National Languages and Teacher Training in Africa

A methodological guide for the use of teacher training institutes

by Joseph Poth
Preface

Because of their concern to preserve and strengthen the nation’s cultural identity — particularly in countries that have recently achieved independence — and because of the desire to develop education along lines which would tend to link curriculum content more directly with the social environment, certain governments have been led to introduce into elementary education a national language regularly used by the majority of the population.

Since it is the teachers’ task to put this innovation into practice in the classroom, the success of the enterprise will to a great extent depend on their backing and competence. Future teachers who are at present undergoing training will clearly have to acquire the skills needed to implement this educational policy; even before leaving their training institutes, however, they can already render useful services. As they in fact already possess some knowledge of the new language of instruction and of the socio-cultural environment it reflects, and as their training enables them to conceptualise this knowledge, they are in a position to contribute most effectively towards the development of the teaching methods and materials that are indispensable to the use of this language in teaching. This means that those who will shortly be entrusted with carrying out the reform in the classroom will already have been involved at the planning stage, and will themselves have been trained while at the same time helping to improve this new educational method.

As is generally known, one of Unesco’s aims is "to further the training of educational personnel". In consequence, while not presuming to take a stance on the question whether in principle a dual language system, particularly a bilingual African-European combination, should be introduced into formal education, the Organization has nevertheless felt compelled to assist in the training of those entrusted with the implementation of such a policy, wherever the national authorities have decided in favour of its adoption.

If teachers and students at the training institutes are to make a useful contribution to the development of a new language policy in teaching, their collaboration must be systematically organised. This is why Unesco has invited Mr. J. POTH1, specialist in language teaching methods at the National Institute of Education of the Central African Republic, to draw upon the experience gained from experiments in certain French-speaking African countries in order to define the practical ways in which training institutes for primary teachers could be actively involved in furthering the use of the languages of their country in formal education, wherever the national authorities have decided to introduce a local language in elementary education, either as a language of instruction or as a subject.

This Guide, which is a revised and expanded version of a mimeographed document issued in February 1977, is therefore basically a methodological aid intended for "teacher trainers”, whose practical task at the training institutes is to organise the collaboration of future teachers in actually putting the new educational policy into effect. The author begins this study with a succinct definition of the underlying theoretical basis to the methodological approach offered here; he then goes on to describe the practical action that might be taken by the training institutes within the limits of their powers, their means and their specific responsibilities within the national system of education. Unesco’s aim, in publishing this study, is to throw light on a question of the utmost interest and help bring about improvements in teacher training; but it should be stressed that the author alone is responsible for the views expressed in this paper, the selection of facts presented and the opinions stated with regard to those facts.

1. Unesco would also like to thank Mr A. Biancheri, Inspector General at the French Ministry of Education, who with the author’s agreement was kind enough to supervise the study from the point of view of educational psychology and methodology.
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Introduction

The trend towards the systematic introduction of national languages in teacher-training programmes and school curricula has been chiefly influenced by the following factors:

- The alarming failure rate, particularly at primary level. This is, in fact, mainly due to the pupils' inadequate mastery of the foreign languages in which instruction is given.
- Developments in linguistic science, as a result of which there are no longer any insurmountable practical difficulties in delineating the systems of operation peculiar to African languages.
- Increase in psychological knowledge, which has helped to make explicit the vital role of the mother tongue in the psychomotor, emotional, moral and cognitive development of the child.
- The need to base the school syllabus— and hence that of teacher-training programmes as well— on a genuine pedagogy of the environment, firmly rooted in all aspects of the cultural, linguistic and social reality of Africa today. The use of African languages in teacher-training institutes is thus justifiable from the pedagogic point of view, even in instances where these languages have not yet been officially introduced into primary education.

Analysis of the initial results obtained in African countries already involved in the process of linguistic renewal, as well as recent studies, seminars and symposia, and the work carried out by internal and external Unesco specialists, have all helped to advance our understanding of the problem considerably. As a result, more appropriate solutions can now be envisaged and sounder procedures and methodological approaches are beginning to take shape. For example, the active participation of teacher-training institutes is emerging with increasing clarity as the keystone of the entire operation, for among the recognized causes of academic failure or retardation one regularly finds, topping the list, the teachers' lack of proper training and the inadequacy of research into instruction methods. As a result, the introduction of national languages into educational training schemes for teachers is becoming, in the opinion of an ever-increasing number of authorities, a major requirement that cannot fail to have a tangible effect on the running of every institute and on the African teacher's job specifications.

But what is to be done immediately, given the considerable difficulties still encountered by most schemes for instruction in African languages?

The first move to be made follows the dictates of common sense: it involves the ability to "see clearly", i.e. to pin-point and class in order both the negative constraints and the positive factors to be taken into account. This identification of real and false problems must, however, be based on present data and not on information concerning outdated language situations and social conditions. For the socio-linguistic situation is undergoing swift transformation: new trends are gaining strength and new processes gathering speed. The linguistic map of Africa is today in a state of greater flux and mobility than that of any other part of the world.

The aim of this paper is, certainly, to provide educational authorities with material for reflection and action, but it is also intended to afford an objective view of the situation as it appears today. In order to solve, or at least alleviate present difficulties, we here offer to teacher training institutes a number of tasks which could be carried out partly with the human and material resources at their disposal and partly with the collaboration of university institutes and specialists willing to participate. These are not merely arbitrary tasks, but ones naturally imposed by the various language situations which give rise to problems as soon it becomes necessary to move on to pedagogical application within a given system. The teacher training institutes would not, then, be expected to perform all the operations described in this work. Their research and subsequent action will be directed towards satisfying real needs through analysis of the positive and negative factors inherent in the situation as regards languages of instruction.

Experience has generally proved that the immediate problems which with greater or lesser urgency confront all educational authorities responsible for the preparation or implementation of a new language policy based on the use of national languages can be grouped under the following heads:

- Problems associated with the CHILD's situation regarding the African language of instruction.
  The officially approved language is not always the child's mother tongue. What can be done by the teacher training institute to help overcome this major drawback in educational practice?
- Problems associated with the TEACHER's situation regarding the African language of instruction.
  The teacher, too, is faced with a variable linguistic situation. In what ways can the teacher-training institutes help to solve this particular difficulty?
- Problems associated with the amount of knowledge available, in the field of EDUCATIONAL PSYCHOLOGY.
  Little data of this nature has yet been collected on the African child's personal relation to the languages of instruction. What contribution could be made by the teacher training institutes in this vital area?
- Problems associated with the degree of progress achieved in theoretical and applied research.
  How can applied research into the African languages of instruction be furthered by support from the teacher-training institutes?
Problems associated with the availability of educational materials concerning the African languages of instruction. The teacher should have access to properly designed textbooks that are easy to use. What can be done by the teacher training institutes in this practical matter?

Problems in regard to division of the subject-matter in the curriculum between old and new languages of instruction. The introduction of African languages does not mean that the languages already in use will have to be dispensed with. But what criteria should be adopted if each language is to be accorded its due role? In what can teacher training institutes contribute towards the solution of this specific question?

The tasks outlined above should not be superimposed on the programmes already being followed in the training centres; they should, instead, be thoroughly integrated with them. The professional training of future teachers necessarily includes predetermined skills and aptitudes in regard to the languages of instruction. This is essential in order that the teacher may be aware of what he is doing in this field, and why he is doing it. In this way the participation of trainee teachers in linguistic and educational research will, because it is active and creative, represent an appreciable element in professional self-training.

This active participation by the trainee teachers — in close association with their other academic activities, or even concurrently with them — is an essential aspect of interdisciplinarity. The study of African languages transcends disciplinary-boundaries for it comprehends all spheres of activity: educational psychology, environmental studies, the social sciences, logic and mathematics, modern classroom techniques and intermediary technology — all are now called upon to contribute to the teacher's training and submerge purely linguistic activities.

Consequently, the tasks proposed here for the trainee teacher are not intended for a specialist, but rather for an intermediary, skilled in the use and practice of the languages of instruction. The future teacher is not being asked to undertake highly specialised research but to participate at a clearly defined level in promoting use of his working language. His activities in regard to language research studies are designed solely with a view to their classroom application and providing him with the essential minimum of technical training to enable him to carry out this task. The training institute, in fact, performs a unique and irreplaceable function in the process of furthering the national languages: it acts as a study-group and relay centre, whose practical approach to the problems of language lies between the specialised activities of the university institutes and the educational experience based on the thinking of serving and future teachers and their practical knowledge of classroom work. This participation, which in no way involves recourse to cut-price techniques, is undoubtedly the method best suited to the needs of schools, ensuring as it does economic but technically sound solutions, fully accepted by the teachers.

Those using this guide will recognize that the introduction of African languages into the teacher training syllabus presages the thorough restructuring of the teacher training system with respect to attitudes, methodology and educational content. The student, now an active participant in the linguistic reform, is no longer a mere "client"; he has acquired a new status, especially since his competence as a speaker tends to bring him to the fore in the team learning which must of necessity dominate in group research work.

But the content of education itself is also liable to undergo deep-reaching changes. In order to solve the problems of communication, is it sufficient to change the language? Must one not also, as well as reintroducing the use of African languages, re-establish within the learning process the primacy of the modes of reasoning and understanding which they employ? Grammatical and lexical categories, as we know, are not universal; does the same not hold for the categories of logic and mathematical reasoning, for example? The end-result is, certainly, trans-cultural, but do not the means by which this result is attained differ according to cultural habits? Is it enough merely to replace certain proper nouns and place names in the textbooks to ensure the authenticity of the pedagogical approach? Practising teachers increasingly agree that the search for adequate verbal forms should be necessarily accompanied by identification of the logical and operational structures underlying the African languages of instruction.

The educational psychologist, the methodologist and the linguist must make a united effort to ensure the African child's cognitive development by providing him with the means of giving expression in his colloquial language to the ways of thinking which are natural to him and which will ultimately enable him to attain the trans-cultural end-result more surely than if he had been subjected to imported thought patterns. Difficult though this may be, it is a prerequisite for the emergence of an education which will be truly African in substance and not merely in form.
I. The basic principles of the operation

Since the aims of this Guide are pragmatic, it is unnecessary to enter into a lengthy exposition of the attitude required in approaching the overall problem of the introduction of African languages in education. The refusal to establish a hierarchy among languages and cultures, and the determination to approach the results of analysis with scientific rigour and objectivity are in fact governed by a general ethic to which all those who are responsible for education should naturally adhere.

On the other hand, when it comes to drawing up a precisely defined training programme, it is no longer possible to evade the issues of the problem as a whole. Experience has generally shown that the most sophisticated projects, and the activities they involve, fall short of the mark if the various parties concerned have not reached prior agreement in defining and accepting a joint doctrine. The practical action that needs to be undertaken by the training centres in order for a local language to acquire full or partial teaching status requires from all concerned exactly this similarity of outlook, and agreement as to the direction and manner of their thinking. Such a consensus of opinion is absolutely indispensable if the technical stage of implementation is to be firmly established and the necessary methodological consistency assured.

These theoretical pre-conditions are, clearly, not mere postulates: they are based on a psycho-pedagogical approach and on the firm conviction that any process of reform as regards the language situation begins and ends conclusively with the African child, i.e. the child's linguistic development is inseparable from his cognitive, emotional and social development.

A. The introduction of national languages into the school syllabus and teacher training programmes must of necessity be governed by an interdisciplinary approach

In so far as the formal use of mother tongues in school activities has the ultimate educational aim of encouraging the pupil's stable development, with the emphasis on spontaneity and freedom of self-expression, the linguistic factor is no longer the only pertinent determining factor. The preparatory activities leading to the introduction of African languages in class must in fact take into consideration the entire personality of the child, who is the true integrating force in all educational programmes. In consequence, psychology, sociology, language teaching and, in particular, educational psychology are all essential "disciplines" which should be constantly studied if all the relevant facts are to be taken into consideration.

Theoretical research studies aimed at exhaustive linguistic description will, certainly, find direct practical application in the methodology of the teaching of national languages, but all research related to the introduction of these languages into educational courses must definitely be based on consideration of the phenomena of language in their entirety. This should therefore also involve the work of linguists, psychologists, sociologists, methodologists, and teachers. The linguists, and the theoreticians in other disciplines are indeed able to confine their research to their own specific fields. But applied research in education should always be placed within the wider context of the child's psychomotor, emotional, intellectual and social development.

The basically pedagogical dimension of our aims does not, however, exclude rigorous analysis of the purely linguistic aspect as defined in the sciences of language. But it does presuppose an analysis of the psychological realities which in fact form the basis of the educational process. Likewise, the sociological considerations implicit in public attitudes should also be taken into account. Thus the formulation of an alphabet, the elaboration of an orthography, and the development of an introductory reader will not be subject to purely linguistic criteria: historical, psychological, political, and economic factors will likewise be considered relevant and borne in mind.

This involves at the outset an important practical consequence with regard to the actual operation. Once the national authorities have announced their decision to introduce an African language into educational activities, the teacher training institutes — within the limits of their human and material resources — may legitimately begin to undertake applied research and studies designed to facilitate the introduction of the national linguistic and cultural heritage in school curricula. The lack of an Institute of Linguistics is no valid reason for delay. While it may be highly desirable — and even, at certain levels, indispensable — to have such an institute in the country, the teacher training centres are nevertheless qualified to undertake, on their own initiative, the necessary interdisciplinary studies, particularly as the nature of their functions enables them to make the developing African child the focus of their research aims.

B. The active participation of students in furthering the national languages is not merely an ideological requirement; it is an absolutely indispensable condition for both practical and professional reasons

In spite of increasingly evident progress — except in certain isolated instances — in the development of teacher training institutes, these centres have hitherto adopted a waiting attitude, leaving it to other specialized institutes to carry out all the work and investigation involved in applied research into African languages. And what little teaching material may
exist has been produced without the collaboration of the teachers, who are, after all, the chief users of such aids.

Part of the blame for this state of affairs must certainly be attached to the somewhat passive attitude of serving teachers and also to the fact that little tangible progress has so far been made by some of the language reform projects, which have remained indefinitely at the exploratory stage. Even a cursory analysis will reveal that the teacher is an indispensable link in the chain stretching from the specialized institute, where the research is organised, to the classroom, where it is applied in practice. As a speaker, thoroughly integrated into the source environment, the teacher is better placed than anyone to collect authentic language data. With his bilingual ability, he is at the centre of the transfer process from one language to the other. His position as a teacher gives him every opportunity for bringing out the prime importance of the psycho-pedagogical viewpoint. As a civil servant, he is in the service of the State, both at work and on leave. As a student, he is better able than an illiterate informant to understand the whys and wherefores of the information required of him. And as a user of the language and a teacher, he it is who holds the key to the success of the operation.

It is not possible, then, to administer a scheme of educational and linguistic reform on a national scale without the moral and practical support of the "grass roots", the students in the teacher training colleges. Indeed, the effective implementation of this reform depends essentially on the teachers and future teachers, and, generally, on the personal commitment of the great active body of users of the languages.

One may then justifiably ask whether the proposal to establish the teacher training institute as the driving and coordinating force of this operation is not ultimately the only realistic way of tackling the overall problem and of achieving tangible results in the promotion and use of the national languages in teaching.

From the foregoing, it emerges that profound changes will have to be made to the present status of students. Since they are to be invested with responsibility and to participate fully in an undertaking in the public interest, there will have to be less stringency — or, more precisely, a change of nature — in the hierarchy at present separating them from their teachers. The technical demands of the scheme will in fact require the student to assume a great variety of roles while carrying out his tasks: he will in turn be excepted to act as pupil, interviewer, researcher, organiser, member of a teaching materials production team, evaluator, etc. The new teacher's profile implicitly involves a determined restructuring of traditional teacher-pupil relationships, in favour of a balanced reciprocal learning process in which the role of "animateur" or leader will be defined in terms of the needs and abilities that emerge in the work groups, and will not be systematically assumed by the traditional holder. It would, in fact, be easy to show that the new language of instruction is often less competently handled by the teacher than by the student, who is able to maintain closer and more frequent "contact" with his original language environment.

The introduction of African languages into educational programmes will, then, contribute strongly towards developing the structure of education along lines that conform more closely to the spirit of reform as it is now customarily defined in Africa. These new activities will inevitably encourage the emergence of a new teaching process, more dynamic, more committed, more friendly, and less vulnerable to challenge, in which the competence and skill of all involved — each alternating as "giver" and "receiver" — will be united in the service of the same national cause.

C. The participation of teacher training institutes should be in strict conformity with the spirit of the official instructions in which the national language policy is defined

This pre-requisite is not a mere formality, as experience confirms. The choice, or the calling into question of a language of instruction gives rise to strong reactions from parents, pupils, and teachers alike. The teacher training institutes should keep well clear of tempting but misguided interpretations, and not "exceed their terms of reference" in regard to their action.

