vocational nature, using native languages (in particular in the case of the Kirghiz, Bashkirs, Turkemens, Uzbeks, Tajiks, Azerbaijaniian, Tatars and Daghestanians) to accelerate the training of native skilled personnel, workers and government and Party functionaries in all fields of management and, above all, in the field of education.

To implement these tasks it was necessary to create a generally comprehensible written form for the native languages which would serve as a basis for the education of children and the elimination of adult illiteracy. Written forms for the languages of fifty peoples were developed, including the Kirghiz, Bashkir, Karachia-Balkar, Tuvivian, Khakass, Evenk, Nanai, Even, Udmurt, Khanty, Mansi and other languages. The development of a written form for these languages made it possible to organize teaching in the native language in primary and secondary schools and, at times, even in higher schools. This, in its turn, helped eliminate illiteracy in a very short time, and accomplish a cultural revolution.

The Soviet policy was to organize tuition in national republics, territories and regions in the native languages, and to create a press and develop national cultures in the native language. Not only was every nation and nationality guaranteed the right to educate its rising generation in the native language, but all necessary conditions were created for the successful development of national languages.

At present, both primary and secondary general educational schools, and higher and secondary specialized educational establishments function in the languages of all the large nations after which union republics have been named (that is, in the Ukrainian, Byelorussian, Uzbek, Kazakh, Georgian, Azerbaijaniian, Lithuanian, Moldavian, Latvian, Kirghiz, Armenian, Tajik, Turkmenian and Estonian languages); in the autonomous republics teaching in school is conducted in the languages of the peoples populating those republics.

In the Russian Federation (R.S.F.S.R.), for
instance, there are national schools with teaching in forty-seven languages (Russian included). Textbooks and manuals are published and general educational subjects are taught in these languages. In different areas native languages are taught for three to ten years, depending on the prevalence of the language and the number of schoolchildren. In all the autonomous republics and autonomous regions of the R.S.F.S.R., as well as in the Komi-Permyak National Okrug, the native language and its literature are studied in the course of ten years (from the first to the tenth grade). In Tataria and Bashkiria (autonomous republics of the R.S.F.S.R.), all general educational subjects are taught in the native languages throughout the school course, and in Yakutia, Tuva and Buryatia—in the course of eight years. In schools for small northern peoples the native language is studied for four years (this includes the preparatory class).

The problem of pedagogical personnel for national schools was particularly acute during the first years of Soviet power: in the case of many non-Russian peoples, schools were being created for the first time ever, and they had no teachers of their own. Special teacher-training institutes and public education institutes were set up to train teachers. Short-term courses were organized in many cities where, along with other subjects, the future teachers studied their native language, ethnography, history, and national literature.

In 1925, national departments were founded at the Kazan Pedagogical Institute (Mari, Udmurt and Chuvash), at the Saratov University (Mordovian), at the Irkutsk University (Buryat), and so on, where teachers were trained for national schools.

Today universities and pedagogical institutes in all the fifteen autonomous republics and five autonomous regions of the Russian Federation have chairs for the training of native language and literature, and primary school-teachers. Another fifty teachers' training schools train native language teachers for the primary grades.

All the autonomous republics and autonomous regions have their own language, literature and history research institutes. The Ministry of Public Education of the R.S.F.S.R. in Moscow has a National School Research Institute. This is a methodological centre for the study of native languages, with branches in the Tatar, Bashkir, Yakut and Chechen-Ingush Autonomous Soviet Socialist Republics.

Textbooks and instructional aids in the national languages, as well as terminological dictionaries of various types have been evolved for national secondary and higher educational establishments. In the Kirghiz S.S.R., which can serve as an example of the progress achieved, transition to universal secondary education of youth has largely been completed. In pre-revolutionary times, the Kirghiz people had no written language of their own. In 1920, of the 833,000 people that lived in Kirghizia, 754,000 could not read and write. The multinational composition of the republic's population was taken into consideration at all the stages of the development of the Soviet school system in Kirghizstan. Now the republic boasts about 1,000 Kirghiz, over 300 Russian, close to 100 Uzbek and several Tajik schools. The composition of pupils at many schools is also multinational, and instruction is therefore conducted in several languages.

Some of the institutions of higher learning in Kirghizia, as in other union republics, have two basic departments, with teaching in the Kirghiz language in one, and in Russian in the other. Teaching in the national languages in many autonomous republics of a multinational population is conducted only in the primary school. For instance, the Udmurt primary school now functions in the Udmurt language, while in secondary school teaching is in Russian, with the Udmurt language being taught as a separate subject. Teaching in the national languages in multinational Daghestan, the Mordovian A.S.S.R., the Komi A.S.S.R., the Mari A.S.S.R. and in a number of other auton-
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omous republics and regions is organized on identical lines.

As to teaching in the languages of the small peoples of the far north, Siberia and the far east, it depends on local conditions. Thus, the Nanai language with its young written form, which is used by about 10,000 people (according to the 1970 census), was, in the forties, the language of instruction in primary Nanai schools. As the general educational and cultural level of the population rose, the Nanais expressed a desire that their national school transfer over to the Russian language. Today the Nanai language is taught as a subject in Nanai primary schools, and press periodicals, belles-lettres and popular science literature are published in the national language. The situation is the same regarding teaching in the Chukchi, Evenk, Eskimo, Nenets, Mansi, Khanty, and certain other languages of small groups, whose written form has been developed during recent years.

There are also some languages in the Soviet Union that have no written form. They are the languages of very small nationalities and ethnographical groups, with each one being used by several hundred to several thousand people. For example, only some 200 persons in Daghestan speak in the Ginukh language; about 500 in Tajikistan speak Ishkashim; and about 3,000 in Azerbaijan speak the Budukh language. The people speaking these languages, and who are generally bilingual, insisted that they had no need of a written form since so few spoke the language. At primary, secondary and higher schools they are taught in Russian or in the languages of the large nations among which they live.

Owing to certain specifics in the historical development of the peoples of the Soviet Union, the Russian language became the language of communication among its socialist nations. There is no official language in the Soviet Union. Equality of all languages is the cornerstone of the Soviet Union's language policy. Any Soviet citizen has a right to address himself to any State institution or public organization in his native language. V. I. Lenin criticized those who sought to make Russian the official language. In his article 'Is a Compulsory Official Language Needed?' Lenin wrote, replying to liberals:

We know better than you do that the language of Turgenev, Tolstoy, Dobrolyubov and Chernyshchevsky is a great and mighty one. . . . And we, of course, are in favour of every inhabitant of Russia having the opportunity to learn the great Russian language.

What we do not want is the element of coercion. We do not want to have people driven into paradise with a cudgel; for no matter how many fine phrases about 'culture' you may utter, a compulsory official language involves coercion, the use of the cudgel.

The Soviet Union's contemporary language life is characterized by a dual process: on the one hand, development of the languages of the peoples of the U.S.S.R. and, on the other, widespread knowledge and use of the Russian language in diverse spheres of life as a language of international communication. This phenomenon is called national-Russian bilingualism which is the main type of bilingualism in the U.S.S.R. It has been engendered by the specificity of the socialist system and the Marxist-Leninist approach to the national question. A further development of bilingualism with the language of international intercourse will characterize the language life of our country's peoples in the future, too. The programme of the Communist Party of the Soviet Union points out that the Party will

continue promoting the free development of the languages of the peoples of the U.S.S.R. and the complete freedom for every citizen of the U.S.S.R. to speak, and to bring up and educate his children, in any language, ruling out all privileges, restrictions or compulsions in the use of this or that language.

Along with this the programme stresses that 'the voluntary study of Russian in addition to


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the native language is of positive significance, since it facilitates reciprocal exchanges of experience and access of every nation and nationality to the cultural gains of all the other peoples of the U.S.S.R., and to world culture.1

The relations of the Russian language with the local languages of the peoples of the U.S.S.R. are of a functional complementary nature. The Russian language serves the common needs of the Soviet people—their mutual intercourse and the exchange of cultural values, while the local national languages serve the needs of individual nations and nationalities in keeping with their individual requirements.

National literatures and art are developing vigorously in the Soviet Union, and a great deal is being done in the exchange of cultural values among peoples. Over 200 publishing houses at the national level, and the level of republics, territories and regions annually bring forth hundreds of millions of books in Russian and in the other languages of the peoples of the U.S.S.R. All in all, 1,669,000 books and booklets were published in the U.S.S.R. from 1918 to 1961 in editions totalling close to 25,000 million copies in 138 languages. Russian and world belles-lettres, the works of the classics of Marxism-Leninism and scientific and technical literature are published in all the national languages. Much attention is devoted to the translation and publication in Russian and other Soviet languages of works not only by outstanding national writers of the Ukraine, Byelorussia, Latvia, Georgia, Kazakhstan and other republics, but by new, young authors from such small peoples as the Udegeh, Avars, Nenets, Lezghinians, Chukchi and Tuvinians.

The scientific and literary wealth of every individual people is becoming accessible to all the Soviet peoples. The process of the mutual enrichment of national cultures in our country is developing ever broader and deeper, enhancing the friendship and fraternal co-operation of peoples, the moral and political unity of socialist society.

It is quite clear that a great deal is being done today to raise the status of African languages. There are some States where this movement is in line with a historical process which started a long time ago: generally speaking, they lay within the orbit of the colonial powers of Germany, England and Belgium whose language policies were such that some African languages were included in primary school courses. English and French did not appear until a later stage, side by side with an African language, and the distinctive feature of the next stage was the exclusive use of English or French.

French policy was based on quite different principles. French was the sole language of education and performed three pedagogical functions: it gave access to writing as a means of communication, it was a subject on the curriculum, and it served as the medium for all instruction.

When they become independent, the African States were faced with situations resulting from the two different language policies. The countries which had lain within the French orbit changed nothing. Guinea alone opted very early for a bilingual type of education; under this system a national language, varying according to the region, is used as the medium of instruction and French is introduced in its turn but not to the exclusion of the national language.

Those States which had lain within the orbits of British and Belgian colonial powers inherited a situation in which certain African languages were used as the medium of instruction. They only had to adopt a more active policy of this kind. Tanzania, with its Ujamaa system, was the country which went the furthest, by making Swahili the official language.

Since their accession to independence—and even before—the African countries have laid great emphasis on the political value of raising the status of African languages. Many eloquent pleas have been made in conferences held under the auspices of Unesco, Présence Africaine and numerous other bodies. Pleas are intended to convince. They were necessary in order to make the public aware of the importance of the problem, but it is very likely that the die has now been cast. A minority of Africans and Europeans have been won over and are waiting impatiently for the first practical steps to be taken or, more precisely, for the necessary machinery to be set up to enable the practical steps to be taken.

There are other people, and it does not matter whether they are in the minority or not, who are
opposed to what has been said in those pleas because it is not in their interest to see the African languages integrated into education in a functional way. Disregarding the large numbers of people who are indifferent and hence not involved, this article is therefore addressed to those who are in favour of this kind of integration but who are waiting for the basic problems to be tackled. These problems are necessarily of a specific and specialized nature and must be formulated by linguists and by sociologists who understand language matters. Eloquent pleas are no longer enough. They are even an annoyance and those who make them give the impression that they are creating a smokescreen to hide their incompetence to deal with technical problems.

In this article, we shall discuss two main points. If we assume that the principle of a bilingual type of education has been accepted, we then have to answer a fundamental question: in this type of education, what are the pedagogical functions of the two languages concerned and how can we ensure that these functions are evenly balanced, bearing in mind the various language situations prevailing in the different States?

Secondly, we shall attempt to outline a tentative classification of African States according to the respective situations of the linguistic communities living in them. Although this is very important, it cannot be studied systematically unless research projects are planned and conducted in linguistics and the sociology of language.

The frame of reference for this article is, although not exclusively, the States belonging to what is generally called French-speaking Africa. Their education policies may be grouped, both in theory and in practice, in four categories according to the models for which they have opted.

Monolingual education of an assimilationist type. French is the only language. African languages do not appear at any level.

Monolingual education in French but based on educational principles which aim to make use of contrastive linguistics. French is taught by the methods applicable to a foreign language. This means that one or more African languages are used not for their own sake but to provide points of reference to help the pupils grasp grammatical systems and especially to master phonetic characteristics which may be difficult for African speakers.

Monolingual education exclusively in an African language. It does not exclude a widely spoken foreign language, but the written form of the language is the medium of instruction. This presupposes the existence of appropriate teacher-training courses and educational materials for all the subjects on the curriculum. At the present time, this situation is not to be found anywhere in the French-speaking zone.

Education based on the principle of bilingualism. The systems at present in force are those which have been adopted as the Solutions 1 and 2 described below. They result in \textit{de facto} bilingualism since an African pupil automatically becomes bilingual as soon as he starts schooling. \textit{Bilingual education}, on the other hand, is based on the \textit{de jure} recognition of the \textit{de facto} situation, and aims to develop it by ensuring that the pedagogical functions, of the two languages concerned, namely an African language and the French language, are evenly balanced. This last-mentioned category is the one which will serve as our starting point in our search for possible solutions to the curriculum problem.

The pedagogical functions of the languages in bilingual education

A bilingual education system should be based on the principle that three pedagogical func-
The problem of the choice of languages in Africa

tions must be evenly balanced. A standard model of equilibrium does not exist, but there are several possible choices according to the sociological conditions peculiar to any given language situation.

The first function is to give access to writing as a means of communication. This means initiating the African child in a new technique of communication. Even if it is decided to give precedence to the spoken language over the written language, the child none the less enters into a relationship with the world of reference through the media of pictures and written texts. As regards his relationship with the originator of the written messages, he often has an impression of anonymity in the sense that the source of the messages is unknown and physically absent. These conditions differ radically from those prevailing when the child is acquiring his education in his family environment and even through all his contacts with the life of the community.

When he goes to school, he has to adapt to new demands, both psychological and technical in nature. He must acquire information through reading and images, so that he has to grasp reality through a medium which takes the place of direct perception and supersedes the living transmitter of knowledge. The teacher can, of course, be a substitute for the latter and re-create a given situation by what he himself says, but the type of communication has nevertheless changed both as regards the person speaking and as regards what is said.

It is evident that language is never absent from the educational process and that writing skill must obviously be acquired in the language in which the child is the most competent, and hence in his African language. The learner's efforts must be made in a situation which associates reflexes of the child as a writer or reader in the best possible way with the reflexes of the child as a speaker. This optimal situation implies recovering the association previously achieved in his own language between signifier and signified, between the phonic medium and the world of reference.

The second function which must be taken into account in bilingual education is that of language as the general medium of instruction. Language is not just a subject included in the curriculum but is also the means of presenting all the subjects taught. The medium language of instruction may or may not be, or may only partially be, the language in which the child has learned to write. The choice will depend on the result of an assessment of the capability of the language to express semantic fields involving notions which we shall not call modern, but which are foreign or unfamiliar to the community of native speakers. Should an African language be chosen to perform the function of the general medium of instruction, this presupposes that appropriate educational materials and teacher-training courses exist, and also that the necessary work has been done to standardize the presentation of the words and utterances to the new nations.

The third function is that of language as a subject. It is obvious that the two languages involved in a bilingual education system must also be subjects on the curriculum in so far as their identity, their history and the relevant standardization questions are concerned. This presupposes that the African language has first been the subject of a descriptive survey and that applied linguistics can draw on the findings of fundamental linguistics.

The introduction of a foreign language (possibly an African one) as a subject in the curriculum is of undeniable importance today. The question arises in a specific way for a large number of African States. In the French-speaking States, the existing situation has its roots in their history. Here we find that French, regardless of the number of speakers able to use it and at all levels, is a language through which the speakers gain access to the circles familiar with writing as a means of communication.
and, at the same time, to a comprehensive field of information which is more easily, and hence more economically, accepted in French than in an African language. This situation will not necessarily last for ever, but it is the one existing at the present. We must admit that it also breeds conflict because of its historical origins.

If we look at the present school courses, education is provided in one language only. The solution, in the short term at least, is not to exclude French outright, for this would amount to substituting one conflict for another, but to steer towards a solution whereby the language situation evolved within the school, namely, bilingual situation—French always being the second language, becomes a legally established and officially recognized situation, creating, ipso facto, an educational instrument comprising two linguistic registers.

Given these three pedagogical functions which claim attention from the very first year of primary education, there are only a certain number of possible solutions.

Each of these solutions is based on a different way of sharing the three functions defined above between the languages.

In the interests of clarity, we must set bilingual education in a precise chronological context. The African child has a first language (abbreviated to lg.1) and is confronted at school with a second language (lg.2). The first language, chronologically speaking, is an African language (abbreviated to A) and the second is French (abbreviated to F). The functions allocated to the two languages must be presented in relation to the chronological language factor mentioned above, which is expressed in the following abbreviated way: lg.1A: first language, African; lg.2F: second language, French.

It should be noted that when the African child starts to go to school he may possibly be familiar with two or more African languages. This, of course, makes the choice of the African language to use in school a complex matter. The choice then has to be made in the light of sociological data, for this is not an individual problem but a question of linguistic sociology. The proof lies in the fact that a child who speaks Wolof, Bambara of Hausa will speak only one African language in the vast majority of cases, while a child whose ‘mother tongue’, and hence first language, is Soninké, Dogon or Koniagi will in nearly every instance, speak two or even three African languages. This is why a linguistic policy which aims to integrate an African language into education, whatever pedagogical functions may be allocated to it, will find that it is indispensable to be guided in its choice or choices by an economic, historical and sociological study of the language communities of the State in question.

What solutions are open to States facing the problem of the pedagogical functions of the languages concerned?

There are six possible solutions which are grouped into two sets of three (see also Fig. 1).

Solution 1. The African language is the one which gives access to reading and writing and is the medium for all instruction; it is, of course, included in the curriculum as a subject. French is also included as a subject, but performs neither of the other two functions. This choice presupposes that educational materials have been prepared in the African language and are available for all the subjects taught. The same applies to teacher-training courses. It should be added that an African-language press will have to be created so that the citizens of the State in question can continue, after they have left school, to practise a communication skill first learnt there. The need for an African-language press arises in all solutions in which an African language appears. Whatever its pedagogical function or functions, a situation which offered no opportunities for continuing to use the written language after the end of school would eventually have the effect of seriously jeopardizing the chances of integrating
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**FIG. 1. Six possible solutions.**

writing as a means of communication into the linguistic community. Here we are faced with a sociological problem: how can we bring about the emergence of a public of readers and 'writers'? If a public of this kind cannot exist, the incentive to integrate African languages into education will gradually weaken after the first wave of enthusiasm for a new venture has subsided. We shall not return explicitly to this problem in discussing the following solutions, but it is ever-present. To deny its existence would be tantamount to making school an end in itself, hence severing it from the life of the community.

**Solution 2.** African-language educational materials are not yet available for the whole of the school course, but only a syllabary and some reading matter. The African language is chosen to perform the function of teaching the child to read and write and as a curriculum subject. French is introduced later as a subject and is used as the medium of instruction for the whole of the curriculum. Solution 2 may be considered as a preparatory stage for Solution 1.

**Solution 3.** This solution may be a preparatory stage for Solution 1. African-language teaching materials exist, but only for certain subjects. French is used as a medium of instruction for other subjects. We are not referring here to a dichotomy that is frequently held to exist between so-called literary subjects and scientific subjects for the possibility of a dichotomy of this kind is only likely to arise at the secondary level and especially at the higher level. This does not imply that some languages are incapable of conveying scientific concepts, but that it is reasonable to ask whether or not it is more economical to use a European language for this purpose than African translations of scientific texts.

In the 1975 *Bulletin de l'Institut Fondamental d'Afrique Noire* (Vol. 37, No. 1, January 1975, p. 154–233), Sheik Anta Diop gives a Wolof translation of scientific texts (theory of sets, relativity, quantum chemistry, etc.). He asserts that it is a feasible undertaking, and there is no reason to doubt that he is right. There remains the sociological problem of the existence of a reading public, and it can only be tackled by working out a programme of options and complementary decisions bearing on all educational courses with a view to making them a natural part and extension of the life of the community.

**Solution 4.** The three preceding solutions use the African language to teach reading and writing.

This is the minimum condition for establishing a sound bilingual education policy. It
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may not always be possible for a variety of reasons. In any event, we must also examine three solutions in which French performs the function of giving access to writing as a means of communication and is also used as the medium of instruction. In Solution 4, the African language is included in the curriculum as a subject but performs neither of the other two functions. For this reason the only teaching materials it requires are a syllabary and some reading matter. The danger of this solution is that the writing habits acquired through the spelling conventions of French may prove to be a handicap for the child when he is learning to spell African words, for the convention of written French may be projected on to those of the African language.

Solution 5. Writing is learned through the spelling conventions of French, and French again appears as a curriculum subject. On the other hand, the African language is introduced as a curriculum subject with a view to using it as the medium of instruction.

Solution 6. This solution reverses the pattern of Solution 3. French performs the function of giving access to writing, and the function of the medium of instruction is assumed both by French and by the African language which share the subjects between them.

The foregoing calls for some comments. First of all, in order to see clearly where the solutions lie in the field of practical possibilities, it is useful to compare those which are based on the acceptance of bilingualism with those which are strictly monolingual. There are two possible cases (see Fig. 2).

Solution 8 is the one which is finally found to prevail in practice, although some States have already formally decided to adopt African languages as languages of instruction. Guinea has reached the stage of practical application of this policy, although French is admitted as a curriculum subject. Senegal and Togo have decided which languages are to be used as the medium of instruction, as we know the stage of practical application has not yet begun in 1976. This is because an essential prerequisite has not been met, namely, that the teachers should have received appropriate training to prepare them to give effect to the new policy.

Some countries like Mali, Niger and Upper Volta have included some African languages in functional literacy courses and have undertaken the production of printed publications. In Mali the newspaper Kibaru and booklets on agricultural techniques (for industrial-scale production projects) are written in Bambara. The transition from functional literacy to the integration of African languages into education raises problems that we do not propose to discuss here. We shall just say that literacy work has the great advantage of making country-dwellers aware of the importance of writing and enables them to understand that an African language can play a part in the process of communicating. This last point is a very constructive one. Nevertheless, the people for whom literacy training is designed are not the same as those who are enrolled in school courses, and this raises specific problems. There is another point on which we must not cherish any illusions: the officially accepted spelling conven-
tions of Bambara reflect an excessive striving for simplicity which is prejudicial to the prospects of the reading public beyond the groups of people involved in literacy training. The spelling conventions officially adopted by the Dioula Commission in Upper Volta are infinitely more consistent: in other words, they are much closer to the phonology of the language. What is valid for Dioula surely is good for Bambara.

As we said, Solution 8 is found, in the end, to be the one prevailing today. French is the only language. The African language lies outside the field of education.

There are some cases of Solution 7 having been adopted in the English-speaking zone. In every respect it is the opposite of Solution 8. Furthermore, if we consider the solution only from the point of view of the primary school course it should be noted that where Solution 7 is operative, the primary curriculum leads up to a secondary school course which includes a European language as a subject and possibly as the medium of instruction, the language in these cases being English. In contrast, where Solution 8 is operative—French alone being used at primary level—there is no evidence of any African language being actually used at secondary level. We know of one exception: at Libermann Private College at Douala four African languages are offered as optional subjects on the curriculum.

Another comment concerns the grouping of the solutions into two sets. Solutions 1, 2 and 3 are distinguished by the introduction of the African language as the language giving access to writing as a means of communication, whereas this function is assumed by French in Solutions 4, 5 and 6. It is not inconceivable that a system combining the features of two or three solutions might be gradually introduced, but it would be a serious error to think that a plan to this effect could be worked out like an abstract problem. It must be rooted in an analysis of the economic and socio-linguistic circumstances of the particular State concerned.

One last comment. Solutions 4, 5 and 6, which assume that the function of teaching the pupil to write is allocated to French, represent no economy from the educational point of view. When a young African child has to learn to write through the medium of French, which is his second language, chronologically speaking, and is branded by history as the language of the former colonial power, he is ipso facto forced to make a double effort for he has to acquire a new communication skill and at the time a virtually new language. This is a situation which gives rise to conflict. It does not exist in France, at least not on such a large scale. When the French child starts school he does not have to learn a new language except in a few rural areas to which French governments have never paid serious attention. As regards the new communication skill of writing, the child is prepared for it, both technically and psychologically speaking, by his family environment, by his games, by television and in some cases in nursery school.

Where Africa is concerned, Solutions 4, 5 and 6 should not be rejected outright, however. We repeat that the choice of solutions depends on the findings of a close economic and socio-linguistic analysis. Solutions of this kind may be found to be the only possible ones in cases where no research has yet been done on the African language or if the language raises phonological and morphological difficulties retarding the consistent preparation of teaching materials right from the very first stage, which is the syllabary. We should remember that while the syllabary plays its part from the very beginning of the school course, preparing it is always a problematical task for two reasons. It lays down rules for the spelling conventions of a given language but, as is all too often forgotten, it also provides rules for the morphological division of words within the sentence. In addition, it has a standardizing effect, for the rules which it recommends cannot be subsequently modified except on points of detail. What is more, these
rules commit the linguistic community to widely spread habits of reading and writing, learning eventually to the acquisition of behaviour pattern. A syllabary containing serious inconsistencies can be said to commit a community just as much, although with this reservation that these inconsistencies are prejudicial to the future success and efficiency of the effort to give the African language a part to play in communication by writing.

Tentative classification of African States

Above we have discussed the problem of how the pedagogical functions are to be shared between the languages concerned in a bilingual situation. But what African languages should be chosen? We raise the question in the plural from the outset: this will be amply justified by what follows. We should say straight away that in the majority of cases, political frontiers do not coincide with the frontiers of linguistic communities, that some States embrace a large number of languages without any one of them being really dominant, and lastly that there are linguistic communities which have a large number of bilingual speakers as a result of age-old and vigorous processes.

What languages should be chosen? This is how the question is generally put. We think that, stated in this way, it hides a trap. There is no choice in the true sense of the word but a political decision determined by a given language situation or, in other words, a choice which can be fully justified only after a complex analysis has been completed by specialists in linguistic sociology. The question can thus be framed as follows: What language situation is specific to each of the linguistic communities existing in a given State?

This is too vast a question to be answered here. We have tackled it from various angles in our *Anthropologie Linguistique de l’Afrique*.1 We also refer the reader to the *Dossiers Pédagogiques* and to the journal *Le Français dans le Monde*. We shall confine ourselves in this article to an attempt, difficult though it is, to put forward a pragmatic classification of African States by language situation. Where necessary, we shall add explanatory comments on certain points.

The States should not all be thought of in the same terms as the solutions are not basically similar for each country.

A classification of States can only be pragmatic until socio-linguistic studies have yielded data about the demography of the linguistic communities, their monolingual or plurilingual features, the relative importance of vehicular languages and the places where they are used. In fact, what the following classification claims to do is not so much to reflect a definitive situation as to suggest lines of thought and highlight the factors which must be taken into account with a view to working out a suitable linguistic policy.

We shall consider only those African States which formerly belonged to the French community. As an experiment, we propose the following four groups of States: (a) monolingual State; (b) multilingual States where one or more languages have long been dominant; (c) multilingual States where one language has recently become dominant; (d) multilingual States where there is no dominant language except in certain regions.

**Monolingual States**

None of the States in the zone we have defined has only one linguistic community. Burundi, Rwanda and Somalia are the only African States which have a single national language, these being respectively Kirundi, Kinyarwanda and

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2. Paris, AUDECAM, Nos. 3 and 13; a journal which, since issue No. 19, has been called *Recherche Pédagogique et Culture*, 75007 Paris, 100 Rue de l’Université.
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Somali. The political frontiers, which were established in colonial times, are such that none of these countries has ever lain within the orbit of French colonialism. Burundi and Rwanda, however, which used to be Belgian colonies, are concerned by African-French Bilingualism. They have already worked out an education policy in which this bilingualism is officially recognized. Consequently, work in applied linguistics has been undertaken with regard to Kirundi and Kinyarwanda, which will add to the stock of knowledge built up by earlier scientific studies, some of which were carried out a long time ago.

MULTILINGUAL STATES
WHERE ONE OR MORE LANGUAGES HAVE LONG BEEN DOMINANT

These are States whose political frontiers embrace several linguistic communities. The relationship of these communities are such that certain languages are dominant for economic reasons and by virtue of their cultural prestige, and are adopted as second languages by speakers belonging to smaller communities. The communities using these major languages are monolingual and occupy a leading position as centres of assimilation in relation to the other communities. This is in fact the continuation of a long-standing or relatively long-standing situation which can be explained by African history and was frequently consolidated by the colonization process.

The five following States may be placed in this category: Senegal, Mali, Upper Volta, Niger and Mauritania.

Surveys conducted by the Dakar Centre of Applied Linguistics have shown that 80 per cent of Senegalese speak Wolof as their mother tongue or as a second, third or other language. To a lesser degree, Mandingo and Peul are also dominant languages. Mandingo is a second language in part of Casamance. Peul owes its importance simply to the existence of Peul and Toucouleur communities, but it is rarely adopted as a second language. As regards Mali, although no survey has been made in this State, Bambara and certain Malinke dialects are probably in a situation similar to that of Wolof in Senegal. We must not, of course, ignore the existence of dialect differences, and where the Malinke group is concerned they can even be said to be considerable. Many different forms are found at local level in the heart of the country, but it cannot be denied that one language exists which, although not necessarily homogeneous, is quite adequate as a medium for mutual comprehension. The language is called by different names according to the region: Bambara, Malinke or Dioula, but it is known to linguists as Mandingo. The development of trade and the choice of Bamako, which lies within the Bambara geo-political zone as the political centre are two factors which militate in favour of the extension of the Bambara language.

Besides Bambara, there is the Peul linguistic community and, very much on the periphery, the Tamasheq community. Many of the people who speak Soninke, Dogon, Bore or Miniankpa speak Bambara as a second language or Peul, particularly in the case of the Dogon. Upper Volta is unquestionably multilingual and has two major linguistic communities, that of the Mossi who speak Moré and that of the Dioula who speak a Mandingo dialect. However, there are other linguistic groups which, although numerically smaller, are not necessarily bilingual: the Kasena, Dagari, Lobi and Gourmantche.

Niger is a multilingual country where there are four dominant linguistic communities. The leading language is Hausa, followed by Songhai, Peul and Tamasheq. The Hausa-speaking community is only a fraction of the vast linguistic group whose nucleus is in Nigeria. Most of the work published on this language is in English, but many Hausa texts have found their way into print in newspapers, journals and
books. This gives the language a prestige which impresses the Nigerians themselves.

It is disgraceful that no practical work has been done on this language by French-speaking scholars. Moreover, it is common knowledge that Hausa is the vehicular language for millions of speakers, mainly in Nigeria, Niger and the northern areas of Togo and Benin. The language has several dialects, but it does not appear, until fuller information is available, that dialect differences in Hausa are as great as in Songhai (Songhai, Zerma, Dendi). This language extends as far as Mali, following the course of the Niger. In the dialect form of Dendi, it is the vehicular in the north of Benin. A systematic study of Songhai is currently in hand.

Lastly, Mauritania is distinguished by the existence of a very large Arabic-speaking community and minority communities speaking Soninke and Peul.

MULTILINGUAL STATES WHERE ONE LANGUAGE HAS RECENTLY BECOME DOMINANT

The languages in question are Sango, Lingala and vehicular Dioula. The first two languages have come to the fore in recent times. Sango is mainly used in the Central African Republic and spreads into Chad and the Congo. Lingala is spoken in the Congo and Zaire. Vehicular Dioula, which is a linguistic reality defying definition, is spoken mainly, but not exclusively, in the Ivory Coast. What is certain is that all these countries are multilingual and that the widely spoken languages we have just mentioned have been used ever since far-ranging trade relations developed.

It would not be quite true to say that Sango and Lingala are not yet fixed, linguistically speaking, but in everyday use, we find the proportion of words of French origin to be greater or lesser according to various factors such as the subject of the message to be conveyed, the social status of the speaker, the urban or rural environment, and the ethnic origin of the speaker. Are languages like this suited to be the medium of instruction? This question cannot be answered until a demographic survey has been made of the speakers, their social and geographical distribution and their motives for using Sango or Lingala. It can reasonably be assumed that the number of speakers is increasing, for the use of these languages is, in fact, associated with economic growth, the development of trade and modern forms of political, administrative and economic organization. However, we must not forget that Lingala (at least where the Congo is concerned) and Sango are spoken in most cases, as second languages and the other ethnic languages come first. On the other hand, in the towns, a generation of young people is growing up who have learnt to speak in these languages, whereas their parents’ generation is still bilingual. Before those responsible for working out a linguistic policy choose Sango and Lingala as languages of instruction they must study the result of a close analysis of these situations.

It is difficult to identify the origin of these languages. It is true that they are indisputably African, Lingala being a Bantu language and Sango stemming from a type of ‘economic language’ similar to other languages used in the Central African Republic. They have grown up in the context of trade and their geographical spread has followed the extension of trade routes, particularly along the rivers. They are typically vehicular languages, gradually tending to become the only language, or at least the first language, of the new generations.

The sociology of the vehicular Dioula of the Ivory Coast is less well known and more difficult to define since this language probably grew up

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1. ‘Economic type’ languages are distinguished by various structural features, such as radicals formed exclusively of open syllables, a majority of two-syllable radicals with homophonic vowels, or else a majority of single-syllable radicals, productive composition of nouns, and prevalence of nasal vowels as phonemes.
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at an earlier date than the two languages mentioned above. It, too, is associated with expansion of trade, but in pre-colonial times. Colonization and the present development of Ivory Coast have created situations in which there are more and more reasons for using vehicular Dioula. Situations of this kind go hand in hand with the need for a language spoken over a wide geographical area. None of the ethnic languages of the Ivory Coast could satisfy this need. A language rivalling Dioula is emerging today, this being a dialectal form of French or pidgin. This is a recent phenomenon.