The use of an African language in teaching does not, in fact, presuppose the automatic exclusion of the language hitherto used. On the whole, the national schemes designed to assign a role to indigenous languages as a teaching aid continue the use of one of the European languages, concurrently or at a subsequent stage. In countries where the African language has already been accorded full recognition in educational circles, the language of international communication has generally been retained as a vital element in the curricula. Here, then, is the real state of affairs to be borne in mind: European monolinguism and Afro-European bilingualism are the only two existing situations in African educational systems, the monolingual use of an African language being still the exception.

As a consequence of this, the activity of the teacher training institutes — not being focused on pure research, but directed rather towards classroom application — must take as its starting-point bilingualism or multilingualism, wherever this is the officially sanctioned policy.

If it is national policy, as regards the language option, to make the child literate in both an indigenous and a European language, the teacher training institutes should, while preserving the independence and scope of each language domain, develop a rational and complementary teaching approach which would above all accentuate the possibilities of combining and relating the use of both languages, instead of systematically stressing the points of divergence. The contrastive and comparative studies which would need to be carried out in conjunction with research into similar situations should not, however, be neglected.

It is necessary, therefore, that the interdisciplinary training teams ensure that their research on the language or languages of instruction be kept constantly up-to-date. Although they

1. Although at present we lack an exhaustive typology of teaching situations, it is nevertheless possible to obtain accurate — and up-to-date — information on the use of languages of instruction in two Unesco publications: Report of the seminar held at Kaduna (Nigeria), ED-76 / CONF. 817/1, Paris, Unesco, 1976, and Bamgbose, Ayo, Mother Tongue Education: The West African Experience, Paris, The Unesco Press, 1976.

2. The need to avoid entrusting the tasks involved in research into African languages solely to specialists was strongly stressed by the General Conference of Unesco at its seventeenth session: "...Nothing can, in fact, be achieved, particularly in the matter of implementing the priority projects, without the co-operation of the community which is alone able to gather together the essential materials, and which can help in the work of classifying the traditional knowledge and subjecting it to critical analysis, as well as supplying, a core of persons whose capacities can be turned to account to facilitate use of educational materials when these become available." Ten-year plan for the study of African oral traditions and the promotion of African languages, document 17 C/73, p. 9, paragraph 48 adopted by the seventeenth session of the General Conference under resolution 3.313, Vol.I, "Records of the General Conference", Paris, 1972.)
may in some respects be a "step ahead" of official decisions, they should in no circumstances substitute their own judgement for that of the educational authorities and work along lines which do not accord with the reality of national language policies.

D. The training of teachers for the use and development of national languages forms part of the overall plan for the country's development

The introduction of a new language of instruction is not in itself an educational innovation to be entrusted solely to the practitioners; it is organically related to the socio-economic development of the country and is a national concern of the highest order. The language of instruction does in fact make a decisive contribution towards the different stages of planned development, for it determines various means of access to theoretical knowledge while at the same time making general the mastery of basic practical techniques. Most educational reforms which seek, precisely, to harness the school as the motor for that of the educational authorities and work along development projects,

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theoretical knowledge while at the same time making general the mastery of basic practical techniques. Most educational reforms which seek, precisely, to harness the school as the driving force in development, insist on the interdependence of the factors involved. Hence the attention accorded to the conceptual pairs: "language and development", "language and environment", "language and techniques". In planning, it would be mistaken to separate cultural development from socio-economic development, since the latter naturally acquires its drive and capacity for self-renewal from the dynamics of the former.

The new programmes based on the use of national languages should therefore be shaped in consultation with those responsible for the scientific, economic and technical sectors, to which education forms a complementary sector. The teacher training institutes will therefore be working in close contact with the bodies concerned with post-primary education, the literacy training services, and the community development projects, which, indeed, often pioneer the use of national languages for educational ends. Their approaches will be taken into consideration, while at the same time care will be taken to respect the specific characteristics of the child, whose perception of facts differs from the adult's.

The introduction of African languages into the school curricula provides, then, an excellent reason for breaking the "isolation" of teacher training colleges and establishing working relations not only with specialized university institutes but also with all the sectors of production. This implies a definite methodological coherence with the requirements of the educational reform, which no longer regards the African teacher as a mere instructor, but as an active force in national development, with all the scope and diversity that this new professional profile involves.

E. The training of teachers to use and develop African languages should be a permanent process continuing throughout their active career

The internal dynamism and mobility of a language is a source of endless interest. The language sciences as applied to African tongues are constantly being improved, and teaching techniques are undergoing continual development. Language instruction is now well founded both in theory and in practice. There is no question of reducing it to a few rigid formulas or a hallowed list of set procedures. Continuity in the flow of information is indispensable if we are to have teachers who are constantly aware of what they are doing and of the reasons for their actions.

This need to institutionalize the continuous psychopedagogical and linguistic training of all categories of serving teachers places the onus on the teacher training institutes to offer future teachers, from the very outset of their initial training, the kind of instruction that will instil in them both the desire and the skill needed to continue with their self-directed learning once they become involved in an active professional life. And if self-education is to be feasible, there must, in turn, be a restructuring and rearrangement of the time-table (with periods set aside for individual research, tutorials and mutual teaching and learning). It is, likewise, necessary for certain material aids to be made available to the students (including adequate documentation within the institution, as well as considerable freedom of access to the library, the audio-visual materials, and to other sources of information and documentation outside the institute). Through their work-groups, teachers and students alike would be expected to furnish a concerted effort towards building up and making generally available a fund of self-education materials designed to provide practical support for the in-service training of all those concerned with the language reform, and also to be of potentially profitable use in other establishments and other countries engaged on similar projects.

We have now a somewhat condensed definition, based on certain fundamental preconditions, of the working ethic which will underlie the students' practical activities and all the tasks to be proposed subsequently to the teacher training institutes. This is a chapter which could not have been dispensed with in the Guide. The purpose of the preceding paragraphs was not to provide a categorical statement of support for the ideas expressed, but rather to provide food for thought, to develop awareness of the implications of an undertaking which does not entail a mere change of content but deeply involves the entire future of teacher training in Africa; giving it a wholly new dimension by plunging its roots in the cultural soil and transforming this substratum into a solid base for progress.

The active responsibility of teacher training institutes in furthering the use of African languages will of necessity be accompanied by a visible improvement in the relations between teachers' educators and students, based on a more marked team spirit which — with every justification — our young colleagues of tomorrow are calling for. By considering these student teachers as co-workers in the full sense, and by providing them with the practical means of exercising their new responsibilities, latent tensions will be defused and the teacher training institute will be able to assume completely its role as an integrated and coherent unit working for the advance of national cultures and the balanced development of the African child. Student participation in work on their mother tongues extends, therefore, well beyond the boundaries of language study: it is completely in line with educational reform, as defined within the African context, and may perhaps be the most realistic and most direct approach within this reform.
II. The role of the teacher training institutes
in solving initial problems

Psycho-pedagogic context

Owing to the variety of linguistic situations in Africa it would be altogether illusory to attempt a definition of the practical tasks on the basis of purely linguistic criteria. The typological approach reveals a multiplicity of situations which prove to be irreducible in nature as soon the question of application is tackled. In this respect, each country has its own specific characteristics deriving not only from the number of languages spoken within the State but also from their social, economic, religious, historical, and numerical importance. Linguistic policy, therefore, cannot be "copied" by one state from a neighbouring country: the diversity of approaches noted during the Kaduna seminar clearly indicates a refusal on the part of the policy-makers purely and simply to adopt foreign models of deceptive similarity. They prefer to determine their approach by consideration of the national needs and the specific features of their situation.

By contrast, the approach of educational psychology, focused as it is on the child and the teacher, serves to highlight a number of basic constants which justify and direct the development of a programme of activities and its practical adaptation to the requirements of different training centres.

1. The child

Even though research work centred on the African child is still too recent and too scarce to permit the formulation in theory of a truly African paedology—which should, however, be properly elucidated one day—teaching practice alone already makes it possible to state that the constant references to the mental behaviour typical of the European child leads to the masking and deforming of the black child's deeper personality. Systematic reference to these arbitrarily chosen models, tends to conceal the fact that in practically all cases the African child is already marked from the very earliest stage of his schooling by a serious conflict situation in as much as his mother tongue, hitherto the language that enabled him to express and project himself, is in a sense now in danger of being roughly thrust aside. This language, so richly endowed with profound values and expressive power, begins to acquire in the child's eyes a diminished social value in comparison with the imported foreign language, simply because the latter is regarded as the only one worth teaching and studying. The language conflict may easily degenerate into a cultural conflict because the exclusive study of a language presupposes constant reference to a whole range of extra-linguistic values of a cultural and ethical nature. It is evident that the status of poor relation "accorded" to the mother tongue imperceptibly accustoms the child to adopt a disparaging attitude towards everything associated with the heritage of his own language. This situation is not frequently encountered by the European child, although the problem of "languages of origin" and of the confrontation between the culture they reflect and the national culture is emerging with increasing vigour, and even violence, in Europe; but for the African child in his early school years, this remains a constant problem. Recognition of this cardinal fact comes, clearly, within the context of our psycho-pedagogic approach and, from this standpoint, it seems to us justifiable to give the African child a distinctive identity which transcends national character and includes certain specific forms of motivation deriving from a compound of experiences and situations with little differentiation at regional level.

2. The prospective teacher

The student who gains his professional training at the institute is the product of an academic tradition which, in Africa as in Europe, has always restricted basic instrumental knowledge to the "three R's", thus giving pride of place to the written rather than the oral aspect. Official examinations and competitive recruitment procedures in the teacher training centres tend to sanction skills that are more or less closely linked to the teacher's future responsibilities and the real needs of the milieu. But nowhere are competence in the national languages and knowledge of the indigenous cultures taken into consideration in the recruitment tests. Moreover, the traditional structures of education at the secondary level have led to uniformity in the students' working methods. These students have had practically no systematic experience of group work, of consistent individual research, or of studies of the milieu; they have not had any introduction to communication, nor have they acquired the liking and means for self-education.

As far as the national languages are concerned, a number of surveys conducted by the training institutes reveal that the students not only have a good subjective knowledge of their mother tongue, but that frequently they have also mastered another language of the country. On the other hand, there is a failure to comprehend the internal functioning of these languages. It is perceived in terms of the system of functioning characteristic of the European languages described in the grammar lessons of the secondary syllabus. The trainee teachers still tend to take the grammatical features of their own languages and impose on them the nomenclature, definitions and analytical terms derived from the European language they study. This is a particularly important consideration, for, even if it is non-productive from the scientific point of view, it must be taken into account.
account from the very outset as a necessary part of what the teacher will need for actual classroom work. Furthermore, the students cannot be held responsible for a situation which derives from an inadequate language teaching theory.

The surveys carried out by the teacher training institutes also confirm strong motivation towards the study of the mother tongues. The students' aim is, certainly, to acquire better knowledge of the language for its own sake, but it is also to gain a clearer understanding of the phenomena of interference occurring between the mother tongue and the language of instruction.

These few remarks are intended to correct the "standard" image of the present trainee teacher in relation to the educational practice with which we are here concerned. The training centres, in developing the participation aspect of their programmes, will naturally take into account both the shortcomings and the positive aspects of the teacher's rôle as thus conceived.

3. The teacher training institute and the teaching courses

Teacher training centres in Africa share a certain number of common characteristics. These institutes bring together students of all ethnic origins, and this balanced distribution, which, for those concerned with legislation, should guarantee the national cohesion of the teaching body, gives the training institutes a character truly representative of the nation's cultural and linguistic structure. It is quite customary in these institutes to meet speakers of all the languages used in the country. This state of affairs will naturally enable the researcher to spare himself unnecessary effort and loss of time in looking for qualified informants.

Another general characteristic of teacher training institutes in Africa is that they generally enjoy remarkable autonomy in their preliminary and final admission procedures, in defining their research projects and in developing their programme of activities. At the same time, they have no responsibilities as an institution with regard to the posting of their graduate teachers. It should also be mentioned that at present the task of supervision is not always carried out by national specialists, but is partly entrusted to technical assistants from abroad.

The primary education programmes are, naturally, analysed and studied in all teacher training institutes, but the general tendency is to reformulate their objectives in order to give them greater relevance to the country's basic development needs. It would be difficult indeed to cite a single African country which is not either engaged in — or in the process of planning — a reform project in primary education! These reforms are most often worked out by national commissions of specialists, and are sometimes even entrusted to a special ministry. In such favourable conditions, the introduction of national languages into the teaching courses and training schemes may easily emerge as one of the driving forces in educational reform and national development.

These are, then, a few points of reference which reveal a certain uniformity in the status of the child and of the student with regard to African linguistic realities. As for the teacher training institutes, they are everywhere the "compulsory transit point" for every major innovation in primary education.

Consideration of the facts just described and experience of the practical difficulties inevitably encountered by language reform projects in Africa, make it possible to group under the few functional headings below the problems of immediate concern, which arise with lesser or greater urgency depending on the situation, and which must be faced by those entrusted with the implementation of the new language policy based on the introduction of national languages into teaching.

The problems to be solved

A. PROBLEMS ASSOCIATED WITH THE CHILD'S SITUATION WHEN CONFRONTED WITH THE NEW LANGUAGE OF INSTRUCTION

The nature of the problems

Considering the nature of the situation prevailing in most African countries today, the child's position with regard to the language of instruction is likely to be almost always complex and differentiated. The new language of instruction may of course correspond to his mother tongue — which is a particularly satisfactory state of affairs — but it may equally well be a second language which he is in the process of acquiring or perfecting (as in the case of the young Serers, Baoulés and Djermas who would be required to learn respectively Wolof, Duala and Hausa). Lastly, this language of instruction may be a language which, although a national tongue, is one the child does not use. In such a case, the child will find himself faced with problems strikingly close to those with which he would be confronted in learning Portuguese, French, or English. A further distinction has to be drawn in this general picture by introducing the important parameter of the European language, which comes into use in primary education. The African child could, then, find himself confronted with the need to learn — separately or together — two languages, both of which are utterly foreign to him!

It would, moreover, be erroneous to think that the simple fact of choosing an African language that is widely used and spoken throughout the country will automatically solve the problems of communication in the class. As soon as it comes to the educational application, an extremely disturbing ambiguity inherent in the notion of the language of widespread communication is encountered. When, as a result of certain pressures — economic, political, religious, sociological, etc. — such a language is thrust upon the adult population of a country or particular region, it does not automatically have to be used by the children, whose needs (of a different nature) may be perfectly well satisfied by the use of the mother tongue. When it is stated that 90 per cent of the population of a country or region regularly uses Hausa, Sango, or Duala (these languages of wide diffusion are mentioned here purely as examples) as the language of communication, the reference is nearly always to the adult population, and such an estimate may well be accurate as far as the adults are concerned. But what about the children? It is indispensable to study this question, for there is nothing to prove that the proportion of speakers is identical among the child population; and experience tends to confirm this scepticism...

The use of the selected language also raises problems of homogeneity. Once it has been definitely determined that, for example, within a certain zone or in one particular country, nearly all the children regularly use Sango, Hausa or Duala, the question still remains: which Sango, which Hausa, which Duala is involved? Nothing proves that the

1. Out of 450 students interviewed in French-speaking countries, only one stated that French was his mother tongue and that he was unable to express himself in an African language.
same lexis is used, with the same semantic or linguistic values, throughout the schools in the zone under consideration. The distortions at both ends of the chain may be great, but the preparation of teaching material for the classes can be carried out only on the common basis of a single language, understood in the same way by the children as a whole. Hence the need for teacher training institutes to verify not only the universal character but also the homogeneous nature of the language used by the children.

The table below summarizes in systematic form the teaching situations with which the African child may be confronted if a national language is introduced into the programme. This systematic presentation will make it possible to grasp more easily the complexity of the problem.

<table>
<thead>
<tr>
<th>Case</th>
<th>AL (teaching in Sango)</th>
<th>EL (teaching in French)</th>
<th>EL’ (teaching of French)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>2</td>
<td>AL (teaching in Sango)</td>
<td>EL (teaching in French)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>AL’ (teaching of Sango)</td>
<td>EL (teaching in French)</td>
<td>EL’ (teaching of French)</td>
</tr>
<tr>
<td>4</td>
<td>AL (teaching in Sango)</td>
<td>AL’ (teaching of Sango)</td>
<td>EL (teaching in French)</td>
</tr>
<tr>
<td>5</td>
<td>AL (teaching in Sango)</td>
<td>AL’ (teaching of Sango)</td>
<td></td>
</tr>
</tbody>
</table>

The following abbreviations are used:

- \( A_L \) = the language of instruction is an African language (various subjects are taught in Wolof, Sango and Hausa).
- \( A_L' \) = teaching of the language of instruction (Wolof, Sango, and Hausa language classes).
- \( E_L \) = the language of instruction is a European language (various subjects are taught in English, French, or Portuguese).
- \( E_L' \) = teaching of the European language (English, French, or Portuguese language classes).