A study of vehicular Dioula has recently been made. This has resulted in a textbook and a set of records entitled *Ko di? Cours de Dioula*, by G. Dumestre and G. L. A. Retord (University of Abidjan, 1974). It is clear from reading this textbook that the language is historically very close to other Mandingo dialects and it seems to have a special affinity with Malinke dialects. This is important because in so far as young children learn vehicular Dioula as their first language they will find that they know a language which is very close to the other Mandingo dialects. The fact that vehicular Dioula is despised by people whose ethnic languages are Bambara, Dioula or Malinke is a phenomenon of collective psychology which can be ascribed to specific economic and historical causes. Vehicular Dioula none the less belongs to a ‘linguistic continuum’ embracing a vast geographical area within which people can understand each other in so far as a common Mandingo language predominates over local dialects.

**MULTILINGUAL STATES WHERE THERE IS NO DOMINANT LANGUAGE EXCEPT IN CERTAIN REGIONS**

Here we have States with complex language situations and about which we can only speak in very general terms until the necessary research has been done.

There is no doubt that the distinction between this group and the second group is a very fine one until such criteria have been established as will make it possible to arrive at an objective assessment. We shall return to this point in our conclusion.

What countries can be regarded as multilingual but having no dominant language except in certain regions? We propose to consider Guinea, Benin, Togo, Chad, Cameroon and Gabon.

Guinea has three major language communities which are Malinke, Peul and Susu. Malinke belongs to the Mandingo group. The dialects spoken in the Kouroussa and Siguiri regions are close to the Bambara spoken in Mali. The dialects of Kankan and Konyan differ to a fairly marked degree from the preceding ones. Malinke is the vehicular language in part of the forest region. The percentage of Malinke speakers in relation to the whole population of Guinea is lower than the percentage of Wolof speakers in Senegal. This also applies to the speakers of the Fouta Djalon. Where Susu is concerned, the percentage is lower still, but this is a vehicular language for the Baga and Nalu minorities on the Guinea coast. Besides these three communities, there are several numerically smaller linguistic groups where the majority of speakers are monolingual: Kisi, Toma, Kpelle and Mano which, in so far as they are open to external influence, lie within the orbit of Malinke, while Konygi, Basari and Badiranke can be said, subject to the same reservation, to lie within the sphere of Peul or Western Malinke.

Benin is a multilingual country but, outside the zone of Voltaic languages, a group of languages emerges which is known as the Tado group, these being Fon, Gun, Adja, Watchi and Maxi. Fon is demographically dominant and very close to Gun. The languages of the group in question are also typological similar. To this should be added a community of Yoruba (Nago) speakers which, although small
numerically, benefits from prestige of the large Yoruba-speaking community of Nigeria.

A rather similar situation is to be found in Togo. On the one hand, there is a group of languages between which little or no intercommunication is possible, the most notable being Kabye, the language officially earmarked as a medium of instruction. On the other hand, there is the Ewe linguistic community, whose language is also intended to become a medium of instruction. Many Ewe texts exist in printed form, in accordance with a long-standing tradition established by Protestant missions, and following the example of the neighbouring State of Ghana.

Cameroon has no dominant languages except Peul, which is spoken regionally and is partly in use as a vehicular language. Where the Bantu area is concerned, a number of communities exist whose languages, although historically and typologically very closely related, do not enable their respective speakers to communicate with each other, and these include Ewondo, Basaa, Duala and the very varied Bamileke group. This proliferation of languages in which no one language predominates explains the present trend in favour of pidgin English which enables trade to expand over a wider area.

Chad's distinctive feature is the existence of a form of Arabic which is peculiar to the inhabitants of the Sahel and is quite widely used as a vehicular language in the northern half of the country. There further exists a whole cluster of languages in which Ngambay, one of the dialects of the Sara group, occupies a leading position and the use of these is tending to become concentrated around Ndjamen.

Bearing in mind the geographical limits which we have set ourselves in this article, we believe that the integration of African languages into education raises two basic kinds of problem.

To begin with, there is the question of how to ensure an even balance between the African language and French with regard to their use to perform three pedagogical functions, namely, as the language giving access to writing, as a curriculum subject, and as the medium for all instruction. There are no standard solutions. Any solution must be adopted in the light of the situation of the linguistic communities within the particular State concerned. Senegal and Cameroon cannot apply the same strategy. Senegal is in a relatively good position despite its large number of linguistic communities since Wolof emerges as the dominant language. It is spoken by a large percentage of the population, it is a vehicular language, and it belongs to a monolingual community which therefore does not need to make use of a second language in order to expand its trade. None of the languages in Cameroon is in a similar position.

One extremely important point must be emphasized. It should not be deduced from what has been said above that some countries can integrate African languages into education, while others cannot do so. The difference resides in the educational strategies which are called for by each language situation.

The second kind of problem is that of the objective criteria for choosing which language to use. The problem can be solved if systematic data are available as a result of research work done in the fields of linguistics and sociology. A survey and the analysis of data are the first stage in working out a linguistic policy.

In a purely empirical way, we suggest that the data could be so marshalled as to enable the following criteria to be applied:

The percentage of people belonging to each linguistic community within a given State. There would be three levels: high, medium and low, according to the percentage of speakers in relation to the total population. The vehicular function: is a given language used as a second language by people belonging to another linguistic community or not? Does the language in question belong to a community which is essentially monolingual or bilingual? Is it the speakers' first or second language?
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Have any linguistic studies of the language been made? At what level? When?
What kinds of texts have been written in the language in question? What function do they aim to fulfil? Is there a press in this language? Is the language used for the transcription of oral literature, for teaching materials, for religions publication?
If a given language is spoken by people beyond the frontiers of the State in question, is the same linguistic community existing in another State bigger, the same size or smaller?
The number of dialects: this is a very difficult question to answer in the present state of knowledge. For example, Senufo or Diola as spoken in Casamance have much more sharply differentiated dialects than Wolof and Bambara.
There is one last point to which we should like to draw attention and which we have already dealt with in an article in Dossiers Pédagogiques under the title ‘Typologie des Langues et Projet Pédagogique’. To put it very simply, there are languages which resemble each other because their lexicological and syntactical structures are similar. If we take the case of the Bantu languages of Cameroon, there is no inter-communication, as a general rule, between the people who speak them, yet while being specific, they have the same structural pattern. The implications for education are of fundamental importance, for these languages can be taught by the same methods. This also applies to the Tado group of languages spoken in Benin and Togo, to the Mandingo dialects, etc. It follows that the systematic study of a language makes it possible to lay down guidelines for research and put forward hypotheses and a typological framework. This approach to the choice of languages represents an indisputable economy of effort both in fundamental and in applied research and is, at the same time, a way of overcoming the irritating difficulty of the diversity of languages. In conclusion, we can say that it is possible to use an African language as the medium of instruction on four conditions: (a) there must be a political will and a governmental decision to do so; (b) committees must be organized to put forward the concrete proposals of specialists in African languages with a knowledge of all language problems (this relegates to second place linguists with no knowledge of African linguistics and those specializing in African languages but with no concern for African political problems); (c) the considerable but scattered mass of documentation and data must be collected and systematically classified; (d) university courses must be provided, as a matter of urgency, in order to produce properly trained African linguists.

Between 1951 and the present day, African public opinion has made progress, and even a breakthrough. Why 1951?
In the Journal Officiel de la République Française, dated 13 April 1951, we find this passage the style was that of the period but the content was to prove prophetic:

On 12 April 1951, Marcel Griaule speaking about the advisory councils for education, made a plea for the Study of Vernacular Languages. It was not always to be sympathetically received, in particular by Africans who received a European type of education, but he asserts that the obligation to provide instruction, overseas, exclusively in French does not satisfy the aspirations and needs of the grass-roots native population.

Where the African languages are concerned, the error now would be to think that 1976 is still the time for ideas of this kind, which would no longer be prophetic but excuses for failing to raise the fundamental problems.


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C. O. Taiwo

Nigeria: language problems and solutions

Language policy is a starting-point in any study of the use of the mother tongue in education. When the United Republic of Tanzania decided in 1967 to make Kiswahili its lingua franca and therefore the language of the schools, Kiswahili received every encouragement for development. Kiswahili is reputed to be practically a second mother tongue of the Tanzanians. G. R. V. Mmari tells us:

Kiswahili is the lingua franca, the language of government business, and is increasingly becoming the medium of instruction of the school system. It is already the medium of instruction throughout the Primary School system (with an exception of a few English-medium schools for the foreign element in the country) and in most of the Colleges of National Education (the notable exception being the Diploma granting Colleges).

He continues:

Mass media use both languages although Kiswahili dominates the media. There are newspapers in both languages and the radio broadcasts in both languages (English is used mainly on foreign broadcasts). On the other hand, in those African communities in which English is the lingua franca and the medium of instruction in the schools, there is little incentive for the development of African mother tongues as vehicles of education.

In Nigeria, the policy remains as it was in 1971—'the Nigerian primary school child should be well grounded in his/her mother tongue apart from learning English and/or any other languages as a second or third language'. But there have been two or three incidents which are bound to have some effect on the policy. The first was the concern about the lack of an indigenous lingua franca expressed by the Public Service Review Commission, popularly known as the Udoji Commission.

The government reacted by underlining the three major languages in the country—Hausa, Yoruba and Igbo.

The Government is fully aware that the trend the world over is to have a national language which is a means of preserving the people's culture. Although the adoption of a lingua franca in Nigeria is a task which cannot be achieved over-night, Government is

1. For a profound discussion of bilingualism and two mother tongues, see the inaugural lecture by Paul Christophersen, Bilingualism, published for the University of Ibadan by Methuen & Co. Ltd, London, 1948.

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of the view that a beginning should be made as soon as possible and considers it to be in the interest of national unity that each child should be encouraged to learn one of the three major languages in Nigeria other than his own vernacular.¹

Later came another decision by the federal Ministry of Education to sponsor the preparation of books and materials in Edo, Efik, Hausa, Igbo, Yoruba, Fulfulde and Kanuri for the Universal Primary Education (UPE) programme which is due to start this September.² Such decisions usually spark off controversies and debates and may lead to a State impetus to develop other mother tongues. National broadcasts of news are made in the above seven languages and Tiv and Ijaw, both of which are spoken by larger communities than Edo and Efik.

The next step was the establishment by the federal Ministry of Education of a National Language Centre, which takes the position that ‘for education to be meaningful, the child should be taught in his mother tongue which he can both read and write’. Since it is not feasible for Nigerian languages to be developed, the centre advises ‘the setting up of a list of minority languages that should be used in the educational programme’.³ One may infer that a number of Nigerian languages will receive encouragement and possibly financial support for their development.

The federal Military Government set up a Commission on the Creation of More States, which reported last December. Experience shows that each state regards the development of a language or languages indigenous to the state as a mark of the state having come to its own. It may therefore be expected that more Nigerian languages will get a boost after the creation of more states, especially in the states created out of the present multilingual states.

There is an over-all Nigerian language policy in education acceptable to the federal ministry and the state ministries of education. But practice varies from state to state, within the divisions of a state, between the urban and the rural areas and in fact from school to school. This latitude, summed up in the extract of the press release by the Ministry of Education, western Nigeria, that ‘there is absolutely nothing in the country’s educational system which prevents a school from using any language for instruction’,⁴ is obviously a problem.

Some Nigerian efforts

The use of the mother tongue in education is a practical issue. There is no more favourable means of rapport between the teacher and a child on his first day at school than a child’s mother tongue. As the child progresses in his adventure of schooling, the mother tongue is a reassuring means of acquiring concepts and building them into ideas and skills. Again it is a practical issue whether the mother tongue is mere scaffolding to be dispensed with later on or whether it is a permanent feature of education. The answer depends on the quality of the language as a medium of instruction in a widening curriculum, one which is modern in content, approach and outlook and science and technology oriented. The Nigerian languages are rich in expression in traditional settings but they are generally insufficient to cope with a modern school curriculum; this insufficiency is a major problem. The obvious solution is to develop the languages. Examination or research is going on but it is not backed up by enthusiasm, in the face of policy statements which are not backed up by practice.

The debate between the altruist and the nationalist does not offer much encouragement for development. The altruist maintains that every mother tongue is worth developing as a medium of instruction. The large number of Nigerian languages makes development along this principle a prohibitive expenditure. The nationalist, on the other hand, is urging a political decision of adopting one Nigerian language as the national language. A popular playwright and scholar, Wole Soyinka, recently advocated the adoption of Swahili as the only African language so that Africa would be identified with Swahili, which in time would become the mother tongue of every African. There are others who see the overwhelming advantages of a world language and urge for Nigeria an early transfer from the mother tongue as a medium of instruction to English, a familiar world language. In the face of these conflicting views, concerted effort on the development of Nigerian languages as adequate media of instruction is not possible. There are efforts, of course, by different bodies and institutions; some of the more significant ones will be outlined in the following pages.

It should be noted that Nigeria has five patterns of the use of the mother tongue in education. The first is in the monolingual states—Lagos (Yoruba), western (Yoruba), east-central (Igbo) and Kano (Hausa). The problems in these areas are common to all others, which are multilingual to varying extents. The multilingual states have additional problems arising from the small numbers of the users of each language.

The states

The states have responsibility (concurrently with the federal government) for education in their respective states. The efforts are uneven. In the monolingual states, the language of the state is taught in the primary school, in the secondary school when staff is available and in teacher training institutions less regularly.

Some of the main problems include a lack of qualified teachers due to the lack of incentive to learn or specialize in the African languages. The status of the languages are still low; they are conversational languages, widely spoken as such, but in secondary school, English is usually compulsory. In the same way, while employers demand a minimum achievement in English, there is no such demand in respect of a Nigerian language. Many people, including teachers, see the Nigerian languages as ancillary to English. English is the lingua franca, the language of the office, the shops, of commerce, business, industry and the legislatures.

Among the Nigerian languages, the status of Hausa is relatively high in the Hausa-speaking areas and it is deliberately promoted. The emir usually speaks Hausa in his emirate even when he is fluent in English and his audience is English-speaking. Hausa is freely spoken in the offices and the shops, in some of which articles are labelled in Hausa. Road notices in towns are in Hausa. Generally there is some encouragement to learn Hausa.

The Yoruba language is widely spoken in Lagos and the western states and parts of the Kwara state but no effort is made to promote its status. Igbo is in no better position. The development of African languages as a medium of instruction is feeble. There is still the erroneous belief that a speaker of a language can use it as a medium of instruction. In many cases, the teachers have neither the background nor the knowledge to use the language effectively in science, mathematics, geography, etc. They themselves acquired school terminology in English and have never thought of the desirability to teach in a Nigerian language.

The few efforts there are are not co-ordinated.

Nigeria: language problems and solutions

Even in the same school, different words in the Nigerian language are used for the same term, concept or experience.

There is a lack of literature aimed at sufficiency of the language as a medium of instruction. Beyond the first stages of learning to read, readers are not graded, topics are in the traditional and literary settings, not in the scientific or technical.

Mass media—radio, television and newspapers—concentrate on literature and traditional settings. Everybody seems shy of scientific and technical themes in the Nigerian language.

Each language has its own orthography, which increases the problem for anyone learning two or more Nigerian languages. The Hausa orthography seems to raise no problem. The Yoruba orthography recommended by a specially appointed committee has not received the official approval and so little differences remain unresolved. Igbo has not reconciled its two forms of orthography. The recommendation for a national orthography has not been accepted in any quarters.

Parents are concerned that children on leaving school should have an acceptable achievement in English. In practical terms, they should be able to read, write and communicate in English rather than in a Nigerian language.

The high status of English is the greatest obstacle to the development of the Nigerian languages. Because English is a world language, there are many methods of teaching it and the techniques and aids are abundant. The teacher of English is well off in resources and is in a far superior position than his colleague who teaches a Nigerian language. In the urban areas of the multilingual states, the urge to make English the medium of instruction from the start is a practical issue. A multilingual state does not give even attention to the development of the languages of the state. The tendency is to develop one or two of the languages and neglect the others, which bruises the sensitivity of the minorities. The transfer from a Nigerian language as the medium of instruction to English is a problem which is recognized but to which sufficient attention is not given. There is little preparation for the transfer and many secondary schools spend the first year in remedial work in English.

In order to promote mobility some teachers have to work in areas where they do not understand the children's mother tongue. The easy way out is to fall back on the use of English as the medium of instruction as early as possible.

The National Language Centre

The National Language Centre, a creation of the federal Ministry of Education, is small, a token of intentions. It is concerned with improvement in the quality of instruction and it works on the assumption that the use of the mother tongue as the medium of instruction is an important factor. The centre has outlined the main problems, much in the same way as we have done above. One can hope that more support and publicity will be forthcoming for the centre.

The programme for development of the chosen languages has to be phased over several years. In the meantime, some more immediate solutions are necessary for the very many language problems that now exist.

1. In some cases, teachers are not trained to teach minority languages, nor to use them as vehicles of instruction.
2. Research done into those languages is scanty and hence the vocabulary available to the teacher is inadequate to cope with new concepts introduced into curriculum changes.
3. Distribution of textbooks, supplementary materials and teaching aids is unsatisfactory. This can be due either to administration or finance, or to a combination of both.
4. Publicity is poor. Teachers are frequently
unaware of the existence of teaching materials that would be helpful and of courses they should attend.

5. Enrichment material and even textbooks have been very limited.

6. There are no incentives, either professional or otherwise, for teachers using the mother tongue as a medium of instruction.

7. In some cosmopolitan areas the language of instruction is neither English nor the mother tongue of the community but rather pidgin.

8. The present policy is merely a bridge programme.

It would be unfair to leave the impression that some of these problems are not being tackled by the states concerned. This, clearly, is not the case. But the general feeling is that a much more practical programme should be embarked upon.

Recommendations

1. That at primary level more emphasis be given to language teaching and learning.

2. That vacation courses in language teaching for those in remote areas be increased substantially. That would mean knowing what languages have been reduced to writing, what primers exist, from where the teaching personnel can be drawn, etc. This information could be obtained through the National Language Centre of the federal Ministry of Education.

3. That in-term evening and day courses be organized for teachers in urban areas, or those near advanced teachers' colleges, institutes of linguistics and universities. It is advisable that vacation courses should be available for the teachers in rural areas who are more gravely affected by the language problems. The teachers in the towns or near institutions of higher learning should be encouraged to attend in-term courses. Thus the in-service programme will spread more widely.

4. That teachers should, over a period of time, be given an increment on the number of courses attended. This is an incentive for them to want to improve their teaching proficiency.

5. That a comprehensive list of readers and primers of minority languages be compiled and published for the benefit of primary school teachers. The list should indicate where those books can be obtained. It must also be remembered that some states cannot afford to commission the printing and publishing of textbooks and supplementary materials.

6. That all language training programmes throughout the federation be co-ordinated and advertised. The method of advertisement is a detail that should be carefully planned through a central agency.

7. That funds should be made available for language research projects, writers' workshops and seminars. This will provide the necessary feedback into the educational system.

8. That the mother tongue should be studied throughout the child's educational career. This is a sounder bilingual programme. To develop a deeper knowledge of one's mother tongue has positive effects on attitudinal factors as well as on academic achievements. This is a step in the right direction. The centre is still small, no more than a token of intention. It should be expanded and its functions widely publicized.

The six-year primary education project of the University of Ife

The project was aimed at demonstrating the possibility of using the mother tongue (Yoruba in this case) rather than English (a foreign language) as the medium of instruction throughout a six-year primary education programme.
The original research design was (a) In the experimental classes: (i) the medium of instruction in all subjects except English was Yoruba, (ii) English was taught by a specialist teacher, (iii) the curriculum materials in mathematics, science, social studies, Yoruba and English were specially prepared; (b) In the control class: (i) the medium of instruction in all subjects except English was Yoruba in primary classes I to III and English in primary classes IV to VI, (ii) the same curriculum materials in mathematics, science, social studies and Yoruba were used except that for classes IV to VI they were in English, (iii) English was taught by the class teacher and not necessarily by a specialist in English.

The hypotheses were:
1. Children in experimental classes will be no worse in academic achievement than those in control classes.
2. Knowledge of and performance in English Language of experimental children will be no worse than those of control children.
3. Children in experimental classes will be better adjusted, more relaxed, more enterprising and more resourceful than children in control classes.

It is not the purpose of this paper to anticipate the result of the research but it is not difficult to visualize that the mother tongue as the medium of instruction should make the children ‘more relaxed and better adjusted’.

The real problem is the adequacy of Yoruba as the medium of instruction in mathematics, science and social studies. The problem is seen in its magnitude and complexity when it comes to the preparation of materials and textbooks in Yoruba to express new concepts and experiences. Word equivalents are difficult to find if the concepts and experiences are to be preserved precisely. Take a few examples given at a recent seminar:1 (a) red, pink, orange, brown are all pupa in Yoruba; round, spherical, cylindrical are roboto; square, rectangle, trapezium are onigun merin (four-angled or four-corner); cubic is onigun mefa (six-angled)—(note the confusion that could arise between plane and solid figures); (b) green is awo eawe (colour of a leaf; children know that not all leaves are green); acid is majele (poison); electricity is ina monamona (light that comes out of lightning); (c) in a number of cases, there are no equivalents of any kind. You either use the foreign word or you resort to a long imprecise sentence. In mathematics, the difficulty is no less great.

The next problem is the acceptability of the translations to a whole region. The Ife project is still at the experimental stage and much useful work is being done. Will there be sufficient authority to register the Yoruba equivalents? The greatest problem is that of transfer. If English or even an African language other than Yoruba is the lingua franca, is it desirable to delay the transfer into that language? The more a language is used, the more fluent or confident in it the user becomes. For the over-all interest of the children, what is the best time to transfer? Will the children in the experimental schools have sufficient practice in the use of English to give them confidence in after-school life?

Nigerian universities

Practically every university in Nigeria does some work on one or more of the Nigerian languages. Generally they concentrate on literature and to a lesser extent on language. The sufficiency of the languages as media of instruction has not received much attention except by a few individual researchers, partly because the lecturers themselves come from the humanities rather than from fields such as mathematics, science or geography. The science and mathematics educators are only just beginning to turn attention to language.

1. CASME Seminar on Languages and the Teaching of Science and Mathematics with Special Reference to Africa, Accra, 28–31 October 1975.
A. Ologunde has made the following suggestions, which summarize the conclusions of many other individual researches: (a) an overall language policy; (b) adequate syllabus for Yoruba studies; (c) developing the language sufficiently to meet the demands of today, need for authoritative orthography, monolingual dictionary, bibliography and grammar; and (d) finally, necessary textbooks should be available qualitatively and quantitatively. Perhaps this requirement is the least satisfactorily met today. Suppose, for example, Yoruba were to be adopted as the medium of instruction for all primary school education. Where are the textbooks written in Yoruba on relevant materials in history, geography, mathematics, and elementary general science, to name a few? This may be the greatest single uphill task to be faced by the Ife University project.

The International Commission on Mathematical Instruction (ICMI)

ICMI put up its Second International Congress on Mathematical Education (ICME) at Exeter University in September 1972. One of the recommendations was that 'fundamental research should be undertaken on the relation between the learning of basic mathematical structures and the language through which they are learnt'. Consequently, ICMI, with the co-operation of Unesco and the Centre for Educational Development Overseas (CEDO), organized a symposium on the Interactions between Linguistics and Mathematical Education, which was held in Nairobi, Kenya, 1-11 September 1974. The report contains some of the problems connected with the mother tongue as the medium of instruction and with the transfer to another language as the medium of instruction. By widening the scope of the theme, we find that we are back with the same questions of the status of the mother tongue and the registers of the subjects—science mathematics and social studies. The questions raised with transfer are: (a) timing and duration; (b) special preparation; (c) continuity of conceptual growth; (d) mismatch between the child's experience and that assumed by teaching materials in the second language; (e) difficulties of communication in the new medium.

The Commonwealth Association of Science and Mathematics Educators (CASME)

CASME followed up the Nairobi Workshop by organizing in Accra, Ghana, a Seminar on Languages and the Teaching of Science and Mathematics with Special Reference to Africa, 27-31 October 1975. The seminar explored the areas of difficulty identified as: (a) vocabulary of the medium of instruction as to its adequacy for the curriculum; (b) syntax of the medium of instruction as to conflicts with a world language of instruction; (c) transfer from one medium (usually the mother tongue) to another, say, English.

The participants saw that the greatest problem was the vocabulary of the African languages which did not have words for the scientific and mathematical concepts, terms and experiences. The next problem was of transfer and the questions raised were similar to those of the Nairobi workshop. Syntax did not appear a major problem but it was worth further examination by teams of linguists working with science and mathematics educators.

The relevance of these international efforts is that most of the African countries represented use an African language as the medium of instruction for a part or all of the primary education programme. The second is that the problems are identified and an exchange of ideas and information takes place in a non-

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political, professional atmosphere. The report then carries the message around for action by the communities and the educators concerned.

Problems, solutions and recommendations

POLICY AND IMPLEMENTATION

The national policy is the mother tongue as the medium of instruction in the lower classes of the primary school. Each state adopts the policy with modifications dictated by its own circumstances. In the monolingual states, the mother tongue is used in classes I, II and III of a six-year primary education programme and English in the last three classes. There are exceptions, such as Kano in which Hausa is the medium throughout the six classes and the Ife project area in which Yoruba is the medium of instruction throughout the six-year programme. In the multilingual areas, there is a wide variation ranging from none to two years of the mother tongue as the medium of instruction followed by English as the medium.

As has already been emphasized, the languages are not adequately developed as media of instruction and the teachers are not trained to use them. As a result, practice varies widely from school to school and even within the same school. Moreover, there is no authority or mechanism to compel conformity to the policy. The leaving of the practice of the policy to the discretion of the teachers and the absence of check or even interest by the inspectors conceal the difficulties of the languages as media of instruction followed by English as the medium.

In our view, the language policy in Nigeria should be the learning of English and a major Nigerian language, that is, of Hausa, Igbo and Yoruba. In the multilingual areas, a child should start with his mother tongue, move to a major Nigerian language and lastly to English. In time, the major Nigerian language should become a mother tongue of the people in the locality. The states should pursue a national policy: for example, there should be inspectors who are experts in one language or another, who should work with specialist teachers to organize courses, draw syllabuses and write textbooks and to visit teachers in the schools. The inspectors should ensure uniformity of practice and discourage the slipshod habit of using dialects or a Nigerian language interspersed with English words which have equivalents in the language.

PRESTIGE

Although more than half the population does not speak or understand English, it carries high prestige. The status of Nigerian languages is low; only four of the languages (Efik, Hausa, Igbo and Yoruba) are studied at the secondary school level. University students of Hausa, Igbo and Yoruba are very few, and Efik is not yet a university subject.

There is, however, some deliberate attempt to promote one or another of the major Nigerian languages. The problem of the low status should not be considered in isolation. With a realistic language policy and the development of the language towards sufficiency and effectiveness, the status should rise.

VOCABULARY

There is, as we have said, a problem of vocabulary. There are the concepts and the technical terms for which there are no equivalents or for which the equivalents are imprecise, inadequate and sometimes completely misleading.
The yoruba word *majele* (a deadly poison) for the word acid does not define an acid. It is an example of a misleading equivalent. So are the words suggested for electricity, cylinder, green, etc.

The solution is hard work by a team of science and mathematics educators and linguists working together to get the equivalents or to decide on which words should be admitted unchanged into the Nigerian language. An attempt was made in 1953 by the western region of Nigeria, which set up a Conference on Yoruba Scientific Terminology, but there was at the time no science or mathematics in the primary school curriculum. The time is ripe for another attempt at the state level to enrich the vocabulary of the major Nigerian languages both for primary education and for general use. There are now Nigerian linguists and more educators and scholars who speak the languages and are scientists, mathematicians or geographers.

**EDUCATIONAL MATERIALS**

The mother tongue as a medium of instruction naturally means that materials must be prepared in the mother tongue. Pupils' readers and textbooks on the Nigerian language and other subjects of the curriculum, tapes, videotapes, practice books are essential. Even in the major Nigerian languages, however, publishers are very cautious to publish. In the minor languages, readers and books need to be subsidized. As a result, there are either no books or few and inadequate books. Teachers and pupils are eager to proceed to books in English, of which there is a good supply.

The solution adopted by the Ife project is mimeographed readers and texts, neatly bound into books. This is expedient, but a poor substitute for attractive colourful books, illustrated with beautiful pictures. For the minor languages, it may be the only realistic solution.

The major languages have a better chance. There are big markets to justify published readers but books for general reading are few, as are textbooks other than readers.

**TRANSFER FROM ONE LANGUAGE TO ANOTHER**

The transfer from the mother tongue as a medium of instruction to a second language (Nigerian or English) is a problem which does not receive much attention. In the more usual case of transfer to English, the better teachers have a transitional period, usually in the primary class III, when they use the mother tongue as the medium in certain subjects and English as the medium in others. In many Yoruba schools, that is the practice throughout the classes. The teacher resorts to the Yoruba language when English as the medium appears not to achieve the objective of the lesson.

**TEACHER TRAINING**

The problem of training is a key one: it is still erroneously held that a teacher who speaks a language can teach it and use it as a medium of instruction. There are signs of a change of attitude. More teacher-training colleges are teaching one major Nigerian language or another, the universities are intensifying the Nigerian language programmes and new curricula are emerging. The states need to pay attention to this aspect of teacher training and to appoint inspectors to do the follow-up in schools.

Seven languages have been selected as the Nigerian languages to be taught in the universal primary education curriculum. Contracts have been awarded for the production of readers in the seven languages (Edo, Efik, Fulfulde, Hausa, Igbo, Kanuri and Yoruba). The problem of teacher training and the learning of one of these languages should be tackled seriously.

The federal government is keen on promoting the physical mobility of teachers at all levels. It is obvious that the language difficulty will inhibit mobility at the primary school level.
This is not necessarily a bad thing. The teachers of young children should know the language as well as the culture and the environment of the children.

RESEARCH

There is room for research into the major Nigerian languages, and into the problem of the multiplicity of languages. The development of the languages spoken by only a few people, for the sake of preserving the languages, is a retrograde step. Research should be made to find a way of narrowing down the number of the Nigerian languages and to improve communication among the ethnic groups. In particular, research could throw light on the desirability of promoting one Nigerian language as a common language.

It is a problem that there is not much information on the language development that is attempted by different bodies and institutions in the same country and outside it. Very little is published in the languages and even this is not read by many. For a language to develop, it needs to be used in the various contexts—scientific, technical, literary, social, etc. The Nigerian languages suffer from the lack of publications in the languages and of information as to their development. These factors perpetuate the low status of the languages.

The solution is, of course, more publications and information. Deliberate effort including subsidy by the governments is needed to make any improvement in the present position.

The importance of the mother tongue in the education of children in their early years is certain. The problems of the mother tongue as a medium of instruction have been discussed. These problems could be narrowed down to (a) policy, (b) sufficiency of the language as a medium of instruction and (c) teacher training. They are not insurmountable problems if all concerned—the governments, educators, teachers, the general public, commercial and industrial concerns—accept the challenge in the interest of education.

It should be accepted that now and for some time to come, an educated Nigerian should be bilingual in a Nigerian language and a world language, in the present time, obviously English. The educator should therefore aim at fluency and sufficiency in both languages. Even if a Nigerian language became the national language, English will still be essential equipment of the educated. For a good start, the child learns in his mother tongue, one or another of the Nigerian languages, and then gradually moves into English as the medium of instruction. This is one way of ensuring equal access of every Nigerian child to education.
Science education in Sri Lanka could be traced back about a hundred years with the establishment of the Ceylon Medical College in 1870 and the introduction of science to the Colombo Academy in 1880. Science education at that time was limited to the small minority who could pay fees and obtain an English education. Neither the benefits of English education nor the advantages of science education had any effect on the masses who formed the core of the nation. The neglect of the masses—especially the rural population, peasant agriculture, the language, religion and culture of the ordinary man led to the national struggle for political and economic independence and for restoring national culture and language to their due place.

The change of medium was finally effected in the middle school beginning in Grade 6 from 1953 and progressively going up to Grade 8 in 1955. In 1955 the government accepted the principle that Sinhala and Tamil should be the official languages and that these languages should progressively become the media of instruction in schools. The Ministry of Education extended the change of medium to Grades 9 and 10, except in science and a few other subjects in 1955. In 1964 the ministry concluded that enough books and teachers were available to teach science too in the national languages and the above concession was withdrawn. The change of medium was then progressively extended to Grades 11 and 12 (GCE Advanced Level) and finally right up to the university level. Today, the university science departments are able to conduct most of their degree courses in the national languages.

The change in the medium of instruction in science and mathematics always lagged behind the other subjects because of special difficulties like the absence of scientific and technical terms, textbooks and proficient teachers. Nevertheless the need to switch over to the national languages was greatest in the science subjects for two reasons. First, science education was considered the main instrument through which national development goals and the improvements of the quality of life of the masses could be achieved. Thus there was a need to expand science education and improve its quality. One constraint which hindered the expansion was the English medium which necessarily limited the opportunities to the small minority of pupils who were able to attend English medium schools. Secondly, in order to improve the quality of
science teaching so as to achieve the wider objectives such as inculcation of the methods and attitudes of science, the didactic teaching approach had to be replaced by an activity and inquiry-based approach which requires greater dialogue, discussion and interaction between the pupil and the teacher and between the pupils themselves. Such an approach makes a heavy demand on the language ability of the pupils and will be most successful if the medium of instruction is also the first language of the pupils.

Organization

The introduction of the national languages as the medium of instruction in schools was linked with the adoption of the national languages as official languages of the nation. An official language affairs department under the special commissioner for official language affairs was already in existence at that time. A special division of this department was set up to organize the preliminary work connected with the change of the medium of instruction in schools. This division soon developed into a separate and independent department known as the Department of Swabhasa (i.e. national languages). The staff of this department consisted mainly of language experts and experienced teachers who were competent in the national languages in addition to their own subject areas. The activities of this department were mainly directed towards the compilation of glossaries of science and technical terms and the translation of textbooks, especially in science and mathematics for use in schools. No attempt was made to write original textbooks during this initial phase. However, when the need arose, as described below, for original textbooks in the national languages, it was found that the response from the private sector was inadequate to meet the demand. Since it was felt that no agency except the government could possibly undertake the responsibility and the risks involved in textbook production, the Ministry of Education stepped in to fill the breach and in 1964 a textbook writing unit was established at the ministry. The main task of this unit was to produce science and mathematics textbooks in the national languages for the primary and lower secondary level (up to Grade 10). As the workload of this unit increased, it was decided to combine this unit with the Department of Swabhasa. This resulted in the setting up of the Educational Publications Department in 1966, under the Ministry of Education.