As there is cross-interference between these situations, the schoolchild may find himself in any one of the following:

Tasks to be carried out by the teacher training institutes

1. To ascertain in the schools themselves the extent to which the language selected is in general use

What is required here is a precise answer to the following question: of the children in situation 2 who are to receive their schooling in this language, how many use the new language of instruction, and what are their levels of competence?

The student teachers should draw up a series of test-games to check the active knowledge of a basic vocabulary limited chiefly to the activities of the immediate environment and to the child’s interests. If the language of instruction is introduced at school-entry level, the questionnaires will test the children at this level and not on the performance that might normally be expected of a pupil at the end of his studies.

When analysing and classifying the answers, it will be necessary to bear in mind the enormous differences in language opportunities that separate village schools from schools in an urban environment, schools in towns where markets are regularly held from schools in towns where there is no market. It is quite evident that upon entering school, the child from a village background will have had less contact with the language of wide diffusion than a child of the same age who has been living in a city, or even a town, where
is a market attended by a heterogeneous population. Although both categories of children are placed in the same position relative to the language of wide diffusion which has now become the language of instruction, the pupils of the second category set out with a distinct advantage over those of the first.

Geographical criteria should also be taken into consideration: a national language can make rapid progress in areas bordering navigable rivers or in open savannah land that can be easily crossed; it may however be impeded in forest or mountain regions. The research workers will carry out particularly exhaustive inquiries in schools situated in regions where a powerful ethnic language already exists but has not been adopted as the language of instruction.

It will be observed that significant variance may be encountered in situation 2. All the relevant variables within this situation should be identified and classified. This will help to avoid mistakes being made in the choice of experimental schools where the first attempts to offer instruction in the national language will be made and evaluated.

The teacher training institutes should also carry out thorough research in order to determine the actual levels of use according to the pupils' age-groups. Thus it may happen that in the initial grade of primary schooling the pupil has no knowledge of the national language of instruction (which is not his mother tongue) while two years later, in the second or third grade, he may have acquired complete proficiency in it — not so much as a result of the instruction he has been receiving at school as of the simple everyday contact between children of different ethnic origins, and also through listening to national radio programmes and being brought into touch with adults.

What actual procedure must be followed to obtain reliable and usable information concerning the ability of pupils in situation 2 to operate in their new language of instruction?

Below we present a few examples of tests which were given in the form of highly motivating games. These "exercises" have already proved their worth in numerous African schools, and research workers may either adapt them or use them with full confidence as they are.

1st test-game: Checking the pupils' understanding of the language.

Procedure:
The researcher will have made a prior selection of short statements, true or absurd, e.g.: cotton is an animal; a car runs on a road...

These statements are then recorded on tape by pupils whose mother tongue is also the new language of instruction (pupils in situation 1).

This tape-recording is then played to classes in the regions outlined in situation 2.

The class is given the following instruction: raise your hands to every false or absurd statement.

If the statement is true, the class makes no movement, e.g. cars run in the sky (hands are raised); horses gallop (no reaction).

Remarks:
The students carrying out the tests should make sure, in compiling their statements, that they cover a good cross-section of the basic vocabulary and structures of the new language of instruction. The statements should be recorded with blank spaces between each one, so that there is time to record the results on a specially prepared graph.

2nd test-game: Checking the pupils' understanding of the language.

Procedure:
Five players leave the classroom. Before they go, the others scrutinise them carefully.

Once they have left the room, the five players outside make some alteration to their clothes (e.g. one rolls up a sleeve, another unbuttons his shirt, some exchange articles of clothing, etc.).

When they return to the room, the others will have to spot and describe the changes made to their clothes.

Remarks:
This entertaining game provides a means of checking the acquisition in the new language of instruction of an active vocabulary, including the group of verbs relating to the wearing of clothes, the names of the articles of clothing, and the adjectives describing colour, shape, and texture, etc...

3rd test-game

Procedure:
Several pupils leave the room. While they are outside, a "tableau" is set up using a number of different objects.

Once the pupils remaining in the room have closely observed and memorised the 'tableau', the arrangement is broken up and the objects are left scattered over the table.

The pupils outside now return. From the information provided by their fellow-pupils, they must now reconstruct the tableau — which they have never seen — in its original form.

Remarks:
This game should bring out most of the expressions concerning the relative and general disposition of the objects, without any subjective connotation. When the game is played in French, for instance, the correct use of more than forty function words is often recorded in the upper primary grades (children of 10-12).

Many more productive tests of this kind could be mentioned, but the Guide is not intended to provide an exhaustive list. By using their own initiative and imagination, and by following the principles we have just defined, the student—researchers will be able to devise the specific question grids required for each group of situations.

2. Checking the level of homogeneity of the African language used at school

This is a complementary task to the one described above. The new language of instruction must be understood by all concerned, so that teaching material can be produced that is lexically and syntactically unmarred by inexcusable inconsistencies. Readers or collected tests cannot be indiscriminately distributed without prior assurance that the language in which they are written is actually the one used by the

1. This fact has been attested many times over, particularly in the Central African Republic. In the region that lies to the north of Bossangoa, the children in the rural environment speak Gbaya, a mother tongue which is firmly established in this area remote from the capital. The schools are situated in certain of the large towns spread over the whole region. It can be observed every year that these children, who, on joining the introductory course did not speak Sango, the national language, have mastered it well by the time they enter the first primary grade at the end of the year's preparation. Sango, however, is not yet taught at the official school; it is, then, at the "parallel school" of recreation hours and play in the street that it is picked up by the children.
teachers and their pupils, and that it is accepted by them in all schools in the particular country or district.

In carrying out this research, the students will make use of games wherever possible. This advice is offered not so much for theoretical reasons, but because it has been frequently observed that it is bad to give children (and teachers) the impression that they are "test subjects" or "guinea-pigs" to be used and immediately forgotten. As the psychologists have long been telling us, games are a serious matter for children, since they invest in them all their imagination, their vital energies, their creative powers, and their individual and collective sense of personal values. This means that the new language of instruction, if introduced to the school by means of games, will be surrounded by a far more relaxed and reassuring atmosphere and the effect will be much more dynamic than the chilling process of a straightforward test.

Test-game: Checking the homogeneity of basic vocabulary and structures.

Procedure:
Three children leave the classroom. The teacher (or researcher) places on the desk a number of objects that are familiar to the children and indicates one "precious" object.

The three children return. One of them distributes the objects; the other two share the objects on the desk by asking for them in turn: give me the pencil, give me the shoes, etc...

Once all the objects have been shared out, the class indicates the winner, that is, the one who has received the "precious" object.

Remarks:
This game would of course be carried out in different schools in the linguistic zone under consideration. The number and nature of the objects included in the "collection" should make it possible to check whether the denotations and connotations are the same everywhere. The students may use their imagination to work out variants of the game. As the purpose is to test the understanding of basic vocabulary in the new language of instruction, it is advisable to make a preliminary list, in the study-groups at the institute, containing a sufficiently exhaustive selection of every day objects in which the children are interested.

Other types of test: To check the homogeneity of basic vocabulary and structures.

The following tests have been tried and have proved successful:
1. The children are asked to describe drawings, signs, and diagrams; the terms used in the description are then compared with those given by other classes of the same level in different language zones.
2. At the institute, sets of objects are devised in the form of sketches or pictures representing familiar features of the home, school, and local environment to which the child has easy access. The different denominations for these objects in the various schools are then compared.

It must be stressed that these preliminary studies are indispensable. An analysis of the results obtained from them will help to avoid considerable disappointment later over the choice of experimental schools and the development of the teaching methods. The information provided by these investigations will, furthermore, make it possible to select the appropriate class level at which the new language of instruction should be applied: should this level, in fact, be that of the introductory course in all instances? Or should the choice of other levels be considered?

It is clearly not possible to assess the linguistic competence of each individual pupil. Such an undertaking would be unfeasible for a variety of reasons. This is why the test-games proposed here are designed to be applied to small numbers of pupils taken as a group; they have been devised to obtain a series of results from class surveys on which sound impressions or even firm conclusions may be based. Evaluation of the results, therefore, to some extent involves a coefficient of empiricism; practical experience, moreover, will quickly yield extremely reliable information. But the role of the teacher training institutes is not confined to drawing up highly refined or sophisticated statistical systems. What the future teachers need is a proper understanding of the school-child's ability to comprehend and use the new language of instruction offered to him, whether or not it is his mother tongue. It is not necessary here to consult experts in mathematics as applied to the social science. Far from it: in fact, it is essential that the teachers and future teachers carry out these inquiries and discover for themselves the depth of the child's relation to the new language of instruction. From this point of view, the students' participation in these surveys is the best preparation they can have for their future profession as teachers.

The child's situation with regard to the new language of instruction is not really grasped by most educators; this is in fact a situation which depends on language policy decisions. All the same, whatever may be the situation confronting the educational authorities, it would be advisable to introduce class instruction in an African language without having first elucidated the basic facts relating to the extent of the general use and to the syntactic and semantic homogeneity of the new language of instruction at the different levels at which it is used by the children.

B. PROBLEMS ASSOCIATED WITH THE POSITION OF THE STUDENT-TEACHER AND OF THE SERVING TEACHER REGARDING THE NEW LANGUAGE OF INSTRUCTION

The nature of the problems

The variables that characterise the pupil's language situation also typify the position of African teachers and future teachers regarding the language of instruction to be introduced. In most African States, the teacher training institutes do in fact bring together students from all the ethnic and linguistic communities of the country. Furthermore, appointments to civil service posts, and particularly to teaching positions, are made in a praiseworthy endeavour to achieve ethnic diversity and national unity. As a natural consequence, the teachers find themselves in a truly complex position as regards the African working language. The search for solutions to this problem has become a priority concern of the teacher training institutes; but solutions certainly do exist. If the language situation of the teachers and future teachers is complex, this does not mean it has necessarily to be accepted with passive resignation. The training institutes can bring about a marked change in this situation, often so difficult at the outset, by undertaking the following:

1. Clearly identifying the situation of future teachers with regard to the new language of instruction.
2. Establishing new recruitment procedures for training institutes, based on practical and theoretical knowledge of the national languages and of the cultural heritage.

3. Studying and presenting to the relevant authorities proposals for training schemes which will take into account the future assignment of new teachers to the different language zones in the country.

The tasks to be carried out by the training institutes

1. Identifying the situation of the future teachers with regard to the new language of instruction

a) Why should this task be undertaken?
What cannot be done for each schoolchild in the primary schools of the country can, however, be perfectly well done for the future teachers, who are less numerous and less widely dispersed. Accurate information concerning their language backgrounds will enable the participation of each student-teacher in applied research to be suitably guided, depending on his particular position and on the research requirements in regard to the new language of instruction. It is, therefore, necessary to have personal files on all students entering or leaving the institute, with details concerning their monolingualism, bilingualism, or plurilingualism, in order to establish their relation to the indigenous language and in particular to the future language of instruction.

b) What procedure is to be followed?
As an example, we give below an analysis of the interactions that characterise the student’s relations towards his mother tongue and the new language of instruction.

MT: student’s mother tongue
AL: African language of instruction

What are the situations actually encountered in the field?
To begin with, one may find:

AL = MT: the language of instruction is the mother tongue. This is the desirable case (situation 1).

One may also have:

AL ≠ MT: the language of instruction is different from the mother tongue (situation 2).

The different variables in the latter case can be identified by applying to the particular context of the teacher training institute the classification proposed by Professor Houils

1 for a more general context. Taking this classification as a starting-point, the following summary is obtained, in which the current situations are divided into five main categories.

1st category: AL = MT: the student does not know the language of instruction. He uses only the mother tongue.

2nd category: AL < MT: the student has only a slight contact with the language of instruction. He mainly uses his mother tongue.

3rd category: AL = MT: the student has equal command of the language of instruction and the mother tongue.

4th category: AL > MT: the student’s relation to the language of instruction is stronger than to the mother tongue.

5th category: AL: the mother tongue is no longer used; the language of instruction has become the main language.

This table covers the main range of possibilities. It also gives us a sufficiently clear picture of the language situation of students on encountering the new language of instruction. Nevertheless, although useful, this schema is still not adequate.

In order to draw up a full typology of the language situations within the teacher training institutes, one would still have to define the minimum and maximum threshold-levels to justify the use of the signs , = and . One would have to discover the relevant criteria for measuring the qualitative levels within the five categories. Each situation in fact contains levelling-points: bilingualism (or monolingualism) is more or less complete, more or less approximative, more or less integrated, more or less “juxtaposed”. It would be the task of every teacher training institute to define more closely, bearing in mind national characteristics, the basic indicators and forms of codification outlined above.

Since the teacher training institutes are in fact a sort of “cultural reflection” of the whole of the country from which their students are drawn, their language situations vary considerably. In a number of States, speakers of the widely-used languages do not feel the need for bilingualism, while the speakers of the less influential languages are nearly all of necessity bilingual. In the Ivory Coast, for example, it was observed in the teacher training institutes that the language situation was strongly dominated by the first category (----- MT, in which only the mother tongue is used) and by the second (AL < MT, in which the mother tongue remains more powerful than a second widely-used language such as Duala). By contrast, in Central African teacher training institutes we have not yet encountered any situations belonging to the first category, although we have recorded many instances of the fourth: AL > MT (Sango, the second language, is used far more frequently than the student’s mother tongue) and the fifth category: AL------ (Sango has become the sole African language of communication).

This analysis does not take into consideration the European language which is, of course, present in practically all the above instances. Moreover, the typology sought should not cover simply monolingual or bilingual situations directly connected to the new language of instruction; it should also reflect the range of African plurilingual situations. The teacher training institutes, which reproduce the language situations of the country on a diminished scale, thus provide focal points for a great diversity of human potential which could become a powerful source of aid to research workers and to specialized institutes. A data-card system recording all the relevant information, on the basis of the typological schema, would provide the research worker and teacher educator with a language profile of each future teacher.

The card-indexes, which will form a true data bank serving the needs of national language research, will be an invaluable tool for research workers directly engaged in study of the languages of the country as a whole, and, naturally, the languages of instruction. Hence, the development of this typological schema within the teacher training institutes already represents the first practical step in promotion of the use of national languages.

2. Establishing new recruitment procedures based on practical and theoretical knowledge of the national languages

a) Why should the present procedures be changed?
Inasmuch as the decision has already been made to introduce

an African language into the primary syllabus, it would be unrealistic not to test the competence of future teachers in this domain. This is really a matter of common sense. Nobody would suggest that teachers responsible for instruction in French, English or Portuguese should not have their competence in these languages examined. Why then should the attitude be any different when African languages are concerned? As we know, the problems entailed in the introduction of a new language of instruction are already sufficiently demanding, without the additional factor of incompetence or apathy on the part of teachers who are either underqualified or inadequately motivated!

It is our belief, then, that in a country where a still limited experiment of instruction in one or several of the indigenous languages is being tackled, a study should be made, as a matter of urgency, of the possibility of revising the entry requirements to the teacher training institutes and of re-examining the present conception of the competitive entrance examination. Consideration must be given to competence in the national languages — alongside the competence required in the European language — and preference should be given to those candidates who demonstrate superior linguistic skill in this domain. Indeed, the sooner the entrance and final examinations are made more relevant to African language needs, the sooner it will be possible to call upon a large body of competent teachers once the language reform scheme is finally under way.

Recruitment based on such requirements would help considerably to reduce and even eliminate the absurd yet not implausible possibility of teachers finding themselves in a situation where they are expected to improve their pupils’ knowledge of a language which they themselves do not know well. There is no dearth of examples in Europe, Asia, or America of civil servants, and particularly teachers, who are required to give proof of their knowledge of the national languages existing in their countries. Why then should not the same requirement apply in Africa at a time when there appears to be an ever-increasing number of applications for entry each year to the teacher training institutes, and when, as a result, the teacher training authorities are able to be more and more demanding in the criteria imposed for the selection of future teachers?

b) What procedure should be adopted?

In assessing linguistic competence and the levels of African bilingualism or multilingualism one clearly cannot be satisfied merely with the subjective judgement of speakers — or those who consider themselves speakers — of the respective language. More accurate and refined criteria must be sought in order to devise test batteries applicable to each specific case, and at the same time to define the psychological and cultural dimensions of the various forms of multilingualism.