The activities of this department fall into the following categories: (a) translating books into Sinhala and Tamil for University students; (b) writing original textbooks in Sinhala and Tamil for schools; (c) commissioning local specialists to write textbooks in Sinhala and Tamil for schools as well as for higher education; (d) editing and publishing the above textbooks; (e) wholesale distribution of books published by the department; (f) production of miscellaneous educational material, e.g. background and supplementary reading material, periodicals, etc.

Terminology problems

One of the earliest needs that had to be satisfied before the national languages could be made the medium for teaching science was to generate science and technical terms in the national languages required for each level. Although there were some terms which were in common usage to express science concepts, the national languages had not developed sufficiently to meet the immediate requirements of modern science teaching, especially at the senior secondary level. Some of the science and technical terms in common usage were found to be either inaccurate or ambiguous and hence they had to be replaced by better and more precise terms.
The Department of Education therefore set up a glossary committee to generate the necessary science and technical terms for teaching science and mathematics in the junior secondary school (Grades 6, 7 and 8). This committee consisted of officials from the Department of Education, well-known scientists, educationists, language scholars, teachers and eminent writers. The members of the committee were entrusted with a pioneering task and the first set of technical terms was published in 1953 by this committee in an official publication entitled *Sinhalese Technical Terms in Mathematics and General Science*. In a foreword to this publication the Minister of Education states that:

... a step forward has been taken and intending authors who wish to produce books on subjects like mathematics and general science have now before them a glossary accepted by the Department of Education. In addition, teachers who are teaching these subjects for the first time in the Sinhala language have the advantage of a ready-made set of terms.

This glossary provided a set of terms in general science and mathematics that was required to teach those subjects in the junior secondary school (Grades 6, 7 and 8).

Later with the establishment of the Swabhasa Department and the extension of the national language medium to the senior secondary school, glossary committees were formed in the key science subjects which were in the school curriculum during that period, for example, chemistry, physics, botany, zoology. These glossary committees consisted of subject specialists who were professional scientists such as university faculty members and scientists in research institutes, language experts and science teachers. The Chairman and Secretary of each committee were full-time officers of the department. The committees had regular meetings, usually once a week running to about two hours and based their work on lists of words which occurred in the textbooks commonly used in the schools for which suitable words were coined in the national languages.

The glossaries prepared by the committees were published at the Government Press and made available to teachers, pupils and the general public. In order to ensure uniformity in the use of technical terms, teachers and textbook writers were instructed to use the terms approved by the glossary committees.

When the decision was taken to extend the national languages as the medium of instruction to higher education the need arose for technical terms for higher education in science and mathematics, and for professional studies in medicine and engineering. Advanced glossary committees were set up in the required fields to meet the above needs.

Within a few years, most of the technical terms needed not only for science and mathematics teaching at school level but even for science, medical and technical education at higher levels were available in Sinhalese and Tamil.

**Translation**

After making available the science and technical terms the next step was to provide books, of which there was at that time a great paucity. Except for a few popular science books written for laymen and some textbooks in nature study and rural science written for the primary level, there were no books in the national languages suitable for science teaching in schools. Since science teaching was confined to the few well-established English medium schools, the standard of English textbooks which were popular in the grammar schools in the United Kingdom were considered to be quite suitable for the local science students too. With the change in the medium of instruction there was an urgent need to provide textbooks in the national languages as quickly as possible. Since the time available was short and also because there was
no change in the syllabuses of instruction, it was decided that the best course of action was to translate the most popular textbooks that were being used in schools at that time.

Widely used English textbooks were selected for translation on a contract basis mainly by science teachers who showed special competence in the national languages. These translations were done under the supervision of the editors of the Swabhasa Department, edited by them and published by the Swabhasa Department. Subsequently, the Swabhasa Department recruited full-time translators who were competent both in science and the national languages to do the translations. In addition to the essential basic textbooks translated and published by the government, private publishers, too, began to put out translations of well-known textbooks.

As the change in the medium of instruction was extended to higher levels it became increasingly difficult to cope with the demand for books especially at advanced specialized levels. However, efforts were made to make available in translation at least one standard textbook in each field of study.

New textbooks

During the early stages of the transition, all efforts were directed towards bringing out more and more translations of existing popular English textbooks. There were a few attempts by private authors to write original textbooks but the number of such books was negligible. The traditional English textbooks were quite adequate so long as the school curriculum which was actually geared to those books remained unchanged. However, the science curriculum reform movement, which became a world-wide phenomenon in the late fifties, made its impact in this country too. A science curriculum revision programme was initiated at the junior secondary school level (Grades 9, 10) in 1960. Although there was no great need of textbooks at the junior secondary level for general science teaching, it became quite evident that new books were needed for the senior secondary level in chemistry, physics and biology. The new curriculum at this level differed both in content and methodology from the traditional curriculum. The new curriculum made attempts to break away from the didactic teaching tradition and introduce a more activity based inquiry approach to the teaching of science. The content was linked to the local environment and designed to meet the needs of the learner in his everyday life. Since private publishers were not properly equipped to write new books to suit the new curricula and also were not willing to take the risks involved in such an enterprise, the Ministry of Education set up committees in 1964 to write new textbooks. This action led to the production of a series of textbooks in chemistry, physics and biology for Grades 9 and 10 (GCE Ordinary Level). The textbook teams were composed of curriculum specialists who designed the new curriculum and practising teachers who had considerable experience in teaching at this level. Most of the original writing was done directly in either Sinhala or Tamil and translated to the other language, thus eliminating the use of English altogether. These books gradually replaced the translations at the Grade 9 and 10 level. However, since there was no major curriculum revision in the upper secondary (Grades 11 and 12—GCE Advanced Level) school level, the translation remained popular with the pupils in these grades. Even in these grades, a few original books were written by local authors in the national languages.

With the introduction of Integrated Science and a new mathematics curriculum to the Junior Secondary School (Grades 6–9) in 1972, a new set of books were written and published by the Ministry of Education. These books have replaced all the translated books in the schools.
up to the Grade 10 level. A new curriculum was introduced to the Senior Secondary School (Grades 10-11) in 1976 and new books geared to these curricula are now being written. With the completion of the Senior Secondary School Level textbook programme the translated books will be replaced by original books written in the national language as the main textbooks in the schools. As far as higher science and technical education is concerned, the dependence on translations will probably continue to exist for a long time.

Support material

Even though insufficient, a certain amount of background and supplementary reading materials has been published. Here, too, translations led the field and showed the path for original books. Well-known background science reading material series in English, e.g. ‘Science on the March’, ‘Life and Science’, ‘Simple Science’, etc., were translated and published by private publishers; The Unesco Sourcebook for Science Teaching was one of the earliest to be translated into the national languages. Once the path was cleared by translations, more and more original books began to appear on the scene. However, there is an ever-increasing need for background and supplementary reading material based especially on the local environment, local agriculture and industry and national development efforts.

With the expansion of science education and the production of more and more reading material, there arose the need for a dictionary of science and technical terms; the Educational Publications Department of the Ministry of Education set up a special committee and subsequently published two dictionaries in each language. A few dictionaries compiled by private authors have also been published.

While putting a great effort on the task of producing textbooks in the national languages (both translations and original) the possibility of using other media for the dissemination of science education in the national language were explored. In the absence of television, it was recognized that the radio could be used widely for this purpose. The educational division of the State broadcasting services which was organizing broadcasts to schools gave top priority to science programmes specially geared to the school curriculum. These programmes, designed and executed by a group of able science educators, served a dual purpose—first they provided instructions to pupils in the national languages and second ‘broke the ice’ and paved the way for those teachers who were not familiar with the national language medium for teaching science. The national services gave more and more time for science broadcasts, thereby popularizing science as well as the new terminology and idiom developed for expressing science concepts.

The national newspapers, too, began to take considerable interest in science writing. Some newspapers started regular columns for science articles written mainly for schoolchildren. More and more popular science articles, too, began to appear in daily and Sunday newspapers. These newspaper articles too helped to strengthen the efforts to teach science in the national language.

Radio and newspapers developed as the main mass media for the dissemination and popularization of science in the national languages among the masses. For example, the Ceylon Broadcasting Corporation made arrangements to provide simultaneous translations in the national languages (with additional explanatory comments) of the live commentaries broadcast by the Voice of America for the entire duration of the Apollo space flights. These programmes were so successful that even regular listeners to the English medium broadcasts preferred to tune in to the translations in the national services because they were superior both in clarity of expression and the quality of instruction.
Transition

The period of transition was not without its problems. It was certainly not at all plain sailing during the earlier period where one of the major problems was the difficulty encountered by the teachers who had little or no experience in teaching science in the national languages. Almost all the science teachers who were in service at that time were those who had their education entirely in the English medium. Even those who were proficient in the national languages were not properly equipped to teach science. Technical terms and books alone were not sufficient to give them the confidence and skills needed to perform at the same level as they would in English. Their vocabulary in technical terms was poor; the new language idiom needed for expressing science concepts was not familiar to them. Hence, classroom performance characteristics such as fluency and clarity of expression were rather poor at the initial stages. However, it was observed that these difficulties diminished rapidly and disappeared with experience and practice.

The translations that came out during the earlier period also presented the learner with special difficulties. The new technical terms were often so formidable and the unconventional idiom used was so foreign to those who were reading science for the first time in their own language that it was often claimed that those translations were incomprehensible and beyond the reach of the average student. Some of the technical terms which turned out to be high-sounding tongue-twisters became the subject of jokes and it was said that the translations could be understood only by constant reference to the English originals! Difficulties of this sort were unavoidable during the teething period. The quality of the technical terms and translations gradually improved leading to the production of smooth and elegant science literature in the national languages.

The task of creating science and technical terms in itself was a formidable one. Although the national languages were quite rich and flexible for most purposes, there were occasions when they were found to be wanting in words and expressions for the purpose of expressing certain abstract science concepts.

Language experts are of the view that even a language like English which nurtured modern science and science literature since the inception, had to adopt various innovations and break away from traditional use to accommodate itself to the needs of the complexities of scientific expression. Such a tradition was completely absent in the national languages—at least in the past few centuries—and the languages had to be subjected to various shocks and ‘foreign’ influences to make them adaptable for teaching science. The puritans and ‘pundits’ who claim to be the custodians of the traditions and purity of the language were naturally shocked when the new technical terms and expressions began, in their own opinion, to tarnish the niceties of the language. In spite of opposition and resistance the glossary committees charged with the task of generating new words used various techniques to overcome these problems. Whenever there were words in common usage, they were adopted except in some cases where it could lead to ambiguities and errors in meaning. Common words existed in the national languages for common elements like hydrogen, oxygen, nitrogen, etc. But to be consistent with international nomenclature, the names of all the chemical elements were transliterated. The chemical symbols were written in Roman script to facilitate writing of formulae and equations. Hence the element sodium was written in Roman script. The names of chemical compounds were transliterated and the formulae were written in Roman script. As much as Greek and Latin contributed to the development of scientific terms in European countries,
it was natural, in the present context, to look up to the Eastern classical languages, especially Sanskrit, for inspiration and ideas in coining terms. This practice had several advantages to its credit such as providing a flexible common root for generating a series of connected terms, e.g. magnet, magnetism, magnetization, magnetic, magnetometer, etc. This practice sometimes led to the creation of rather awkward sounding terms and tongue-twisters much to the consternation of the language experts.

In some instances the traditional rules of grammar and syntax had to be overlooked for the purpose of tackling a special situation. Expressions which flouted the traditional idiom of the language had to be introduced. Such minor skirmishes affecting the traditional purity of the language were inevitable. The national languages were certainly enriched and their scope and flexibility increased by such 'heretical interferences'.

Certain words which had no local equivalents were transliterated but slightly modified to suit the local tongue and ear, e.g. siphon (siphonaya), flask (palaskiwa), prism (prismaya), parameter (paramithiya), cylindrical condenser (cylinda-rakara condensanaya). A hybrid between transliteration and translation had to be used for certain terms: e.g. oxidation (oxi-karanaya), hydrogenation (hydrogeni-karanayd).

Prefixes and suffixes presented special problems, e.g. prefixes such as cyclo, octa, tetra, etc., could be translated using the corresponding Sanskrit roots, e.g. cyclo (chakra), octa (ashta). On this basis octahedron is translated as ashtathala. But when confronted with a term such as cyclo-octa-tetra-ene the translator has to follow a different principle. Being the name of a chemical compound, it was transliterated as such.

The use of international units has also created certain problems. In the English medium, the units are written after the quantity, e.g. 5 g, 10 m per s per s, etc., and read as five grammes, 10 metres per second per second respectively. But in the national languages it is the reverse. The above examples will be written and read as 'grammes 5' and 'metres per second per second 10'. Earlier the practice was to use the national language abbreviations as symbols for the units and write them in the same order in which they were to be read. But now to be consistent with international conventions, the international symbols (g, m, s, etc.) for units are used and the units are written after the quantity. This practice, however, conflicts with the order followed in reading.

Translation of textbooks create another problem. Translating books is a tedious, time consuming, process and quite often the edition adopted for translation becomes obsolete even before the translation is out of the press. It is difficult to keep pace with the revisions and new editions which are brought out in such rapid succession. Major curriculum changes also render textbooks obsolete. Translations cannot cope with the requirements of new curricula which are often oriented and biased towards the local environment and local needs.

Periodicals and reviews also present problems. It is not possible to translate all the periodicals, reviews, monographs, reports, etc., needed for higher education and research. It is, of course, possible to translate a limited number of articles selected from journals and publish them in the form of a digest for the use of those who are unable to read the originals.

Compilation of a science encyclopaedia in the national languages is another major task which deserves much priority.

The number of books and journals that could be made available in the national languages as translations is limited by several constraints such as time and money. Hence there is a serious disadvantage created by the limited access to reading material in the case of those whose reading abilities are strictly limited to the national languages. In this context the importance of acquiring a reading ability in one
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or more international languages for those engaged in research and higher studies cannot be overemphasized.

The achievements during the period of transition from the medium of English to the national languages may be evaluated both in quantitative and qualitative terms. On the material side, the self-ware needed for the transition such as technical terms and textbooks were produced in reasonable quantity to meet the immediate and urgent needs. However, an achievement which had even greater and far-reaching results from the point of view of a resurgent nation was that the transition from English to the national languages as the medium of instruction in science helped to destroy the great barrier that existed between the privileged English educated class and the non-English educated deprived classes; between the science educated élite and the non-science educated masses; between science itself and the people. It gave confidence to the common man that science is within his reach and to the teachers and pupils that a knowledge of English need not necessarily be a prerequisite for learning science.
In addition to Spanish, some thirty-five vernacular languages are spoken in Peru, the great majority of which are to be found in rather thinly populated forest areas or by the Amazon. No exact figures are available, but it is estimated that the number of people speaking these languages in the Amazon regions totals 250,000. In the Andean zone the language is Quechua, forming a linguistic family which can be broken down into five languages or main dialects accounting for a total of 1,311,062 one-language speakers aged 5 years and above (11.12 per cent of the population), and a total of 1,715,004 (14.5 per cent) who speak both Quechua and Spanish—the majority of whom can be assumed to have Quechua as their mother tongue—making a grand total of 3,026,066 (25.64 per cent).

Also to be found in the Andean region is Aymara, spoken by 149,664 (1.21) one-language speakers aged 5 years and above, with a total of 182,241 (1.55) bilingual speakers (Aymara and Spanish), making a total of 331,405 (2.82) Aymara speakers in all. Lastly, there is Spanish, spoken by 7,740,945 people, i.e. 68 per cent of the population.

These figures and percentages relate to the population of Peru aged 5 years and above, which the official returns for the 1972 national census gave as 11,337,194.

Reasons for the decision

When one year ago, in May 1975, the Peruvian Government decreed that Quechua should be an official language, surprise was expressed and expectations aroused among various sectors of the population; the measure was regarded as a spectacular gesture, as Peru was alone among the Andean countries in adopting it within its legal and political systems. Subsequently a public discussion took place with the participation of the sectors concerned, which provided clearer insight into the problem.

In fact, there was nothing spectacular about this measure if it is analysed in the context of the relevant socio-economic, linguistic and educational situation. Now that a year has elapsed...
since its introduction, we consider it feasible to conduct a study of the present circumstances governing the application of the law, including its effects and implications, and tentatively to inquire as to the outcome of this official policy, taking as our basis the specific programmes carried out over the last twelve months.

**THE CONTEXT**

A brief analysis of the socio-economic context brings out, in addition to a large number of other phenomena, the fact that over the last forty years there has been an interrupted increase in the great migratory movements from the country to the town, i.e. from agricultural zones—with the exception of joint agricultural and industrial complexes—to industrial zones.

Table 1, showing population movements in Peru, is significant:

It goes beyond the scope of this article to analyse the causes of these movements; however, it should be emphasized that during this period the social relationships of production in the pre-capitalist era were gradually broken up and gave way to predominantly capitalist patterns of production.

This makes it necessary to remedy the language situation in Peru, since all the monolingual Quechua-speaking population is rural, and leaving the country for the town means learning another language—Spanish—with the resulting loss after some time of the vernacular language.

Traditionally the language of the leading classes, Spanish is gaining ground as a national language, its spread increasing in proportion to and concurrently with the population movements. In social terms, however, the price to be paid for this change-over to Spanish is rather heavy, since the pattern of its development is irrational: it submerges both the vernacular language and its culture and finally destroys them, and it floods the towns with a great mass of unemployed or underemployed who cannot be absorbed by urban expansion.

From the qualitative point of view, Spanish has gradually replaced Quechua for certain purposes, and is even driving it out, as is the case for example in Huancayo and Cajamarca—areas which are traditionally Quechua-speaking but in which intensive commercial and agricultural development is taking place; Quechua is becoming isolated and concentrated in areas which are not fully economically integrated into the predominant production pattern, as for example in Apurímac, Cuzco, Puno and Ayacucho. This gives force to the argument advanced by certain socio-linguistic scientists, namely that a language becomes a national language when the success of commercial exchanges leads to the unification of a country; hence it does not depend on the subjective wishes of individuals or social groups, though these play a decisive role.

In the context of the reforms promoted by the government in the last seven years, two—land reform and educational reform—have direct implications for the language situation in the country; land reform is regarded as one of the most radical attempts in South America to keep the peasant in his native community by making him the owner of the main source of production, which is the land. It may be said that the fate of bilingual education is linked far more to the eventual success of land reform than to possible technical solutions which may be

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**Table 1**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Urban population (%)</th>
<th>Rural population (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1972</td>
<td>13,572,000</td>
<td>59.6</td>
<td>40.4</td>
</tr>
<tr>
<td>1961</td>
<td>9,906,000</td>
<td>47.4</td>
<td>52.6</td>
</tr>
<tr>
<td>1940</td>
<td>6,200,000</td>
<td>35.45</td>
<td>64.55</td>
</tr>
</tbody>
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devised by the Office of Bilingual Education.

Educational reform, which is what we are concerned with here, is based on a critical analysis of the former ‘elitist’ system, which was both discriminatory and biased against the people; it offers a new, more open, democratic system which will make possible the critical participation of those being educated.

The Reform Commission began by preparing a general report analysing the major indicators of the causes of school drop-outs and criticizing the selective nature of traditional education. One of the selective mechanisms identified is language. Statistics of enrolments in traditional primary and secondary schools show very significant percentages of monolingual vernacular-speakers and bilingual speakers. With the passage to the higher levels of education, monolingual vernacular-speakers disappear; all that remain are bilingual speakers and a majority of monolingual speakers, whose mother tongue is Spanish.

Faced with this situation, and within the policy framework of the educational reform, there was established in Peru for the first time in 1972 a national bilingual education policy (PNEB), one of the aims of which is ‘to prevent any exclusive cultural pattern from being imposed, and energetically to promote recognition of the cultural plurality of the country on a basis of equality’.

The PNEB thus posits the variable of language within the educational process, by defining a policy for the educational sector with regard to those who speak vernacular languages, especially monolingual speakers, for whom it is considered a priority goal that they should learn Spanish; and by recommending the use of techniques for teaching the second language, and respect for the mother tongue. The bilingual education policy thus signifies planned action by the State with regard to the present completely disorganized process of conversion to Spanish.

What further complicates this planned action and measures to promote respect for the mother tongue, is the fact that Quechua is neither a standardized nor even a family of languages. One of the most recent and thorough studies of Quechua, by A. Torero (1974), classifies it into five main dialects: (a) Ayacucho-Cuzco; (b) Ancash-Yaru; (c) Jauja-Huanca; (d) Cañaris-Cajamarca; and (e) Chachapoyas-Lamas. This breaking up into dialects is an irrevocable fact which goes back historically to the Spanish Conquest, which not only precluded any possibility of standardization but was a setback to the existing degree of standardization, since it isolated those varieties of the language which were spoken by smaller groups of people.

Seen against this background, the policy of making Quechua an official language has nothing spectacular about it. Rather is it a logical, necessary and hoped-for result. It is in fact an outline plan to supplement existing policy, but which adds new obligations and tasks. Compulsory teaching of Quechua affects both those who speak Quechua and those who do not; in each case different methods and techniques are involved.

EFFECTS AND IMPLICATIONS

In order to implement the national bilingual education policy an Office of Bilingual Education was established in the Ministry of Education, which has been operating since 1973. This represents the first example of State management of this kind in the history of Peru.

The first measures to implement the PNEB were to delimit the field for the introduction of an experimental programme of general basic education, particularly in the first grade, in which a start is made on reading and writing, the keystone of bilingual education and its most controversial area. Those for whom this service caters were defined as monolingual vernacular speakers never having come into contact with Spanish, it being considered urgent
that special attention should be paid to them in the education system.

It was then decided that the language of instruction, and the one in which a start would be made on reading and writing, would be the mother tongue, and that at the same time oral teaching would be given in Spanish as a second language, representing a first stage which would later be followed by the development and improvement of the mother tongue at school. Plans were also made to develop the ability to read and write the second language, Spanish, with a view to its becoming a vehicle for instruction in the higher grades giving access to more technical and scientific subjects. This process should result in the use of both languages at school throughout the educational process.

The first of these measures signifies a change in the traditions of the education system. It is based on the principle that a purely oral, non-written language cannot compete in terms of social usefulness with a language backed up not only by the full weight of an organized system but also by the use of the mass media; and that it is inevitably restricted to being used locally, orally and on a medium-term basis, condemned to die out with increasing speed. This being the case, to give this language what is in fact a system of writing, means providing it with an instrument which can guarantee its survival; it also means outlining plans for the publication of educational materials, or at least formulating a publications policy which will ensure that the teaching of reading and writing in the vernacular language is adapted to its purpose. But the introduction of a common system of writing presupposes careful planning, complicated by the problem that a language such as Quechua has many different dialect forms.

Here the starting-point is recognition of the irrevocable fact that Spanish is the language of communication for the nation as a whole, that is to say, for Quechua- and Spanish-speakers and for those who speak some thirty other languages; the aim is to direct and guide this on-going process of conversion to Spanish on a planned basis, in order to avoid the reckless destruction of the cultural and linguistic identity of those who speak vernacular languages.

Aspects of implementation

In the age-old controversy about the production of educational materials for vernacular languages, there was on the one hand the argument that it is inefficient and uneconomic to produce special materials for each vernacular language, since the users of such materials will go sooner or later to swell the ranks of those being educated in the Spanish language. The proponents of this view argued that it would be better to change quickly over to Spanish, which would obviate the need to produce such educational materials and make the school-going population homogeneous. From the other side it was argued that monolingual students who spoke a vernacular language were entitled to have special educational materials which would ensure that they learned reading and writing in their mother tongue, and that action should also be taken to produce written texts for various subjects in the upper school levels.

The second view was the one adopted as a guideline for action by the Office of Bilingual Education of the Ministry of Education. The production of reading and writing materials in the vernacular language met two basic criteria: (a) the first, of a technical and practical nature, was that monolingual schoolchildren should learn a second system (i.e. a written code or system of writing) based on the system of the oral language they chiefly spoke. This does not mean that a monolingual child cannot learn to read in a second language, even if he is unable to speak it, since it is quite possible to master the mechanics of reading
even without understanding what one reads. However, many years' experience in Peru shows that even in the best of cases monolingual vernacular-speaking children who have been taught to read in Spanish continue their schooling with all the difficulties and disadvantages inevitably faced by those who have no command of a language, do not feel at home in it, and are forced to use it to express ideas which are generally not properly understood precisely because they have no command of the language. In addition, the educational situation in rural areas shows, year after year, that the lack of suitable educational materials for teaching children to read the vernacular language merely aggravates the school drop-out rate and increases the number of illiterates, owing to the isolated and inferior position in which they find themselves; (b) the second criterion, of a political nature, was that apart from the political need for written and oral communication, the only specific measure which would rehabilitate vernacular languages and ensure their survival, was to publish material in these languages, either at the level of the central government or at the local level, and thus give them a new lease on life.

THE PRODUCTION OF EDUCATIONAL MATERIALS AND THE STANDARDIZATION OF QUECHUA

To produce materials for languages which are to some extent broken up into different groups and dialects, as in the case of Quechua, advance planning is necessary, which presupposes the identification of a standard language or languages grouping together a specific number of dialects which can be more or less understood among themselves. The first step is to devise corresponding alphabets, which involves a preliminary study of phonology, morphology and syntax. This has already been done, with the preparation and publication in October 1975 by the High-Level Commission for the Implementation of the Law on the Adoption of Quechua as an official language, of a general basic Quechua alphabet consisting of sixteen consonants and five vowels, making a total of twenty-one symbols which can be used for all varieties of the language. The remaining symbols make up an additional list which can be drawn on for each of the varieties. The advantage of this alphabet is that it makes it unnecessary to record the full range of different sounds, i.e. to give the written equivalent (grapheme) of each sound as actually pronounced in each dialect. However, the second step, i.e. the establishment of a standard language or languages, calls for much more complex studies and greater expenditure: decisions have to be taken as between two or more forms which may relate to phonology, morphology, syntax or vocabulary. This stage of the work is now well under way.

In the case of Quechua, as already noted above, five languages or main dialects (supralectos) are recognized, each comprising variants of dialects which are not always homogeneous. To work out a single standard language which would be valid for the five major varieties would be ideal but impractical, since the basic differences in phonology and morphology, and to a lesser extent vocabulary, are fairly marked. Hence, the most realistic solution would be the creation of standard forms for the major varieties of Quechua for which stereotyped written symbols would be adopted, capable of being understood by a substantial number of those who speak different varieties of Quechua.

EDUCATIONAL MATERIALS FOR READING AND WRITING IN QUECHUA

Educational materials for learning the rudiments of reading and writing must be produced in motivative language which is very close to

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1. By supralecto is meant an entity or methodological grouping used to classify and group together variants of dialect.
the everyday experience of the child. It will therefore be necessary to use the local language, with all its idioms and vocabulary. This means that the planning and drafting of reading texts should start with the personnel basically concerned, i.e. the teachers posted in the various educational zones or centres affected by the problem of the lack of suitable materials for children in vernacular-speaking areas. However, since there was no tradition of local production of educational materials, and over the years teachers had grown increasingly dependent on those produced by the central government, a start had to be made on the production of reading and writing primers; it was therefore necessary to prove that Quechua could be written (which was generally considered doubtful) and that the teaching or reading and writing to children, and literacy work with adults, were not only feasible but highly suitable and recommendable.

The Office of Bilingual Education has produced two reading and writing primers: one entitled *Nuqantsiqpis* which, freely translated, means 'We can do it too', and the other *Llaqtanchis*, which means 'Our people'. The texts are for the variants spoken in Ancash, Cuzco and Puno. The criterion governing the choice of these dialects was the comparatively large number of people who speak them.

The preparatory linguistic work for *Nuqantsiqpis*, to be used for the variant spoken in areas throughout the department of Ancash, involved drawing on the most archaic language forms, i.e. taking as a basis the underlying structures of Protoquechua. Here written forms did not exactly correspond to spoken forms; arbitrary decisions were taken, as in the case of any written form, to enable the texts to be understood when they came to be read, depending on the present pronunciation of the various

speakers of the different dialects in the department of Ancash. By way of example we might quote the following: while in some dialects the diphthong *ay* is pronounced in the spoken word *apaykan*, in others a kind of monophthong *ee* is used, so as to produce a broader vowel *apeekan*. The written form had to be standardized on the basis of one of these; *apaykan* was chosen as being the oldest and best preserved, and because it is regarded as underlying all forms of speech. When it comes to reading, each speaker in each of the variants will use the pronunciation corresponding to his own variant of the dialect.

In the case of *Llaqtanchis*, the work was carried out on the basis of the Cusqueña variant, allowing for two alternatives where differences in vocabulary or morphology made this necessary, or choosing a single form where this was recognized as valid for both variants. In both cases teachers were associated with the work in order to develop a combination of methods, and the accuracy of the texts was checked with various sources. The method chosen was the global method which best corresponded to the characteristics of the language concerned. It also allowed of the gradual adoption of written models, presented as phrases which were used for a word-by-word analysis and finally broken down into syllables.

Future plans include the production of materials of this kind for the other variants of Quechua, and the continuation of this work with the preparation of advanced reading texts which will contain examples of the literary tradition, though the tradition is basically an oral one. This will also involve the preparation of educational materials to cover other branches of knowledge, in which the necessary terminology will be developed for each of these languages.
National linguistic minorities: bilingual basic education in Slovenia

Slovenia, one of the six federal units of Yugoslavia, has 1.8 million inhabitants, including a little over 3,000 citizens of Italian nationality on the western frontier and some 10,000 citizens of Hungarian nationality on the eastern frontier.

The status of the Italian and Hungarian nationalities in the Socialist Republic of Slovenia is defined by the constitution: the members of the two minority groups have the same rights and obligations as the Slovenes; the rights and privileges of each minority are limited only by those of the other communities and by the interests of the socialist community. Like all the Yugoslav nations and nationalities, the Italian and Hungarian nationalities have the right, by law, not only to receive education and instruction in their own language but also to assert and develop their national culture. In these territories, the Italian and Hungarian languages are used on absolutely equal terms with the Slovenian language for official purposes and in everyday life.

In order that the members of these two national minorities may effectively develop their national culture, receive education and instruction in their own language and have their own press and publishing activities, while at the same time maintaining the links with the mother country which are essential to their economic and social life, they can set up in the areas where they are living self-managing common interest associations for education and culture, just as they can decide on other matters determined by the statutes of communes and by the self-managing enactments of common interest associations. They enjoy equal rights in this respect with the competent body of the Communal Assembly or with the corresponding self-managing communities.

Such are the constitutional provisions which govern the general education and instruction policy; on account of historical circumstances, however, it became necessary to devise two educational models for the Italian and Hungarian minorities, the first being the so-called 'minority schools' for citizens of Italian nationality, the

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1. Self-managing common interest associations are social organizations formed by all interested persons who, in accordance with the constitution and statute, agree on programmes, activities, a financing system and other conditions for action. These organizations, which take the place of governmental and administrative institutions and cover a wider field, have every means at their disposal for finding a positive solution to the problems they have to tackle.

2. Established by the 'Memorandum of Understanding Between the Governments of Italy, the United Kingdom of Great Britain and Northern Ireland, the United States of America and Yugoslavia Regarding the Free Territory of Trieste', signed in London, on 5 October 1954.
Bilingual basic education in Slovenia

second being the bilingual schools for those of Hungarian nationality. We shall deal here with the second model, as this will enable us to highlight certain special features which are little known to teachers or writers elsewhere in the world.

The theory and practice of bilingual pre-primary education in the Socialist Republic of Slovenia are based on the principles of socialist humanism and self-management. In our view, respect for human rights and the all-round development of the personality depend organically on the definition of the relations between individuals and groups within the social community to which they belong. These relations are not simply the result of external forces; any progressive society must make a conscious effort to establish them. The management of public affairs, especially those directly organized by the society, has a determining influence on internal relations. Understanding and tolerance can only be achieved through the practical coexistence of peoples; the less they are hindered by internal social antagonism the more they flourish. In the very first years of life, when the relationships between children are most authentic and least influenced by any form of social tension, we try to overcome the linguistic barrier which is so often the obstacle to closer contacts between people, thus reducing their chances of achieving mutual understanding and working together for a common purpose. We try to overcome this barrier through two-way action respecting the principle of complete equality of rights. Our aim is to safeguard and promote the specific identity of the two national linguistic groups and to increase the effectiveness of all possible practical ways of ensuring equal rights for young people in their work and in all other aspects of their lives. We thereby seek to prevent the development, in particular, of all the various tendencies militating in favour of assimilation and loss of national identity to which minority groups are often exposed.

Although we attach great importance to the protection of the national minority, it is not the only objective nor the main determining factor of bilingual education. On our territory, in which several nationalities are mingled, this is the only type of education whereby a sufficient degree of social cohesion and co-operation may be achieved to guarantee that all citizens enjoy the same economic and social status conferring equality of rights, participate in the management of public affairs, and exercise freedom of choice as regards their work and their contribution to the life of the community.

These objectives have special significance for the Yugoslav socialist society which, as is generally known, is founded on self-management. Our social system promotes self-management by the workers who make their own decisions on all questions relating to production, the distribution of the social product and the conduct of public affairs. Such a system gives every individual the opportunity and the desire to participate in decisions of public importance. It is obvious that a command of the language is not enough in itself to equip a man to participate actively in the self-management process in all fields and at all levels; he also needs an adequate knowledge of the economic, cultural and social problems of his environment. But an individual can only acquire and increase such knowledge through close contact with all the other people around him, regardless of their nationality. Co-existence, which begins with the shared experience of school life, continues to be fostered through relations between people in their work and in other aspects of adult life, when understanding and tolerance can only be built upon true equality of rights.

Here we must draw attention to a specific feature of our national problem. The historical circumstances in which we, the Slovenes, established ourselves and developed as a nation have certainly left traces on our mentality, which is by no means an exception; such circumstances occur in almost all frontier regions between different nations, national groups and cultures.
Being surrounded by more densely populated and economically stronger nations, we have often been exposed to all kinds of outside influences, assimilative pressures and other forms of oppression which have forced us to defend our national existence. It is, of course, impossible to efface the influence of such historical events, but we feel the need to overcome their consequences, and one of the most effective instruments to this end is a system of education and instruction based on strict equality or rights, under the joint democratic control of the two national groups on the territory where the nationalities are mingled. This system rules out any possibility of intolerance arising out of educational content or institutions.

For us, therefore, bilingual education is not merely an experiment but a deliberate and systematically planned effort to approach as closely as possible to the aim of ensuring the free development of the individual and thus to contribute to the full realization of the fundamental human rights.

From the political point of view, the ideological justification for the bilingual school was outlined in 1958 by the president of the Executive Council in office at the time, Boris Kraisinger, who made the following statement in a broadcast on Radio Ljubljana:¹

We have arrived at the conclusion that bilingualism is one of the principles which offer the best solution to the problem of the coexistence of national minorities with the national majority in certain predetermined conditions. It appears to us to be the best and fairest solution, in that it prevents the development of any nationalistic tendencies, promotes the principle of equal rights and firmly removes from the political arena the problem of antagonism between individual nations. If this principle is respected, the fact of belonging to one or other of the national groups living in a given territory becomes a matter of little importance, so that there is no cause to bring up a child during his early, formative years, in a spirit of narrow nationalism as regards his attitude towards children of another nationality living in the same village, town or street and attending the same school.

It is thanks to this principle that children of any nationality learn, from their very first years, to show their fellow-men that tolerance and friendship which are based not on questions of nationality but on the basic human qualities and on human relations among people aware of their mutual dependence and fighting fraternally for the same ideals. For that reason, in particular, the bilingual school is of outstanding educational significance for men living in a progressive society today.

To quote another document of the Executive Committee of the Central Committee of the Communist League of Yugoslavia,

in Yugoslavia, the question of national minorities in the State and that of Yugoslav national minorities in neighbouring States are regarded as the same problem; accordingly, the State has adopted the same attitude, both in policy and in practice, towards all questions relating to any of these minorities.

On the basis of the above considerations, the Socialist Republic of Slovenia instituted, in 1959, the bilingual primary school system for Slovenian and Hungarian children living on the territory of Pomurje where the nationalities are mingled (Communes of Murska, Sobota and Lendava), because a steady decline in the number of Hungarian sections had been observed in the years immediately preceding 1959 owing to the enrolment of Hungarian children in Slovenian schools. The competent school authorities, having consulted their political and professional colleagues, decided that bilingual teaching should be gradually introduced, starting with the first class in primary school.

Bilingual teaching in Slovenia, which was designed to fit in to the set of measures taken to safeguard the rights of the Hungarian minority, was the subject of the 1962 Republican Law on bilingual schools and schools in which the language of study was that of the national minorities in the Socialist Republic of Slovenia.

¹ Slovenski Poročevalc, the daily newspaper, 3 October 1958, p. 1.
This law was amended in 1965, but the stipulation concerning bilingual education remained unchanged and read as follows in both texts:

Teaching in a bilingual school shall be so organized as to ensure that the pupils acquire an equal command of both languages and become equally familiar with the main historical and cultural attainments of both nations. The curricula and study programmes of bilingual schools shall specify which subjects are to be taught in both languages and which are to be taught in either one language or the other.

Elementary education in the bilingual Sloveno-Hungarian schools went through a crisis, however, even before the first generation of pupils had completed the period of eight years of compulsory schooling. This crisis was due to the dissatisfaction of many parents (especially in the Slovenian community) who complained of the apparent inefficiency of the bilingual school, the large number of repeaters, the low academic standard and the handicaps this represented for children in their further education. All these shortcomings were accompanied, according to the parents, by far too much strain on the children’s minds and interference with the development of their intellectual and psychological powers. These complaints were sufficient to make part of the population begin to feel less tolerant towards the other nationality, a process which led to a petition being submitted to the constitutional court of the Socialist Republic of Slovenia requesting it to decide whether the law on bilingual schools was in conformity with the constitution.

The Slovenian public, and more particularly the initiators of the bilingual system, were therefore faced with the delicate task of refuting the accusations against the bilingual school or abandoning it as an unsuccessful experiment. The humanistic idea which was the very foundation-stone of the bilingual school could not be sacrificed because of mere conjecture. We accordingly decided to undertake an interdisciplinary research project on bilingual education in the Socialist Republic of Slovenia, which was conducted in association with the Geography Institute of the University of Ljubljana (study of the demographic structure of the multi-national territory in Pomurje), the Ljubljana Institute for nationality questions (to provide a politico-ideological survey of the problem of bilingual education), the Secretariat for Education and Culture of the Socialist Republic of Slovenia (for a review of the legal aspects of bilingual education in Slovenia) and the Schools Institute of the Socialist Republic of Slovenia (for an analysis of the pedagogical and vocational implication of bilingual education in Pomurje).1

The comprehensive study, which was completed in 1970, showed first of all that there was no question of the system having broken down nor of the principle of bilingual education and instruction being inappropriate, but rather that the particular model in question had certain weaknesses, that knowledge and evaluation of the demographic and socio-economic factor were inadequate and, above all, that financial resources, school premises and staff strengths were much too small to produce the expected results. As well as being a highly complex phenomenon in itself, the bilingual education and instruction system demands all the attention, assistance and substantial financial support that society owes to a new experiment. This was precisely what was lacking, after the first wave of enthusiasm for bilingual education had subsided. The causes of the crisis were found to be mainly of an external nature, since the material resources and numbers of staff required were far beyond the means of the two communes.2

At the technical level, when bilingual education was first introduced in Slovenia in the school year 1959/60, very little research had

1. The complete collection of research material comprises over 1,000 pages.
2. The national per capita income in 1970 was US$498 in the Commune of Lendava and US$512 in that of Murska Sobota, while the average national per capita income of Slovenia in the same year was US$1,064.
been done on bilingualism in Yugoslavian schools and, in this particular case, on problems of linguistic interaction between Slovenian and Hungarian, which are very different, since Slovenian is one of the Slavonic, and therefore Indo-European languages, whereas Hungarian belongs to the Finno-Ugric family. The task facing the teachers and educational services was therefore not an easy one. Nor could the teachers be guided by the example of any similar experiment in another part of the world, when they began to introduce bilingual education; they had to find their own solution, exchange experiences as they went along and gradually correct their pedagogical approach and methods. Moreover, the study programmes were drawn up separately for each class, but in such a way as to make them match the study programmes of the exclusively Slovenian primary schools.

In 1967 a special study programme for bilingual Sloveno-Hungarian primary schools was drawn up and submitted for adoption, which followed the same broad lines as the programme of the Slovenian primary schools while taking into account the provisions of the law on the equal rights and equivalence of the two languages and cultures. To the general educational objectives established for primary education it was necessary to add the specific aims of bilingual schools, which include securing the equal rights of the Hungarian language and nation and creating human relationships in school life of such a nature as to make the Hungarian nationality instrumental in promoting a closer understanding between the nations and the neighbouring States in encouraging active international coexistence.

Furthermore, when drawing up the study programme, it was necessary to take into account the fact that the bilingual primary schools are an integral part of the general school system of the Socialist Republic of Slovenia and that children who complete the primary school cycle are free to enrol in Slovenian secondary schools. Mainly for this reason, the study programme stipulated that in the higher classes of primary school (i.e. Grades 6, 7 and 8) Slovenian would be the major language of study, while in the lower classes (Grades 1, 2 and 3) and intermediate classes (Grades 4 and 5) half the instruction would be given in Slovenian and half in Hungarian. In all the subjects which were to be taught in one of the two languages, it was provided that pupils should learn the new terminology in the other language as well. The chief characteristic of the curriculum and study programme for the bilingual primary schools was that Slovenian and Hungarian, as subjects and as languages of study, were on an absolutely equal footing, with the same number of study hours being devoted to each of them; this meant that the number of hours allocated to some other subjects had to be reduced. The children’s weekly time-table was a few hours longer than that of children in the monolingual Slovenian schools.

Table 1 shows the share of the weekly time-table allocated to each language of study, from Grade 1 to Grade 8.

<table>
<thead>
<tr>
<th>Language and Subject</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bilingual teaching</td>
<td>87</td>
<td>37.4</td>
</tr>
<tr>
<td>Teaching in Slovenian</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(including teaching</td>
<td>91</td>
<td>39.0</td>
</tr>
<tr>
<td>of the Slovenian</td>
<td></td>
<td></td>
</tr>
<tr>
<td>language as a subject,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i.e. 39 hours per week)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hungarian language</td>
<td>44</td>
<td>18.9</td>
</tr>
<tr>
<td>(including teaching</td>
<td></td>
<td></td>
</tr>
<tr>
<td>of Hungarian as a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>subject, i.e. 39 hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>per week)</td>
<td>11</td>
<td>4.7</td>
</tr>
<tr>
<td>Foreign language</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>233</td>
<td>100.0</td>
</tr>
</tbody>
</table>

1. In Yugoslavia, primary schooling lasts eight years, beginning with Grade 1 and finishing with Grade 8.
By comparison, the time-table of the monolingual Slovenian schools from Grade 1 to Grade 8 totalled 218 hours in 1967.

When this study programme was adopted, it was regarded as a maximum and it was understood that it could only be carried out on condition that the children were given pre-school education before they were enrolled in a primary school, and that steps were taken to train educational staff for that purpose and to provide the teachers with special textbooks and appropriate teaching aids even if it was impossible, in practice, to comply with these principles to the letter, owing to the slender means available, however great the desire to make an additional effort.

The aims of the professional pedagogical research which we decided to carry out were as follows: first of all, to evaluate the general stock of knowledge acquired by the children in bilingual schools by comparison with those in monolingual schools and the level of knowledge of languages among the children in bilingual schools; to identify linguistic and psychological difficulties arising in bilingual education; to define the study methods which, in the given context (bilingual environment, mixed nationality classes, protection of the linguistic rights of the minority, relative value of the use of Hungarian, etc.), are most likely to ensure that the pupils of bilingual schools have the same opportunities of pursuing their education as their counterparts in monolingual Slovenian schools.

This study shows that, as regards the general stock of knowledge acquired during the period running from the establishment of bilingual primary schools up to the interdisciplinary research project of 1969/70, the pupils attending those schools were not noticeably backward in essential subjects compared to pupils of the monolingual primary schools. A little more effort was undoubtedly required of the children but it did not exceed the acceptable limit. The study also shows that the pupils' capacities for acquiring an equivalent stock of knowledge in the two languages are different and that, while about 50 per cent of the pupils are incapable of learning both languages with the same thoroughness, they can, on the other hand, assimilate their lessons satisfactorily and with more facility in a single language. It was also established that the weaknesses observed could easily be overcome if a child's bilingual education was begun during the pre-school period, around the age of 5 or 6.

Generally speaking, the research work made it clear that it is necessary to ensure that every child learn his mother tongue and become so familiar with it as to avoid all risk of assimilation. Moreover, it indicated that the curriculum and study programme adopted in 1967 for bilingual education should be improved, given pedagogical support and democratized from within the system so that the standard model of studies would become compulsory for all pupils. The various forms of consolidation of knowledge at home and ways of testing knowledge should also be adapted to the children's linguistic abilities and intellectual powers. The teacher, for his part, should evaluate a child's knowledge regardless of the language in which the child replies, thus enabling individual pupils of any nationality to progress in their education mainly through the medium of one of the languages or even through the use of both.

Another finding was that the time-table of pupils in bilingual schools should not be overloaded. Any addition to the bilingual educational model should be based on the optimum co-ordination of real social needs with pedagogical possibilities and on the co-ordination of the interests of society with those of the individual.

The effectiveness of bilingual education, in the sense that it safeguards linguistic and cultural authenticity and increases respect for the equal rights of the minority group in
the territory where the nationalities are mingled, depends on the tolerance and understanding of the majority groups living in the same territory. The importance attached by society to the success of bilingual education should be shown by a greater effort to take practical steps to meet the material conditions for the existence of this type of education, which is more complex and therefore more costly, and to give teachers appropriate training, adequate professional assistance and a salary commensurate with the demands of the bilingual work required of them. In bilingual schools it is essential to establish a professional school service composed of an educationist, an educational psychologist and a social worker. The pupils of bilingual schools should also be provided at the appropriate time with the special textbooks and all other study aids in both languages so as to increase the chances of developing a more individualized learning process.

In the light of the findings of the interdisciplinary research on bilingual schools in Pomurje, we set out to improve the model for bilingual education. On account of the conclusion that not all pupils are capable of ‘learning both languages with the same thoroughness’ and of becoming ‘equally familiar with the main historical and cultural attainments of both nations’, as the law prescribes, it was necessary to amend that law. Accordingly it is now stipulated that teaching in bilingual schools shall be so organized as to ensure that the pupils learn their mother tongue, acquire a knowledge of the language of the other nation and become familiar with the main historical and cultural attainments of both nations, in accordance with the aims set by the study programme. Curricula and study programmes shall specify which subjects are to be taught in both languages and which are to be taught in one language only.

Similarly, the law confirmed that bilingual education was of great importance to society, with the result that the larger social community, namely Slovenia, undertook to provide the appropriate material basis for achieving the full educational aims of the bilingual school.

The new curriculum for the bilingual Sloveno-Hungarian primary schools provides the basic material for the study programme. As regards its scope, the programme is about 10 per cent shorter than the study programme of the Slovenian primary schools. On account of the fact that each of the two languages is taught as a mother tongue and used as a language of study, the time-table of the bilingual school is still 10 per cent longer than that of the monolingual school, although the scope of certain subjects has had to be reduced. It is undeniable that the pupils have to cope with a heavier academic workload because of the teaching in two languages. In the higher classes, for example, they have to learn a foreign language in addition to these two basic languages. The extra time has had to be found at the expense of the physical education programme (although it is still allocated two hours per week in each class) and of subjects contributing to the children’s artistic and aesthetic education. In the basic subjects, only insignificant cuts have been made in content and weekly hours of study in order not to handicap pupils from the bilingual school when they move on to further studies.

In accordance with these basic principles, the teacher will maintain an even balance between Slovenian and Hungarian languages of study in Grades 1 to 5, while in the higher classes (from Grade 6 to Grade 8) he will use Slovenian as the language of study. Table 2 shows the share of the weekly time-table now allocated to each of the two languages of study (at least as regards the presentation of the subject) from Grade 1 to Grade 8.

By comparison, the weekly time-table of the monolingual Slovenian schools from Grade 1 to Grade 8 totals 179 hours.
TABLE 2

<table>
<thead>
<tr>
<th></th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bilingual teaching</td>
<td>70</td>
<td>35.8</td>
</tr>
<tr>
<td>Teaching in Slovenian (including teaching of the Slovenian language as a subject, i.e. 33 hours per week)</td>
<td>83</td>
<td>42.6</td>
</tr>
<tr>
<td>Hungarian language (teaching of Hungarian only)</td>
<td>32</td>
<td>16.4</td>
</tr>
<tr>
<td>Foreign language</td>
<td>10</td>
<td>5.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>195</td>
<td>100</td>
</tr>
</tbody>
</table>

The difference in the use of the language of study between the old and the new models of bilingual studies is only apparently in favour of Slovenian. In fact, the work of bilingual education and instruction now starts earlier, that is to say, during the pre-school period. Although pre-school education is not compulsory for the children of the multi-national territory, the social community has established such a close network of bilingual pre-school educational institutions that it enables practically all children in the bilingual school districts to attend these institutions from the age of 5 or 6. By transferring bilingualism to the pre-school period, it has been possible to reduce the workload of the higher classes and thus to intensify the teaching in Slovenian, which ensures that pupils who have completed bilingual primary schooling have a better chance of success in their studies when they go on to secondary school.

As regards the research finding that not all pupils do have the same capacity for acquiring knowledge in two languages, the teacher will in future be left free to choose in which direction he should guide the pupil in his linguistic development. In the lower and intermediate classes, the teacher, acting on the principle of internal linguistic individualization, will use the language of the pupil to test and consolidate his knowledge. Both in theory and in practice, therefore, the pupil is given the opportunity of receiving up to 75 per cent of his education in his mother tongue during the first five years. In the higher classes, too, the teacher communicates with the pupils of Hungarian nationality in their mother tongue if necessary in order to consolidate and test their knowledge.

There is a further point to note in connexion with the use of the language which is not the pupil’s mother tongue. With respect to the rules governing the evaluation of the pupils’ work, their promotion and the marking system, the principle must be borne in mind that the basis for the development of the child’s personality is his mother tongue, and that pupils of bilingual schools should not feel that the second language is an insuperable obstacle which might handicap them in their progress.

We still have to solve the most difficult problems, however, and these concern the special training to be given to a sufficient number of teachers, and the preparation of special textbooks as well as other teaching aids which must not only respect the claims of both languages but also present the content of both cultures as being equally valuable, in accordance with the aims of bilingual education and instruction. We already know that the cost of preparing and publishing the printed materials will be extremely high on account of the bilingualism and of the small number of copies required. Our difficulties are aggravated by the fact that we have no specialists qualified to work in this special cultural and educational field.

In this article, we have tried to outline the history, present status and future prospects of bilingual education and instruction in Slovenia. We are confident that we are working along the right lines and we are resolved to continue to harness both our intellectual and our material resources to the task of ensuring that education and instruction make equality a reality as regards access to education and opportunities for
personal advancement, and also promote the doctrine of peaceful coexistence and active cooperation between States and nations, regardless of their internal social organization, their language or their beliefs. In our country, where we have several national minorities, we also have the exceptional good fortune to develop relations which are not simply those of good neighbours, but are essential to our very life and therefore inherently durable.
Canada is often viewed abroad as an enlightened haven of bilingualism. Although there is a sound basis in fact for such a reputation, particularly at the present time, foreign observers tend to assume that this state of affairs is an ‘inevitable’ result of historical circumstances. By overlooking the difficulties, they frequently ignore the important portions of the Canadian experience which are broadly applicable elsewhere, even under radically different social and economic conditions.

The purpose of this article is to look at one aspect of the Canadian linguistic mosaic—the educational problems of the French-speaking minority in the province of Ontario, the Franco-Ontarians—and to use it as an illustration of the role that education can play for maintaining and enhancing the culture of a small linguistic minority, submerged in a different language context.

Bilingualism from near and afar

Viewed from afar, Canada is, indeed, a favoured haven of bilingualism. One entire province, the second largest in terms of total population, is inhabited by a majority of French-speaking citizens; the province of Quebec has maintained a vigorous English-language minority who continue to enjoy a complete educational system in their own tongue. Many Quebeckers and Québécois are, moreover, examples of a frequently idealized individual, the true bilingual. In large measure, the coexistence within Quebec of 4.86 million French-speaking and nearly 800,000 English-speaking people,¹ is the cornerstone of Canada’s reputation for bilingualism.

Yet Quebec has always constituted an exception. The language rights of its citizens (along with other aspects of their respective cultures) were protected in the legal document that forms the constitution of the Canadian confederation, the British North America Act of 1867. The substantial number of French-speaking minorities living outside Quebec in other provinces have never enjoyed such protection. Under the 1867 Act, each province is entirely responsible for its educational system, without interference from the federal government in Ottawa. In all other provinces, therefore, the French minority has depended for its rights upon an

¹. Approximate figures. Statistics Canada, 1971 Census of Canada: Population Mother Tongue, Vol. 1, Part 3, No. 92-725. Some 27.6 per cent of the Quebec population reported they can converse in both French and English.

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Prospects, Vol. VI, No. 3, 1976
English majority. Until relatively recently, the English provinces have tended to view minority-language education, that is education primarily in the French language, as a tolerated 'luxury', not a right.

A Royal Commission on Bilingualism and Biculturalism, established by the federal government to review the whole problem, published its findings on education in 1968. A few excerpts from that report will convey the problems of bilingualism in Canada that are not always appreciated from afar:

... the decision in the English-speaking provinces not to provide for the special educational needs of their French-speaking minorities has had fateful consequences. The main reason put forth in defence of this policy has been the need for a centralized administration and uniform academic standards. The avowed aim was to ensure equal opportunities in all parts of the province, but the insistence on one uniform English-language system of education resulted effectively in a denial of equal opportunity for the Francophones.1 ... the departments of education in the English-speaking provinces have never based their programmes on the right of Canadian parents to educate their children in the official language of their choice.2

In the latter part of the nineteenth century, while Canada remained largely a rural, agrarian society, failure by provincial authorities to protect or to develop the formal education system serving French minorities in their own language, had relatively limited effects. But, as societal conditions changed during recent decades, the damaging impact on the French-speaking minority groups has become progressively greater, threatening their survival in a linguistic and cultural sense. Industrialization and urbanization have increased the value of attaining higher levels of education at the same time when movement into larger cities fragmented the French-speaking group's social structures. The price of 'success' in an English educational system has frequently been cultural assimilation; moreover, even where the French-speaking person has chosen to accept this difficult choice, the chances of attaining higher levels of formal education have been significantly smaller owing to the added difficulty of studying in a second language.

The situation revealed by the studies of the Royal Commission was sufficiently serious to initiate a new current of opinion favouring greater language rights for French-speaking people outside Quebec. A dramatic change has occurred in the few years since the publication of its report. Despite the numerous delicate issues regarding the respect of provincial rights in the matter of education, the federal government has succeeded in assuming leadership for promoting bilingualism and has stimulated the efforts of the English-speaking provinces. A key element of policy has been the provision of a special source of funding to provinces which provide education for a minority official language group in its own language. (The funds apply equally to education for the English minority in Quebec.) The grants are based on the assumption that providing education in a minority language is more expensive than in the majority language. The federal government therefore pays each province a sort of 'premium' for each minority language student enrolled in an elementary or secondary school programme provided in the minority language. The amount is fixed at 10.5 per cent of the average cost for all students in the system; a method of proration of payments exists for cases where the students follow programmes taught in varying proportions of the two official languages.3

The ‘atmosphere’ of bilingualism has been further enhanced by a series of federal measures.

2. Ibid., p. 73.
3. Government of Canada, Review of Educational Policies in Canada, Submission of Secretary of State [submission to OECD examiners], 1975, p. 32-5. (Mimeo.)
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in different domains, primarily resulting from the Official Languages Act adopted in 1969. The most dramatic for its public opinion impact (both positive and negative impact) has been the decision to designate many jobs in the federal civil service as ‘bilingual’ and to set up some administrative units functioning only in French. Programmes for retraining federal employees in the two official languages have been instituted. However, since native French speakers tend to have, on average, more knowledge of the English language than English speakers of French, the result has been to increase somewhat the chances of recruitment and promotion for the French-speaking people—even if they still remain under-represented in the civil service. Another important measure has been the designation of certain ‘bilingual districts’ where the existence of a sufficiently large minority (10 per cent or more) justifies the furnishing of federal services in the two languages. The independent activities of the French-speaking minorities have been further stimulated by means of direct federal grants to cultural and recreational organizations. The extension of the French-language network of the Canadian Broadcasting Corporation (‘Radio Canada’) has brought radio and television in French to some areas, thus counteracting the overwhelming dominance of English media.¹

Federal initiative on bilingualism could not bring results in the field of education if the provinces were not willing to co-operate and to make their own independent effort. It is most fortunate that public opinion and political leaders in several provinces have proved more sympathetic than ever before to the educational needs of French-speaking minorities. The stakes are high. According to the 1971 census, outside Quebec a total of 926,920 still used French as their family language.² Rather than deal with the issue of their survival in the abstract, we shall discuss the impact of changes as they have occurred in Ontario. The example of this province is vital, since it is the jurisdiction which has reacted the most vigorously and generously to the new challenge of bilingualism.

Franco-Ontarians: the submerged minority

The importance of recent changes in Ontario educational policy can only be understood in the light of the situation which prevailed earlier, a situation whose social consequences were both serious and enduring. A few words of background on the structure of education in Ontario will assist in understanding the situation prevailing prior to the great changes of the last decade.

Education in Ontario at the elementary and secondary levels is dispensed through schools administered on a regional basis by elected public boards of citizens. The provincial Ministry of Education maintains general authority to control course content and to supervise the functioning of the entire system. In practice, ministerial control has been considerably reduced through a process of decentralizing decision-making to the school board level. Through reforms in the late 1960s, the average size of school boards was increased and their numbers decreased. At present, there are 178 school boards, of which 60 belong to the Roman Catholic ‘separate’ school system;³ these boards operate schools using tax monies and in most respects are similar to the non-denominational ‘public’ school boards, except that they do not receive public funds for the

operation of the last three years of secondary school. Thus, the typical public school board operates a school system consisting of kindergarten (sometimes junior kindergarten) and Grades 1 to 13; the typical separate school board operates a system that extends usually to the end of Grade 8 and sometimes to the end of Grade 10. This difference is important for Franco-Ontarians, the majority of whom enrol in the separate school system for the first years of their education.

The post-secondary educational system consists of a great diversity of institutions operating under public and private systems of governance. The overwhelming majority of students attend a system of some sixteen major universities and twenty-three colleges of applied arts and technology.¹ The system is supported primarily from public funds and operates under the supervision of the Ministry of Colleges and University Affairs. The relative sizes of the system components can be judged from recent statistics: In 1974, of the total Ontario population estimated at 8,093,000, the enrolment in elementary and secondary school was 1,971,418; this corresponded to a participation rate of 94.7 per cent for the population aged 4 to 13 years, and 75.2 per cent for the population aged 14 to 18.² At the post-secondary level, combined university and college enrolments were 193,923 (full-time students, 1973/74).³

The relationship of the Franco-Ontarians to this educational system in the mid-1960s was a product of a long historical process in which their rights to a French-language education were severely circumscribed. Although French-speaking persons have been involved from the very earliest times in the development of the region that became Ontario, the bulk of the present Franco-Ontarian population descend from migrants from Quebec who settled in Ontario in the nineteenth and early twentieth century. Their major concentrations are in the eastern and northern areas of the province near the border with Quebec where, in some counties, they form the majority or a substantial (22 to 48 per cent) minority of the population. Recent migratory trends have tended to increase the numbers found in the southern industrial area near the provincial capital of Toronto. By comparison with the remainder of the population, they tend to live in slightly larger numbers in rural areas.⁴

In the latter decades of the nineteenth century, the issue of language became a crucial issue as the provincial government gradually tightened its control over the developing school system. French was the dominant language of instruction in the schools where a majority of pupils spoke French; schooling consisted primarily of a few years of elementary education, and local hiring of teachers resulted in the ‘natural’ consequence that French was used in the classroom. A series of provincial regulations handed down between 1885 and 1912 gradually abolished this customary right. In 1912 a provincial regulation declared that English was to become the sole language of instruction after the third year of elementary school and the study of French was to be limited to one hour a day. This low point in Franco-Ontarian fortunes continued until 1927 when a public report recommended a slightly less rigorous policy. Although the letter of the regulations remained intact, they were not enforced, and French frequently became the dominant classroom language in elementary schools attended by Franco-Ontarians. For the following three decades, instruction in French was permitted ‘at the pleasure of the Minister (of Education)’, a régime which has been called a ‘non-system’.⁵

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The consequences of these policies were abundantly clear by the mid-1960s. Linguistic assimilation was most evident; according to the 1961 census, of the 647,941 persons of French ethnic origin (10.4 per cent of the province's 6,236,092 inhabitants), only 425,302 reported French as their mother tongue. The 1971 census included a new question which for the first time permitted one to estimate the number of those persons who still regularly use French in their households. These figures confirm the depth of the phenomenon: In a provincial population of 7,703,105, a total of 737,360 or 9.6 per cent were of French ethnic origin; 428,040 persons said their mother tongue was French but only 352,460 indicated that French was the language most spoken in the home. In other words, more than half the French ethnic group had given up the use of French as their domestic language.¹

It is well known that lower educational attainments are associated with lower socio-economic status; similarly, cultural 'disadvantage' is correlated with both. In a situation where cultural disadvantage derives from linguistic minority status, it becomes even more difficult to sort out cause-effect relationships. At best, one may say that all factors combine to produce a situation of inequality. Thus, beyond the straightforward issue of assimilation, the situation of the Franco-Ontarians in the 1960s can be described in terms of a series of related indicators, all pointing to the need for changes. A provincial investigating committee summarized the situation as follows:²

The education of Franco-Ontarians, as measured by rates of participation and achievement, has lagged behind that of the rest of Ontario's population by a wide margin. In 1961, the last year for which we have complete figures, the census recorded a spread of nearly 14 per cent between the proportion of the same age group in the province as a whole (62.4 per cent as compared with 76.3 per cent); proportionately, Franco-Ontarians had only about half as many university degrees as Ontarians generally (2.3 per cent as against 4 per cent); and a markedly higher proportion had attained only an elementary level of education (61.6 per cent as against 43.4 per cent).

This considerable shortfall in educational levels betokens as well the presence of a close link between membership in the French-language group and low social status, as gauged by the occupation and income profiles of Franco-Ontarians... Franco-Ontarians on the average earned markedly less than the English-speaking population.

In terms of educational attainment, the crucial years in which the French-speaking students were left at a disadvantage came in secondary school (Grades 9 to 13). A study of a cohort of Ontario students who enrolled in Grade 9 in 1959 revealed an enormous difference in attrition rates according to the language group. Out of 100 students from English-speaking people's homes enrolled in Grade 9, a total of 13 completed Grade 13 five years later. Out of 100 French-speaking people, only 3 had done so. Throughout the secondary years the French-speaking group's attrition rates were disproportionately high.³ Among the major factors behind these transition rates is the distribution of students between the public and 'separate' school systems. Large numbers of Franco-Ontarians continued in the 'separate' school system to the end of Grade 10, pursuing studies in French; then they were obliged to transfer to the 'public' secondary schools, where they studied mainly in English. (In the 1960s public high schools were authorized to teach additional subjects in French—Latin, geography and history.) Since university admission is dependent upon completion of Grade 13, the social consequences of

this forced transition were inevitable in terms of non-recruitment of Franco-Ontarians into professions requiring university training.

Had no further recognition of their language needs been given from the mid-1960s onward, there seems little doubt that the long-term prospects for maintenance of the Franco-Ontarians as an identifiable linguistic and cultural group would have been seriously compromised. They were still submerged, so to speak, in an English milieu, but they were far from perishing. Since the beginning of the century they had vigorously pressed for their rights, primarily through an organization called the Association Canadienne-Française d'Éducation d'Ontario. Under the régime of tolerance prevailing since 1927, they had maintained intact an elementary school system functioning mainly in French with an enrolment that reached more than 90,000 pupils in the 1960s. A teachers' college for training elementary teachers had functioned at the University of Ottawa since the 1930s, and a faculty of education providing training in French for secondary teachers evolved subsequently.¹ Although disadvantaged in many ways, the French educational system at the elementary level grew in size and improved the quality of its programmes. The great advances of recent years were built on this foundation.

The advance of minority language education

The 1960s mark a turning-point in the fortunes of Franco-Ontarians. In less than a decade, more than educational structures have changed. The atmosphere surrounding the issue of bilingualism has suddenly and spectacularly been infused with hope and optimism. Although the bitterness left by previous confrontations over language rights has not entirely disappeared, the politics of bilingual education have become more open. The apparently unshakable monolith of English-language dominance has given way to a situation in which the advance of minority linguistic rights is possible through the use of normal political channels designed to resolve disputes rather than suppress one party to them.

The political aspects of advancing minority rights must be emphasized. Indeed, the Canadian model of bilingualism might be called one of ‘multi-level consensus’. As we have already seen, the decision-making by the federal government cannot be implemented without some measure of support and participation from the provinces. Similarly, the decentralization of decision-making power within Ontario down to the level of locally elected school boards means that leadership by the provincial government can only be effective if the school boards accept it and implement it. (Within the province, the provincial legislature and the cabinet have final legislative authority, but the tendency of recent years has been to use this authority sparingly.) The demography of Ontario dictates that this model must operate by consensus. The Franco-Ontarians are a minority in all but a handful of the school board jurisdictions. The school boards are dependent, in turn, upon local opinion. In this situation, tolerance—if not wholehearted support—must be obtained from the English majority for carrying into practice the reform process in the schools. At the post-secondary level, universities also have a major share of autonomy, which also implies that change be negotiated rather than legislated. The result is a process in which leadership at one level depends upon a measure of consensus at the next level.

The transformation of the last few years has come about through a series of decisions, each one building upon the previous. A major component of each decision has been a consultative process in which community attitudes were influenced and prepared for change. Changes are still taking place, so that the only appropriate

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way of describing the status of Franco-Ontarian educational rights is within the framework of a dynamic process of reform.

The beginning of the process is rooted in the massive expansion of the entire educational system of Ontario during the 1960s, highlighted by the creation of several new universities and an entire network of colleges of applied arts and technology. A recent book on the period refers to education as Ontario’s ‘preoccupation’. Curricula were modernized and the strongly centralized direction exercised by the provincial Department of Education (subsequently renamed Ministry of Education) was relaxed. Ontarians and Canadians generally lived in a period of optimism regarding the value of education and the expansion of educational opportunity. This atmosphere coincided, moreover, with the national interest in celebrating the 100th anniversary of Canadian confederation in 1967. It was against this backdrop that the Royal Commission on Bilingualism and Biculturalism drew up its report and made sweeping recommendations for improving the lot of minority French-speaking people throughout the English-speaking provinces.

The legitimation of the elementary school régime made it possible to undertake the systematic development of a school system which might provide equality of treatment for French-speaking people. At the secondary level, the impact of the reform was even more revolutionary. For the first time, Franco-Ontarians were to be given an equal chance during the crucial years which led on to university.