The devising of relevant tests should not entail insurmountable technical problems. It is, of course, difficult to advocate a scientific approach that will be valid for the entire set of language situations encountered in teacher training institutes in Africa, but it is still possible to offer certain guidelines for research. Thus, for instance, in the Central African Republic, the interdisciplinary group engaged on these problems has devised a series of tests enabling students’ competence in Sango to be assessed by means of an “expression index” and a “correctness index”. The expression index is defined by the following ratio:

\[
\text{Expression index} = \frac{\text{total number of information-units expressed}}{\text{time taken}}
\]

Example: a student who expresses 21 units in 3 minutes will have an expression index of 7.

The correctness index is likewise defined through a ratio:

\[
\text{Correctness index} = \frac{\text{number of information-units correctly expressed}}{\text{total no. of units expressed}}
\]

The correctness index varies from 0 – 1. The student in our example expressed 21 information-units in 3 minutes. Of the units expressed, 16 were non-ambiguous, while 5 were grammatically suspect. The correctness index is therefore 0.67, i.e. 0.79.

It should be repeated that we are still concerned with lines of research, and there is no question of putting into immediate operation the evaluation processes outlined here. Too many issues have still not been sufficiently well defined, particularly the notion of an “information-unit”, which is to be regarded as a sort of “notional unit”, a kind of minimal content element ready to be combined with others. Furthermore, there is still considerable uncertainty concerning the classification of the different levels of incorrect expression noted in the language: here the statistical criterion should be taken in conjunction with the criteria relating to the gravity of the linguistic dysfunction revealed by a certain “incorrect” expression. These difficulties do not, however, prevent a start being made. And their importance is, in any case, diminished by the fact that initially we are seeking simple elements of comparison within a given population, and not absolute criteria.

The adoption of a new recruitment procedure based on knowledge of the national language heritage clearly presupposes, in the middle term, the implementation of a series of coherent measures aimed at providing the teacher-to-be with the practical means of educating or improving himself in the functional and theoretical knowledge of the new language of instruction (mother tongue or not). A minimal proposal would be that of offering, from the first stage of secondary education, optional instruction in one or several African languages on the same basis as instruction in German, Spanish, etc... The secondary school pupil attracted by a primary teaching career could thus begin serious preparation for the entry examinations to the national teacher training institutes. It should be recalled at this point the "Ten-Year Plan for the study of African oral traditions and the promotion of African languages" considers that a preliminary condition for the introduction of any language programme must be "the promulgation of official measures designed to supplement and support literacy work, in particular through the introduction of African languages as course subjects and instruments of education at the elementary, secondary and higher levels".

3. Studying training schemes which will take into account the future assignment of new teachers to the different language zones of the country

Despite the establishment of an exhaustive typology, and a new recruitment procedure which makes the national language a feature of the standardized examinations, there may still be a number of non-reducible variables which will raise doubts as to the homogeneity of the teacher training provided

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1. Document 17 C/73, para. 21.2.
by the institutes and add to the work-load of the teaching staff. Thus, in order to avoid excessive fragmentation of activities — which might place an intolerable burden on the present structure of the training institutes — it would be desirable for the training authorities to determine sufficiently early, and whenever the possibility exists, the place, or at least the region, to which the graduate teacher would be posted on completing his course at the institute. Decisions of this kind would help to lessen the effects of the last major difficulties:

- the teaching staff would be able to eliminate the variables involved in the teacher’s position with regard to the language of instruction, and to adapt the pedagogical and methodological training and the grounding in educational psychology to the specific language situation the student would actually encounter in the field;
- they would also make it possible for the student to work on the socio-linguistic, ethno-linguistic and psycholinguistic situations characteristic of the region in which he would be teaching. The student would thus be better equipped to discover in advance the actual educational and linguistic problems which he would be expected to surmount (interference of various kinds; aspects of dialectology relating to the unified language of instruction; specific features of the relation between the child and the language of instruction, etc...).

Here, then, we have a series of measures which the teacher training institutes could put into practice in the immediate future. Whether these measures concern typology, the reformulation of the criteria for admission or planning the posting of teachers, none entails major financial investment and none exceeds the specific competence of the training institutes themselves. If each institute, within the scope of the responsibilities incumbent upon it, were to give effect to these innovatory measures, the most serious problems of the student’s position and that of the teacher with respect to the new language of instruction would be overcome.

C. PROBLEMS ASSOCIATED WITH THE EXTENT OF THE PSYCHO-PEDAGOGIC KNOWLEDGE AVAILABLE

The nature of the problems

What is required here is as much certain knowledge as possible concerning the African child’s deep relation with the new language of instruction. It would in fact be ill-advised to undertake a large-scale operation without attempting at the same time to clarify the fundamental psycho-pedagogic principles which should underlie the use for teaching purposes of African languages introduced into the school curricula.

Objective information is, then, required concerning the manner in which the pupil experiences in his own terms the ambiguity of Afro-European bilingualism. The bilingual situation is a normal one for the young African, even when this state of affairs has not yet been officially recognised at school. Outside of his school activities, the child continues to use his home language. The resultant phenomena of cultural discontinuity should be identified and minimised so that the two linguistic elements present may enrich and balance the child’s personality instead of disrupting it. Students at the teacher training institutes are situated right at the interface of two, or even several, linguistic and cognitive worlds: through their own experience, therefore, they can assist in identifying the fundamental nature of the difficulties raised by bilingualism in the school environment.

Another of the problems which must be solved before a new language can be effectively introduced into the school curriculum is the question of the pupils’ abilities to express themselves verbally in this language, for it must be remembered that the child does not possess the adult’s powers of expression. What words (at the semantic level) and what conjunctions and linking-elements (at the syntactic level) does the child use for comparison, evaluation and reasoning? How does he express the intuitive notions of space and time? To what extent has the new African language introduced into the instruction been sufficiently mastered by the child to become the ideal intermediary by means of which he can confirm his powers of conceptualisation and abstraction while also establishing his identity in relation to himself, to others and to the world around him? Information on these questions is indispensable to those whose task it is to devise the new educational programmes, for an active pedagogy — one which makes the mental operation emerge from the concrete action — becomes possible only when the child is able to express precisely in words not only his everyday preoccupations but also those arising from his feelings and his cognitive requirements.

Lastly, before embarking on the teaching of technical subjects, one should possess precise information concerning the child’s ability to use functionally this new means of instruction. If the linguistic medium, even though it may already be familiar, is not sufficiently well known or usable by children of school-going age, the child will not be able to derive full benefit from the teaching provided. His rudimentary use of language will limit him at the level of operational thought. The introduction of technical subjects into class work presupposes, therefore, that a prior attempt will have been made to determine in specific terms the child’s ability to describe everything in the local environment concerning the relation between human needs and the world of material objects designed to satisfy these needs: materials themselves, modes of employment, methods of manufacture and adaptation, prohibitions, taboos, etc... Failure to go into all these questions would mean relying more on haphazard groping and trial and error instead of basing educational theory and method firmly on knowledge of the child and of his capabilities.

Tasks to be performed by the teacher training institutes

The work of the training institutes will, naturally, be geared to the varying requirements set out above. The students will first of all need to gather the necessary psycho-pedagogic data, and then participate in applying this knowledge. Basically, what is required is precise information concerning the following points:

1. The child in his relation to bilingualism at school and the phenomena of transfer from one language to the other.
2. The child and the verbal expression of his intuitive notions in the new language of instruction.
3. The child and the cognitive use of the new language of instruction.

1. The child in his relation to bilingualism at school and the phenomena of transfer from one language to the other

The student at our teacher training institutes is well acquainted with these problems because he has already lived through them in his own early years. He is therefore a valuable “witness”, capable of identifying and explaining both the motivations and the mechanisms of language acquisition in
the bilingual or multilingual context experienced by the African child. Much is to be gained by calling on the student’s personal experience of deculturation. Our students have a rich background of subjective impressions which are well worth analysing for the purpose of future pedagogical application. Are there typical traumas stemming from the monolingual situation to which they may have been prematurely subjected at school? If so, what are these traumas and how are they manifested? How does the child experience the relation between the two linguistic and cultural entities between which the structure of his personality is shared? Are the results wholly positive, or wholly negative?

The inquiries will, of course, be carried out in situ, i.e. in the schools. The questionnaires, which will have been previously devised by the students in such a way as to exclude all ambiguities of aim and content, may be subdivided under several headings in order to cover the whole range of levels involved.

a) The psychological level
What are the conscious and unconscious motivations behind the child’s use of the mother tongue or the second language in a given situation?

Is it possible to draw up an objective or even systematic list of the types of situation which motivate and predetermine the choice of one language or another? Where exactly is one to locate the points of conflict and the sources of tension caused by cultural transposition and the use of two or several means of expression to convey different social norms, forms of activity and interests?

Can one establish for pupils and students a list of specific instances of the way in which the superimposition of several languages with differing operational patterns results in confusion and fuzziness in regard to modes of logical reasoning?

b) The intellectual level
Does the child in the preparatory school years always resort to translation when asked to use the non-mother tongue? Does he systematically pass from experience to mother tongue, and only then pass on to the foreign language?

If one surveys the child’s progress from preparatory class to the last year of study, can one determine the period when it is no longer the “mould” of the mother tongue that organises reality as expressed in the foreign tongue?

Up to what stage, and what school age, does the mother tongue serve as a sieve not only for the form (linguistic interference) but also for the content of thought, with the foreign language being no more than an appended code that must be used?

Can precise facts enable one to identify instances of psychological anomaly caused by the overlapping of the different thought and comprehension patterns with which the plurilingual speaker is simultaneously confronted?

Can one list and analyse these symptoms, which indicate a momentary blockage of the means of perceiving reality and constitute an almost pathological form of what has been labelled “brainfag”, a condition typical of certain French- or English-speaking African students? (Dr R.M. Prince, Nigeria; Professor Quandet, Central African Republic.)

Likewise, in the child, objective knowledge of the foreign language precedes subjective knowledge. Can one, within the grammatical system of the language concerned, identify and attempt to classify the exceptions to this rule (particularly those relating to spontaneous acquisition)?

The interest of these inquiries can easily be understood: a clearer understanding of the issues involved will enable us to formulate solutions geared as closely as possible to the teaching situations arising from African monolingualism or Afro-European-bilingualism. Analysis of the results will enter into consideration when the educational authorities have to determine the appropriate mix of syllabus content between the different language systems used at school.

It is true that the headings proposed above are not exhaustive, but they are of prime importance and should guide the spirit of the questionnaires which will serve the students as framework for their actual investigations. The research work should preferably be presented in the form of detailed monographs and, as such, form part of the training institutes’ basic documentation. A scholarly consolidated analysis of all this research will substantially enhance our knowledge of the African child and of his relation with the various languages at his disposal. Such an undertaking is still in its very early stages, and the problem has only recently begun to receive attention. For example, Cameroonian bilingualism is still seen in terms of the relationship between French and English, and only rarely in terms of that linking the individual to an indigenous mother tongue, and only thereafter to a European language.

2. The child and the verbal expression of his first intuitive notions in the language of instruction
If the continuity and balance of the child’s cognitive and intellectual development is to be better safeguarded in a given cultural and educational context, it is desirable to have a proper understanding of the basic intuitive notions governing his daily life and his immediate interests. The research that must precede teaching should therefore respect three fundamental principles:

- to start with the child and the means available to him
- to follow through the stages of his mental development
- to regard the African language as a means of expression and not as an object of analysis.

The teacher training institutes will devise and carry out inquiries into the way in which children grasp and give verbal expression to the basic concepts in the new language of instruction. These concepts, which are largely interdependent, may be presented as follows for the sake of easier analysis:

Space: Awareness of the body. Location of objects in relation to the self, to other persons and to other objects. Situating oneself in space, and structuring space.

The training in verbal expression proposed here will not, of course, suffice to develop the sense of abstract space, but it is an indispensable accomplishment to this sense, while at the same time aiding the pupil’s subsequent understanding of topography, geography, geometry, technology, etc. Moreover, future teachers of geometry and geography, working through the African language of instruction, will in turn contribute to developing the sense of spatial construction and enable the child to acquire a true grasp of the ideas of surface, perspective, etc.

In order to arrive at the verbal expression of spatial concepts, the students will prepare in groups various
20 examples of specific possibilities of arrangement. The perception and conceptualisation of space is in fact initially based on experience. The hand must describe, trace, explore, and vary the perspectives; the act of bodily displacement is in turn linked to the activity of the hand. It is this motor experience which will facilitate the situational verbal expression of the relations involved in direction, and their co-ordination.

Time: Is determined by relation to the self, to others and to the transformations caused by time in the outer world. The experience of "becoming" must be gradually built up through reference to focal points in time, or chronological markers, initially very broad but then increasingly precise. Once these time markers have been established for the present, the past and the future, one can pass on - through the example of situations experienced - to the expression of modal values (the hypothetical, the unreal, the conditional and so on).

The child has no past as yet; he lives essentially in the present and the future (when I grow up...). The past is not really grasped as a universal dimension until the present itself is conceived as continually engendering the past. Yet it is the construction of the past that governs acquisition of the historical concepts encountered in the syllabus. Without a construct of the past, the young pupil cannot possibly conceive the "before" and the "after", the simultaneous and the disconnected, or the relationship of cause and effect, and conjugation itself becomes an exercise in mere parrot-like repetition.

The studies pursued by teacher training institutes into the manner in which the African child apprehends the notions of space and time in African languages should form the psychopedagogic base for all classroom material subsequently devised in these languages for the teaching of geography, history and verbal syntax.

To teach these subjects without the support of prior research and study in situ would be risking the charge of narrow empiricism. Above all, it is essential to break away from unsuitable pedagogical traditions and, through contact with the African child himself, build up again the genetic order of the appearance and development of the first intuitions and verbal expressions;

With regard to the other intuitive notions - spatio-temporal relations (speed), causality, effect, cause and effect, comparison, etc. - it may well be wondered why so much importance should be attached to their adequate verbal expression in African language. We know that verbal expression of a notion does not in itself suffice to ensure that the child will acquire the relevant notion, for the structures by which it is characterised have their origins in action and in sensory-motor mechanisms that lie deeper than linguistic description; but this verbal expression is necessary in order to complete the process of working out these structures, and it is therefore a necessary precondition for any abstract, operational or logical construction. This is why the teacher training institutes, given their responsibilities in the field of educational psychology, cannot dispense with research studies of this kind, which, in terms of pedagogical application, are an essential counterpart to analysis of the linguistic characteristics of the new language of instruction.

It goes without saying that verbal expression can itself be based on intermediary representations. It is often useful to interpose, between psychomotor activity and verbal language, the discovery and handling of symbolic systems which are at once abstract and concrete (models, diagrams, cut-outs and various graphic representations). Quite apart from their undeniable educational value, these intermediary systems are of major interest to us in that they are susceptible of simultaneous verbal expression in several languages. They can thus initiate communication capable of overcoming the strictly linguistic obstacles.

In order to succeed in generating the expression of all the operational notions just mentioned, the research students would need to base their questionnaires squarely on the egocentricity which remains the essential motivating force behind children's self-expression. Each item of the questionnaire should situate the child within his very own environment and inside his own emotional, physical and cultural world. This will be achieved by the students' working together to devise readily accessible situational sequences (drawings without words, photographs in combinations), in which the relations of space, time, causality, comparison, etc. will be absolutely unambiguous.

The progressive nature of the approach adopted during this preliminary phase should also be evident when the results are applied in subsequent teaching. One of the major aims of education, indeed, is to assist the child to progress from the egocentric point of view to an anthropocentric outlook by getting him, through a sort of progressive decentering, to come to terms with the point of view of others and, finally, with the universality of logical thought.

The recapitulatory table which follows is no more than an example of what the trainee teachers could do. It is not being presented as a model, though it does indisputably suggest forms of systematisation that would be useful in field work. It was devised to fit the specific context of the Central African Republic, and it summarises a series of lessons intended to test the ability of schoolchildren in Bangui to express verbally in Sango the concepts necessary for proper assimilation of the future syllabus material to be taught in this language.

The research teams of the teacher training institutes participating in this investigation adopted the following approach:

1. Each notion is to be the subject of a lesson which will be given exclusively in Sango. The lesson is prepared through group-work, and the main stages are marked on a card to which, naturally, the student (or serving teacher) refers.

2. The end of the lesson is set aside for participation by the children, who are encouraged, by means of suitable models, to use correctly the notion explained to them, in new concrete situations such as can be expressed naturally in Sango.