At very nearly the same time, another committee which was examining the entire problem of the aims and objectives of schools in Ontario also endorsed the cause of Franco-Ontarian rights in terms which clearly spoke to the sentiments of the times:

culturally and economically, far beyond the cost in facilities and personnel needed to accomplish this result.

The importance of the statements resided mainly in their legitimating effect for public opinion, a result of the preparatory process of wide popular consultation through which the committee went before issuing its report.

The immediate effect of the legislation was spectacular. Enrolment in French-language high schools (which had previously been private, except for Grades 9 and 10) doubled, then tripled within three years. Enrolment in 1966/67 was 8,739, in 1967/68 9,680; then it moved in 1968/69 to 16,984, reaching 25,212 in 1970/71. In 1974/75, the total enrolment of French-speaking students in French secondary programmes was 30,906, indicating a participation rate in most areas approaching that of the English-speaking school population.

This process of development ran into serious problems in several areas of the province, in which school boards with English-speaking majorities did not act to implement the legislation as fully as the French-speaking population would have desired. In particular, disputes arose around instances where the French-speaking people desired to have separate physical facilities, entirely dedicated to French-language teaching. This tendency was resisted in various places on grounds of economy—the demand sometimes would have involved building a new school—and, at times, on grounds of principle: 'Separateness' of French-speaking people was not acceptable to many parts of public opinion. One particularly heated debate resulted in the naming of a Ministerial Commission on French Language Secondary Education. The commission report, issued in 1972, assisted in mediating the dispute in question and, in addition, made recommendations that endorsed the basic position of the Franco-Ontarians:

The Commission shares the belief, which is widely held by Franco-Ontarians, that the establishment of French-language schools in which the language of both communication and administration is French best meets this twofold need: to preserve the language, customs and cultures of the Francophone student, while enabling him or her to contribute fully in due course to the cultural and economic progress of his province and country. . . . The commission believes that where a sufficient number of students can be assembled then a French-language school must be provided, if it is the wish of the French-speaking community concerned. Similarly, failing a school, then the French-speaking students should be in a French-language wing of the school, and, failing a wing, then they should be in a French-language class. . . .

The report also found numerous short-comings in the support services available to secondary schools and made suggestions for improving them. One typical example was the fact that textbooks were frequently not available in French for specific courses; or, if the books were available, they were not well adapted to current needs. Finally, the report recommended that the legislation be strengthened by creation of a permanent commission to serve as ombudsman for minority-language rights in education.

Current legislation has implemented a number of the commission's recommendations. In boards where secondary classes are created, a French-language advisory committee is to be set up, consisting of three members named by the school board and four elected by the French-speaking taxpayers. The school board is obliged to consult the committees on most matters affecting instruction given to the minority language group.

The key to the effectiveness of the legislation has been the creation of the Languages of Instruction Commission of Ontario. The

1. 'The Learning Society...', op. cit., p. 82.
3. The Education Act, 1974, Toronto, Queen's Printer, 1974. (Part XI, French Language Instruction.)
commission consists of five citizens named by the government, at least two of whom must be French-speaking and two English-speaking. The crucial role played by the commission results from the demographic characteristics of the various school boards. The creation of new schools and classes has been going on recently in areas where the French-speaking group constitutes a very small minority and where there is no tradition of French-language education; the resistance of local opinion to changes in existing structures is a normal consequence of the situation. The mechanisms for conflict resolution are set in motion when either party to a dispute (minority-language parents or school board) informs the commission that intervention is required. The commission then names a mediator who is given twenty-one days in which to seek a solution acceptable to both parties. If the mediator proves unsuccessful (an extension of time may be requested if it appears useful), then the commission is required to hold a public inquiry into the dispute. The commission visits the affected school board and, after gathering evidence, makes formal recommendations to the Minister of Education. Typically, most disputes are not settled by the mediator, but the rather more forceful intervention of the commission usually results in a settlement. In only a relatively few disputes have settlements required going to unusual lengths of persuasion or negotiation of 'incentives' for board action.¹

¹ ibid. This account is based in part on the author's personal experience as a mediator for the commission.

The impact of the legislation is hard to assess quantitatively, though there appears to be a steady progress of French-language education. In the southern areas of the province where the proportion of French-speaking people is frequently less than 2 per cent, new French-speaking classes and schools have been set up quite rapidly in several boards. The importance of this movement is potentially very great. The continued growth of the southern region and the consequent internal migratory patterns are likely to bring large numbers of Franco-Ontarians to live in these areas where, in the absence of effective schools, they would almost certainly disappear as an identifiable group among a vast urban concentration.

Teacher training has frequently proved to be an obstacle to providing educational opportunities to minority language groups. The situation in Ontario during the early 1960s was not untypical of the type of difficulties that can arise. Because small numbers of French-speaking students finished secondary school, recruitment into teacher-training programmes was correspondingly small. This situation had dictated, in turn, that entrance requirements into French-language teacher-training programmes be lowered, thus eventually lowering the quality of education given in the schools by the graduates of these programmes. As the quality of education constituted, in turn, a factor reducing the numbers of graduates from high schools, a 'vicious circle' of causality existed. The problems at that point were a reminder of the need for balanced development: an improvement in one portion of the system would tend to improve the other portions, just as the weakness of one portion was responsible for difficulties elsewhere.

A determined effort in the past decade has virtually eradicated the problem. The province possessed the nucleus of a bilingual post-secondary system in nine post-secondary institutions, three of which were to play a dominant role in later developments: the University of Ottawa, Algonquin College of Applied Arts and Technology (in the Ottawa region), and Laurentian University (in the city of Sudbury). These institutions all had a system of parallel English and French education in which, for certain specialities, training could be obtained fully or partially in French; however, for many disciplines (medicine, for example) no French-language programme was, or is, available. In line with provincial policies, the universities
have each incorporated an existing French-language teachers’ college (Normal school). Fed by growing numbers of graduates, the teacher-training institutions have progressively been able to upgrade their requirements. Since 1974, the University of Ottawa has been able to require training to the level of B.A. for both elementary and secondary school teachers; at Laurentian, owing to local circumstances in the northern central area of Ontario where it is located, the entrance to elementary school teacher certification programmes remains temporarily at the level of secondary school graduation (Grade 13). Through special programmes, including summer training opportunities in the 1960s, the general level of teacher certification has also risen rapidly. Although differential figures are not available for the French and English systems, the radical improvement in the situation is evident from data on the system as a whole. As recently as the year 1967/68, 7,721 letters of permission and approval were issued to enable persons to teach who had not fully completed their professional training up to the existing level of certification. For the year 1973/74, the total of such exceptional permits had dropped to only 391—a very small number in a system of education employing approximately 100,000 full-time and part-time teachers.1

The new educational era

At this point, we are in a position to summarize a few of the major elements of the Ontario experience and their implications. As stated earlier, the description of an ongoing process cannot be static, nor can we pretend to have described more than summarily the major milestones of Franco-Ontarian progress in the educational field. The following appear to be significant characteristics.

The Franco-Ontarians have demonstrated throughout their history a strong attachment to their language and culture. This internal group dynamism is essential to educational renewal.

The groundwork for rapid development, such as the surge in secondary and (more recently) post-secondary enrolment in French-language programmes, was laid over a long period through the maintenance of an underprivileged, barely tolerated educational system. The system was incomplete, particularly lacking the link at the secondary level between elementary and post-secondary study.

The general change in atmosphere in Canada as a whole during the 1960s helped prepare popular opinion among English-speaking people for the acceptance of language rights for the French-speaking minority.

The process of change has involved numerous minor conflicts, but leadership from federal and provincial levels has significantly reduced the impact of such differences of opinion.

Progress has been gradual, with each stage of development of minority rights being a step beyond a previous one.

The climate of public opinion has remained generally favourable, in large measure because reform has been an interactive process, with legislative advance being followed by a pause in which progress was consolidated and opinion allowed to adjust. A single, drastic reform would very likely have been counter-productive and produced resistances which would not have been easy to overcome.

At the present moment it is not possible to assess final effects. It will doubtless be some years before rising educational levels among young Franco-Ontarians are translated into socio-economic gains of major significance. Meanwhile, in addition to the legislative and quantitative indicators mentioned earlier, the ‘discovery’ of new problems to be solved is

perhaps the surest index of rapid progress. In the near term, the most pressing problem is likely to be the question of further enlarging post-secondary opportunities to accommodate a rising young generation of Franco-Ontarians, the first to benefit from education in their own language throughout elementary and secondary school. Already major public meetings have been held in areas where post-secondary opportunities are scarce, perhaps the first augury of a new set of necessary changes.

What is now certain is that the status of the minority language in the most important sense—the self-esteem and self-awareness of the minority group itself—is changing. Only yesterday a symbol of social and economic discrimination, the French language in Ontario is gradually re-establishing itself. A recent study of opinions among students of Grades 4 and 9 in Sudbury (recently designated a federal bilingual region) reveal a marked change. Parents who ten years ago would have sent their children to English schools now enrol them in French ones; French is spoken increasingly in some homes; and the idea of the 'melting pot' is fading.¹

A new air of hope exists for Franco-Ontarians and an educational renaissance is under way, incomplete but dynamic.

Trends and cases

Curriculum development trends in African countries

Albert F. Menka

Africa is a vast continent with a variety of educational systems. Since my contact with curriculum developers is limited mainly to people from English-speaking tropical Africa, I shall therefore be concerned in this article with curriculum centres in English-speaking countries south of the Sahara and north of the Zambesi.

Political emancipation reached a turning point in black Africa when Ghana gained her independence in 1957. As country after country became independent, there was a rapid expansion in their educational systems. Illiteracy was seen as the curse which haunted all these countries. A curse which must be eradicated rapidly. As a result, many new schools and colleges were opened and existing ones expanded into three- four- or five-stream schools to meet the increasing demand for school places. This rapid expansion, especially at the first cycle level, was ‘mainly quantitative’ [1] and did not give serious attention to the qualitative aspect of education. It is natural, to some extent, that quality should become diluted in the process of rapid mass production, unless extra care is taken to prevent this. Unfortunately, no special precaution was taken and most countries continued to rely on sketchy lists of topics, referred to as syllabuses, which existed before independence. Six to ten years after independence, a large number of elementary school leavers began to appear on the labour market. Many of these young boys and girls have completed their basic formal education but they possessed no special skills and were, therefore, unemployable. As their numbers increased, and more and more of them drifted into the cities in search of jobs, people began to raise questions about the quality of education being offered by the schools. Governments began to set up national committees to review education and relate the contents of education to meet the aspirations of their people.

Systematic curriculum development is very recent in Africa. Most curriculum centres, where they exist at all as centres, are less than ten years old. The Nigeria Educational Research Council was established in 1965, the Curriculum Research and Development Division of the Ghana Education Service was started in 1967, and the National Curriculum Development Centre of Uganda was set up a few years later. Some countries, like the Gambia, are now in the process of establishing national curriculum centres.

Organization

While most centres seem to have a common organizational structure, one can discern degrees of autonomy in their set up. There are those that are parastatal organizations like the Nigeria Educational Research Council and the National Curriculum Development Centre of Uganda. These do not form sections, divisions or units of the national ministries of education. There are others that are divisions within the national

1. The figures in brackets refer to the list of references at the end of this article on page 458.
ministries of education like the Zambian and Ghanaian centres. The third group is made up of those that are affiliated, in a way, to national universities, usually institutes of education, like the Sierra Leone Curriculum Revision Unit. Some information on the organization and structure of a number of centres is given in the pre-seminar booklet [2] which was prepared for the African Regional Seminar for Advanced Training in Systematic Curriculum Development and Evaluation held in Ghana in 1975. Most centres fall into either the autonomous group type or form a division within the national ministries of education.

The parastatal centres are usually established by an Act of Parliament or some such national law which gives them a legal status. Being parastatal organizations they usually have their own conditions of service and salary structure which make them more attractive than the general civil service. For high moral of employees and continuity of service such centres appear to have preference over the others. One serious disadvantage suffered by centres that form part of ministries of education is that staff can be moved about quite frequently either to the centres or out of them to other divisions of the Ministry. On the other hand, I have heard it argued that centres within ministries have closer contact with teachers and easier access into schools because their personnel are the same ministry personnel. As circumstances vary from country to country it is a matter for each country to decide which type of centre is most suitable for its needs.

A common characteristic of many of the curriculum centres is that they have national councils or committees which provide guidance and advice for the centres. In Zambia there is the Curriculum Council, Liberia has a Curriculum Co-ordinating Committee and in Ghana there is a National Advisory Committee on Curriculum for Pre-University Education. Apart from educators, a number of these committees or councils tend to have representatives from labour and manpower planning departments, religious and women's organizations. These national organs are useful in providing direction for the centres to follow. Where broad national goals are not readily spelt out, the national committees can be useful in determining the broad educational objectives that must be kept in view. They also help in identifying priority areas that need attention by the centres.

Another common characteristic in the organization and structure of most curriculum centres is subject panels or subject committees. The subject panels are made up entirely of professional educators or subject specialists. These specialists are either full-time regular employees of the centres or active classroom teachers who serve the centres part-time. The regular centre employees act as catalysts; they are secretary/conveners for panel meetings and provide administrative service at workshops. The composition of subject panels is crucial in the work of curriculum centres because much of the work done by the centres is done through them during workshop meetings. For successful vertical integration of courses, classroom teachers at primary, secondary and tertiary levels are usually to be found on each subject panel. Horizontal integration of courses tends to be more elusive and in the Ghana situation it is found necessary to urge secretary/conveners to subject panels to make conscious efforts to get their panel members to exchange views on important common issues. In some countries completed syllabuses are submitted to the national committees or some higher authority for clearance before they are implemented.

Resources and constraints

PERSONNEL

The staff of a curriculum centre are its most important asset. A good-sized full-time centre
staff may vary from twenty to fifty specialists. In the African centres there is a reasonable number of people with adequate classroom teaching experience. What is lacking is previous training in curriculum development and some grounding in the theory of curriculum planning and development. A few centres still rely on expatriate staff. What a number of centres are doing therefore is to arrange training courses for those of their staff that require it or offer training awards to local teachers who are expected to join the centre staff on their return from training. The common type of training is a post-graduate diploma course or a course leading to the M.Ed. degree with specialization in the theory and practice of curriculum development. Trainees have in the past preferred institutions in Britain, United States, Canada and Australia. A number of African institutes of education, e.g. Ibadan in Nigeria, Njala in Sierra Leone and Cape Coast in Ghana now offer courses in some aspects of curriculum development and it should be possible to provide local training for a larger number of curriculum centre staff. Equally useful, if not more important, is frequent in-service training, like the type that was organized at Achimota, Ghana, from 14 July to 15 August 1975, for some sixty-seven participants from twelve African countries [3]. Where salaries and other conditions of service are not attractive African curriculum centres will continue to experience fairly rapid turn-over of staff for some time yet.

FUNDS

The greatest common handicap of almost all African curriculum centres is the inadequate budget within which they operate. It is said that budget allocation to curriculum development the world over is not as high as it should be. In the African centres the probabilities are that most of them receive $\frac{1}{2}$ per cent or less of the total annual education budget. Remembering that in most African countries education takes 20-30 per cent of the total national budget one would expect that the core of the educational enterprise, i.e. curriculum development should receive far more than a mere $\frac{1}{2}$ per cent of the total education budget. Apart from staff salaries, the most costly items are printing, stationery, purchase and maintenance of official vehicles, writing workshops and other meetings, and expenses in respect of research projects. The nature of the work of curriculum centres is such that enormous quantities of paper and other items of stationery are consumed within very short periods. Capital outlay on printing and duplicating machines is usually spread out over several years. But the constant wear and tear of these machines and subsequent maintenance costs do often create financial problems.

COMMUNICATION

There is a good deal of moving about by the staff between their centres and schools, district and regional offices. This is necessary during trial testing of materials and implementation of new programmes. At times the official vehicles of the centres are used; where they are not available the staff use their own vehicles or rely on public transport and claim expenses later from their centres. Whatever method is used transport and travelling costs claim quite a chunk from the limited funds available for operating curriculum centres.

Other equipment like table calculators and computers which form essential tools of a curriculum centre are gradually acquired over a period of time. A good library is also essential for the smooth operation of a centre. The size of libraries in use by African centres varies from centre to centre. As the centres develop their libraries tend to increase their stocks of books and periodicals. Lack of adequate accommodation can also hamper the smooth running of centres. A number of centres share buildings with other departments but the general feeling
is that centres should have their own buildings with facilities for writing workshops, meeting rooms, libraries, etc. Limited resources with which most centres are faced do not, however, prevent them from carrying out their responsibilities as best as they can.

**Curriculum development process**

Where there are national councils or committees under which curriculum centres work, as referred to above, these national organs are useful in spelling out broad national objectives in education. This was done in the case of Ghana. Where such bodies do not exist the centres themselves identify the broad educational objectives from existing official documents. These statements of educational objectives are made available to the different subject panels or subject committees when they are formed and brought together to develop programmes for the schools. In practice, full-time officers of curriculum centres provide the panels with working papers which can be used as starting points. When the Government of Ghana decided to change the structure of the education system and provide new areas of emphasis, the Ministry of Education produced a pamphlet spelling out the objectives of the new system and the subjects to be taught. Copies of this document were supplied to the staff of the Ghana centre and members of all subject panels for their guidance [4]. Documents like this one, and others provided by the centres to members of their working committees, enable each subject panel to spell out the specific objectives for their subject and the different grade levels for which they develop new programmes. Having determined the objectives they then go on to determine and select the various learning experiences that should go into the programmes. Decisions on what topic should precede which, how many times a particular kind of experience needs to be repeated within a given period and similar other technical decisions are made by the panel members during their workshop meetings. A review of new syllabuses being developed by most centres now shows that provision is made somewhere in the syllabuses, or in accompanying documents that go with them, for recommended methods and activities that teachers who use the syllabuses can try. For basic course books like ‘Ghana mathematics’, ‘English’, etc., series being published by the Ghana curriculum centre every one of the different titles has its accompanying teachers’ handbook [5]. Without these teachers’ handbooks many teachers are not able to make good use of the materials and approaches recommended.

As centres develop and expand they recruit specialists in educational measurement and evaluation. These [specialists] participate in the initial outline planning meetings of each subject panel when new programmes are being worked out. In a number of cases subject specialists, especially those with backgrounds in mathematics or science, are sent on short in-service training courses so that they can play the role of evaluators at their panel meetings and on other occasions. In this regard, the training being provided by the International Centre for Educational Evaluation, Institute of Education, University of Ibadan is a valuable one for preparing educational evaluators for African curriculum centres. As the evaluators participate in the initial planning meetings of the subject panels, they make recommendations on various aspects of the programmes to be developed. During trial testing of the draft materials (if this is done) the evaluators assist in collecting and analysing comments from field officers and classroom teachers who are involved in the trial testing. Through this kind of formative evaluation many centres, pressed with time and obliged to meet date lines when new materials must reach the schools, are able to implement new programmes throughout whole school systems within a shorter time than would otherwise be the case. What many centres are not yet able
to do is to carry out full-scale summative evaluation of most of their programmes. Apart from shortage of staff, a number of centres tend to regard evaluation of finished programmes which have been fully implemented as something that is not very necessary. The time and funds available should be spent on something else rather than on a programme which is fully operational. When centres acquire more experience and the pressure on them to produce enough materials for every school is gradually reduced, they will no doubt come to see the usefulness in carrying out full-scale summative evaluation of their programmes and other materials.

Language and other problems

Language

The language or medium of instruction can become an important national issue in developing curricular materials in a number of African countries. With the exception of Kiswahili in the United Republic of Tanzania there is hardly any other country in tropical Africa which can boast of a common language spoken by almost all the citizens as either their mother tongue or a second language. The practice in many English-speaking countries, therefore, is to use local languages for instruction in the first few years at school and then switch over to English as the medium of instruction in the upper primary classes. Since there are many different local languages spoken in each country, by varying numbers of people, it is only in a limited number of cases that written materials can be developed without incurring unnecessarily huge expenditure. At any rate, many of the languages have not been set down in writing. Obviously then, even where an African language is used as a medium of instruction, there are bound to be some of the pupils, in a number of places, for whom the approved language of instruction will be foreign, or at best a second language but not mother tongue. The curriculum developer must take note of this and provide a lot of oral work in the programmes he develops for pupils in the lower primary classes particularly. What language to teach, when to introduce English as a subject, which language to use as the language of instruction and, above all, in which local languages should curricular materials be prepared are important issues which in many places can become serious political issues. Many curriculum centres complain that definite language policy is lacking in their countries, and they will be happy to have language policy laid down boldly by their governments. Meanwhile, the curriculum developers in the language field continue to feel their way gingerly and prepare materials in the main approved local languages for use by the schools.

Tradition

In the past, very little place was given to African custom and traditional belief in the school system. There was a time when pupils were called to come forward during Monday morning school assembly and were each given six strokes of the cane for attending (not necessarily participating in) African drumming and dancing activities during the previous weekend. Today, a syllabus for a local language, or a social studies course for any grade level will be considered incomplete if it does not provide for teaching and learning about some aspect of local custom and tradition. Pupils are expected to learn about customary practices that take place on occasions like the birth of a new child, puberty time, marriage, and death and burial ceremonies. Drumming and dancing is an essential part of many important events in Africa. A number of educational institutions have their own traditional drums which are used on various occasions. Where a music master is not competent to teach the use of a local instrument he does not hesitate to invite a local celebrity to come and help teach his students. In some of
the higher institutions there are students who know how to drum and perform some of the traditional dances. Such students are also encouraged to teach their fellow students. Thus through extra curricular activities as well as carefully planned formal courses of instruction African schools are marrying African culture to the academic skills that they offer their students. Obviously, certain subjects like religion, music, art, language and social studies lend themselves more easily to the curriculum developer in incorporating national culture into the school curriculum. It is in these areas that one expects pupils' experiences in the classroom to be most closely related to their day-to-day experiences outside the school environment.

VOCATIONAL EDUCATION

The rapid expansion in first-cycle education that has taken place after independence in most countries has produced a large number of elementary school leavers who cannot easily find employment. The critics argue that school curricula should be diversified to cater for developing vocational, commercial and technical skills in the pupils in addition to the traditional academic skills that are taught. One serious limitation to this proposal is that most pupils complete their basic education at a rather early age, 12–14 years, when they cannot be expected to complete training in particular trades to become competent tradesmen. The other serious limitation is that the ordinary first-cycle institutions are not equipped to teach vocational and technical courses. They neither have the qualified staff nor the equipment. A half-way sort of solution is to predispose the young pupils to different kinds of vocational skills so that on leaving the primary school they can be in a better position to determine what vocation to pursue. The Continuation School Programme in Ghana and the Village Technology Project in Cameroon have in common this element of vocational predisposition of their pupils. To some extent the Namutamba Teacher Training College Project in Rural Education and the Tanzanian Community Education project also have this same idea of providing vocational training for their students; the difference here perhaps is that these two projects deal with an older age group of people. Most curriculum centres in Africa are certainly placing a lot of emphasis on diversifying the school curricula to include some form of training in vocational or technical education. For some time to come, the problem is not going to be what to teach, but how to provide the basic equipment and, to a lesser extent, how to provide the qualified teachers especially for second cycle technical and commercial institutions.

RESEARCH FINDINGS

Most curriculum centres devote very little of their time to empirical research work. The feeling often is that centres should use existing findings from the relevant literature and not waste time carrying out high sounding academic research projects which are far removed from the classroom teacher. Where local universities are carrying out research work relevant to the work of the centres then there may be no need for the centres to duplicate this effort. But where nobody is providing research information, which will help to improve the work of the centres, then it is useful to devote some time to educational research projects.

Products and implementation

The physical products that are turned out from curriculum centres are usually school syllabuses, teachers' handbooks, some audio-visual aids and pupils' textbooks. Quite recently a few centres have started producing manuscripts for publication as basic school textbooks. In Ghana this has become a major function of the curriculum centre. Uganda and Zambia are also
seriously thinking of taking on textbook production as a major function of their curriculum centres. There are arguments for and against this approach. Depending on what the textbook policy is in a country some countries may find it more advantageous than others.

Implementation of new curricular materials involves a lot of work for curriculum centres. Under normal circumstances, briefing courses are organized initially for a number of key people. These may be inspectors, selected head-teachers and other field officers, e.g. subject organizers in Ghana. After these key people have been briefed they in turn carry the torch into all the schools by organizing local courses for classroom teachers. In doing this the curriculum centre must supply handouts that go out with the new materials to explain and stress salient factors that require emphasis.

International co-operation

A number of English-speaking countries are involved in regional co-operation in curriculum development in Africa. The Science Education Programme for Africa (SEPA) is very well known to most countries which have curriculum centres. The headquarters based in Accra, Ghana, co-ordinates the activities of the members and organizes workshops and in-service training courses from time to time. SEPA materials are made available to interested member countries and they can adapt them as they wish for their own use. The African Social Studies Programme (ASSP) with headquarters in Nairobi, Kenya, is another example of regional co-operation in curriculum development. There are about eleven countries which are members of ASSP. It has a co-ordinating body that meets once a year. Workshops are organized by the headquarters to which curriculum specialists are invited to produce kits on various countries. The African Mathematics Programme which began in the 1960s developed into the West African Regional Mathematics Programme (WARMP) and the East African Regional Mathematics Programme (EARMP). Both programmes had the same objectives. They provided training in the teaching of modern mathematics to selected teachers and education officers and also organized writing workshops during which manuscripts were produced for adaptation by member countries that wish to use them. Both programmes have come to an end after completing what they set out to do initially. WARMP materials are being adapted for use in schools in Sierra Leone, Liberia and Ghana at present. Some training colleges in East Africa have also adapted materials from EARMP. There certainly is room for regional co-operation in curriculum development in Africa. It is not surprising therefore that the participants to the African Regional Seminar for Advanced Training in Systematic Curriculum and Evaluation resolved towards the end of the seminar that there should be established an organization to be called African Curriculum Organization [3, p. 96] which will bring curriculum centres in Africa together and promote their activities for the benefit of all.

There is a wide series of activities taking place in the field of curriculum development in many parts of Africa. A number of countries have set up curriculum centres with well-defined objectives. Others are in the process of doing so. There is quite a rush to review existing school curricula and where necessary to replace old ones with completely new curricula. Many curriculum developers are not able to go through reasonably long enough trial testing of their new materials before implementation. They prefer to follow a ‘crises model’ of testing small parts of the materials being developed and feeding the finished programmes into the whole system as fast as possible because time is not on their side. As financial, political and other pressures are reduced it may be possible to go in for prolonged trial testing before implementation of...
new curricular materials. Production of manuscripts for publication as basic textbooks is likely to become a major function of many curriculum organizations in the near future. Many people in curriculum work in Africa appreciate the efforts being made to pull knowledge and resources together through regional co-operation. Hopefully, there will eventually be an African curriculum organization through which international co-operation in this field can be channelled.

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One method of peer teaching for schoolchildren

Dennie Briggs

One of the most compelling and lasting ways to learn is to teach someone. And yet our foolish pride and host of myths about pedagogy are depriving countless children of the opportunity for increased learning in industrialized as well as developing countries. Ironically it is perhaps to the latter that we can all look for guidance in this area.

In the United States, the wide scale development of children teaching other children over the past two decades is silently changing the structure of many traditional teacher-led classrooms. The success of the procedure, as well as increasing learning, is having a positive effect on problems of discipline and lack of motivation. It is significant that early in the development of this trend, its widest use was in areas where children were poor and educationally disadvantaged. The aim was to raise the educational level of these children: subject-matter was the basic communication skills (the three Rs), and instruction was teacher-dominated.

As the idea developed and became more accepted, the methods spread to other areas and encompassed other subjects. Teachers gave greater choice to peer teachers to determine subject-matter as well as teaching methods.

The purpose of this article is to give teachers and administrators some preliminary ideas of one variation of this method and to encourage them to experiment. Naturally, no single set of


Enseigner, c’est apprendre deux fois—Joseph Joubert, Pensées, 1848.
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techniques or instruction will work in all situations. A pre-condition, however, is a basic dissatisfaction with one's own efforts to create and maintain an atmosphere whereby students can learn effectively. And a willingness—an openness—to allow oneself to become the subject for and not the object of learning. 'Children', said Joubert, 'need models rather than critics' (Pensées, 1842).

The main source of material is my own experience introducing the concept of peer teaching into adult education courses. A course entitled, 'Procedures for Improving Classroom Instruction', evolved over a 12-year period and was offered for teachers, administrators and non-professional teachers at the University of California. The course lasted for two semesters and met once a week for two and a half hours. The course, limited to twenty-two participants, opened each semester with a weekend workshop held at a conference centre owned and operated by the university. The purpose of the workshop was to help the participants begin to break away from some of the traditional attitudes, beliefs and resistances which educators often have accumulated to trying new approaches with students.

Each participant was expected, as the only requirement of the course, to develop and carry out a small short-term project to try the idea of peer teaching in the classroom. Participants were encouraged to work in pairs and, as some of them came from the same school, this was feasible. If the participant was an administrator, or if he chose not to initiate a project, or if a project was not possible at his school, which was rare, he could develop a method of observation or administration related to the concept.

I made myself available one day each week to visit one or more of the projects if the students requested it, to assist them, make observations or offer support. I would often tape or video portions of the visit for 'instant playbacks' for the teacher and the class to take back to the course.

The material for the remainder of the course was concrete examples encountered in trying out peer teaching. The material was presented by each participant and could be supplemented by recordings, written observations, visitors (which sometimes included the children themselves and their parents, teacher colleagues and others).

Details will be given here of one method of peer teaching which involves four stages: planning and orientation meetings with the teacher and prospective peer teachers, the teaching sessions, post-teaching or evaluation critiques and further training and planning sessions.

In the selection of children to become peer teachers, there are no well-established guidelines. Most important is the child's desire to teach another. Teaching skills can be acquired—often in short order. In the beginning it has been found useful to keep a few years' age distance between the peer teacher and the student, at least until peer teachers and teachers gain experience. If the gap between what is taught and what is being learned lessens significantly, the peer teacher can become overwhelmed and discouraged. Many successful projects began using older children who had disciplinary problems in their own classrooms. The belief was that if their image could change to that of helping someone, their disrupting behaviour would become non-functional and thus disappear.

All classroom teachers need help and it is best to look for their most pressing needs to begin a project to ensure its success and acceptance. As one teacher put it, 'I just said to the other teacher to send me some children who were slow, or who cause trouble, who are disruptive, or who you want to get rid of for a few hours each week. This was a way to get some children quickly without a long song and dance about what I was going to do.'

Help can run from remedial to enrichment; the only limitation is the teacher's imagination. Teaching can be on a one-to-one basis, one-to-two or, depending on the circumstances,
one-to-six, or even larger. Finally it is good for the teacher to set a time limit for a project, which can be seen as an attainable goal. If the project is successful and the idea acceptable, another project can be planned based on the experiences of the first. And so on.

Planning meetings

Before beginning a project, it is important for the teacher to hold a series of two or three planning meetings for the peer teachers. These meetings are important in order that the children begin to see the teacher as a colleague and resource person in pedagogy and also in order to lay specific plans for the project. If conducted properly, such planning will become absorbed into the project as an integral part of the learning process and a scientific tool in itself. British social scientist, Eric Trist said:

"We are at the beginning of a new type of learning. Only through this will we become able to meet the faster, uneven, change-rate without losing coherence. Planning, which includes listening, is its master skill. A combined technocratic and democratic operation, it is a young and unmastered art, the new mould that its 'culture' is beginning to 'grow' in the post-industrial society. It is a process of unending imperfect co-ordination and of continuously learning more—about how to decide among seriously uncertain alternatives—so that some of the better features are kept open.

Planning meetings also give an important sense of security and form a reference point from which peer teachers can draw strength during moments of crisis in the teaching situation. Planning is not used in the rigid sense, but implies a general strategy, which both student and teacher agree to try, and the availability of some materials.

Early in the meetings, emphasis on the relationship between peer teacher and student is helpful. Often the accepting teacher will ask peer teacher trainees to think about ways they could get to know their student. Such an assessment may include finding out their interests and the things they like doing, as well as those in which they experience difficulty and need help. Often peer teachers will want to devote the first meeting to getting acquainted and have the student tell them about themselves and their interests. Sometimes they like to take them out of the classroom and for a walk so they can have more privacy and encourage the student to begin to talk freely. Children I have taught referred to these as 'learning walks' which they also used as a teaching method from time to time, to add variety and new experiences to learning.

Learners' profiles

Questions to form the basis of a planning seminar might be: 'What is a 7-year-old girl like?' or 'Can you describe a 6-year-old boy?' Eight by five inch cards can be used on which the peer teachers list one trait per card with heavy felt pens, for as many traits as they can think of. The cards can be attached to the wall with masking tape so they are visible to everyone. The seminar can assemble a profile of what they know generally about the children they are going to teach. These general statements can next be categorized by the children and the development of suitable pedagogical methods. They can be added to or taken away as the peer teachers gain further experience. Categories will soon range from positive characteristics to behaviour which is annoying and problematic.

Then the teacher can ask for ways to cope with situations which might cause the peer teacher to become discouraged. Most children begin mimicking teachers and adults. The most familiar methods to control students are suppression and punishment. Role-play is helpful

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in training sessions and can form the basis for group discussions as to the possible effects on the teaching transaction. The teacher can ask for an alternative which can then also be role-played. The children now have another method in their repertory to handle disruptive behaviour when the occasion presents itself.

So, establishing a working relationship between the peer teacher and student is a first consideration. Some children, again mimicking teachers, will begin emphasizing teaching methods and apparatus. They should have an opportunity to experiment and see the results of their planning. And the teacher must have strong support readily available if their methods break down. Relationships may also be complicated at first by the image younger children have of older ones, particularly with older boys who have a reputation for bullying and exploiting younger children in the school, neighbourhood or even within the family.

TARGETING TROUBLE SPOTS

The second area for planning meetings is an assessment of what the students need help with. If the teacher is going to leave the choice open as to areas in which teaching will take place, then more attention is needed to assessment than if the teacher selects the area and the students who need the help. Children may be encouraged to conduct somewhat of a reconnaissance of their students' abilities beginning with the things they do well, the successes, before the areas in which they need help. Questions can be used like: ‘What do you like the most?’ ‘What do you do best in?’ ‘What is easiest for you?’ Then the peer teachers can move into the other areas by asking the student: ‘What is hard for you?’ ‘What do you have the most difficulty with?’ ‘What do you need help with?’

To get first-hand experience, the accepting teacher can ask the peer teachers to try to remember what it was like when they were the age of their prospective students and recall what was most enjoyable and what was the hardest for them in school. This empathy between peer teacher and student can form the basis for future seminars in recognizing, describing and tailoring teaching to the individual learning style of the student. And such introspection can lead the peer teachers to identifying and maximizing their own teaching styles. It is important for the adult teacher to help the peer teachers to be empathic with their students but not impose their learning difficulties on them. For example, some may believe that their personal difficulties are universal and want to teach only in those areas. The diagnostic or assessment of the students' ability and needs is thus an important first part of learning.

TEACHING STYLES

Identifying and developing their own styles of teaching is the third area for planning meetings. To begin with, a card exercise can be used in which the peer teacher trainees are asked to list on cards their own skills and abilities and these can be categorized for the teacher-trainee group as a whole. Likewise, with another colour of felt pen, they can see how they compare with one another and begin to see the areas in which they need further training.

If the accepting teacher has selected the children who need assistance and the areas in which they need it, then, of course, these training and planning sessions can be more concrete and emphasize special methods of teaching. However, establishing a relationship with the student and identifying his own ways of learning and teaching is still important. Often we have seen that as the relationship becomes established, the peer teacher discovers many things both in terms of blocks to learning and special abilities of the children that were not apparent in classroom teacher-led instruction.
MEANS AND METHODS

The fourth area for planning may involve teaching methods, although in a programme where the teacher allows the peer teachers the choice of both student and subject-matter, emphasis on teaching methods will occur later. If the accepting teacher has selected, say, twelve of her children who need special help with reading, she may wish to give some training sessions on methods of teaching reading with the individual children. These methods may include the materials to be used as well. Peer teachers, with support and encouragement, are extremely imaginative in devising teaching materials. One 12-year-old boy, Bill, who taught with me, designed and constructed a ‘learning kit’ from wood, which contained a whole array of materials which he added to or deleted from as he gained experience with 8- and 9-year-old children. He found he had to modify his kit from time to time as he began to move from teaching boys to girls. He especially liked to take his students (he preferred to teach in pairs) out of the classroom, improvising wherever they ended up.

Even when given the freedom to innovate, peer teachers usually begin by imitating teachers in the methods they chose. When starting a project, they arm themselves with books, papers, pencils, flash and drill cards and all the paraphernalia they have been exposed to. Children who come from more deprived areas and poorer schools, lacking a great variety of materials, often come up with more imaginative teaching methods. Simple devices of fingers and toes are often all they have. And later, home-made equipment, often very primitive, appears. Regardless of the methods or materials, if teachers want to foster more creative learning, they must constantly raise the question: ‘Can you think of another way?’

THE ROLE OF THE ADULT TEACHER

The fifth area for training is to help the prospective peer teachers learn to recognize and know where they can get assistance when they need it. It is important that they have positive support from a number of sources. The accepting teacher should always be available to give on the spot support but not interfere with the teaching situation, merely encourage and observe. The teacher’s observations and suggestions are important for training in the post-group. If the teacher has peer observers as part of her programme they may provide some immediate support merely by their presence, although observers need special training so they will not take over the teaching situation at a time of crisis.

The post-teaching seminar which must follow each teaching session becomes a regular means of support and learning. Here both enthusiasm and anxiety can be used immediately for pedagogy. And the children know that no matter what happens, they will have this immediate support. Peer teachers soon learn to get support and help from each other. Through the seminars and their own observations they learn to help one another and learn from whom they can expect the most help. Often two will pair up and exchange both teaching sessions and post-group seminars between themselves, one acting as a neutral observer to feed back information after the teaching session for mutual learning.

Peer teachers get a great deal of support from anticipating situations in which they may have difficulties and then working out solutions in advance. In planning sessions the teacher might ask each prospective peer teacher to list three problems which might arise in teaching. Again this procedure can be done on cards. When categorized and discussed, the peer teachers could list other ways, again on cards, and then role-play some of the anticipated conflicts and alternative methods.
Having each peer teacher select the one area he is most anxious or unsure about and concentrate on ways he can handle the situation when it arises helps to build confidence. The teacher can help each peer teacher to develop, say, five ways to cope with this one area. When peer teachers see that crisis situations can be turned into useful ones for learning, a great deal of mastery and new solutions are possible.

Many of the crises in teaching occur when students do not want to follow plans, are emotionally upset or are restless. All these conditions are bound to appear early in a project. Greater freedom from standardized teaching methods and authoritarian control by adults inevitably brings about a reshuffling of behaviour as students test out the new learning relationship. Some peer teachers resort, as do adult teachers, to more discipline in an effort to bring the situation under their control. It is important that they have this opportunity from which to learn and in the post-teaching meeting they can reflect on what happened and then role-play an alternative way. For example, this excerpt is from a post-teaching seminar in which 12-year-old children have been teaching 6-year-olds.

**BOY:** I have a little girl and her name is Cathy and I teach math to her. She didn’t do too well at first, but now she’s getting up there. When she gets her work done, I take her out and let her play what she wants to for about five minutes and then bring her in and she settles down and works good.

**BOY:** Well, I have a little girl too and I let her do what she wants for a few minutes but then she starts messing around when I’m trying to teach her and then when I turn my back, she’s gone.

**BOY:** Well, maybe you can think up some jokes, I don’t know any right off but maybe you could make up some. There’s a boy in our class who’s pretty interested in math and he teaches. He gives the child jokes and this gets him interested in math.

**BOY:** This might sound funny to you, but if she doesn’t like to stay around, just sit her down and tell her how math came about, like, this might sound funny to you but Jullian’s tried it out and it works. Just tell her about the dinosaur or whales and when she’s interested then ask her what two plus two equals and then make up stories about that.

**BOY:** Yeh, Mark and Allen were in the room teaching their students science and when I wasn’t looking she left and went over to watch them.

**BOY:** Maybe you and Mark or Allen could work together a little bit with math and science and maybe you could do some experiments in science and she might be more interested in you as a teacher that way. Because with science they discovered math and if she knew that she’d probably say, ‘well math is science’ and then she’d have more interest in math.

**WHEN AND WHERE DOES ONE TEACH?**

The sixth area for planning is considerations of time and space. In the beginning, short teaching periods are best lasting perhaps 30 minutes. The periods of teaching can be shortened to 20 minutes or lengthened up to 45 with experience. The length of time largely depends on the nature of the relationship between the peer teacher and student, their learning and teaching styles and the amount of time available. Teaching sessions can be scheduled for two or three times a week and extended if desired.

Children are ingenious at finding suitable places in which to teach. Even in crowded classrooms, they find nooks and corners where they can maintain a certain amount of privacy in which to work. When a large portion of the class is involved, the peer teachers can bring their own chairs and sit at the edge of the student’s desk. When there is a difference of several years between teacher and student, peer teachers sometimes exchange chairs with the students in order to make them feel bigger and thus not appear so overpowering.

Outside the confines of the classroom, peer teachers and students find unusual places to engage in learning. Temporarily unoccupied areas like the cafeteria, the auditorium, the library or the principal’s outer office make good learning areas. The corridors outside the classroom can be used too, for a short session, if they are quiet. It is important to give a
project some importance and dignity. On one occasion, I donated my teacher’s desk to the librarian as she needed an extra one and I did not want to have an object between the students and myself. The librarian, in turn, became interested in our peer teaching. Consequently she closed the library for one hour each day and made available its space and facilities for peer teaching. For a few days the children found it strange to talk aloud and make noise in the room where previously only whispers were allowed. The principal also made her waiting room available, an act which gave the procedure considerable status and made it visible to everyone.

Having teaching sessions more exposed publicly gives sanction to the procedure, clears up many of its mysteries and lessens the closed door of the teacher-led classroom. Visitors to the school can see individualized teaching and learning taking place.

Weather permitting, teaching can occur out of doors. In one situation, the principal made a forbidden grass area a special one to be used only for teaching. One peer teacher held many of his short sessions on top of the parallel bars. He and his students found a certain amount of detachment at that height and he maintained that both he and his students had to concentrate harder up there.

There will, of course, be objections that there is not enough time for peer teachers to be absent from their class and that they will fall behind in their own work. Some allocating teachers will at first select either those children who need special attention in the subject to be taught, or those who are already ahead of their class to become peer teachers. However, with experience, teachers usually find that children do not fall behind in their own classroom, even in those projects where teaching is on a daily basis. On the contrary, when children volunteer to become peer teachers, they develop extra motivation for their own learning.

At one extreme, a 12-year-old boy, for example, who was such a discipline problem in his own class that his teacher asked that he be removed, taught full time in ours for several of the remaining months of the year. I had seen him sitting outside the principal’s office almost every day, and one day, she suggested he might help out in our class as he had noticed the older children teaching ours. He came and stayed. He kept up with his own work and asked me for an extra half hour now and then to give him some help. I, in turn, found an older boy who could help him. He never returned to his class, to his teacher’s delight, and yet passed all his examinations at the end of the year with high marks.

Often peer teaching projects have to begin during the lunch hour, using half for teaching, the remainder for the post-teaching seminar. Most children enjoy bringing their lunch and eating with their students or with the accepting teacher during the discussion. Often planning and training meetings are held after school, when there is less pressure and fewer other children are about. One said it would be fun to go home and tell your parents you had to stay after school for a teachers’ meeting instead of being punished for something you did that was wrong—they wouldn’t believe you!

Most teachers, who at first maintain their schedules are already too full, when they see the value of the procedure and the enthusiasm of the peer teachers and students, will rearrange their priorities to give the project maximum conditions for success. With experience and acceptance of this method of teaching and learning, teachers and administrators will alter time and space to incorporate its constructive features into normal conditions in the school.

Finally, it is helpful to ask each prospective peer teacher at the last planning meeting to present his specific plans and rationale for his first session. How will he begin the session? What materials, if any, will he need and where will he get them? What help does he need? First meetings can be role-played usefully and
the other peer teachers can offer suggestions and comments.

It is also a useful exercise to ask the peer teacher trainees to write down three things they expect to have happen in their first teaching session, not specifying whether they are positive, or if difficulties are foreseen. These anticipated events can be read to the group and discussed. The teacher may have them duplicated and later give copies to each peer teacher at the first post-teaching meeting. The comparison of the anticipated events with the actual ones can lead to a constructive and exciting seminar.

And lastly, in spite of all that has been said, it is good advice not to plan to death. Many teachers plan too rigidly and do not allow for spontaneity and unforeseen circumstances. Peer teaching is different from classroom teaching by adults and the children are both more sensitive to individual differences and more adaptable to changing conditions. As one very successful teacher said, in beginning a peer teacher project.

You've just got to set a date and then jump in with both feet! When I finally got up the nerve to approach a first grade teacher I thought might like to have some of my third graders help out, instead of the cautious reply I had expected, she said, 'Oh, that'd be wonderful'. And then when she started pressing me to begin and asking me questions in front of the other teachers, two, no three, immediately piped up and said, 'Why don't you send me some too? One was even the nursery teacher. And then and there, without any warning, I had enough teaching jobs for all of my class. We had to work fast.

The teaching session

It is important in peer teaching that everyone have a successful experience—teachers, peer teachers and students alike. As approaches will vary greatly due to different methods, attitudes and beliefs of teachers and peer teachers, no one way works for all. In the early phases, while everyone is getting experience and feeling their way, it is wise to keep the sessions brief, specific and oriented toward short-term goals. The basic pattern is planning, teaching, assessment and re-teaching.

After a relationship has been established between peer teacher and student, small, manageable, condensed bits or morsels of content for teaching can be planned. In the beginning, this form may resemble 'micro-teaching', which has been used successfully at all levels, from the nursery school through the university and in all areas.1 Peer teachers may select one skill or simplified concept to teach and perfect in a single lesson. They may be guided by the accepting teacher, or by the student depending on the amount and nature of the project's structure. In time, almost all projects become primarily student-centred as the peer teachers become secure in the relationship and skilled pedagogues. Many peer teachers in their initial enthusiasm have a tendency to overwhelm the student with materials, content or complexity. They soon learn, in the post-teaching critiques, how to better estimate the child's level and style of learning, then tailor their approach accordingly.2

A teacher who is to learn from a project must be willing to set aside preconceptions: we do not know enough about effective teaching to be close-minded. I remember one instance when a Negro grandmother had been hired as an assistant teacher for a group of 8- and 9-year-old children, many of whom were educationally retarded. She had completed only a primary education in very primitive circumstances but had raised dozens of children in conditions of poverty. Borrowing on what some of her grandchildren told her about their teachers, she embarked on developing a role-model for herself.

of what she thought a good teacher was like. Getting instructions from one of her granddaughters, and surveying the lack of skills in the six children who had chosen her to work with, she began teaching them mathematics. Her grand-daughter was two years older than the children she was working with, and was currently learning long division and fractions. Not knowing these skills herself, she learned them from her grand-daughter and then proceeded to teach them, without having taught the basic mathematic skills. The classroom teacher had settled for their being able to count money and tell time; but to her surprise, the children quickly learned as much mathematics as the grandmother could offer them, without having mastered basic skills with numbers.

If support is given skilfully and at the right time it will strengthen the role of the peer teacher. At an especially frustrating moment when a peer teacher asks for assistance, the teacher may merely comment that this subject is difficult for everyone and then ask what other way they have tried or could try. Teachers seem often to have difficulties in avoiding the temptation to step in and salvage a stressful situation. Patience and belief in the concept are essential, analogous to that which Rousseau expressed when he said that in raising children we have to learn how to gain time by losing it.

**Evaluation and training**

An integral part of successful peer teaching is a meeting between the accepting teacher and peer teachers, immediately following the teaching session. Considerable anxiety is oftentimes aroused in teaching. This anxiety can be used constructively for growth if it is dealt with properly and while still fresh. The meeting is a time to pool ideas and learn from recent experiences, to evaluate teaching methods as well as to make general plans for the next teaching session.

The seminar can begin with a very short résumé or account of each teaching session. It is good to tape record these seminars for both teacher and peer teachers to refer back to. Any means used to increase objectivity and accuracy of recall will improve teaching methods.

After a brief general run-down from each peer teacher, the teacher may ask the members of the seminar: ‘Who would like some help with their teaching?’ Often a crisis has occurred with one peer teacher and this situation will automatically take precedence. During the discussion, the teacher may add her observations or if peer observers are used, they can add theirs. If the peer teacher has taped the session, a short sequence may be played back for everyone to be briefed on the transaction. Judgments of right and wrong are to be avoided. Rather a more constructive framework is developed around the question of what happened and what was the effect. Turning problems into challenges is a task for the teacher. This more objective approach allows the peer teachers constantly to evaluate their own performance and try something different if they are not satisfied.

When the situation has been discussed to the seminar’s satisfaction, suggestions can be put forward as to alternative ways the situation could have been handled. Simple questions, initially from the teacher, will help progress, like: ‘Can you think of another way you could have used? or ‘What else could you have done?’

Time permitting, some of these suggestions can be role-played: Role-play sessions can be taped for further study by the peer teacher who was immediately involved and used for training other peer teachers. Alternative methods can be role-played by the peer teacher to gain some experience before trying a new method.

The evaluation meeting is extremely important as this is where the greatest amount of learning often occurs. The teacher can draw on her knowledge of teaching and observation skills to help the peer teachers become more
proficient. Successes should be dealt with in the same manner so that peer teachers can maximize them.

The following dialogue is a transcription of a tape recorded post-teaching critique of a first session between fourth graders (9- and 10-years old) teaching second graders (7- and 8-years old) at the request from an allocating teacher for assistance with some of her children whom she thought needed special help. In this example, she asked the accepting teacher (who kindly permitted me to use the dialogues) to conduct the teaching session in her room, so she would be able to present new material to the remainder of her class. Eleven of the peer teachers give brief impressions and the ensuing interchange is with the whole class of forty. Many of the children came from semi-poverty conditions: of American Indian parents, they live in the ghetto-like conditions of a United States Indian reservation on the edges of the desert:

TEACHER: We’ve had an unusual experience this afternoon by having second graders in here to teach them reading and I’d like to hear about your experiences.

BOY: The boy I had was sort of shy but I think that the reason was because that we’re a lot older than he was. He kinda got nervous and that’s why he missed a lot of words.

GIRL: The boy I had was around 7 and he missed five words, but he sounded them out for himself. After he read the story, I asked him the words again and he knew them right off. I think he was a pretty good reader.

BOY: The two boys I had, well, one missed a lot of words and the other one hardly missed any because he was a real good reader and I thought so myself but he kept on saying other words, putting other words in the story. I think he’s going to be a pretty good reader when he grows up.

GIRL: Would you like to have him again?
RESPONSE: Oh, yeh.

GIRL: What did you learn from it?
RESPONSE: Well, you have to have patience.

BOY: Did you like your student?
RESPONSE: Yes.

BOY: Did he pay attention?
RESPONSE: Yes.

GIRL: Did he like you?
RESPONSE: I don’t know.

BOY: Was he snotty or did he call you names?
RESPONSE: No, he didn’t.

GIRL: The little boy I had was very nice. He missed a few words on the page but he sounded them out. He knew the story. I asked him a few questions about the story and he knew them. He was very nice and I’d like to work with him for a lot of days.

BOY: Did he pay attention?
RESPONSE: Well, sometimes he didn’t.

GIRL: The girl I had was real good at reading and the only thing was that she didn’t keep her mind on was what she was reading.

GIRL: How did you help her?
RESPONSE: Well, I just told her to keep on reading.

GIRL: Did she like you?
RESPONSE: Yes, I think so.

GIRL: Did you like her?
RESPONSE: Yes.

GIRL: The girl that I had, talked so low, I could hardly understand her. When she didn’t know a word, she would make one up or she would talk so low I couldn’t hear her or she wouldn’t say anything. And I couldn’t understand her, so the words she didn’t know, I’d write them on the board and by the time I’d got that done, she’d be on the next page.

GIRL: What did you do about her not talking loud enough?
RESPONSE: Well, I tried to get her to talk louder but it didn’t help.

BOY: Was she very shy?
RESPONSE: Yes.

BOY: I think the reason they didn’t quite want to work or something was because we’re fourth graders and they’re only in second grade and we want to rush through everything. They can’t read that good and they want to go slower and read the words that they can so they can learn something.

GIRL: The student I had read alright but she kept her head down in the book and she kinda talked low. I learned that you have to have patience with them because some of them don’t want to mind you and they want to do something else or else they want to read and they want to talk real low.

BOY: The student I had, well, he was kinda nervous because, well, he knew I wanted to rush through some of this stuff, and sometimes when he didn’t know a word and I tried to help him with it he just didn’t want to learn it and well, he got kinda, I don’t know
how to explain it, he got kinda upset because I knew all these words and he didn't and he was so nervous that he was figety.

GIRL: Well, the boy I had, I learned from him that I think they always want to learn. If they want to learn they really try so I think you have to have lots of patience too and give them the chance sometimes to be off by themselves to read and then they understand more words.

BOY: The girl I had, I knew that she wanted to learn yet, she didn't know the words and so I learned that you have to have patience and not to rush them.

GIRL: I learned that you have to be real patient with them because they are not all alike—they're different. With mine, you have to have patience with her because she wanted to learn, but I kept wanting to rush her and I kept wanting to say, 'Hurry up and read', but I didn't.

BOY: At the same time when I was with my student I was kinda watchin' the others. They were reading alright, but they were looking around and the people would have to get them back on the track everytime they'd do something that they weren't supposed to and they wouldn't work. Well, they'd get them back on the right track.

GIRL: I learned that if you had an advantage like we had to teach somebody, just see what it's like and not just try to rush through it so they can go back to their room.

BOY: It's not very easy to teach second graders. They don't like to sit still and write for a very long time.

TEACHER: Well, I guess you all agree that you need to have more patience with little children.

Extensions and variations

There is virtually no end to the variations and combinations appropriate to peer teaching. Choice of subject-matter can range from more structure like in mathematics and language to less, like in creative writing, social sciences, physical education and the arts. Subject-matter can be remedial or enriching. Peer teachers can be older children teaching younger ones or even the reverse. Parents, businessmen, artisans, and neighbours can all be recruited to assist in teaching. Every community has unlimited resources for learning, largely untapped. The side effect of peer teaching is that it helps children with socialization and development of their own personalities—both student and teacher.

And one of the most interesting variations had an ironic ending. One hundred 12-year-old boys who were experiencing the normal pains of growing up in an urban area were each given the weekly companionship of a first-year university student. The idea was that the older student, having recently successfully gone through many of the same growth experiences, could help the younger boy make the transition more smoothly. Good idea and it worked. But studies showed that the effects were greater on the 'olders'. Having mastered the growing pains of adolescence, they were having new ones—those of entering adulthood. The younger boys, bewildered by all this, became expert listeners, the first essential in skillful therapy.1

Retrospective

Older children passing on the younger children the short cuts they have learned or have been taught is one of the oldest and most widely used forms of transmitting knowledge, skills and culture. In large families, older children look out for the younger ones and teach them ways of becoming more independent. In the developing countries, where there is less separation between living and educating, teaching by peers is the most common and basic form of learning.

In industrialized countries, the rural one-room school where one teacher taught all grades and subjects, began with the older teachers teaching the younger. In the United Kingdom, for example, pupil-teachers were officially recognized as long ago as 1848. By 1870 more than 34,000 were involved and many of them were paid. The scheme was an important one for recruiting and training new teachers.

With the growth of the teacher-training industry and the struggle for professional standards and power by teachers in the developed countries, the model of the single-qualified teacher in a well-equipped classroom became the respected and dominating one.

During the 1960s in the United States, large-scale projects funded and encouraged by the government aimed at reducing the gap between economically disadvantaged people and the majority, made extensive use of peer teaching.\(^1\) The Frenel Écoles in the south of France employ peer teaching as their basic method. Peer teaching is fundamental to international programmes like those advanced by the Peace Corps from the United States, the Community Services Volunteers and International Volunteers Services from the United Kingdom and by Frères des Hommes in Europe.\(^2\)

It was in the 1960s that the idea was more seriously studied as a form of pedagogy in formal education. Given the term ‘cross-age’ teaching or relationships, the development occurred at the University of Michigan by professors Peggy and Ronald Lippitt. For more than fifteen years they have carefully studied the process in operation in several neighbouring school systems. They have prepared extensive teacher-training and evaluation methods.\(^3\)

In California, two school districts have employed the method and extended it to all their schools.\(^4\) And in New York similar action has resulted over the past twenty years.\(^5\) But it is in Cuba where the most extensive programme has been operating successfully since the 1960’s ‘year of education’. There, as extensively reported by Arthur Gillette, after the initial goal of all but eliminating illiteracy was accomplished by 271,000 volunteer peer teachers, and in only six months, the practice became standard in all the schools. Each class elects those students who are best at each subject and skill to teach the others. Many of these *brigadistas* have gone on to become future teachers.\(^6\)

Extensive development and use of peer teaching in the ways described could significantly improve learning for everyone and change the essentially elitist way formal education is offered. In the developing nations there is the danger that this method, which is basic, will become extinct in the ensuing struggle for education to take on the formalized nature which dominates most of the industrialized ones.

5. Gartner, Kohler and Fiessman, op. cit.
A capable child is not a gift of nature

Lena and Boris Nikitin

Many people consider our family queer. Grandmothers are particularly disapproving: 'Everything is not like with other people here', they say. And they are quite right: most families have one or two children, while we have seven; other people's children wear sandals and sunhats in summer, while ours run about barefoot and without anything on their heads; in winter all small children are muffled up in caps and shawls so that one can see only their noses, while our children can run about in the snow in shorts; other people have nice furniture in their homes and all kinds of bric-a-brac on the bookshelves, while our house is full of bars, rings, ropes and ladders, the children building castles and spaceships out of the furniture and armchair cushions, while an old folding-bed has been hung up under the very ceiling to serve as a 'nest' where not only our children, but also the neighbours' kids climb up to play.

Our children's occupations are also very uncharacteristic of other children of their age. Thus a 4-year-old may be deeply absorbed in reading a thick book, and a 5-year-old may study the Mendeleyev table with great enthusiasm. And if we say here that our Anton finished a mathematics school at the age of 13 1/2, one can really start suspecting something abnormal, for all our other children are younger than their classmates by two or three years.

'Why do you do it?' people ask. They say, 'Everyone knows how difficult it is to study in the senior forms; in the tenth even 17-year-olds find it very hard, while you go and saddle a 13-year-old with such a load. He must be sitting at his desk all day long doing his homework! You deprive your children of their childhood! How cruel, heartless and even dangerous it is!'

People think like that until they have paid us a visit. When they have seen everything for themselves, talked and played with our children, brought their own kiddies to our family 'kindergarten' and then had trouble tearing them away to go home, they admit that our children are happy indeed.

Some even sigh and say: 'What happy parents you are!' And we do not deny it, for we are indeed happy, only our happiness did not come to us by itself.

When Alyosha, our first boy, was born sixteen years ago we dreamt, as most parents do, that he would grow up to be healthy and capable, that his studies would come easily to him at school and that we would be happy and proud of him. But how could we achieve this?

At the time it seemed that all depended on heredity. We read the biographies of gifted people and observed how early they had revealed their talents—Pushkin and Lermontov a talent for poetry, Mozart for music and Edison for inventions. It occurred to us that maybe they had reached such heights because they had started early. Psychologists maintained quite the opposite: 'The most convincing, one can even say irrefutable proof of diverse natural
gifts are cases of their early and clearly defined manifestation.’

We started collecting facts, read the history of pedagogics and found that in the eighteenth century children were taught to read at the age of 14-15. Later this was started at an earlier age; already at the beginning of the twentieth century children went to school at the age of 8. Our children go to school at 7, while in fifty-eight countries of the world they begin school at 6, in some places at 5 and there are even debates on whether children should start to be taught at the age of 4. How to explain this tendency to start education earlier and earlier? What is the optimum version?

While we were learning all this and meditating upon it, our first-born grew. Once an acquaintance gave 18-month-old Alyosha blocks with letters of the alphabet for a present. We were really surprised when some three months later Alyosha had learnt about a dozen letters. By the age of 2 1/2 he knew the whole alphabet, and at 2 years, 8 months read the first word. It seemed quite a matter of course to him, but to us it came as a revelation—this was when a person could really start reading! And what about all the rest?

Thus we began our experiments not only with teaching to read, but also with the physical development of our children, with their mastering of all kinds of movements and even with the improvement of their health. The experiments were usually purely intuitive attempts to find out what a baby could already do, experimented very carefully by play. There were no pressure and no lessons, of course. If a child succeeded in doing something it made us happy, if not—we put it off till another time. And as every one and a half or two years we had another baby, we accumulated our experience and grew bolder. We bought more and more useful toys, gymnastic apparatus, invented all kinds of aids and games ourselves.

Gradually it happened that from its very birth a child was surrounded in our house by blocks with letters and figures. There was an alphabet drawn on one of the walls, there were letters made of wire and cut out of lino, a black-board and chalk, pencils and paper, books and notebooks. The letters and figures became a part of life, our children did not even suspect that a letter was something abstract, and imperceptibly learnt the forty characters. Finding a wire ring among its toys a child would run up to its mother and joyfully cry, ‘Mummy, this is “O”!’ We played with the letters, built trains out of them, read ‘Mummy’, ‘Daddy’, ‘Milk’, etc. As a result, our second boy Anton began to read at the age of 3 years and 3 months, and the girls started reading between 3 and 4.

And again we heard people saying: ‘What are you doing? One should not teach children to read before school, you do not know the right methods, you are not specialists, you will only do the children harm!’

Thus we started, accompanied by debates. First we ‘fought’ against grandmothers and neighbours, then the argument found its way onto the pages of the press. ‘Are We Right?’ we asked in our book, newspaper article and film. The scientists’ reply was very explicit: ‘No, you are not! Early development is harmful and dangerous!’

While we watched our merry, lively children, always carried away by something, we wondered: ‘Why harmful? Why dangerous?’ and again took to studying books, brochures and articles—everything from which we could draw information on the ‘hazardous’ effects of early development. It turned out, however, that in spite of the scientists’ warnings, in spite of the fact that teaching to read was not included in the curriculum of the kindergarten, every year more and more children who had learnt to read at home came to the first forms. In Moscow and other big cities they sometimes formed 60-70 and even 80 per cent of the pupils.

We learnt that as far back as the beginning of the present century M. Montessori’s pupils (and mentally retarded children into the bargain) not only learnt to read by the age of 5, but
also to write calligraphically; that in Japan a school had been opened for gifted children where they admitted 4-year-olds, that in Philadelphia there existed an institute for the study of the human potential where they arrived at the conclusion that the best age to teach a child to read was between 1 1/2 and 2.

All this encouraged us in our quests. But the chief confirmation of the hypotheses we formed were our own children. They amazed us with their potentialities. We could not catch up with their development and were constantly making mistakes in our forecasts. It was surprising indeed, and it made us take up the problem of early development very seriously.

During the sixteen years of our work we considerably deviated from the traditional terms of the beginning of children’s development and drastically changed many customary methods of education. In the present article we cannot tell about all our difficulties, about the inevitable mistakes and miscalculations; we want to show what is untraditional in the upbringing of our children, what results it has produced and what it has prompted us to meditate upon.

Therefore we ask the readers’ pardon for the certain dryness, even conciseness of our narration as we wanted to put as much information as possible into the brief article. For this purpose we had to sacrifice the description of the emotional, moral and ethical sides of our life, but we sincerely hope that the reader will not get the impression that we lack them.

The question of health

All our children were born when we were no longer young. Our first-born appeared when the mother was 29 and the father 43. The six older children during the period from 6 months to 3–4 years (Yulya up to 8 years) revealed symptoms of exudative diathesis, considered a sign of congenital predisposition to a number of diseases. The natural wish to make our children’s health better prompted us to look for effective methods of hardening their organisms and developing them physically.

From the very beginning we believed that one can judge a person’s health by how quickly and easily he adapts himself to different life conditions, and the greater the range of such possibilities, the better is his health. So, gradually and very carefully we extended and varied the life of our children by removing many limitations and norms. Thus we established a very flexible daily régime for a baby from the very start—feeding time could be shifted for an hour, an hour and a half, while sleep and periods of wakefulness depended on the baby’s own needs. We did not keep to a strict régime when the children grew older either: the daily routine in our family changes very widely, depending on circumstances, particularly during hiking expeditions and long trips.

Neither do we keep to any strict norms and portions in our diet: everyone eats as much as he wants and there is a common diet for everyone. However, fruit and nice things to eat are divided equally among everybody. We prefer to drink unboiled water and milk and to eat raw fruit and vegetables which favour the development of a non-specific immunity in the organism.

We do not give our children any special treatment to harden their organisms. During the first weeks of a baby’s life we keep it either naked or in a thin vest while it is awake at a temperature from +18°C to +25°C. Altogether, such air baths take up about two hours a day, and by the time a baby is one month old they last up to three or four hours a day. Later, wearing light clothes and walking barefoot become customary for our children. Our children like to run like that to and from the bath-house which is situated twenty-five meters away from the house even when the ground is covered with snow.

Usually we wash a baby’s face and genitals with cold water. From the very first weeks of an
infant’s life we regularly hold it over a chamber pot, and as a result there are ten to fifteen times less soiled diapers while the baby does not need any powders or ointments.

We strive to take into account a child’s wish and mood in everything we do. Thus we do not make a child bathe in cold water if it does not want to, but, on the other hand, if it does not wish to come out of the river and goes on bathing till it is blue, we do not forbid it. We can advise a child to put on warm clothes if the weather is cold, but we never force it to do so.

As a result of all this, our children are not afraid of draughts, wet feet; they eat snow and icicles and run barefoot in the snow in winter or bathe in the river when the water is still cold without catching cold. They easily endure all the discomforts and difficulties of travel and hiking expeditions such as heat and cold and living in a tent. They are equally insensitive to changes in climate, water and food. They sleep soundly everywhere and on all kinds of beds. All of them have very good digestions: during all the sixteen years we have had only three cases of gastro-intestinal diseases, and even simple gastric disturbances occur very seldom. All bruises, scratches and cuts our children may have heal very quickly without any special treatment.

Up till the age of 12 months our babies do not fall ill at all, while such infectious diseases as flu, measles, scarlet fever, mumps, German measles and chicken-pox usually take a mild form with them without it being necessary to give the children medicines and special treatment.

In the course of sixteen years only two of our seven children have been taken to hospital: Alyosha in 1963 on a suspicion of dysentery, and Lyuba with pneumonia (a complication after the flu) in 1973. This was the only case of pneumonia in the family. On the whole, we call in a doctor or consult a doctor at the polyclinic in connexion with our children’s health up to eight times a year. Considering that ‘in the developed countries 150 to 200 persons out of each 1,000 are taken to hospitals each year’ (data of the World Health Organization) and that every inhabitant of our country visits the polyclinic eight times a year on average (while children of the pre-school age fall ill two to five times more often than adults, and over 90 per cent of all the children’s diseases are colds), we can say with confidence that our way of life favours the strengthening of our children’s health.

Physical development

We knew that with the improvement of people’s well-being and the comforts of city life, the volume and intensity of physical work of adults, and particularly of children, had fallen considerably lower than the optimum dose necessary for normal physical development, that hypodynamia and hypokinesia were becoming diseases of the age and the cause of many, particularly cardio-vascular, diseases. We decided to oppose this tendency, and as far as possible tried to change our conditions and way of life so as not only to satisfy the need of our children in movement as much as possible, but also to develop this need.

Therefore we strive in the first instance to create conditions that favour the development of movement. They are light clothes (worn at home, and during the warm seasons of the year outside too)—a vest for a baby and shorts for the older children. Such clothes do not restrict the children’s movements; they allow them to feel the coolness of the air which stimulates movement and makes the mechanisms of temperature control in the organism work better.