3. The linguistic and psycho-pedagogic analysis of this information, and the numerical transcription of the data, is later performed at the teacher training institute in close collaboration with the National Pedagogical Institute, which is involved at all stages of the research study.
Recapitulatory table

<table>
<thead>
<tr>
<th>Notions</th>
<th>Preparatory and introductory courses (age: 6 - 8)</th>
<th>Elementary courses 1st &amp; 2nd yr. (age: 8 - 10)</th>
<th>Intermediate courses 1st &amp; 2nd yr. (age: 10 - 12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spatial relations</td>
<td>-mbage ti koli (the man's side = right) -mbage ti wali (the woman's side = left)</td>
<td>-mbage maboko ti koli (side of the man's arm = right, in relation to others)</td>
<td>-mbage maboko ti wali (side of the woman's arm = left, in relation to others)</td>
</tr>
<tr>
<td>Temporal relations: anteriority, posteriority simultaneity</td>
<td>-kozoni (before, without implication of self); -na pekoni (after, without implication of self)</td>
<td>-lege oko tongana mbi (simultaneity)</td>
<td>-kozo ti mbi (before, with implication of self) -na pekoti mbi (after, with implication of self)</td>
</tr>
<tr>
<td>Temporal relativity</td>
<td>tongana (when)</td>
<td>gilli (previously) fade so (now) la (duration) gilli so (the other time when; formerly when)</td>
<td>tongana a ndë (hypothetical if) tongana fade (hypothetical if)</td>
</tr>
<tr>
<td>Spatio-temporal relation (speed)</td>
<td>- hio - fade fade</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Causality</td>
<td>- nda li ti so - tene ti so - si (because)</td>
<td>- ngbanga ti so (because)</td>
<td>- tene ti nye? (for what cause?) - ngbanga ti nye? (for what reason?)</td>
</tr>
<tr>
<td>Cause-effect relation</td>
<td>- nda li ni si (that's why) - ngbanga ti so (a matter of... = that's why)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comparison and degrees of comparison</td>
<td>tongana (as)</td>
<td>-mbi hò lo (I'm bigger, taller than him) -lò ho mbi</td>
<td>-mbi yeke kota mungi (I am big very = I'm very tall)</td>
</tr>
<tr>
<td>Notion of classes</td>
<td>a la kwe (all) ni kwe (all)</td>
<td>a mbeni (some) a mbeni ye (some) oko, oko (each)</td>
<td></td>
</tr>
</tbody>
</table>

Note: Clearly, spatial, causal, temporal and other relations are not expressed exclusively through phrases of as clearly delimited meaning as these. Sango, as a language, has other means of conveying them; in particular it draws on the syntactical structure of the utterance and on its expressiveness. It is precisely because these expressions are not common in the colloquial language that the trainee teachers singled them out. Their aim in doing so was to reactivate and reintroduce into the linguistic circuit means of expressing relation which had fallen into abeyance — although they belonged to the language — and which were particularly suitable for written expression.
3. The child and the cognitive use of the language of instruction

3.1. The expression and description of technical processes

A general observation. Experience has shown that although children in the advanced classes are generally able to express with great verbal precision in the European language their relationship to the technical situations underlying several learning activities (manual training, practical scientific experiments, etc.), they are most often at a loss when asked to use their mother or home tongue to describe the technical processes observed. Furthermore, their attempts to express themselves verbally are often challenged by other speakers of the same dialect, who sometimes employ very different formulations to express the "why" and the "how" of these processes.

We have here an interesting observation which, in spite of occasional argument to the contrary, certainly does not cast doubt upon the ability of African languages to explain physical phenomena and describe technical processes. The explanation is to be found, rather - in a good number of cases - in an inadequate knowledge of the language and its descriptive vocabulary and logical linking-devices, but this inability is also due to an attitude on the part of the speakers which matches a characteristic linguistic habit, itself originating from a certain way of transferring technical knowledge. In this connection, the authors of the Ten-Year Plan approved by the General Conference of Unesco quite rightly observed that the languages spoken in Africa had been developed primarily for purposes of communication and interchange and little emphasis had been placed on their pedagogical and technical use; it frequently happened that the cultures in which these languages were spoken showed no trace of logico-mathematical objectives of the Western type, with a consequent dearth of the wherewithal to give verbal expression to the mathematical and technological elements of the syllabus. It is evident that this situation is purely circumstantial and in no way definitive.

It does not, however, appear to us to be pointless to stress this fundamental question, since it continues to give rise to various unfortunate misapprehensions which are more or less openly recognized. Certain educationalists - and not only those who are strangers to Africa - do not believe in the cognitive potential of the African languages. They judge the capacities of these languages by the use made of them, and once they have noticed in their pupils a relative absence of cognitive registers for the description of technical situations, they conclude that there must be an absence of appropriate resources in the language itself and in the culture it conveys.

Could African languages be lacking in the means of cognitive expression? There can clearly be no question of this... Human language, as expressed through a multitude of languages, is almost infinitely versatile. Every human language is potentially capable of moulding itself to practically any human experience that can be communicated. Provided it meets a real need, every language tends, of its own accord, to fill whatever gaps may chance to appear through contact with experience. In order to do so, it makes spontaneous use of the most diverse means (metaphor, metonymy, nominalisation, recourse to complex syntactic structures, etc.).

Every different kind of speech, of course, stretches its capacities to a greater or lesser extent depending on the historical and economic circumstances on which its cultural customs are based, but there is no human speech that is not also able to draw on its potential in order to adapt to new realities and express whatever pertains to the human sphere.

The cognitive resources of African languages are, moreover, used to effect by the better educated speakers. Thus, part of Einstein's work has been translated into Wolof, without any insurmountable difficulties being encountered in expounding the author's theory of the relativity of space and time. One would be wrong to find this surprising: there are no languages that are congenitally imprecise. Many Africans could mention areas in their mother tongues in which there is a greater striving after precision than is to be found in the languages used by science. There are, for example, African languages that are able to convey temporal relations with far greater precision than certain European languages. The past is rendered through particularly fine divisions of time, including an immediate past (anteriority), a recent past, a past of yesterday, a past of several days ago, and a past of former times. The trouble is that full use is not always made of these subtle distinctions in everyday speech; they exist in a "passive" state, but rarely form part of the "active vocabulary". If it is a simple matter for any craftsman, whenever he wishes, to explain accurately and clearly what takes place during the different phases of his work, then there is no denying that at the non-specialist level - to which future teachers and their pupils belong - little use has yet been made of the opportunities for describing technological procedures.

This is an educational question. In order to recognise that this is an educational question, one need only study the cognitive non-verbal transmission (mutism) of techniques in the teaching of traditional crafts. It seems clear, in fact, that verbal language is not the preferred medium in the traditional context when it comes to transferring knowledge or skills of a technical or scientific nature. Learning occurs mainly through reference to an example, to a first model, and through practical encouragement at the right time and place. The future craftsman in a certain sense identifies physically with the master craftsman whose work he observes. There are few questions or none at all, few or no explanations (I do this, because if I didn't... If I did this, I'd... That's why before you... you have to... etc.). The learning takes place through constantly repeated trial and error; it is gesture that is the main teaching tool in the relation linking the traditional artisan and his apprentice. It must be understood that within this didactic relation the roles of apprentice and master are clearly ordained in advance. The transference of skills rests on an implicit non-verbal basis, and the integration of the apprentice into the social group does not involve his showing his capacity in relation to a norm by virtue of verbal performance, which is considered to be superfluous.

The situation is not essentially different in certain modern educational contexts in which an African language serves as the means of communication. This may be easily confirmed by attending the practical exercises held in the craftwork centres where pupils are introduced to wicker-work, pottery, shoemaking, woodworking, arts and crafts, etc. Here too, questioning, if allowed at all, is not the rule. Naturally, the craftsman, or crafts instructor, would be perfectly capable of giving a verbal explanation of the different stages in the operation if he performs, and his silence is not due to insufficiency of language but to an attitude justified by a cultural tradition.

It would doubtless be wrong to exaggerate the import of these observations made in surroundings not necessarily representative of all African environments, but, on the
whole, direct observation in situ has shown that this is indeed what happens.

If the European languages have over the centuries developed registers for Western science and technology, it is because the philosophy underlying the methods of transferring knowledge, and of acquiring it, have necessitated the parallel progress of conceptual operations, the vocabulary in which they are expressed and the syntax linking the various mental units together. It would be utterly useless to attempt to show the superiority or inferiority of these various attitudes which are directly reflected in linguistic habits. Each responds to a philosophy whose justification lies deep in the realities of the environment. This explains why the pupil or student who has learnt logical operations in a European language is better able to describe a technological process in this language than to convey the same process in his mother tongue.

Furthermore, the notorious cultural variability of the concept of "technical object" gives rise to the most unexpected misunderstandings between the "African attitude" to the system of such objects and the analysis of purely technical functions, in the balance between the objects' technical properties and their expressive or aesthetic value. This occasionally results in an objective distortion between the reality and the verbal expression thereof. Nevertheless, insofar as the African languages are called upon to take over fully the functions that customarily devolve upon languages of instruction, and insofar as active teaching methods involve the child directly in the acquisition of skills and make free questioning and spontaneous expression the basis of his participation, these languages must place on offer their full potential not only in the registers of traditional expression but also in the verbal formulation of cognitive and operational experience. Sooner or later, the teachers will have to start dispensing part of the technology and science syllabus in the new language of instruction, once an official decision has been reached on this matter. In order for its introduction into the syllabus to be justified, the African language adopted will need to be able to convey technological and operational subject-matter with even greater effectiveness and economy than the European language formerly used. It is, therefore, necessary to undertake appropriate applied research in this respect in order to "prepare the ground".

The function and the tasks of teacher training institutes. The teacher training institutes will aim at clarifying, through use of the African language, the descriptive framework of different mechanical activities which are commonly performed in the environment: changing a bicycle wheel, operating a weaving-loom, etc. Using suitable diagrams, drawings and photographs (when it is not possible to work on the object itself), an explanation will be sought of the system of weights and levers in the construction of traps as made by village children for catching small animals: the children will also be helped to understand and describe in words the various stages involved in building a hut or house. They will also be asked to explain, in their African language, the mechanism governing the working of the toys they make and play with (small cars, dart guns, etc...). On each occasion, the relations of cause and effect should be clearly explained.

Naturally, the training institutes will always be ready to enlist, for their lectures and practice classes, the aid of trained craftsmen and mechanics in exploring novel means of identifying in word, those factors which make for successful performance of specific operations in their particular field of work. In this way, the trainee teachers will themselves be encouraged to analyse and explain the logical connections and linking-devices characteristic of each mechanical process. Experience has shown — and we have explained why this should be so — the difficulty of eliciting verbal explanations for mechanical processes. The children — and even the future teachers — tend to express themselves in a speech which has little logical connection, to juxtapose co-ordinated elements, to use the code of gesture or mime as a substitute for the expressions of connection and relation which they are unable to find in the African language. In such instances, reliance on the European language is clearly a ready temptation for student and schoolchild alike. This recourse to the European language will, naturally, never be accepted, unless as a temporary device designed to help people formulate their concepts in terms of the African language itself.

These training methods and activities will be of great assistance in bringing to light the considerable logico-structural potential inherent in the African language of instruction, and will ultimately lead to the creation of new language habits which will enable the teachers and the children to use it effectively in all the technical activities included in the syllabus.

The Appendix contains several lesson plans devised by trainee teachers specifically to serve as introductory material for technological courses in African languages. These exercises are designed to accustom the teachers and pupils to making active use of the logical patterns and expressions involved in reasoning. The objection may be raised that these are somewhat amateurish procedures for improving the cognitive output of the language. To this we would reply that, sooner or later, this action initiated by the teacher training institutes will, with the successive graduation of trained teachers, finally affect all the teachers in the land and hence all the schoolchildren. And, since the focal point of our work remains the child, and our aims do not extend beyond classroom application, the process now under way has real prospects of "paying off". This action is, moreover, a fine illustration of the way in which teacher training institutes can help in introducing the use of African languages as languages of instruction: it respects cultural authenticity in regard to form and content, makes use of local resources and, in seeking solutions, draws upon home-grown ingenuity. In other words, it accords perfectly with a technical approach to the problems of language such as might be adopted in a work-shop of intermediary technology adapted to the environment. In this sense, the action we are speaking of is undoubtedly a more effective means of enriching African languages of instruction than would be the publication of twenty specialist articles on the subject.

3.2 The child, the teacher, African languages and mathematics

If there is any subject-area in which the educational capacity of African languages has been strongly disputed, it is surely that of mathematics. Even today, some teachers of this subject blame the poor results obtained in their classes on the "lack of logical spirit" in their pupils, and seem quite prepared to hold African languages responsible for this deficiency. But what is happening in reality? It is possible, even probable, that the pupils balk at logic in a form such as that conceived and imposed by the teacher, but this does not necessarily mean they are averse to other forms of logic better adapted to the cultural area to which they belong. There is, after all, no serious reason for thinking that a
cultural tradition which evolved in the West from Aristotle under the name of "mathematics" might not be encountered in different forms in other cultures and other climes. It would be evidence of the most shocking ethnocentricity to claim that logical categories are universal and that all except those recognised by Western cultures are worthless. This antiquated attitude actually corresponds closely, mutatis mutandis, to the one-time belief that the grammatical categories of the Indo-European languages should be considered as universal models. As we know, the linguists have long since rectified this erroneous assumption... It is certainly true that no culture can afford to dispense with logic as a means of understanding mathematical truths, but the Cartesian route is not the only one that leads to this end...

Once again, the problem is pedagogic. All communities, through their languages, recognise the values which signify numeration, but some differ from others in the mental constructs through which these values are apprehended. Why, in Africa, should one want to teach the notions of similarity, identity, equality, degrees of comparison, etc. through imported methods and approaches? Although little research has yet been completed on this question, there is every reason to believe that the African pupil gains a grasp of these concepts more rapidly when following his own natural thought patterns. Older teachers will doubtless recall the demonstration strategies they were advised to use for introducing the study of numbers. The teacher suspended three sticks from a string stretched in front of the blackboard, and then, with an expansive and clearly visible gesture, added another stick, saying $3 + 1 = 4$. The pupils then practised with this technique. This approach to counting is still to be found in some text-books which are devised in Europe but are meant for use in Africa, but is it suitable for an African introductory course? Could one not imagine that it might be preferable to begin with the number five, which is already intuitively grasped by the children of the cultural background in which we are working, and, by means of various operative strategies, render it easier to understand the number four by derivation from this basis?

Clearly, we are not proposing that mathematics should be reinvented, but it is undoubtedly necessary to rediscover and identify the logical structures which underlie the mother tongues and govern the proper development of mathematical thinking in the African child. Indeed, although the mathematical result may be transcultural and universal, the methods by which this result is attained are none the less dependent on cultural factors. And the alarming shortage of mathematical and scientific graduates from certain African universities is indisputably the consequence of classroom methods ill-adapted to the teaching of mathematics. It should not, at all events, be regarded as the outcome of a facet of the African mentality, supposedly hostile to scientific analysis and prone, in consequence, to sweep aside the concepts of logic and mathematics...

A change of language is not enough. It would be a mistake to think that the mere use of an indigenous language of which the African child has firm command will in itself suffice to solve difficulties of comprehension in mathematics. What matters here is not so much to know what African name should be given to the concept of a square, a rectangle or a million; what matters is to know what devices and comparative models can be used to render these concepts tangible and ensure that the pupils finally master them. In the long run, it is the operational embodiment of the concept which counts more than the name given to it. Consequently, in the teaching of mathematics, not only must African languages be introduced but also African ways of reasoning.

It would, in fact, mean breaking off the reform half-way if one were merely to replace foreign formulations with indigenous ones, while conjointly retaining all foreign patterns of reasoning. It may rightly be wondered if the foreign languages would not be better suited to this use... The truth is that language and conceptualization form an indissoluble pair. If in reasoning one wishes to work from European models, it would be preferable to retain European languages for teaching mathematics; if, on the other hand, one wishes to open this discipline to the logical lines of thought natural to the African child, no better medium than the African languages can be adopted. We must be clear about the fact that the way in which a language system functions is in itself the reflection of a certain mode of logical thought. Separating the content from the container, i.e. the thought from the language by which it is conveyed, is to sever the links which bind together form and matter and, in the case in point, guarantee the authenticity of the mathematical approach.

The function and tasks of the teacher training institutes. The work of the teacher training institutes is easily derived from what has just been said. The institutes' function will be to promote pedagogic research in order to ensure the appropriateness of the language used in mathematics classes and to identify the first demonstrations of mathematical thought in children, and the natural lines it follows. For the teachers and future teachers, this work will afford an excellent opportunity to clarify and reorganise their own mathematical assumptions. More than anywhere else, what is require here is to be able to "see clearly".