Then the children walk barefoot all the year round inside the house and in summer outdoors too. According to our observations, walking barefoot facilitates the teaching of a baby to walk, prevents the development of splay foot, increases carefulness during walking and running, makes the skin of the foot thicker and
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stronger and favours the formation of a correct manner of walking and running.

We also have all kinds of sports apparatus both in the house and in the yard, and all the children, including the youngest, can use them. Such a sports atmosphere makes it possible to satisfy the children's permanent need in movement and turns physical culture into an element of the children's life, the same as mobile games.

In our family children of all ages mix with each other. On the one hand, this provides the younger children with examples they wish to imitate, for they want to be as clever and strong as their seniors, while on the other, the senior children can help them, show them what to do and take care that nothing bad happens to them.

Gradually we have developed our methods of physical education. In the first instance, we try to make use of a child's natural aptitudes. By the moment of its birth, nature provides a child with grasping, supporting, walking, swimming and other reflexes which usually quickly fade away as they do not find any application. However, we try to make use of some of them (now we even believe that they should all be developed): we begin to hold a baby in an upright position very early, help it to plant its feet against something solid and stand or hand holding to an adult's fingers (beginning with the second and third months), and in this way we also lift a baby out of its cot.

We have observed that bold energetic handling of an infant makes it strain itself in response, not subordinate itself passively to the actions of an adult, but take an active part in them and, consequently, develop.

We are not afraid of the early use of 'sports apparatus' either. In a baby's cot and carriage we fix a bar beginning with the age of 3 months which the baby can grasp and pulling itself up sit and later stand on its feet. When a baby starts playing on the floor, we drop the sports rings and bar to a height of eighty centimetres above the floor so that the baby, by changing its position from standing on all fours to standing upright, could reach them and hang on them. We let a baby play on the floor from the age of 6–7 months where it can easily move trying to follow the older children, fetch toys, etc. This provides the baby with the necessary movements and greater freedom in the cognition of things and their properties.

When a baby makes its first acquaintance with a sports apparatus we, grown-ups or the older children, stand by till we are sure that it is absolutely safe.

We have observed that the usual unchanging surroundings bore children after some time. Therefore we try to supplement our stock of sports apparatus as far as possible and use them in different combinations. Thus, for instance, a ladder may stand by the wall vertically, or in an inclined position, it can be fixed so as to stand vertically in the middle of the room or be suspended from ropes or rubber cords at different heights from the floor; we also change the height of the suspended rings, fix the bars differently, etc. Such mobility and changeability of the sports apparatus helps us to support an interest for them and stimulates the children to perform new movements and exercises.

We encourage the children when they invent new games and sports apparatus; we do not forbid them to combine physical exercises with intellectual occupations such as solving arithmetic problems standing on one's head or swinging from a rope. The children are fond of doing such things.

Here, too, we always take into account the children's abilities and wishes. Usually an adult cannot determine accurately the strength of a child's hands and feet and out of carelessness can cause a sprain, a dislocation, or a rupture of ligaments. In order to avoid such things we do not lift a baby until we feel that it is holding fast to one's fingers. We do not stand a baby on a chair until it learns to climb up and down the chair by itself. We do not raise it to reach high
hanging rings which it cannot reach itself, do not swing the rings till the child has learnt to swing by itself, etc.

The children determine the character and length of their physical training, exercises and games by themselves and even take upon themselves loads which we, grown-ups, would never have imagined them capable of. Thus they can do 500 knees-bends in succession (Anton at the age of 7), 232 'frog' leaps (Vanya at the age of 2), climb on the table and jump down from it seventy-six times running (Yulya at 3 and Anya at 6), etc.

At the same time, of course, we do not remain merely passive observers, but encourage the children in their games and occupations and make use of all kinds of circumstances to develop their muscles. Thus, if it is necessary to take a baby in one's arms, we do not lift it by holding it under the armpits, but stretch out two fingers to it so that the baby could grasp them and even jump. Then it is easier for a grown-up to lift the baby, while for the baby it is both pleasure and training, as one sometimes has to lift it a dozen times a day. When we go for a walk with a child we do not hold it by the hand, but offer it a finger which it grasps; similarly we allow a child to climb onto a tall chair by itself, the father's lap, shoulders, etc.

Besides all that, we arrange games with elements of sports, family 'circus performances' at which our amateur gymnasts, acrobats, wrestlers and dancers show their skill. The small children are particularly glad when grown-ups and the senior children take part in their games and sports events.

Regularly (three times a year) we check the standard of the children's physical development. Sometimes this takes two or three days. We write down the results, award chocolate medals to the winners and rejoice in each child's achievements.

We consider a timely beginning to be the most important thing in physical development. However, as we did not know at first when a certain movement would be within a baby's power we tried to create conditions beforehand that would allow it to move and strain itself as much as it wished and needed. It turned out that our children started earlier than usual:

to stand holding to the fingers of an adult—beginning with 3 months;
to hang holding to the fingers of an adult—at the age of 3 months for thirty to forty seconds;
to crawl without touching the floor with their knees—beginning with 6 to 7 months;
to walk barefoot without any support—beginning with 8 1/2 to 9 months;
to raise their feet to their hands hanging from a bar—by 10 to 18 months;
to run at the rate of their double height per second—by the age of 2 years;
to climb a pole to a height of up to four metres—at the age of 4 years.

Our children are of average weight and height. The warning of the doctors that they would not be tall enough as they lifted heavy weights during the pre-school age was not justified. At 16, Alyosha is 175 centimetres tall and weighs 55 kilograms. All the children have slim sporting figures and there are no deviations from the normal in the development of their muscles and skeleton.

However anthropometrical indexes characterize chiefly the constitutional qualities of the organism and do not reveal its physical potentialities. Therefore we attach great importance to sports indexes. Here they are.

The power of the muscles: the children can lift a load from the ground (in the most favourable position upon a torso dynamometer) weighing four and a half and even six times more than their own body; they can pull themselves up on a bar up to fourteen times, lift their legs when hanging from a bar to reach the bar up to fifty times in succession and hang holding to a bar with one hand for up to ninety seconds.

Speed of running: all the children are fond
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of running and can keep running for a long time. At the best time they develop a speed of up to five and even five and a half of their heights a second (like the strongest sportsmen). It is to be regretted that one and two years after the children start going to school these indexes become lower probably owing to school hypodynamia and hypokinesia.

Even the small children strike us with their endurance. They can run two to six kilometres without taking a rest, and even 4-year-olds can walk twenty kilometres a day during a hiking expedition.

They are supple and dexterous and can perform head stands, bridge positions, ‘cartwheels’ and other acrobatic exercises. They can climb a pole five and a half metres high: Alyosha (16 years old) in six seconds, Vanya (6 years old) in twelve seconds. They can easily climb over any fence, climb trees, climb to the roof of the house without a ladder, etc. If they happen to fall, they do it so cleverly that they do not harm themselves at all.

A sense of their potentialities is very well developed in our children. They will never do anything dangerous to themselves—jump over a ditch, for instance, if it is wider than the length of their leap, or jump from a height if they can injure a foot. Jumping from a height of one and half to two of their heights they very subtly feel the limit which they should not exceed. Therefore in spite of their intensive physical activities not one of our children has ever had a fracture, dislocation or straining of a limb.

The measure of a person’s ability for physical work is very well determined by the index of physical readiness according to the Harvard pacing test. In our six older children the index is from 100 to 130. For comparison we can cite the indexes of adults: below 50 is bad; from 50 to 80, satisfactory, over 80, good.

Sports coaches who have seen our children say that they are well prepared for serious sports training already before the school age.

Mental development

Our initial intentions in respect to the mental development of our children were comparatively simple. We wanted to prepare them for the assimilation of the school syllabuses that were becoming more and more complicated, and to develop in them an inquisitive mind and an interest for study. However, in the course of the work with the children there unexpectedly opened such great possibilities of their development that our plans changed. We started searching for the optimum conditions of developing the children in the family and then conditions for developing their creative abilities. This resulted in the working out of a ‘Hypothesis of the Origin and Development of Creative Abilities’.

In this theoretical work, which has been approved by several prominent Soviet scientists, we expounded a very important principle according to which the chief condition of the effective development of a child’s abilities was a timely beginning (much earlier than at present), that the potentialities of development did not remain invariable, but faded, and that this was the cause of the low level of abilities in most people.

In our family we tried as far as possible to prevent this irreversible fading of the potentialities of the effective development of abilities. Here is a very general outline of our quests. In order to teach a child to speak it must be spoken to beginning with the day of its birth, i.e. the conditions for the development of speech are provided beforehand, long before the child itself starts speaking. And what if one were to try and do the same with the development of other abilities? So we tried as far as possible to surround a child beforehand with such an environment and such a system of relations that would stimulate its most diverse activities, and little by little develop in it such abilities that would flourish most effectively at a suitable moment.
We have divided the whole of our house into 'zones of different activities'. We have a drawing-room which is turned into an auditorium during all kinds of family concerts and for television programmes, a play-room and gymnasium where all the sports apparatus and toys are kept, a study with scientific and educational literature and a workshop with a photographic laboratory where there are several carpenter's benches and working desks, different materials and sets of fitter's and carpenter's tools and electric instruments. The main thing here is that all these premises and their equipment have been designed both for children and adults, and common premises incite joint activity. It turned out that when a small child started walking about the house it could not pass indifferently others who were working. Thus if daddy was knocking with a hammer, it wanted to be given a hammer too. If an older sister was sweeping the floor, it wanted a broom. If mummy was sewing, it wanted to sew too. It would be a crime to refuse the child at such a moment. Work requires much mental and physical effort, while the joint work of parents, of the senior and junior children creates in the family a warm atmosphere of mutual assistance and mutual education and therefore becomes one of the most important conditions of the children's development.

Besides, we were not afraid to introduce into the children's use many things taken from the 'adult world'. Thus besides the usual dolls, toys, picture-books and games they were given many different tools, materials and diverse educational aids, such as geographical maps and globes, tables and textbooks, a black-board and chalk, special educational devices and a whole series of developing games invented in our family which have become a great success with other families too.

The games are original. They happily combine the principle of old folk games—a gradual complication of the elements of the game, and a requirement of scientific and technical progress to think creatively and solve new unknown problems. For this purpose it is necessary to think independently, to analyse; synthesise, find relationships and ties between elements, to design models without any patterns.

For these games we used Koss's books and Link's cube known to psychologists, as well as some of M. Montessori's games and children's building blocks, sets of squares made of plastic and cardboard cut into a different number of parts, parts from a meccano set and other suitable objects.

The games begin with very simple tasks in the form of a series of pattern-assignments and drawing-assignments after which assignments are given to compose new patterns, to design new models and structures.

However, such an 'enriched' atmosphere does not always produce a noticeable developing influence by itself if one does not 'set it moving'. We had to try many things before we worked out the basic methods of working with the children and even more, the basic principles of associating with them.

In the first instance, our work with the children does not bear the character of regular lessons when an adult teaches and a child learns. Our 'lessons' chiefly take the form of a game or merry competition in which adults can both supervise and participate. Often it is the solution of some problem—how, for instance, to divide twenty-five nuts among everyone, or three apples between ten persons, or what to do if someone gets lost at the zoo, how and where to cross the street, etc. It is impossible to plan all such cases beforehand, but we try to make use of everything that occurs.

Second, we try to encourage a child's independence, not to solve its problems for it if it is capable of doing so itself, and we never urge a child on if it is slow with the answer. We believe that one ought to wait patiently till the child finds the solution itself, till it thinks everything out by itself. We strive not to force ready stereotyped solutions on the children, try to
understand the train of the child’s thought and do not stop it even if we see that its solution is erroneous. We do not point to the mistakes directly either, but try to direct the child’s efforts so that it can discover its own mistakes. We always welcome unique solutions, the ability to advance arguments and defend one’s opinions.

Third, we grant the children great freedom in the choice of occupations, their length and sequence. This, to our mind, offers the children an opportunity to try their hand in the most different kinds of activity and reveal their various interests freely.

Fourth, we know that a child is more attracted by a game when it sees that older children and grown-ups also take an interest in it. One cannot remain an indifferent observer or dull mentor in a game. And we take our children’s games quite seriously, share their successes and failures with them.

As far as possible we do everything together—work and relax. We enjoy watching television together (usually the programmes are chosen beforehand from the paper and not more than twice or three times a week), we read aloud, sometimes for several evenings running, arrange family concerts and festivals, trips and hiking expeditions.

Under such conditions the children, early and easily, through games, learn to read by the age of 3 to 4 years, to count approximately corresponding to the arithmetic syllabus of the first form by the age of 4, to write by the age of 5 and 6 and to read a plan, a drawing or a map by the age of 4 and 5.

All this considerably facilitates the children’s studies at school and even makes it possible for them to skip one, two or even three forms, while in the senior forms they study without any special strain and often do not have to prepare their oral home tasks at all. Our children’s academic progress is usually high, the average mark being 4.5.

Our children differ greatly in characters and interests (one goes in for chemistry, another for electronics, still another for drawing), but some features are typical of all. Thus they are all inquisitive, reveal an active interest for the most different fields of knowledge, they are very fond of reading, and their reading interests are diverse—from fairy-tales and science fiction to popular scientific and classical literature. They are very attentive and have good memories, easily remember what they have read, but do not think in a stereotyped way, search for their own solutions and like problems which require a keen wit. According to academician N. M. Amosov, the children are not so much ‘erudite’ as ‘problem-solvers’. And indeed, we are surprised at the quickness and facility with which our children deal with difficult creative tasks that often nonplus adults, or make us spend much time in solving. They also strike us with their rich imaginations. Thus they are fond of inventing games with a story and parts, of playing at ‘revolutionaries’, or at ‘primitive men’, or ‘the zoo’, or at ‘the theatre’ and write the plays and rehearse them by themselves.

In 1974 the mental abilities of our children were checked according to G. Eysenck’s tests of the general level of abilities. And though these
tests are designed for adults with a secondary education, our children showed results as shown in Table 1.

Thus the level of our children's mental development can be compared to that of adults already at the age of 7 to 8 years.

When we were just starting on our quests, when we still doubted many things ourselves we often heard people say: 'Just wait till the children grow up . . .' and made foreboding forecasts. But now that the children have grown we can sum up the first results.

We have not observed any harmful results of the 'early' physical loads and cool temperatures. On the contrary, owing to them we have escaped 90 per cent of children's diseases which are colds. Timely physical development makes our children not only slim, strong, dexterous and enduring, but also confident of themselves, with a healthy well-being.

We have not observed any harmful effects of our children's early mental development either. On the contrary, owing to an earlier, or to be more correct timely, development we avoid overloads and lagging behind at school and, what is the main thing, achieve high results in the development of the creative abilities of our children.

All children can develop this way, and even much better, if only they are provided with the necessary conditions for timely and full-blooded development—such is the chief result of our practical and theoretical research of fifteen years' standing. A strong, healthy and capable child is not a gift of nature, but represents quite a feasible task for the theory and practice of education of today.
Biological continuity and epistemology

It will readily be granted that one of the main aims of education is to develop the intelligence. Whatever the other avowed or unavowed purposes of educational training may be, it will be conceded that the primary function of the school is to promote the full development and flowering of the child's intellectual faculties. Assuming this to be so, the question remains: 'What is intelligence?'. Various philosophical and other theories have given definitions of it, ranging from intelligence as a more or less innate faculty to intelligence as the product of learning about ready-made facts.

In attempting to reply to the psychological question about the nature of intelligence, it has proved fruitful, both heuristically and experimentally, to consider the problem in the more general context of epistemology (the theory of knowledge). Does knowledge appear after a copy of reality has been made? Does it emerge haphazardly? Is it made possible simply by the development of the nervous system? Is it built up gradually both on the collective level of science and on that of its individual manifestations?

Observation of children from birth has led Piaget to consider intelligence as a continually evolving process that takes place through interaction between the subject and the world around him.

Essentially, Piaget states that knowledge derives from action, i.e. from an 'assimilation' of the real to general co-ordinations of actions. Assimilation is a mechanism common to biological and psychological exchanges. Co-ordinations of actions achieve the most perfect form of exchange with the environment because they enable the subject (at the level of his co-ordinations of actions) to be adjusted to all the objects on which he acts. Thus, for example, one of the baby's most elementary forms of co-ordination of actions is that of sucking reflex. This co-ordination (which Piaget calls a 'schema') evolves rapidly by the continual assimilation of new objects. Towards the age of 3 or 4 months, the baby sucks his fingers and any other available object.

The fact that a schema can incorporate new objects through assimilation has a second aspect, one that is complementary to the initial process: in assimilating increasingly different objects, the schema must adapt to them. Co-ordination, by adapting to new objects, will foster the 'differentiation' of actions and will consequently lead to a more and more refined adaptation to the environment.

The importance of action in relation to knowledge does not decrease when the child learns to speak. The possibility of evoking through representation—which may be speech, but may also be a mental picture—situations that have previously been experienced will enable the intelligence to perform and co-ordinate interiorized actions. By about the age of 5 or 6, for example, the child will have acquired the instruments needed to link together simultaneously in thought two or more actions (which Piaget calls 'operations'). These operations will not take place in isolation, because as schemas they have common characteristics. This is why they can be grouped together in sets (as, for example, a series of whole numbers).

For the last fifty years or more, Piaget and his school have studied this continuous development which leads from sensori-motor actions to the most abstract instruments of thought. One of the original features of this approach has been that the stages in the development of the intelligence and the evolution of scientific knowledge (especially in mathematics and physics) are studied simultaneously. This twofold interest enables a fruitful comparison to be made between the genesis of ideas in the child's mind (number, space, etc.) and the historical development of such ideas in Western scientific thought.

A method

We must start with observation, and when we discover an interesting fact, we must reproduce the situation, varying the factors. That is where experimentation begins. The method is devised as one goes along. I have seen this close at hand—J. Piaget, interview in L'Express, Dec. 1968.

A statement of this kind is enough to astonish a scientific mind. To devise a method 'as one goes along' may appear to be poor science unless we

remember that a method is always chosen with a view to an established goal. Here the goal is of an epistemological nature: how is knowledge possible? How is science possible? It may be useful to recall briefly the essential points in the development of the method in Piaget’s psychology, since it is responsible for the decentration that some are advocating—and using—today in connexion with the renewal of education, for example. This decentration means getting away from the verbal and over-conceptualized aspects of thought, and being concerned rather with action and the dynamic processes that underlie it.

It was while working in Binet-Simon’s laboratory that Piaget first used his method. This method, which is based on ‘conversations’ (in the clinical sense), while essentially verbal, led Piaget to make a close study of the reasoning of children in solving simple logical problems of the type where a part is to be included in the whole. Piaget paid particular attention to the mistakes and incorrect replies of the children whom he questioned.

Soon, however, Piaget gave up studying language and turned to observation, beginning with observation of his own children. Concentrating on the first three years of life, he became convinced that what was primarily important was the way in which the child manipulated and experienced objects. ‘We shall not refrain from studying language, but where small children are concerned we shall study it only in relation to the whole action—and the most spontaneous action possible.’

The basis of the method is: the child is presented with concrete situations, ones that can be manipulated, by means of which the experimenter may discern and analyse the series of actions (or operations) which the child sets in motion to reach a goal or solve a problem. It should be stressed that it is not the attainment of the goal or the solution that is primarily important; the main aim is to study the strategies and the means used and especially the organization of the means.

It was by identifying such organization in the activities of the subject confronted with a wide variety of materials that Piaget perceived the stages of development. They are characterized by a set of logical relations—corresponding to the child’s various operations—which represent the logical-mathematical abilities of a subject at a particular point in his development.

The ‘clinical’ aspect of the method is of great importance. The psychologist does not merely put material before the child (generally in the form of a ‘game’) and note his responses; he adapts his investigation to the child’s reactions and behaviour. This means that the experimenter will let himself be guided by the spontaneous reasoning of the subject in order to carry his interrogation further. With the same desire to ‘stick’ to the child’s real world, the experimenter will avoid using adult language and will employ the terms that the child uses spontaneously.

The description of this method may make the role of the adult seem passive and compliant, but it is not. While one of the conditions of the method is understanding and adapting to the child’s experience, the experimenter must naturally have in mind—and set before the child—a specific problem which he will not lose sight of at any time throughout the session. Furthermore, the ‘clinical’ method may be transformed into what some have called a ‘critical’ method. This consists in casting doubt on the child’s statements by quoting other statements attributed to other children. This counter-suggestion procedure is essential because it makes it possible on the one hand to evaluate the stability and coherence of the subject’s reasoning and, on the other hand and primarily, to determine whether that reasoning is the expression of an actual mental structure.

The main stages in the development of the intelligence

If two rows of five counters each are lined up side by side so that each counter in one row is exactly opposite a counter in the other row, and the counters of one row are subsequently spaced out over a longer distance, it will be readily admitted that there are still five counters in each row. However, recognition of this numerical equivalence is not obvious to most children before the age of 7. The different spatial arrangement of the second row destroys the optical correspondence between the counters and consequently the numerical equivalence.

The child who frees himself from the appearance of the shape of objects constructs what Piaget calls an ‘invariant’ (in this case the numerical equivalence between the two rows of counters). It is precisely the

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4. It has been observed, for example, that the term ‘as much’ often means ‘more’ to children aged 5 or 6; ‘as much’ in the adult meaning of ‘the same number’, ‘the same quantity’, is expressed by ‘the same thing much!’
formation of invariants that characterizes the various stages in the development of intelligence, since each invariant achieves a particular form of balance between objects in the world and the co-ordination of action.

The principal invariants formed in the development of the intellect are classified in two broad categories: practical invariants and conceptual or operational invariants.

The first invariant, which comes into being during the 'sensori-motor' stage (up to the age of 2), is the schema of the permanent object. The baby succeeds in situating objects as their position is changed, and this schema constitutes one of its first achievements. Before that step is taken, changes in the position of the object are perceived only in relation to the baby's own action (for example, he will not look for a toy that has been hidden behind a screen while he was watching). The ability to attribute stable existence to objects—which finds concrete expression in the baby's behaviour when he looks for objects, taking account of their successive displacements—serves as a criterion by which his awareness of permanence can be recognized. Furthermore, the existence of an invariant always goes hand in hand with some form or organization. In the case of the young child, the organization is that of the practical grouping of the displacements within which the actions (i.e. movements) are organized in relation to one another. Important items of behaviour are thus mastered within the grouping. Examples of this are the way in which the detour is carried out and the associative composition of movements from one place to another.

The sensori-motor period is followed by a long period—approximately from 3 to 6 years of age—called 'pre-operational', during which the practical instruments are gradually transformed into thought. This period of transition is characterized by the presence of a qualitative logic which prepares for and prefigures the quantitative invariants of the 'concrete operation' stage (which begins towards the age of 6 or 7). By this stage the sensori-motor actions have been interiorized and have acquired the essential property of being reversible (action A when combined with its reverse B is nullified). These interiorized actions now have the status of operations and are put together in new over-all organizations, or concrete groups. Let us glance briefly at the scope and limitations of these groups. By virtue of operational reversibility, the child in the concrete operation stage will account for numerical equivalence (in the problem mentioned at the beginning of this section) by the fact that the counters can be replaced in visual alignment, either by spacing the counters in the first row farther apart, or by bringing those in the second row closer together, and he will ultimately admit that there is some correspondence, apart from any question of arrangement in space. The invariants that are built up during this period will cover not only the field of logic and arithmetic but also space (the conservation of measurement), physics, the conservation of matter and of weight, and causality, i.e. the system of inter-action between objects.

The construction of groups in this period is always based on objects that are materially present, and is achieved as a result of manipulation. The fact that at this stage operations are built up step by step, by continual reference to the manipulated content, limits the possibilities of operational compositions.

The next stage in intellection will begin precisely with the gradual emancipation from the various concrete contents and, from the age of 11 onward, there will appear the stage of 'formal operations', in which the subject has the ability to reason about verbal statements. Propositional reasoning (the ability to handle the implication of 'if this . . . then that') and a combinatorial logic (the consideration of a number of possibles) are the main characteristics of this period.

The mechanisms

The essential meaning of our theory is that knowledge leads to inter-actions between the subject and the object which are more meaningful than what is offered by the objects alone. . . .

The development of knowledge is not a passive process, nor is new knowledge registered as such even under the effect of outside pressure, however strong this may be (cultural, etc.). Any new ability acquired must be acquired by the subject, through those filters which are constituted by assimilation schemas, the texture of which is modified by accommodation when each new object of knowledge is integrated. These modifications may be described with great precision (cf. the stages of development). In each of these stages in its development the intellect achieves a particular type of balance between assimilation and accommodation. However, the instruments devised by the intellect at a given level—a practical invariant, for example—will give rise to complete reorganizations.

1. Any reader who wishes for further information and for the main bibliographical references to the discoveries mentioned here should consult the excellent work by J. Piaget and B. Inhelder, La Psychologie de l'Enfant, 6th ed., Paris, PUF, 1975. (Que Sais-je series.)
at the higher level (conceptual invariant). This reorganiza-
tion will first produce an imbalance between the two mechanisms—for example, a distorting as-
similation may lead to centring on the action itself or
limited accommodation (cf. fixation on perceptive as-
pects). On the other hand, the continual integration
of new objects and the diversified accommodations
resulting therefrom will strengthen the balance be-
tween the two processes and furnish the subject with
instruments of knowledge which are more complex
and more powerful than the ones he previously had.

In order to emphasize the active and constructive
character of knowledge, Piaget's theory examines the
process of abstraction, as well as assimilation and
accommodation. A distinction is drawn between two
forms of abstraction that are involved in the develop-
ment of knowledge:

The first is called 'empirical abstraction', and
broadly speaking coincides with common sense. It
consists in drawing information from the visible
properties of objects or the observable characteristics
of action. For example, in the first case the child will
concentrate on the colour of an object and in the
second on its weight.

The other form is 'reflecting abstraction'. This is
distinguished from the first form in that it is no longer
concerned with the object as such, but with the co-
ordination of the subject's actions. This may be illus-
trated by an example: a child is given a set of sticks of
different lengths and asked to arrange them by size in
either increasing or decreasing order. Children suc-
cceed in making the right arrangement (at the age of 7)
when they proceed systematically. For example, they
may find the smallest stick by comparing the sticks
two by two and then find the smallest of those that
remain, etc. Before they employ a systematic method,
children only make over-all perceptive comparisons
and divide the sticks into classes, the big ones to one
side and the small ones to the other.1

From this construction of the schema of seriation a
new type of composition will emerge, namely 'transi-
tivity'. For example, A<C if A<B and B<C. As may
be seen, the transitive relation was not a property of
the sticks before the child arranged them in order.
The process of abstraction thus involved the co-
ordinations implicit in the action of putting in order,
and these co-ordinations, which were reflected from
the practical to the operational level, created a new
instrument of thought.

Some recent work

In recent years there has been a shift of emphasis in
the research done by Piaget's school and more es-
pecially that of the International Centre of Genetic
Epistemology (under the direction of Piaget himself).
For a long time the main subject of study was the
major categories of the real (logic, space and time),
whereas interest now centres on the actual mechan-
isms by which the transition from one stage to
another is made and on what Piaget calls 'the creation
of new ideas', which is proper to the intellect.

This shift of emphasis began with an important
series of studies on causality,2 i.e., on the way in which
children (of ages 4–5 to 13–14) understand and explain
different relations of physical causality between ob-
jects. The results have shown that physical concepts
(transmission of motion, the notion of force or vec-
tors) are not formed in the child solely on the basis of
his reading about objects: the mechanism of reflecting
abstraction and operational compositions also enter
into the process. This takes place by the attribution of
co-ordinations of actions to objects and to inter-
actions between objects. A good example of this is the
case of the transmission of motion when a moving
marble strikes a row of stationary marbles. The
phenomenon takes place before the child, and he him-
self may throw the marble. However, observation of
the effect of the setting in motion does not suffice to
explain the transmission of movement from one
stationary marble to another. For example, small
children, as a rule, completely overlook the intermediate
marble, and some imagine that the moving marble has
replaced the last one by jumping over the whole row
of stationary marbles! Children at the level of concrete
thinking explain this phenomenon by reference to a
form of mediate transmission (one marble pushes
another and so forth), a kind of physical equivalent of
logical transitivity.

The mechanism of attributing the activities of the
subject to external phenomena raises the problem of
ascertaining what element of actions is attributed to
the object and how the subject becomes aware of it.
In other words, what must now be understood is the
causality of actions.3

The first striking discovery resulting from these
studies was the demonstration of the long time lag

1. J. Piaget and B. Inhelder, La Genèse des Structures
Logiques Élémentaires, Neuchâtel, Delachaux et Niestlé,
1959.
2. A summary of these studies will be found in: J. Piaget
and R. Garcia, Les Explications Causales, Paris, PUF,
1971. (Etudes d'Épistémologie Génétique, Vol. XXVI.)
For a detailed account of the research, see Vols. XXVII
(1972), XXVIII (1972), XXIX (1973) and XXX (1973)
in the same collection.
3. J. Piaget and collaborators, La Prise de Conscience,
Paris, PUF, 1974. (Psychologie d'Aujourd'hui series.)
between the organization of actions (with a view to attaining a goal, for instance) and awareness of the co-ordinations actually effected. One experiment, for example, was carried out with a sling. A wooden ball attached to a string was swung round and then shot towards a goal. From the age of 4 most children proved capable of releasing the ball correctly in the direction of the goal. However, if we look closely at the conceptualizations that children make of their actions, we find that what they say about them does not immediately correspond to what they do. Children up to the age of 8, for example, describe the motion of the ball towards the goal as two distinct actions: one is an interruption of the circular movement in front of the goal and the other is a perpendicular trajectory which is a direct line extension of the radius. What they do not yet succeed in doing is to co-ordinate the fact that when the ball is released it goes off ‘from the side’, with the idea that only one line of movement is possible, namely the one that starts from directly in front of the goal. Once again the correct explanation—a tangential trajectory—is conceptualized by the process of reflecting abstraction, which makes it possible to reorganize on a level of simultaneity two actions originally seen as separate, within a frame of reference that is broader than at the beginning, comprising all possible cases of releasing the ball.

Another interesting result of this work enlightens us about the direction of the awareness process, which goes from the periphery (result of an action) towards the centre, i.e. towards the ‘co-ordinations characteristic of the very mechanism of the action’.

The fact that there is a time lag between the action and the subject’s understanding (conceptualization) of it seems to show the importance of the ‘notional reconstruction’ of actions and movements of practical intelligence and the role which reflecting abstraction is called upon to play.

However, there is still the problem of determining why conceptualization of the different cases of co-ordination of actions remains distorted and imperfect for approximately five years. The hypothesis put forward by Piaget is that ‘the subject’s real actions contradict one of his preconceived ideas’. This theory then gave rise to a new series of studies on contradiction in the child and on the way in which children raise their contradictions to the level of action.¹

The subject is not immediately aware of the contradictions. We saw in the numerical example of the counters that children, before the level of concrete thinking, did not hesitate to say that the rows became numerically unequal when one of them was extended, even though they had just built up the two series so that they corresponded, and had thus admitted their equivalence.

The problem of contradiction should therefore be approached from the point of view of the relations between affirmations and negations. Observables which the subject retains are initially positive (e.g. the extension of the series of counters), ‘because a negative aspect, hence the absence of what is characteristic, is only perceived by reference to a non-confirmed expectation’. Thus it is the initial predominance of positive aspects that prevents the child from perceiving what is contradictory from the adult’s point of view.

A balance between affirmations and negations is necessary, and that balance will be provided by operational compositions. These will introduce a compensation into every situation, particularly through the construction of ‘negation mechanisms’ such as reversibility.

Before concluding this brief summary we must mention Piaget’s latest theoretical work on equilibration.²

Equilibration is a difficult mechanism to grasp because it is not directly observable in subjects’ behaviour. It is essential, however, for it is an accurate model of the development of knowledge. At the beginning of this article Piaget’s approach was shown to be between a theory which explains the appearance of knowledge by the preformation of structures and an explanation based only on the experience of objects.

Piaget’s genetic psychology has given us convincing evidence of the development of knowledge as ‘successive constructs with constant elaborations of new structures’.³

This constructive theory requires a model based on regulations of actions which lead ‘not to static forms of equilibrium, but to re-equilibrations that improve the previous structures’.³

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3. ibid., Introduction, p. 8.
Is it possible to transfer the experience of other countries in the design and implementation of open learning systems? The answer seems to be a cautious yes.

Published under the sponsorship of Unesco's secretariat, the volume is aimed at educational authorities, especially for those in the developing countries. It is divided into three parts, the first dealing with substantive and conceptual issues evolving around the notion of open learning systems; a case is made for the place of such systems within the dynamic world of education where new needs and the impact of an array of technologies can contribute toward change and innovation.

The problem and practice of open learning systems are then dealt with in the second part. The themes are presented following a systematic view of planned instruction. Students are classified according to their background, needs and expectations; research and evaluation is considered at several different levels: background, formative, summative and policy research; the curriculum, the choice of media, the use of broadcasting and the making of the courses are also dealt with. The reader is then confronted with a series of questions aimed at the decision-maker; they refer to the use and transfer of experience and the framework for considering such matters as costs and effectiveness. The remainder of this part suggests a framework for the consideration of those interested in the creation of a new institution, and emphasizes the values behind the concept of open learning, which can be considered a movement towards a new education frontier.

The third part contains sixteen case studies each of which focuses on similar questions and problems and the way they have been dealt with in different countries. Each case typically concludes with three appendixes presenting additional data, bibliography and biographical notes. The successful presentation of British Open University in a case-format is outstanding.

Why open learning systems? A number of reasons are proposed in the introduction, and are reflected in the ultimate choice of cases for study. Some of the reasons are to offer opportunity to acquire new skills; to redress social or educational inequality, and to offer opportunities not provided by conventional colleges and universities.