It is, therefore, most fortunate that several specialised university institutes established in Africa have recently initiated a research programme in studies applied to the teaching of mathematics. Although mainly concerned with secondary education, a good deal of the research work is being pursued along lines which are equally relevant to children of primary-school age. The teacher training institutes could collaborate in this research not only by welcoming experimenters in this field to their practice classes but also by themselves undertaking part of these studies, whenever they can be centred on the child, the teacher and African languages. In these three areas, the teacher training centres, by their very nature and function, are in a position to offer specific and invaluable aid to the specialised institutes.

Here, then, are some actual examples of the research studies at present being pursued by several African university departments and research institutes¹.

1. Studies and investigations into the expression of certain concepts by children, e.g.:
- order
- quantification and negation
- deduction
- cause and effect relations

One of the aims of this research is to bring out some of the relations between the mother tongues and mathematical formulation.

¹ This information is drawn from the bulletin of mathematics teachers (March, May, and September 1977 issues) distributed by AUDECAM (University Association for Educational and Cultural Development in Africa and Madagascar). The lines of research indicated here were determined by Mr. Deledicoq, mathematician and Director of the UER de Didactique, Université de Paris VII, and by Messrs. Mathurin and Koehl, specialists in mathematics.
In order for this research to be properly carried out, the mathematicians would like to "devise questionnaires in collaboration with the non-mathematicians involved". The future teachers and the staff of the teacher training institutes are those primarily concerned, hence their participation in the undertaking would seem to be a matter of course.

2. Mathematical aspects of local games and traditions

The aims of this inquiry are to promote at the pedagogic level the "understanding and expression of certain concepts and to provide examples of their use: to extend our knowledge of the psycholinguistic development of the African child". The practical tasks include:

- the compilation of games presently played:
  - behavioural imitation games, guessing games, puzzles and riddles, strategic games, etc.
- the study of local counting systems and methods of calculation
- the mathematical representation of certain play situations.

We know the importance of the part that may be played by the trainee teachers and teachers in compiling, selecting and analysing this information. All these operations, in fact, demand great willingness to co-operate on the part of the investigation team and perfect integration into the language community involved.

3. Aids to understanding of mathematical language using non-verbal means

The aim of this research project is to provide the teacher with a set of techniques which will enable him to complement his verbal explanations and avoid certain errors of understanding linked to the language.

The intention here is clearly to eliminate the inherent ambiguities in the language of communication - be it European or African - by making more systematic use of the formal language based on signs and symbols. But is the formal language at present used in the classroom culturally neutral? Should not a new language be reinvented on the basis of a symbolism that is more effective because it is more appropriate? We clearly cannot give an answer to this question, but, as the organisers of the research have stressed, "the use of such a language forcibly raises the crucial problem of advanced training for teachers in these areas". How can this advanced training be provided unless there is direct participation? This is the point to which we always return...

4. The connection between "African language and mathematics"

Particular interest attaches here to the following tasks, which are matters of immediate concern to the teacher training institutes responsible for devising and putting into practice new educational methods associated with the introduction of national languages at school:

- to establish the linguistic elements (lexical, syntactic and semantic) of the mother tongue (or habitual language) which govern the development of the child's mathematical thought;
- to identify the procedures for verbal expression linked to the child's operational activity in the field of numbers and relations: the verbal expression of his relationship with the environment, of a particular practical, mathematical or logical situation, etc.

It will be noticed that some of these research projects do not essentially differ from those singled out by the directors of teacher training institutes at their meeting in Kaduna (Jan. 1976). The fact that they have been judged necessary both by the teacher training institutes and by the specialist institutes proves - if proof be needed - that they do indeed represent a decisive and necessary step towards the development of a pedagogic theory and practice designed to ensure the unhindered cognitive growth of the African child.

D. PROBLEMS ASSOCIATED WITH THE DEGREE OF PROGRESS ACHIEVED IN APPLIED RESEARCH

The nature of the problems

Clearly, the languages adopted for use in the school curricula are in varying stages of readiness to fulfil the function assigned to them by the government authorities. They may or may not have been subjected to analyses of varying intensity. Between the two extremities of poverty and richness of descriptive power all sorts of levels may, and indeed do, emerge. On the other hand, it is absolutely necessary that the educational authorities have at their disposal a complete and reliable picture of the situation in regard to the new language of instruction. They will then be able to base their judgement on objective and valid information in order to implement a reform project which will provide a satisfactory solution to the various problems they have noted. The different kinds of situation that may be encountered may be grouped under the following headings:

First category: The new language of instruction has not been scientifically studied.

This category concerns the limited, but not entirely hypothetical case of a language which has not yet been subjected to the analyses that are needed in order to throw light on its system. This means that work still remains to be done on collection of usable data, identification of the central language of reference in relation to its variants, and adaptation of the entire lexical and syntactic system to the modern scientific and educational context.

Second category: The new language of instruction has been subjected to research of a more or less scientific nature.

These approximative studies have generally been carried out by members of an older generation who lacked the thorough methodological training necessary for an objective analysis of the facts of language as defined in an African context. These studies which, from a strictly technical point of view, do not match up to modern scientific norms and requirements, are often characterised by the almost classical shortcomings of studies of this kind. Thus, for instance, the voice tones are either not studied at all or badly studied, the grammar sections follow the main lines of delineation found in the grammars of European languages, the phonemes are identified in relation to their European "equivalents", etc. These investigations derive from a universalist conception, and project onto the African languages the grammatical, semantic and phonological categories of the languages of reference. Taken as they are, they obviously cannot serve as a basis for the production of educational material.

Third category: The new language of instruction has been subjected to incomplete scientific research.

At present, most African languages belong to this category. Generally speaking, one thesis (or several theses) has been
devoted to an important aspect of the language (e.g. the phonological structure), but the other features are only sketchily examined, or even not studied at all. In other cases, one or other of the dialectal variants may have been studied objectively, but without any attempt being made, within the language group selected, to identify or classify the common functional areas in order to provide a coherent description of a single language which could be called upon to serve as a vehicle of instruction.

Fourth category: The scientific research into the new language of instruction is almost sufficient.

As the result of intensive studies carried out by the institutes of linguistics and by individual research workers, this category is regularly expanding. Unfortunately from our point of view, most of this research work is submitted in the form of university theses or highly specialised reports, with little concern for classroom application. The reports, designed for a restricted readership, are couched in a language of their own, with special jargon and terminology often peculiar to the author. This means that the teacher can rarely make use of these studies in his work. It is true that most of the time these research studies are written for the thesis adjudicators and do not have any immediate practical aim. Their object is to describe certain facts, and they only rarely set out to find ways of enriching the language or of adapting it to the existing educational and scientific context.

Fifth category: Full scientific study has been made of the new language of instruction. This is clearly the most desirable situation, but it is also exceptional. Here the teacher can make ready use of properly adapted educational material: basic grammars, glossaries, introductory readers, collections of texts, etc.

It is clearly not possible within the scope of this paper to examine all the specimen cases of national languages which have recently been introduced as languages of instruction, but each institute could, by reference to the foregoing explanatory notes, determine the requirements of the situations with which it is confronted, and direct its specific action towards diminishing the deficiencies observed.

Tasks to be performed by the teacher training institutes

Bearing in mind the various situations outlined above, the tasks of the institutes would appear to be as follows:

1. to compile the linguistic data at present lacking for the new language of instruction;
2. to process this data with a view to identifying and comprehensively classifying the language of instruction;
3. to adapt the language and bring it up to date in order to make it thoroughly fit for educational use.

1. Compiling the missing data

a) The trainee teacher could act as an agent in collecting the missing linguistic information. The compilation of authentic data forms the starting-point for all linguistic research work of whatever nature it may be, and any serious descriptive analysis must be based on correctly assimilated language facts. During the longer school holidays, the trainee teacher could go out with a tape-recorder and make recordings of isolated utterances and series of words, using a questionnaire form with specific points, which would be obtained before hand from the institute directing the research. The purpose of this is not to make a systematic recording of all and everything; one must bear in mind the state of progress of linguistic research. With the exception of particular instances, the research workers know what they are looking for and are equipped with "models" which have been devised to restrict the scope of the investigations. The subsequent transcription into the working language and the literal translation of the body of material obtained are, likewise, phases in which the trainee will be invited to participate, depending of course on his ability as a speaker and on the various linguistic and anthropological dimensions of his culture.

b) The trainee can also be involved as an informant for the language under study. The future teacher possesses all the qualities required of a good informant. His pronunciation is good and he does not stammer or lisp, otherwise he would have been disqualified at the entry examination for the institute. Furthermore, his professional motivation, and his linguistic and general knowledge, distinguish him from the traditional, often illiterate, type of informant and make him a valuable collaborator for the research worker to whom he can offer a subjective but interesting point of view on the language being studied. Thanks to the trainee teachers, the linguist can at last find - within the training institute itself - informants with a mastery of the principal dialectal variants encountered in the language of instruction concerned.

c) The trainee can assist in the choice of informants from his own linguistic community. The research worker cannot be consistently satisfied with recordings made only in the institute. The information collected must be matched against that provided by other informants from the same environment. Such comparison will make it possible to validate or invalidate the first results obtained. The student teacher can "prepare the ground" in his own environment and help the research worker to track down informants of the requisite quality in the linguistic community under consideration. If the research worker is unable to visit the area concerned, the student could himself make contact with the informants and even, if he has a form of questionnaire devised in advance, go on to record the necessary information.

2. Processing the data in order to identify and classify the language of instruction

Applied research into the introduction of an African language as language of instruction or of the literacy campaign is chiefly characterised by simultaneous study of the dialectal variants - particularly the lexical ones - of which it is currently made up. In practical terms, what must be done - let it be repeated - is to identify and classify, within the linguistic group concerned, the common functional areas, in order to provide a comprehensive description of the core language for educational use. This work is absolutely necessary because, if it is properly carried out, it will make possible the distribution of a single version of school text-books in all schools throughout the land. There are few countries indeed that can afford the luxury of producing text-books on "dialect" lines. Analytical and comparative study of the various dialectal forms is thus of capital importance in the process of making a widely-spoken language a means of instruction.

a) The student teacher can assist in the determination of similarities and differences. Whether dealing with languages of the same stock that have evolved along divergent
paths or with the same core language that has been broken up into subgroups which have reached different stages of evolution, the students, if provided with suitable forms of questionnaire, can make parallel studies of the linguistic data already identified in the system of the language concerned. And from those first observations they will be able to formulate certain initial working hypotheses. Their close knowledge of the language (which is both subjective and, at the same time, placed in a cultural perspective) gives them the authority to do so. These hypotheses must, naturally, be put to the test of further, more exhaustive research.

b) The student teacher can assist in the formulation of a unified lexical base made up of material representing the different speech forms encountered in one and the same group. The original lexical material of a language is not universal, it is deeply influenced by the natural living conditions and economic concerns of the speakers. The hunter from the savannah, for instance, employs an active vocabulary which is sufficient to describe his own activities but is deficient in words to describe the world of the sea fisherman or even of the hunter from the great forest. The same holds for vocabulary relating to urban life or life in the bush. The active involvement of student teachers in this research will make it possible to cover all the semantic areas involved in identical speech forms, and hence to contribute to the establishment of a single, standard vocabulary.

3. Participating in the process of adapting the language and bringing it up to date in order to make it fully fit for educational use

If the language of instruction adopted is to be able to serve its function as a fully operational tool, it must be capable of conveying the concepts and the realities encountered in modern science and technology. It must, then, be lexically enriched in accordance with its potential and its internal logic.

a) The student can assist in identifying, from factual data, the mechanisms of lexical production (research into the lexical fund peculiar to the language). The vocabulary which is made up of open series, apparently arbitrary in their surface structure but whose underlying structure is in fact logically determined, develops consistently with the needs of the speakers and in conformity with procedures which are now becoming well-known: derivation, syntagmatic fixation, transposition, metaphor, etc. The student teachers, equipped with research forms devised with the aid of specialists, and relying on their own competence as speakers and their knowledge of the language needs of the region, will be able to play a major part in discovering the specific ways in which these procedures are reflected in usage. They may also even discover certain models, certain generative matrices for the formation of neologisms which are specific to the particular area they happen to be investigating. The scientific, technical and educational vocabulary will thus be able to develop and take shape, while at the same time the synchronic characteristics of the language and its internal tendencies towards certain types of evolution will be respected.

b) The student teacher can assist in identifying, from factual data, the criteria for the Africanization of foreign words (research into loan words). In this particular instance, the students will be expected to draw up a list of the procedures for lexical appropriation accompanied by concrete illustrations (confusions of meaning, slurring, the reduction of difficult groups to suit a language habit in the mother tongue, the occurrence of epenthesis, etc.). While carrying out these studies, care would also be taken to look out for words or expressions that had fallen into disuse and which might be reintroduced into the active linguistic stock either with their already established meaning or as vehicles for the conveyance of new information. It is in fact pointless to attempt systematically to create new words or to resort to superfluous loan-words when the language itself has the power of generating the signifiers required in order to adapt to the requirements of evolution.

What should be done?

Space is lacking to give concrete examples for all the above mentioned tasks. We shall, however, by way of illustration and as a practical demonstration, examine the tasks described under item 3 above, corresponding as they do to pressing needs experienced in regard to almost all African languages. Even if vocabulary remains a relatively closed system, mainly determined by the natural conditions and the economic preoccupations of the speakers' lives, for the linguist it is none the less made up of open series capable of accommodating and absorbing foreign elements. The student who, as a speaker, has mastered the notional and semantic content of his mother tongue is able to offer the linguist invaluable aid in determining the processes through which new elements are acquired and showing how such processes can point the way to controlled lexical production in areas where the deficiencies are evident. This assistance will be rendered within the framework of initial research into borrowings by the mother tongue, coupled with parallel research into its own lexical fund.

1. Research into borrowings by the mother tongue

a) The objectives of this research:
The identification of borrowings (well or badly integrated), and also of the system for the creation of neologisms in the mother tongue, in order to extract systematic principles applicable in education.

b) General remarks on the approach to be pursued

The students' participation will be specifically concerned with research into the factors of influence and interpenetration between African languages themselves, and into productive contacts between the mother tongue and European languages. African languages are certainly not poor in vocabulary; like all languages, they develop and activate the vocabulary that corresponds to their needs. They are, for instance, able to express in a multitude of ways the nuances and finer shades of meaning in social relations, and it would be most ill-considered to speak here of insufficiency or cultural poverty. Nevertheless, these languages can reproduce only the reality from which they derive; in order to render the sense of new notions, they need to resort to various solutions, of which the most evident is certainly borrowings from other languages. In the African languages already studied, most of these borrowings, intended for use in the verbal expression of new concepts or as means of denoting unknown objects, have of course been recorded and classified, but it is difficult to ensure complete coverage in such a mobile and changing domain. With regard to the languages which are still badly or inadequately described, systematic investigation still needs
The student teachers will naturally be free to use their own initiative in expanding this table, and all comments on the origins of loan words, their connotations in the borrowing language and the circumstances surrounding their adoption or use will be provided in the explanatory notes. Obviously the terms in which the research workers will be interested are those which convey new notions or refer to new objects, and are in all cases of foreign origin (match, transistor, electricity, abstract descriptive terms, general concepts, etc.). Questionnaires drawn up in a European language will be refashioned and readapted to the system of the borrowing language.

At first, the terms collected could be grouped by topics or even listed in alphabetical order. Once the compilation has been completed, the various elements will then be classed according to the categories suggested in the preceding table in order to permit rational exploitation. Since the geographical, historical and cultural contexts all bear closely on lexical assimilation, it is clear that interdisciplinary cooperation will be necessary among all those at the teacher training institutes who are concerned with disciplines in the domains of sociology, ethnology, philosophy, economics, technology, etc. Indeed, all branches of activity can, through liaison with the specialist institutes, contribute towards establishing a basic stock to express which adequate terms have had to be provided in the African languages, to cater for contemporary needs. The environmental specialists and linguists will work together in listing the terms in question, indicating what gaps remain to be filled and where local circumstances need to be taken into account. The students' co-operation is not limited to actually camping out this research; they will also be asked to assist throughout the planning and organisational stage.

c) The practical methodology of the investigation into lexical loans:

1. Taking as its starting-point the needs defined in the field of lexical research (particularly those defined by specialist institutes), an interdisciplinary study group elaborates the form and content of the questionnaires.
2. Student teachers assume responsibility for assembling documentation on the specific contexts (geographical, historical, ecological, religious, etc.) within which the production of lexical items derived from foreign languages has developed and is still developing. This documentation will take the form of replies to specific questions asked in the introduction to the questionnaire and (or) open comments.

3. The student undertakes research in the language community of his home background, using the questionnaire provided, which he himself will have helped to devise. Through his competence as a speaker of the language under study and because of his own linguistic experience, the student will be able to amplify the part of the questionnaire in which the loan items are presented according either to topics or to alphabetical order. Each loan recorded will be accompanied by comments on connotation, origin, specific conditions of use, etc.

4. The student undertakes the classification, ordering and initial presentation of the data collected. This work cannot be envisaged without the assistance of specialists, and it is expected that the student would have already acquired some theoretical and practical competence in dealing with the problems inherent in the phonology, and also in recognising the characteristic features of the borrowing language in this respect. Phonological structure is, in fact, one of the moulds or templates which confer on new words their eventual form. The following specimen schema will in most cases afford a means for rational classification of the items assimilated into the lexical fund of the borrowing language (the internal classification and most of the examples are taken from a study by P. Vogler on French loans in Baoule):

| A. Phonetic loans well assimilated by the borrowing language | Expressions which have become well integrated into the borrowing language and which function normally according to its usual rules. |
| B. Loans bodily assimilated by the borrowing language | Expressions which have not been incorporated into the system of the borrowing language and which change their function and meaning – depending on speaker and context – within one and same linguistic community. |
| C. Loans resulting in composite phrases or circumlocations | Explanatory and circumlocutory expressions in the borrowing language for concepts or objects conveyed in the donor language. These expressions may prove to be well or badly assimilated, depending on how they are used. |
| D. Loans rendered by means of onomatopoeia | Expressions deriving from the dominant physical characteristic or that which is conceived as such – of the object or person designated, e.g. "KUTU-KUTU", motor-car. |
| E. Other processes | |

The effects of phonological structure in determining the form assured by lexical units borrowed from a donor language when such units contain associations unacceptable to the borrowing language

A. Assimilation of structures.

1. Vocal epenthesis
   e.g.: S.C.O.A. asikoa
   balcon baligu

2. Consonantal epenthesis
   e.g.: montre comptable
   montle kontablu
3. Suffixation

e.g.: u : cartouche katusu
i : garage galasi
c : pneu piné
a : sucre sukla

4. Prefixation

5. Disappearance of a phoneme

Phonemes may disappear when a consonantal group is not tolerated by the borrowing language. Thus, in Baoule and Duala, the sequences V C 1 C 2 V (i.e. vowel + consonant + consonant + vowel) do not exist. They are, however, frequent in French; thus in the assimilation of a term involving such a sequence, either C 1 or C 2 could disappear.

e.g.: cartouche katusu (C 1)
veste vesi (C 2)

B. The assimilation of terms

In this case, the consonantal sounds and/or the vocalic sounds which give rise to difficulties in the adopted words are reduced to more habitual neighbouring sounds or to sound sequences of more probable frequency in the phonological system of the borrowing language.

e.g.: r crayon klinio
crayon klinio
écrité klée
ecrité klée
y i : fusil fiz
y i : fusil fiz
œ e : manœuvre mandeflu
œ e : manœuvre mandeflu

It is important to mention that all these operations, unconsciously performed by the speaker, can occur in the same loan word; thus in the Baoule loan-word galazi, one encounters both suffixation in i and consonantal assimilation (z) — the source word for this loan being garage.

Phonetic effects, i.e. those due to internal phonetic tendencies peculiar to the borrowing language, and not caused by interaction between the phonological systems of the donor and borrowing languages.

1. Defective registering

e.g.: beaucoup gboko

2. Assimilation

e.g.: machine mazi

3. Metathesis

e.g.: jardin zlade

Here, again, these tendencies may combine, thus helping to make a loan practically unrecognisable.

5. The student then proceeds to group these loan-words, defined and explained in this way, within the major functional categories of the research schema already proposed. This final categorisation will make it possible to extract criteria of feasibility for each of the mechanisms of assimilation described above, and will also help the investigator to define the most productive deep trends governing the process of lexical borrowing.

d) Pedagogical suggestions

The theoretical information given to the students should stress the deep-lying reasons on account of which one language, A, is led to use terms borrowed from another language, B (the need to designate objects, people, places, techniques, new methods, and general ideas, but also the need to establish finer shades of meaning, the need for conciseness and expressiveness, the desire to use elegant variants which will set one off from the norm — as when a Frenchman speaks of going off for "le week-end" rather than for the "fin de semaine", etc.). Likewise, it should be clearly explained and convincingly demonstrated that the form eventually assumed by a borrowed foreign expression is not influenced by the phonological system alone, and that the mutation equally concerns accent and morphology. Concerning the latter point, one should demonstrate through examples that a borrowing language A generally incorporates its loans from language B into its most regular and productive word-classes (thus in French, the verbs borrowed from other languages are nearly always reduced to the model of the first verb group (chanter) e.g.: shooter, zoomer, etc.).

e) Other lines of work

The research work we so strongly urged in the section on the practical methodology of the investigation relates to linguistic situations which do raise genuine problems. The students will, of course, be associated with this work only at elementary levels commensurate with their abilities, but nevertheless these are not mere scholastic tasks. They are studies designed to be developed and used. It is therefore appropriate that the data provided by the inquiries should be analysed with a view to actual classroom use. The working parties, under the supervision of specialists, would be asked to elaborate the "grammatical rules" governing lexical assimilation and to endeavour to extract a systematic set of principles pertaining to the information gathered. With this in mind, we present below a number of points which could be amplified by the groups of students, basing and documenting their analysis on the material collected:

1. How does the speaker of language B proceed in delimiting a lexical unit borrowed from language A? Is this loan made in the same way by all speakers of this language? How is the loan made at the extremities of the linguistic chain and in the intermediary variants? How is the presence — in a European donor language — of articles preceding the noun, or of prepositions which the speaker may feel to be affixed to it, accounted for by the borrowing language? In this connection, and in languages which borrow from French, a distinction should no doubt be drawn between:
   - the agglutination of the definite article, elided or non-
   - the agglutination of the partitive article (often felt by the
   - the non-speaker to be part of the noun);
— the agglutination of certain prepositions (e.g.; Fr. en). While collecting their material, the students should also record and establish all instances of aberrant, accidental or esoteric loans, which might reveal tendencies that should not be discounted.

2. How can an African language which is marked by a system of punctuated tones transpose the lexical units of a language characterised by fixed accents, such as a European language?

3. How are borrowed nouns treated with respect to gender? What are the criteria for distinguishing between masculine and feminine gender for the loan words?

4. While collecting their lexical information, the students will be asked to pay particular attention to words under-going Africanization, and especially to the question of shifts of meaning where the words are loans as far as form is concerned but have acquired a meaning that differs radically from their initial meaning in the source language. These shifts of meaning may vary from one region to another in the same country, depending on the frequency of the situations to be described. Here, for example, are several nouns undergoing Africanization in Ivory Coast:

<table>
<thead>
<tr>
<th>Source language</th>
<th>Borrowing language</th>
<th>New meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>le goudron (tar)</td>
<td>gidro (guidron)</td>
<td>(the) tarred road /whole country/</td>
</tr>
<tr>
<td>le compteur (meter)</td>
<td>kote (conté)</td>
<td>(the) taxi /Abidjan-Bouaké/</td>
</tr>
<tr>
<td>les bagages (baggage)</td>
<td>bakas (bakass)</td>
<td>bush-kit /Northern zone/</td>
</tr>
</tbody>
</table>

Many terms also become incorporated with different semantic values in the local dialects (camion = car; bafi = 2 h.p. Citroën, etc.). If already in the strictly informative link between content and expression, i.e. at the level of denotation, the introduction of loans is accompanied by distortions of a semantic order, the disruption is even more evident when it comes to the connotations making up the entire subjective and emotional corona attached to a given word within a given culture.

It is a matter of urgency to fix the exact meanings of these words as they are at present, before they disappear or become transformed. In this way, we shall be enabled to lay the basis for the diachronic study of lexical information, which is still generally lacking on account of the absence of back-up material. All the same, it is clear that decisions as to norm and usage (with a view to the production of dictionaries for classroom use) should be envisaged only at the level of specialist institutions responsible to the national education authorities, in conjunction with the literacy training or adult education services which are already using or will be using the languages of the country.

2. Research into the mother tongue's own lexical fund

a) Introductory note

Here, too, the background material for the research will be provided by information collected from field studies, as no sufficiently comprehensive overall study has yet been made of the languages that concern us and as much still remains to be done in order to extract a systematic set of principles for these languages which could be applied to the production of grammars intended for educational purposes. In order to gather such information it will be necessary, once again, to devise in advance appropriate questionnaires. These must not be a kind of "catch-all", encompassing, at all costs, the entire range of human activities. If the frame of reference is too general, all that is peculiar to the culture of the ethnic group in question will be automatically obliterated. This would mean "stripping" the culture of all its distinctive features. The true questionnaire is the one which will give maximum scope to the needs and realities of the environment, taking into account the mentality of the speakers and working gradually towards broaching the most delicate and intimate subjects. With regard to this last issue, the students' suggestions and (why not?) their advice will be given the closest attention: since they themselves belong to the language community one of whose distinctive features one is trying to elucidate, they appreciate better than anyone the possible reticence that may be encountered in touching upon certain areas of expression and communication.

The trainee teacher, then, will be expected to carry out proper taxonomical studies in areas where the deep-rooted individual characteristics of his mother tongue are exemplified. Even though these taxonomies may not always conform to scientific criteria, their interest is undeniable: apart from the purely linguistic information they provide, they also provide insights for the ethnologist, the sociologist and the teacher, through precise identification of objects or notions by which the environment can be correctly interpreted. The somewhat empirical conceptual divisions employed by languages often differ from those employed in scientific classification, e.g. in botany, zoology, etc. There is certainly no need to drive the students deliberately in such specialised directions, unless, in particular cases, the student happens to show a clearly manifest motivation which springs from his teaching interests (examples of this will be seen in the last chapter, dealing with the development of teaching material for the classroom). It would, however, be a pity not to use the knowledge they may have in any areas of specialization in order to fill, without more ado, gaps in our knowledge and, through their deep acquaintance with the environment, contribute further information.

b) The aims of the inquiry carried out by the students

To gather a corpus of lexical data, as plentiful and varied as possible, in order to identify and elucidate the mechanisms of lexical production peculiar to the new language of instruction, and so make possible the extraction of a system of principles suitable for educational purposes.

c) Practical methodology

The questionnaires used by the student teachers will relate to well-defined semantic areas, but considerable scope will be left for personal initiative and even for empirical research based on the intuition of the observer-participant. This investigation will provide extra background material for the linguists — whether comparative linguists or Africanists —, the teachers and the specialists in the humanities and social sciences; this is why theoretical and functional interdisciplinarity will be the working rule in the preparation and conduct of the inquiry, as well as in the use to which the results obtained are put.

1. The phenomena of agglutination, of which we have here given only a few examples, are to be encountered not only through observation of the ways in which language loans are made. They may also occur throughout the genetic processes by which the child acquires his mother tongue, particularly at the moment when his own first general hypotheses are confronted by the actual functioning of the language used around him. This is further evidence of the fruitfulness of the psycho-pedagogic approach we have been advocating throughout this work.
Here, by way of example, is a preliminary lexical investigation of Adioukrou, carried out by G. Hérault of the Institute of Applied Linguistics at the University of Abidjan (1971).

After introductory observations on the Adioukrou tribe and an explanation of the plan followed in gathering the material, the investigator presents his results as follows:

"I. — Agricultural economy
(plant crops)

1. rice
saka: This term is not specific to the Adioukrou. It is encountered throughout the central, west-central and southern regions of Ivory Coast.

Saka ann à l à l
rice is fire on
the rice is cooking

2. millet
maj: Millet is no longer eaten or grown in the Adioukrou country; millet grain is imported for feeding poultry.

3. cassava
nbosi: (mbosi) plural: s — nbosi (nmnbosi)
This is the generic term.

nbosi ur — em n — im
1 2 3 4 5
cassava (1) to dig up (2) in (3)
they/the women/ (4) to be gone (5)
the women have gone to dig up the cassava

(The author then gives seven other signifiers he has studied for seven other varieties of cassava.)

4. onion
ganga madzàni: the pepper of white

2 1
(This is a fine example of lexical creation from the word fund of the mother tongue; rather than borrow a foreign term, the language preferred to create a composite expression or periphrasis from its own system of word production. Thus a "fixed phrase", which is perfectly comprehensible, makes it possible to render the meaning of an extraneous object.)"

By way of illustration, Professor Houis would select the following topics for inquiries into African languages: "Agricultural economy (crops); agricultural economy (poultry, livestock); domestic life; non-agricultural activities; public life; space and time; the body, the senses, hygiene and sickness; fauna and flora; man and kinship; spiritual life and religion; verbs (actions and states of being)." The order or the topics of inquiry is not fortuitous; it follows a progression that closely matches that of the psychological approach that develops between the interviewer and the interviewee during the course of an inquiry. It is quite evident that with a psycho-pedagogic outlook such as ours, activities which are related to teaching, to the traditional education in an African environment, and to all that involves the school and the classroom, the needs and interests of the children, etc., will be systematically favoured. Even so, Professor Houis' schema can accommodate the bulk of the school syllabus, and it is therefore an excellent basis from which to start.

There are clearly certain aspects of reality which are distinguished with varying shades of fineness in the different languages in accordance with the needs of the speech environment. Thus, for a French speaker, the "cassava" would be an adequate rendering of all that this term represents, yet for the Adioukrou in the inquiry just mentioned, no fewer than eight signifiers are to be found for this same entity! In regions where rice is cultivated and where crops are grown, one must expect to encounter the same lexical proximity. The "language net" of which G. Mounin speaks is in fact a mesh of wider or narrower openings which serve to enclose and apprehend reality. In order to 'trap' the realities of daily life, language uses a net — like the fisherman's — with a mesh of varying size. In the same way, one might also divide countries, or even regions, into micro-regions on the basis of the major geographical divisions (forests, savannah, coastal belts, lagoons, sub-desert areas, etc.), into sociological conglomerations (large town, small town, village, hamlet, etc.) or into zones corresponding to the activities exercised (trade, fishing, hunting, manual labour, crafts, etc.). A questionnaire specifically devised for each community investigated could be envisaged. The great number of trainee teachers available from all parts of the country makes it in fact possible to cover practically all sectors.

This initial research, which at a more advanced stage will make it possible to identify the lexis of the language, will be proposed in the same form to several students. This will enable us to go beyond the mere collection of dialectal variants. Likewise, by analysing at a more advanced level the similarities and signs of mutual influence between lexical material relating to the same family of speakers, results may be obtained that are scientifically more far-reaching and methodologically more sound.

Attention should likewise be given to certain specific features of the lexical inquiry, for example by undertaking research into patronymics and toponomy and entrusting these studies to the students. An investigation into the lexical fund would not be complete without such research. African names "speak": generally, they reflect a religious, human or physical situation, they derive from natural or supernatural realities, and they attempt at times to define the truly human reality or that of intermediary creatures or spirits. In this world so rich in nuance, understatement and taboo, the outsider makes his way with difficulty; but, as the students are organically integrated into their home environment, they may be expected to provide a rich yield of information of practical use to the ethnologist, the historian, the teacher and, of course, the linguist.

At present, as far as African languages are concerned, it would seem that it is in regard to vocabulary that there has been least systematisation of the problems involved, and it is here that most remains to be done. There are numerous reasons for this, in particular the lack of etymological dictionaries and definitive reference works capable of providing information on earlier states of the language and of covering all linguistic areas. Added to this are other circumstances, such as the limited funds and personnel that have so far been

1. This inquiry was conducted on lines proposed by Prof. M. Houis of the Institut national des langues et civilisations orientales, Paris.
available to research workers, the impossibility of their staying long in the terrain, and the remoteness of the linguistic zones of interest (which are often difficult to reach from the capital, where the university is situated). Moreover, the fact that the best documented languages become daily richer through contact with the ever-encroaching modern world, which is itself evolving, and that the lexical fund of the African languages has to be continually brought up to date, is yet another reason for drawing research workers' attention to the laws of African lexical evolution. For is it not true that in all sectors knowledge of the laws of evolution enables one to control the unchecked flood of facts?