How open must a system be, to be considered within the present framework?
Notes and reviews

ology provides the reader with a fairly broad map of the issues one must consider when planning an innovative system. The case-studies usually present the background and the relation of the open learning system with the educational system at large. Then there is a description of the process of operation, as well as new prospects and challenges. Space limitations did not prevent the authors from offering a remarkably clear picture of each situation. An appendix attached to each case provides additional background and project-specific data, as well as sources of further information and a bibliography.

As far as the case-writing methodology is concerned, a few remarks seem in order. The case-studies are described by outsiders, though in many instances the author had an associate from the country concerned. Thus, the cases tend to be descriptive rather than focused on specific issues or decisions to be made. There are clear advantages and disadvantages in this approach.

The book’s concern with problem definition and description of processes and practices used seems to have resulted in a lack of emphasis on clear-cut results and achievements. Though a thorough evaluation certainly could not be performed either at that stage of the projects nor for the purposes of the book, a clearer indication of educational results and costs would possibly have enriched the value of the book for the more sceptical planners, even though such evaluation might lack comparative value. Enough evidence is brought forth to justify the alternative selected, but the cases fall short of completing the means-ends-results comparisons necessary for a full account of the experiments described.

As a handbook, Open Learning suggests more than tells. The case-studies, nevertheless, contribute to heighten the credibility of the innovations discussed. The book was doubtless inspired by the success of the British Open University and, very likely, in its effects on more recent attempts undergone by many other developed and underdeveloped countries to set up their own post-secondary open learning systems. Moreover, the authors’ British origin further contributes to a singular perspective about how experience and knowledge can be transferred. Although Learning to Be has been an additional source, the ‘handbook’ part of it reflects a way of thinking not always similar to that in other Western and non-Western countries; it remains to be seen whether adoption of systematic planning is the price to be paid in order to innovate.

The book’s format provides additional advantages for possible uses. A design for planning can be directly extracted from the first part; abundant material for classes of comparative education can be found in the case-studies; the appendices contain information which may be useful for additional data collection, background on specific information as well as the location of actual people involved in these projects.

Practical, written in a non-technical style and covering ground common to planners, innovators, consultants, students of comparative education, educational technologists and people interested in education, the book is a mandatory study-guide for all those professionals interested in education, the book is a mandatory study-guide for all those professionals interested in the subject, provided they bear in mind the problems involved in the cross-cultural transfer of experiences. It might be expected that Unesco and other agencies will keep promoting this kind of study and providing periodical opportunities for the international community of educators to follow up on these and other major projects in open education.

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If one were to believe press accounts, the world of education is a strange place indeed, inhabited by bands of fashionable manic depressives. We are today increasingly unwilling to pay the bride price. Naturally, this is a grim prospect for the many fathers of educational plans. Yet the problem is far more than that. For in effect, it impales governments neatly and inexorably upon the horns of a dilemma.

Certainly the current fashion in educational thinking has moved away from higher education to form a more global approach to 'post-secondary
education"—that is, co-ordinating all sectors of post-school education, training and instruction. But there is one persistent question underneath all this: if the arguments advanced during the 1960s are valid that education stimulates economic growth, that access to higher and post school education for underprivileged groups is a social and political necessity, they are no less so in times of recession than in times of prosperity. Indeed, since in times of economic stringency the underprivileged are the first to suffer, one could argue that the demand for realistic strategies vis-à-vis post-secondary education is greatest when political will is seemingly at its most flaccid.

Effectively, the economic crisis has raised the question of the particular strategy governments are to adopt towards post-school education: are they to support a judicious and well-publicized restriction on the finances of elite institutions, coupled with appropriate gestures to assuage the remainder? Or are they to reform the structures of higher, university, non-university trade and professional schools into one complex interlinking whole? In short, is the economic crisis to be seen as an occasion for maintaining the status quo ante? Or will it be recognized as an opportunity for developing beyond the bounds that history and custom have decreed?

There is a curious paradox in the relationship between higher education and policy planning in times of recession—one that is not always recognized, still less acted upon, but that is relevant to the issue of creating post-secondary networks of education and learning. To the university administrator, the lack of students is a disaster. For the private sector, as some colleges in the New York region have found, it spells ruination. From the standpoint of the educational strategist or planner, however, it is the beginning of wisdom. It is amazing how receptive old institutions become to new ideas when new ideas bring more students. Some, of course, are canny enough to try their own hands at homespun change either through curriculum reform—the development of courses thought 'more relevant' to the needs of their potential clientele—or through suddenly relaxed entry conditions.

The logical conclusion is that opportunities for transforming an elitist and differentiated system of higher education to a mass-based network of complementary institutions (the post-secondary model) are greatest in times of recession. To argue, as do many governments, that reform should be left to happier and more prosperous times is to wait until that moment when institutional inertia and capacity for resisting change reach their maximum. Many European governments are now recognizing that since the traditional sector enjoys immense powers of resistance, the only solution for setting up alternative forms of education, is the creation of new institutions. Thus does one find something of a policy of institutional accumulation, reproducing thereby, the stratification between institutions in post-secondary education precisely at the moment when such stratification is beginning to disappear at the secondary level.

There are other difficulties, as Scott's review of the American experience points out. Perhaps the most important of these is the lack of precision as to what post-secondary education constitutes. Despite the spectacular development of the two-year colleges—500,000 students in 1957; 1.8 million ten years later—operational definitions remain somewhat vague. One study, by including on-the-job training and other forms of adult education under this head, estimated that by 1975 around 82 million enrolments fell into the classification of post-secondary education. Others, less generous, reckon that current figures are around 13.2 million. Either way, the figures are impressive.

No less a problem and one that is likely to discourage many governments about post-secondary education is the undue influence of what one can only term the 'messianic fringe'. Certainly, the damage wrought by panacea proposals has to some extent been undone by solidity sober works in recent years. One thinks, for instance, of such reports as Education Beyond High School by the New York Regents, the Carnegie Commission's report Towards a Learning Society and the similarly entitled inquiry by the Ontario Commission on Post-secondary Education The Learning Society, not to mention the collection of opinions assembled under the title Learning to Be.

It is arguable that an interlocking network of post-secondary institutions will be both diverse and democratic. It will, it is claimed, unite both quality and equality. It will cause the sheep of social accountability to lie down with the world of academic freedom. As part of the 'salestalk' for post-secondary education, such claims tell us much about the ways in which present higher education systems are thought to malfunction. But the simple identification of shortcomings is not the same thing as remedying them. To state the crude outer boundaries of an immensely complex issue and from there to state that institutional reform will solve them may be an act of imagination, courage, even faith. But it is not the same thing as stating how such reforms will do so, nor what instruments governments have at their disposal to make sure that policy parameters are adhered to: precisely because policy objectives often require instruments which governments are either unwilling to use or, more disturbing, do not have at their disposal.

If higher education has not met the hopes placed
upon it—and this argument is the main justification for moving towards post-secondary education networks—what are the institutional and governmental failings that allowed it to go off course? What lesson might post-secondary education derive from the fail­
ures of higher education? What will prevent insti­
tutions of post-secondary education obeying the 'Iron Law of Self Elevation', as one sees in the case of the British Polytechnics?

The notion of public accountability only scratches the surface of a very complex issue of control in education. Without due attention to policy objectives and the instruments for attaining them, 'innovation', Scott says, 'like “post-secondary education”', can be used as an intoxicating slogan in discussions about the future of education. When the two are mixed together the result is a very potent drink that can unsetle the judgement of even normally sober men. “Reform” can have a similar effect: it is often used as a panacea that promises a blanket solution to present problems, but all too often hides their complexity' (p. 95).

The goal of post-secondary education is straight­
forward. It is to lessen that historical trend by which the State, through the education system, assigns life chances to the individual in an arbitrary manner, confers advantage on the basis of such random criteria as birth, social class and intelligence. Conservatives argue that the State should not intervene in this domain. Radicals argue that it should, if only to pal­
liate the social consequences of such arbitrariness.

Both, however, are equally suspicious of what Scott terms ‘the leviathan of the education bureaucracy [that] will gobble up chunks of the life of the indi­
vidual and the community that should be separate' (p. 25).

It is, of course, a common mistake to equate Hobbes' Leviathan with the ‘bureaucratic state'. Hobbes was arguing for the concept of a strong state, for a supraordinate body before which all citizens are equal. Bureaucracies, in education just as anywhere else, can flourish just as well in a weak state. Indeed, it is arguable that present relations between higher education and governments are based on the weak concept, enshrined in the notion of academic auton­
omy (which does not necessarily mean freedom) and upon the idea that if all men are equal before the law, they are not so in matters of educational access. The fundamental question which is posed by any effort to establish post-secondary education, there­
fore, is whether one can diminish arbitrariness, or increase the life chances of deprived groups in society without Leviathan. For whatever the particular stra­
tegy adopted to realize post-secondary education, that is still the fundamental issue even though govern­
ments may today shirk it by pleading economic expediency.

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growth of the industrial sector of the economy. In many developing countries the excess of graduates not immediately employable causes trouble which is usually remedied or avoided by resorting to unusual measures; among such measures the authors mention the Unemployment Relief Fund. In some other developing countries, a law assures university graduates that they will be employed at given initial salaries. Such measures increase the pressure of student flow into the universities and higher institutes, with the result that the university capacity is almost completely filled and the level of student-performance is lowered. In some countries, the period of waiting before a graduate finds employment becomes progressively over the years.

Sanyal and Yacoub examine these problems carefully, showing that higher education in many developing countries involves serious problems of wastage, which cause acute concern. While they stress the role of universities and higher institutes in the over-all development of a country, including their role in stimulating other levels of education, they recognize that higher education is extremely costly and that developing countries can ill-afford such expense unless it yields substantial gains.

The second aspect of the problem, as the authors see it, is the glaringly unjust and unequal distribution of educational facilities. Only 19.7 per cent of the school-age population attend school; the enrolment ratio at the primary level reaches 63 per cent in some areas and only 4.5 per cent in others. This inequality is compounded by a great discrepancy in distribution between the sexes and between economic groups. But especially important is the discordance between the education given by the institutions and the training required to fill the jobs available; the discordance between what the country needs and what it gets in number, quality and type of graduate. The authors diagnose the problems and the inconsistencies, and outline the contributing factors, with the aim of suggesting remedies.

They express concern about the required data, which are often questionable, or even non-existent. It is also known that availability of reliable and valid data is commensurate with the level of development of the country. But the authors have, as far as can be seen, obtained all relevant available information. They give an accurate account of the socio-economic background of the Sudan; the level of savings is low; per capita income is small; economic activity is mainly agricultural and the major part of the country’s rich resources is still untapped.

For the Sudan to increase its economic development, the government must control both its own and private consumption in order to increase the share of resources available for investment. Another resource draining phenomenon is the above-mentioned Unemployment Relief Fund which could be more profitably used elsewhere. It is repeatedly shown that the country is suffering from grave wastage and is not benefiting from its tremendous economic potential.

A number of cultural and political factors are noted, such as the relationships between the northern and the southern regions, with adjacent countries, and with the great power countries. A number of socio-cultural aspects have not been considered, in particular attitudinal factors such as the general attitude to government, to work, to discipline, to the use of time, to the use of money, to the family and to foreigners. Some of them may help to explain the slowness of progress and the very large gap between the highly educated and the masses.

The presentation of the data on higher education is indeed stimulating, the most striking aspect being the prediction of university output in relation to manpower needs. The authors find the ratio of professionals to corresponding subprofessionals seriously alarming. In the medical area, there is less than one subprofessional for each professional graduate. In the agricultural field, the situation is said to be worse. The consequences of such a state of affairs are too well known to need elaboration here.

A most interesting section of the research is the analysis of opinions collected from students, graduates and employers. The population consulted is satisfactorily large, 500 students, 376 graduates and 51 employers. The authors are very careful in stating that what they aimed at was some indications in respect to the discrepancies in the responsiveness of the higher education system to the labour market. They also caution that the findings of the questionnaires are to be used with discretion and reservation, as is, of course, the case in any sample survey of social behaviour.

But, in spite of this cautionary note, the finding of the questionnaires are very revealing in the attitude and opinion differences between the sexes, in the differences between nomads and rural and urban dwellers, between higher and lower age groups, etc. One could object that some questions may not elicit valid answers: girls in Sudanese society are too inhibited to be able to give frank replies when asked, for instance, why they study.

However, there is a value in this research. The methodology could be used in almost any developing country; it involves no complicated method of handling data. Any intelligent educated research worker could follow the model with fruitful results. One cannot help but be gratified at the suggestions and strat-
egies offered in the concluding chapter. The need for manpower planning and an education-employment information system are emphasized, as too is the need for research and for guidance units. Other policy suggestions are related to the development of a non-formal education system running parallel to the formal, in order to bridge the gaps and meet emerging needs.

Readers will be interested in the other two studies in the same series which are expected to appear shortly. They deal with the same subject in Zambia and Tanzania. Together, the three volumes should form a substantial contribution to the field.

**Some recent Unesco publications**

**Moving towards change**
Some thoughts on the new international economic order
137 p.
1976 (ISBN 92-3-101365-3)
To be published in Spanish and Arabic

A discussion of the major problems facing mankind today and of the role of the United Nations and Unesco in bringing about a new and more equitable world order. Intended primarily to stimulate thinking within the United Nations system, this study should nevertheless be of interest to a wider public. Contents include: Foreword by Amadou-Mahtar M'Bow, Director-General of Unesco; efforts to arrive at a new international economic order; obstacles and lines of action; adaptation of the United Nations system; importance of scientific, technological and cultural development; Unesco's contribution.

12 F

**La educación en marcha**
378 p.
1976 (ISBN 92-3-301216-6 (Unesco))
(ISBN 84-307-7378-9 (Editorial Teide))


50 F

**The aspirations of young migrant workers in western Europe**
by Robert de Montvalon
(Educational studies and documents, no. 21)
38 p., tabl.
1976 (ISBN 92-3-101333-5)
Also published in French

Analysis of a present-day phenomenon brimming with potential conflicts. The author, a doctor of medicine and member of the Federation for the Respect of Man and Humanity, has first-hand experience of working with immigrants. He describes the people involved, their aspirations and motivations, and concludes with proposals for possible approaches to the problem.

6 F

**Youth participation in the development process: a case study in Panama**
by Luis A. Gómez de Souza and Lucia Ribeiro
A study prepared for the International Educational Reporting Service
(Unesco: IBE Experiments and innovations in education, no. 18)
101 p.
1976 (ISBN 92-3-101308-4)

Since 1970 a process of agrarian reform and rural modernization has been transforming Panamanian society. At the same time, Panama has been carrying out educational reforms with the aim of producing men capable of participating in the country's
economic development. This study, conducted in an agricultural province, focuses on rural youth, considered as one of the agents in the process of development, through education campaigns, voluntary service, training for leadership, mobilizing people, and so on. While not claiming to be representative of other regions of the country, still less of Latin America as a whole, the study offers suggestions for further projects and proposes criteria which might be considered in establishing policies for youth.

**Ruralidad, educación y desarrollo**
por Louis Malassis, Professor de Economía rural en la Escuela Superior de Agronomía de Montpellier
Delegado científico en el Instituto Mediterráneo de Agronomía
Prólogo de Edgar Faure
127 p., cuadros
1975 (ISBN 92-3-301238-7)
Publicación conjunta: Editorial Huemul, S. A./Editorial de la Unesco
Distribución exclusiva en Argentina: Editorial Huemul, S. A. Chacabuco 860, Buenos Aires
Already published in English and French

**The operational seminar: a pioneering method of training for development**
by Marcel de Clerck
(Educational studies and documents, 20)
59 p.
1976 (ISBN 92-3-101323-8)
Also published in French; to be published in Spanish

Operational seminars have in recent years become an important means for training personnel for national literacy programmes. While the techniques employed were already well known as a practical tool of the social sciences in general and of a teaching method involving participant activity in particular, the overall conception on which operational seminars are based undoubtedly constituted a genuine educational innovation. This study describes the conceptual basis, organization, contents and results of some of the operational seminars held so far.
The teaching of reading and writing at school is a source of problems and of reflection for educational specialists in both developed and developing countries. Anyone interested in the evolution and the reform of education is constantly faced with the confirmation that knowing how to read with comprehension is essential to progress in all areas of the curriculum. In addition, experience has shown that reading competency depends on a whole series of introductory and reinforcing exercises which should be offered to primary school pupils as an integral part of their programme.

The development of language
Aspects normaux et pathologiques
by Charles Pierre Bouton
Professor, Simon Fraser University, Vancouver, Canada
277 p., figs.
1976 (ISBN 92-3-201261-8 (Unesco))
(ISBN 2-225-42086-6 (Masson))
Co-édition: Masson/Les Presses de l'Unesco
Published only in French

This book is intended for a wide readership—educators, parents, general practitioners, teachers, guidance counsellors, social workers—who have two features in common: they are interested in language development in children and they are not specialists in linguistics. There is, therefore, a dual purpose to this book: to present the state of the art of knowledge about the relationship of children with language, and to present the lay reader with an overview of the contribution of different language sciences and the solutions they offer to problems.

Mother tongue education
The West African Experience
Edited by Ayo Bamgbose, Head,
Department of Linguistics and Nigerian Languages,
University of Ibadan
153 p., maps
1976 (ISBN 92-3-101239-8 (Unesco))
(ISBN 0 340 201207 (Hodder & Stoughton))
Co-published with Hodder & Stoughton, London
This book is available through Unesco except in the United Kingdom where the co-publisher has exclusive sales rights. Unesco has exclusive sale rights in the United States.
In the rapidly changing political, economic and social life of West Africa the search for cultural identity has led to interest and experimentation in mother tongue education. This book describes the developments and difficulties experienced by different countries in the use of mother tongues in a multilingual society. Articles by leading specialists discuss the changing role of the mother tongue in education; the historical background; the use of mother tongue in education in Sierra Leone; language and education in Dahomey; mother tongue education in Ghana; the Six-Year Primary Project in Nigeria and the Rivers Readers Project in Nigeria.

World survey of pre-school education
by Gaston Mialaret
Director of the Institute of Educational Sciences,
University of Caen, France
(Educational studies and documents, 19)
67 p., illus.
1976 (ISBN 92-3-101311-4)
Also published in French and Spanish
This study is a first attempt to find out what institutionalized pre-school education services are available in various countries and to examine the factors which are favourable or unfavourable to the development of this relatively recent sector. Contents include: general aspects of pre-school education in various countries; the institutions; the children who attend pre-school educational institutions; relations with parents and compulsory education; pre-school education and the community; the future of pre-school education.

World guide to higher education
A comparative survey of systems, degrees and qualifications
(Studies on international equivalences of degrees)
xxii+302 p.
1976 (ISBN 92-3-101251-7 (Unesco))
(ISBN 0 85935 043 6 (Bowker))
(ISBN 0 89059 002 8 (Unipub))
Co-published with Bowker Publishing Company and Unipub
Available through Unesco except in the United States, Canada and the United Kingdom where our co-publishers have exclusive sales rights. Already published in French and Spanish. To be published in Russian and Arabic
This book provides a world-wide country-by-country survey of systems of higher education and a glossary of the principal degrees and diplomas awarded. The introduction offers a global analysis of the problems encountered in establishing ‘equivalences’ and also supplies general criteria for recognizing degrees and diplomas. There are 135 country studies included in this invaluable reference book.

Planning buildings and facilities for higher education
137 p., illus.
1976 (ISBN 92-3-101266-5 (Unesco))
(ISBN 0 85139 522 8 (Architectural Press))
(ISBN 0 470 89633 7 (Dowden, Hutchinson and Ross, Inc.))
Available through Unesco except in the United Kingdom where Architectural Press has exclusive sales rights, and in the United States, Mexico and Central America where Dowden, Hutchinson and Ross, Inc. have exclusive sales rights
To be published in French

The 1970s have seen exceptional expansion of higher education in developing countries, and along with enrolment growth came the need to create new physical facilities. This step-by-step work-book describes the long and complex efforts involved in translating abstract educational needs into functional buildings. Generous use is made of checklists, organigrams and sketches to illustrate how academic and physical development may be carried out simultaneously and the ways in which future needs may be provided flexibly and at low cost.

Nuevas tendencias en la enseñanza integrada de las ciencias. Vol. II
Preparado por P. E. Richmond, Profesor en educación, Universidad de Southampton, Reino Unido
(Enseñanza de las ciencias fundamentales)
251 p., figs., cuadros
1975 (ISBN 92-3-301114-3)
Already published in English and French

Nuevas tendencias en la enseñanza de la química. Vol. IV
Basado en los documentos de trabajo preparados para ser discutidos en el Congreso Internacional sobre el Mejoramiento de la Enseñanza de la Química, que se realizó en Wroclaw (Polonia) entre el 17 y el 22 de setiembre de 1973
(Enseñanza de las ciencias fundamentales)
vi+218 p., figs., cuadros
1975 (ISBN 92-3-201241-7)
Already published in English and French

Letters to Prospects

Dear Sir,
The articles in No. 3, 1975, of Prospects on ‘Education and Womankind’ made me think that it would perhaps be of general interest to your readers to know something about the conditions in Swedish schools as regards the roles of the sexes and the equality between them, and how we are trying to attack the problems.
First a few words about the organization of our schools. Since the recent educational reforms, we now have a comprehensive nine-year school which is compulsory for all. In the years 7–9 there are also optional subjects—French, German, art, technology or economics—and freely chosen work. The new upper secondary school has twenty-two streams, most with a vocational orientation. Upper secondary schools have an intake capacity of about 95 per cent of the 16-year age group, but not all pupils go on direct from comprehensive to upper secondary school.
The curricula of both forms of school emphasize the importance of making pupils conscious of questions affecting equality between men and women.
According to the comprehensive school curriculum the pupils must 'be aware that a necessary condition for equality between the sexes on the labour market and in the society in general is that the responsibility for care of the children and domestic work be divided equally between men and women within the family'. And also: 'The school must assume that men and women will in the future have the same roles, that preparation for the role of parent is as important for boys as for girls, and that girls have reason to be as interested in their careers as boys.'

What, then, is the impact of these formulations of goals on the practical work at school? Let us see how pupils react as soon as they are faced with a choice.

In the subject of handicrafts, all pupils in years 3–6, of both sexes, receive the same teaching in textile handicrafts as in woodwork and metalwork. At the senior level (years 7–9) the pupils have the choice of type of handicraft each year. The curriculum points to the risk of traditional thinking in this respect and states how important it is that the first contact with both forms of handicraft should be as positive as possible. Nevertheless 94 per cent of boys in year 9 still choose woodwork and metalwork, and 88 per cent of the girls choose textile handicrafts.

In the upper secondary school streams there is a strict division between the sexes. Girls predominate on the humanistic and social science lines, boys on the technology and natural science lines. For example, the proportion of girls in the domestic science and social service streams in the autumn of 1974 was 95 per cent, while the male predominance on the engineering line was more than 99 per cent.

So this is the situation in reality in Swedish schools. What means have we had to do anything about the sex-bound choices at and after school? When a uniform educational and vocational guidance organization was introduced in comprehensive and upper secondary schools a few years ago, and a new form of training was created for the officials who were to be responsible for it, emphasis was placed on the important role of educational and vocational guidance in promoting equality between men and women. Educational and vocational guidance should, for example, counteract any limitations in the choice of a profession which are dependent on sex among other factors.

In teacher training there are special courses on the roles of the sexes. Extension courses are also arranged. A recently appointed Teacher Training Commission is, according to its terms of reference, to analyse what changes are needed in teacher training in order that the curricula of the comprehensive and upper secondary schools may have an effect in producing equality between men and women.

This is the background to the extensive research and experimental work which started at the Board of Education in 1970 under the name 'The Sex Roles Project' under the leadership of Margareta Vestin. A report has now been issued, called 'A Freer Choice—Programme of Equality in Education'. Some of the concrete proposals made in the programme should have an international interest:

- New formulations of goals concerning the roles of the sexes in the Education Act and curricula.
- Compulsory teaching of economics and technology both for boys and girls.
- Compulsory practical vocational orientation for girls in male-dominated occupations and for boys in female-dominated.
- Increased educational and vocational orientation at the junior and middle levels.
- Woodwork and metalwork as well as textile handicrafts both for boys and girls at senior level of comprehensive school.
- More combined gymnastics at comprehensive and upper secondary school.
- Basic and extended education in the roles of the sexes for all school employees and for parents.
- A 'check list' with requirements, hints and ideas for producers of teaching aids.
- A manual on the roles of the sexes for school employees and other interested persons.
- An information and documentation centre which collects, records and spreads information on literature relating to the roles of the sexes.

The report emphasizes also that the entire physical and staff structure of schools must be reviewed. Women, for example, should be given some priority on headmaster training courses, a proposal made also by a commission of inquiry on women in the civil service. Numerous proposals are made to teachers and other staff concerning objectives, material and methods in teaching, planning, pupil care, own continued education, etc.

I should like to discuss in somewhat greater detail one of the ways to break the traditional pattern of the roles of the sexes discussed in the report, namely sex quotas. It seems to me that, as a way—even if a drastic way—of changing a situation in a shorter time than by influencing of attitudes and information, the allocation of sex quotas is an extremely interesting possibility.

Among the conceivable reasons for a quota system the report states that a working environment—say, a nursery school—thrive better if both men and women work there, since it is important for children to have contact with both sexes. Another reason is
that the country cannot afford to waste its resources as it does when only one sex applies for a given type of job—men, for example, for technology and women for nursing.

The report discusses in detail different ways of stimulating an unconventional choice in the intake procedure. The possibilities discussed are a system of priorities (supplementary points for the minority sex), admission within a free quota, and a quota system proper, that is to say the allocation of a given number of vacancies to one sex. The report emphasizes the importance of ensuring that pupils do not desist from applying for a given line of education for fear of being the only boy or girl in the class.

The attempts made in Sweden hitherto in the educational field to stimulate the minority sex by changed intake rules have been in the spheres of pre-school teacher training and training in administrative data processing. The latter trial was soon stopped after it had been discovered that female applicants were in fact misfavoured by the intake rules. The attempt to arrive at a more uniform distribution between the sexes in pre-school teacher training, on the other hand, may be said to have turned out well. In principle the rules imply that male applicants are judged somewhat 'more mildly' than female, but without departing from the basic requirements. During the nearly five years in which the trial has been proceeding, the numbers of male applicants as well as admissions have risen tenfold.

Finally a few glimpses from a trial initiated by the government Delegation for Equality between Men and Women. The delegation has appointed a reference group consisting of eight girls from the four-year technology stream in upper secondary school, on which the proportion of girls is only a few per cent of the total.

'It is difficult at school to choose your line of education and of a career. But the best information comes from older comrades who tell you how they came to a decision and what it is like on one or the other line, and from people who tell you about their own jobs.'

That is what one of these eight girls says. Some of them, at their own initiative, have now started informational campaigns following this model. They plan to visit girls in the last year of comprehensive school and tell them what it is like to take a technological line.

I think that this example shows the importance of two things: firstly the need for a pattern to follow, someone with whom to identify oneself in an untraditional role. This is undoubtedly of particular significance for young people who are to choose lines of study and vocations at an age when the group pressure from their comrades is greatest, especially when the surrounding community—school, the labour market, homes, the mass media—is largely a mirror of the traditional sex roles. The second point is the need for more open channels between school and working life. Schools can make contact with the labour market through visits of study, the labour market can go into the schools by sending people who can speak directly from their own experience.

By reinforcement and improvement of the contacts with working life, for which schools already provide the formal means, one can perhaps come to grips with a problem which worries me perhaps unnecessarily: The female predominance in some non-vocational lines of education seems to me to indicate that many girls have little consciousness of the need to take a job at all. This attitude results in a continued weak position on the labour market and a continued lack of trade-union consciousness. But there is perhaps no reason for pessimism: more girls than ever before are today receiving vocational upper secondary education, and attitude surveys among youth show that girls want to take a job after finishing school to a greater extent than boys can imagine for their future wives. This, in turn, shows that we must not forget to change the men's role and attitude both to themselves and to women. How, otherwise, will girls be able to meet the conflict when it comes?

Yours sincerely,
GUNNEL FÄRM,
Ministry of Education,
Stockholm (Sweden)

Dear Sir,

As a schoolmaster in Johannesburg with twenty years' experience, I would like to share with your readers some thoughts and comments on education in South Africa. The South African educational system, it is claimed, owes much to the Western tradition in education. How tragic, therefore, that those facets which are of its own making should corrode the very foundations upon which a magnificent edifice has been built.

The South African educational system is based upon apartheid or separate development—a political system that divides people of the four main population groups in the country according to their racial classification. In aims, content, organization and, above all, allocation of resources education are designed to perpetuate and encourage racial division.

South Africa is the richest country on the African continent and one of the Western world's envied relatives due to its gold output. It certainly appears to have enough to spend on an extravagant programme for the education of its white population, while the
non-white groups are forced to live on a meagre pit-
tance drawn from an account based on a tax system
which, strangely enough, knows no racial barriers, at
least not the kind that would alleviate the burdens of
an underprivileged community. The statistics which
follow show how grossly unbalanced the distribution
of her wealth among all her people is.

The South African Institute of Race Relations, in
its highly accurate and authoritative 'Survey of Race
Relations in South Africa' provides us with the follow-
ing statistics:
The population of South Africa according to latest
available figures is 24,920,000. Of these 71.2 per
cent (17,745,000) are blacks; 16.7 per cent (4,160,000)
are whites; 9.3 per cent (2,306,000) are Coloureds;
and 2.8 per cent (709,000) are Asians.
The estimated costs per capita of education for
pupils of each of these population groups reads as
follows:

<table>
<thead>
<tr>
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<th>Black</th>
<th>White</th>
<th>Coloured</th>
<th>Asian</th>
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<tr>
<td>1968:</td>
<td>R14</td>
<td>R228</td>
<td>R70</td>
<td>R70</td>
</tr>
<tr>
<td>1974:</td>
<td>R28</td>
<td>R484</td>
<td>R108</td>
<td>R152</td>
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</tbody>
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No reports have actually been published on the costs
of education for each population group but the fol-
lowing figures were given from 'Estimates of
Expenditure from Revenue and Loan Accounts':
Bantu (black) education R.59,578,000 (outside the
homelands)
White education R.383,000,000 (excluding
universities)
Coloured education R.98,000,000
Indian education R.50,217,000

These figures speak for themselves. The truth of this
is seen further in the highly irregular practice of
making economically disadvantaged groups provide
their own resources. With the very, very few notable
exceptions at university, facilities provided by the
State are by legislation based upon racial segregation.
Separate facilities are provided at every level for each
racial group; since residential patterns too are deter-
mined by official policy which enforces racial sep-
arration, it naturally follows that schools are divided
on a racial basis.

'Non-white' groups have absolutely no access to
parliament except through the respective ministers
in charge of their affairs, who are in any case white,
and have no real interest in the people they are
supposed to serve.

Thus far all matters connected with education
for all racial groups has been under the control of
whites. Even the respective departments of education
for the three non-white groups are largely under
their control; syllabuses and textbooks reflect white
control. South African history, to cite the most
glaring example, is often studied with some suspicion,
as textbooks always try to glorify the exploits of the
white man and his struggles against the blacks who
for some reason or other are made to appear as people
with little culture. Prescribed textbooks are nearly
always written by inspectors of education who have
ways of ensuring that their books are sold in large
numbers to the schools that fall within their circuits
of supervision. The scope of education, for all its
altruistic trappings for a divided nation, is difficult to
assess. Even more difficult is any possibility of
recognizing any similarity of objectives or common
goals aimed at the establishment of nationally cohesive
educational principles.

Ever since 1912 compulsory education for white
pupils has been enforced. Compulsory education for
all non-white students is not yet a fact, despite the
recommendations of several commissions of inquiry
into the introduction of compulsory education for the
non-white groups.

A brief look at some of the other aspects of the
entire educational machinery reveals a pattern of
functioning and an attitude of hatred that reveals
a sadistic lack of regard for the people as a whole.
This paper could go on at length to reveal many of
the excessively unjust rules that are an obvious
indication of the totally disparate situation existing
at present in the allocation of resources for all the
race groups in South Africa. With this situation
it is not unlikely that educational objectives will
never be equally realizable to any appreciable degree
by all population groups. I have not, for example,
mentioned the totally unfair situation that obtains
with regard to teachers' salaries or grossly inadequate
facilities at schools for non-white children as compared
with facilities at white schools. The beautiful build-
ings in which white children are taught, the equip-
ment used, the sports facilities provided are a never-
ending source of envy to non-whites. About five
years ago the pupil/teacher ratio in black schools
was 60:1 in contrast to 20:1 in white schools.

Of the four population groups in South Africa,
the African (black) child and the Indian child have
the biggest burden placed upon them on account of
having to learn more than two languages. English
and Afrikaans are the official languages taught at
all schools, but the African like the Indian requires
the additional use of his home language. The South
African Government which is almost totally composed
of members of the white Afrikaans community en-
force the use of Afrikaans as one of the official
languages. This means that English is taught as a
second language in Afrikaans-medium schools and
Afrikaans is a second language in English-medium
schools. In African schools the Department of Bantu Education tries to enforce the use of Afrikaans for the teaching of half of the subjects in Afrikaans and the other half in English. Recent surveys have shown that African parents have totally rejected the use of Afrikaans in their schools because of the added burden placed upon their children. The burden that the average Indian child has had to face for many years, and the situation still obtains at present, is the learning of lessons at government schools from 8 a.m. until 2 p.m., and then the home language at private schools from 3 p.m. until 5 p.m. Private schools are financed entirely by the Indian community. The difficulties encountered in the provision of adequate facilities at these vernacular schools are quite unimaginable.

I could include many more examples of such injustices; these facts have been exposed by others, but one can always hope that constant reminders can eventually bring about a change.

THILLAYVEL NAIDOO,
Johannesburg,
South Africa
ALBANIA: N. Sh. Botimore Naim Frasheri, TIRANA.

ALGERIA: Institut pédagogique national, 11, rue Ali-Haddas (ex-rue Zaatcha), ALGER; Société nationale d’édition et de diffusion (SNED), 3, boulevard Zirout Youcef, ALGER.

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