In our opinion, it is precisely in this area, so changeable and so difficult to grasp in all its specific detail, that student teachers can be of invaluable assistance in bringing to the work an inherited understanding of their language deepened by personal research on their home ground, and thereby making it possible to a certain extent to do without those dictionaries which do not yet exist. Owing to the strength of their numbers and the diversity of their backgrounds, these students are a substitute for the great encyclopedia of African regional and national speech, the absence of which is so acutely felt by research workers today.

d) Practical suggestions
Study of the specific vocabulary peculiar to the lexical fund of the mother tongue will be directed along the lines laid down by P. Guiraud: "Every form of lexical creation has its laws, that is, it functions within a set of established conditions. The codification of these laws is the most urgent task of lexicology, and it will entail the compilation of exhaustive reference-lists on the lines of those already produced for the study of phonetics. It is only through such reference-lists that the motivations underlying a specific mode of lexical creation can be revealed in their totality... Every creature, object, and notion is designated according to some attribute, which may be physical (form, colour, consistency, etc.), functional (situation, usage) or circumstantial (place of origin, manufacturer)"1. Student teachers should, therefore, be encouraged to carry out research into the physical, functional, circumstantial and other attributes on the basis of which denominatives are created.

In the light of these principles, L. Duponchel of the Institute of Applied Linguistics at the University of Abidjan shows for instance in his taxonomic study of the names of fish in Alladjan2:

1. That the names of people or places are used in forming the names of fishes;
2. That many fishes are named after other animals, and that these extensions of meaning are due to physical characteristics;
3. That many anatomical elements enter into the formation of fish names (thus a fish may be called "big-eye" because of the size of its eyeballs, etc.).

As one can see, there is here a whole fascinating area of investigation and research to be undertaken by the trainee teachers, who would at a certain level carry out the inquiries formerly undertaken by the research worker, and would in any case provide essential background material to support the lexical research and ensure that it was based on a wide stratum of reliable data. The credibility of the results ensuing from this research can be fully attested from the many possible areas of overlap and reciprocal influence, thanks to the large numbers of trainee teachers available for these investigations and actively involved in them.

E. PROBLEMS ASSOCIATED WITH THE AVAILABILITY OF EDUCATIONAL MATERIALS

The nature of the problems
Once a clear choice has been made regarding the language of instruction, the educational authorities responsible for the actual implementation of the new national language policy will immediately begin looking into the amount and acceptability of the educational materials at their disposal. The situation in this respect varies greatly, depending on the language and country involved. The main situations, within which there are of course all sorts of intermediary variants, can however be grouped under several basic headings.

First situation: The educational materials available are theoretically sound and suitable for the level of competence of both teachers and pupils.

By theoretically sound educational materials we mean materials which in conception and development have been based on the results of applied linguistic research and psychopedagogic requirements. By suitable materials we mean that a choice has been made of grammars, glossaries, introductory readers, anthologies or selections of texts, etc. which can be directly introduced by the teacher and used in the primary classes for which they were destined. Where possible, audiovisual equipment (records, tapes, filmstrips, etc.) should also be available, conforming to the same rigorous criteria.

The text-books in this first category would match up to accepted standards of readability. The decoding of the printed text occurs at normal speed; this, indeed, is the minimum requirement for efficacious reading, and when, for example, the text is overloaded with diacritic markers, reading ceases to be felt as functional. The danger then arises of reading being abandoned by the pupil or becoming an artificial scholastic exercise. From our standpoint — that of classroom application — this is a matter of particular importance, and one where the situation in practice is still far from satisfactory. Not all African languages have yet found the golden mean between having the minimum number of graphic signs and providing the maximum information.

This first situation is clearly the most advantageous, but it remains extremely rare, one might even say exceptional.

Second situation: The educational materials available are theoretically sound but unsuitable for the teachers and the pupils.

This is at present the case with a number of African languages common to several neighbouring countries. For example, when an indigenous language is introduced into the national school syllabus, the teachers, finding themselves for the moment without teaching aids, may be tempted to use whatever material happens to be available from neighbouring countries where the same language figures on the programme of school activities. In addition to the fact that there are often extremely important dialectal differences between one country and another, particularly in the speech of children, there is also the fact that the imported text-books offer the teachers methodological advice in a language which by and large they themselves know badly. An example of this would be that of Ewe, which is a language used in many countries

2. Language community of the Ivory Coast west of Abidjan.
but for which the available pedagogical material comes mainly from Ghana. In the case of Hausa, a relatively wide selection of material exists in Nigeria but little has yet been provided for the neighbouring States. This is not in itself a bad situation, but there is a danger that it may serve as an alibi for not embarking on the creation of truly national funds of educational material.

Third situation: The materials available are well suited to the level of the pupils and the competence of the teacher, but unsound in their theoretical basis.

This is an all too common situation. The danger, indeed, is difficult to avoid because the reference documents available are few in number and also hard to come by. Most of them are text-books designed for African classes but — with regard to methodology, for example — purely and simply modelled on text-books of the same type produced in Europe. Leaving aside language and vocabulary, the educational content itself does not emanate from the environment. Works of this kind, often poorly developed in form, are generally the outcome of isolated personal efforts by private or religious groups engaged in marginal educational activities which are often badly integrated with those of the public sector.

On the whole, these text-books do not respect the international conventions and usage of phonetics as reflected in recently standardized scripts. The orthography in these text-books is still imitative of the characteristic script of one or other of the European languages. Needless to say, this is a particularly dangerous situation in that it tends to instil in the pupils (and in the teachers as well) bad habits that are difficult to correct.

Fourth situation: There are no educational materials available worthy of the name.

In this case the teacher training institutes will not be short of work...

Tasks to be carried out by the teacher training institutes

The students' work will, naturally, consist in responding to the different needs described above and in participating in development of the basic educational material, the distribution of which to the teachers and pupils will undoubtedly determine the full success of the new national language policy.

The materials which must be rapidly provided for the teachers belong to the four following basic categories:

1. introductory readers
2. selections of texts for guided reading
3. a standardized basic vocabulary
4. a basic grammar

1. Introductory readers

The conclusion of psychology, confirmed by educational practice, is that learning to read involves tremendous effort on the part of the pupil, greater perhaps than that required for the acquisition of any other subject matter in the syllabus. Though reading may be taught to children from their very first schooldays, this does not mean that the effort entailed is slight, but simply that learning to read is a fundamental activity and a precondition for acquiring the other school disciplines. All precautions, therefore, must be taken and everything done to minimize the problems and avoid the pitfalls; at all events care should be taken not to add to the child’s difficulties, unnecessarily.

Now, in Africa at present, when Afro-European bilingualism would seem to be the only reasonable solution to present and future language problems, most children and adults, who are being affected in ever-increasing numbers by the educational and literacy programmes, will be led to read in at least two languages: their own national language and a language of international communication. With this in mind, one must understand the perplexity of pupils who, having already made the great initial effort of learning to read in one of these languages, then find themselves confronted with different characters, or even with seemingly identical letters which nevertheless call for very different pronunciations. It would seem reasonable, therefore, whenever the national policy is directed towards official bilingualism, to submit this question to close examination and see whether it is possible — without disrupting the linguistic texture of one language or the other — to adopt graphic symbols which make maximum use of the similarities between the old and new languages of instruction.

How can the teacher training institutes take concrete measures towards developing introductory readers in the new African language of instruction?

To start with, the problem of orthography must be settled. Once this has been officially standardised, the problem will clearly be under control: it will be necessary only to abide by the instructions. But it may happen that no official standard has yet been enforced, that the script is merely unofficial, that several systems of orthography are competing for exclusive status, etc. The range of possibilities is too wide for it to be possible to establish general rules. Let it be said, nevertheless, that for teachers the choice of a genuinely scientific script should take into account all the pertinent facts. And these facts are not simply linguistic: they also concern the psychological realities which underlie teaching, the historical realities which reach back to past customs and traditions, the sociological realities, in other words the climate of public opinion or the influence of existing publications, and the educational realities, such as readability or difficulties of learning. All these factors must be taken into due account if a truly scientific orthography is to be arrived at.

The same holds true for the difficult question of the transcription of voice tones. The tone is an integral part of the vowel to which it relates, and it would be easy in tonal languages to give illustrations of word-pairs which are distinguishable by tone alone. There are, nevertheless, cases in which one must temporarily ignore this fact and give prime consideration to educational needs, for the introduction of a complete system of tonal notation in the introductory classes would lead to difficulties quite incommensurate with the benefit expected. This concession has, in fact, already been made for many languages, and not the least important. It is an attitude that is perfectly justified in an approach to learning in which the word is almost never isolated and in which the context makes it easy to avoid confusing terms of identical consonance. It should, furthermore, be pointed out that an introductory reader is intended above all for children who already speak the language they are learning to read and who are therefore able to re-compose for themselves all the information contained in the chain of written symbols. What is more, the European languages themselves tolerate large numbers of homonyms without this leading to confusion and ambiguity. It may further be added, that the tones would inevitably interfere with the accents or other diacritic signs that characterize the second language; further obstacles would thus be introduced into the already immensely difficult
task of children learning to read in their first years of school. When all is said and done, the ultimate decision in matters of orthography rarely lies with the educationalists. Teachers may however influence this decision and, whenever it is possible to apply purely linguistic criteria and mark the tones, we feel that this should be done. Where, however, such a choice leads merely to the creation of extra difficulties and obstacles for the child, it would appear preferable to progress by stages, not introducing tone markers until later, once the child has reached the stage of decoding and differentiating.

To recapitulate: in order to arrive at a system of orthography which will prove satisfactory in practice, the national commissions, with whom the final word often rests, might base themselves on the general recommendations formulated by Prof. George A. Mhina of the University of Dar-es-Salaam:

- the orthography selected should raise as few problems as possible for future users;
- the wider the range of its applicability, the greater its usefulness will be;
- a simple orthography makes language learning easier.

This specialist quotes by way of example the Swahili orthography, for which these three recommendations have been observed, and which, “in spite of a few shortcomings, is today among the most efficient orthographies in the world”.

Several useful recommendations on the same subject are also to be found in the working document prepared for the symposium held at Dakar, 14-18 June 1976, on the problems of education in the mother tongue in a sub-region of Africa. The authors of this report recommend an orthography “as phonetic as possible” which would “be designed to meet the requirements of the national reader, i.e. simplified to the maximum whilst still being comprehensible in the context”. Immediate action would thus be possible; certainly, “the system might subsequently have to be amended, after analysis of practical experience, but that is a logical procedure which is adopted in the majority of cases”.

The next matter to be settled is the problem of the internal progression of the text-book. In order to be coherent, this progression should take into account the following criteria:

- word frequency
- sound frequency

The students would determine word frequency through inquiries carried out in the school environment, in the beginners’ classes (and not in an adult environment, since this would be pointless). Once word frequencies have been established, it will be easy to determine and classify, in the words listed, the sounds that are the most common, i.e. those which it is most urgent for the child to recognize in written form. It is not always possible, however, to carry out these inquiries in a large number of schools. The number of pupils involved is therefore likely to be too small and restricted to a geographical area too localised to be of any significance. Furthermore, the subsequent analysis of these inquiries is a long and demanding task, and one cannot sacrifice too much time to this preliminary work. In order to remedy these difficulties it is advisable to use a dossier of photos or sketches representing the objects and notions derived from the first inquiries. By means of this dossier, it will be possible to check whether children in other schools understand and use the respective key-words in the same manner. No further preparation is necessary: the pictures are reproduced on the board, and a rapid response test will permit the research worker to determine whether the same pictures elicit the same verbal response in all the schools within the linguistic zone under consideration.

Finally, it will be necessary to resolve the problem of the actual methodology of learning. The methodological procedure must also derive from an approach founded in theory and practice. It should take into consideration the most recent innovations in psychology and educational psychology as applied to the learning of reading. It is highly desirable that reading-books in African languages should not be methodologically inferior to the most successful readers in European languages. And the success of these readers is due to the way in which they link the “overall learning” phases with the subsequent phases of analysis and synthesis, when the pupil breaks down and recomposes the elements of the written sequence.

a) The aim of the “overall learning” — or prelearning — phase is to familiarize the pupil with the relations existing between a particular graphic group and the reality it evokes. In other words, it must lead to the acquisition overall of a set of key-words which will be worked through “in depth” during the subsequent phase of analysis and synthesis. This preliminary phase, during which the “key-words” are recognised by the child and combined in different contexts, may last about one month if the timetable provides for one and a half hours of reading a day, spread out over several sessions (as is generally the case). This “overall learning” phase, which the pupil sees in part as a stimulating game, provides a powerful incentive for reading in the proper sense. At the same time, it provides him with the grounding which will make it possible to carry out break-down and recomposition processes in a truly active way.

b) The phase of analysis and synthesis is based on a mixed methodology which calls upon the pupil’s prior experience and knowledge (acquired during the “overall learning” phase) in order to accelerate his ability to recognise and analyse letters. This approach could be schematically represented as follows:

### First stage: analysis

a) analysis of words already known (from the “overall learning” phase)

<table>
<thead>
<tr>
<th>SO</th>
<th>ITA</th>
<th>TI</th>
<th>KOSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITA</td>
<td>TI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TA</td>
<td>TI</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b) isolation of the letter reached at this particular stage of the progression

t

t

c) graphic learning of the new acquisition

t

---


3. These examples are taken from a reading method in Sango devised by the language section of the IPN in Bangui (June 1976).
2. The book of selected texts for guided reading

This in an indispensable complement to the introductory readers. It is all very well to be able to read in the new language of instruction, but one must also have something to read in the language! As was the case with the development of the readers, here too the major part of the work could be performed by students, working under supervision in ad hoc working groups.

The procedure to be followed is both simple and direct. Within the groups formed at the training institute, each student will be entrusted with the production — in conformity with orthographic, grammatical and lexical norms — of short reading texts which may deal with very different subjects: tales or legends from the region, historical events past or present, amusing anecdotes, problems of technological adaptation, translations, etc. These texts will then be collected, examined and discussed in turn by the whole group, after which they are classified according to themes or topics. Once a final checking has been made by specialists, they can then be included in text-books containing selected passages for use in schools. It is necessary that serving teachers should also be associated with this work, since their close daily contact with the children enables them to offer valuable advice concerning the way in which the texts and illustrations measure up to the psychological realities of a population they know well.

Experience has proved however that it is difficult to obtain complete texts; many students do not finish the work asked of them, particularly if they have been left without strict instructions at the delicate moment of the conception and development of the texts. An attempt should also be made to demythologize the tasks of the writer or storyteller. In general, throughout this work, motivations need to be reinforced. Thus a prize might be envisaged for the most successful pieces, to be awarded either by the establishment or, even better, by the Board of Education. If an educational journal is published in the country, the promise of having the most interesting texts appear in its pages would be an inducement worth considering.

One might be inclined to delay, or even dispense with, the production of a selection of texts on the grounds that it appears to be less urgent than the preparation of an introductory reader. But it should above all be appreciated that such a selection would already be a first sample of educational "literature" in the national language. By introducing the pupils to material which would improve their acquaintance with the national cultural heritage in both its human and historical dimensions, and also by furnishing educational material exemplifying the most up-to-date teaching methods, these text-books rank among the prime means of national integration, and their importance far transcends the purely scholastic domain.

As far as classroom use is concerned, such a selection of texts can be drawn upon for numerous important activities: elocution, oral or written summary of the reading, textual analysis, précis writing, reading with commentary, etc. This of course presupposes that each text would be accompanied by exercise material which would enable the teachers to work on the texts with their pupils. It must not be forgotten that these activities, when based on well-conceived and carefully selected texts, are the best suited for enriching the national languages in the logico-mathematical, technological, scientific and qualitatively abstract terms and other notions which are indispensable for successful adaptation to the modern world. To produce a selection of texts in which all this potential is inherent, is by no means a negligible task!

3. The standardized basic vocabulary

The aim here is to establish once and for all, for the school-going public, the basic vocabulary required to convey the subject matter of the syllabus in force in the first years of schooling. Given the importance of dialectal variants in the usage of the language, it is essential to standardize this basic vocabulary and produce a reference work from which to design teaching material and text-books which could be used directly, without "translation", throughout the land. The aim of this work should, naturally, remain modest and clearly defined. There can be no question here of producing dictionaries or exhaustive lexical glossaries; such tasks would be far too ambitious for the teacher training institutes.

The necessary investigations can be wholly entrusted to the students, on the understanding that the ensuing analyses will be carried out under the supervision of competent experts. Thus the students will be in a position to understand the full interest of this research, to follow up their own objectives, and to accept methodological guidance both in the development of the instrument and in its use. It will in fact be necessary — at least at the start of the active phase — to accompany the students on their field-work, and to provide support and control for their first attempts, without however directly intervening in the collection of raw data. Once they have acquired the technique, the students will be entrusted with entire responsibility for the operation, though they will still be aided occasionally in the evaluation of the work they have already completed.

What should be taken as the bases in devising the questionnaires? Bearing in mind our educational aim, which is to cover all the vocabulary associated with the subjects on the syllabus, a good method to be followed is in fact to draw up an inventory of the subjects themselves in order to extract the main headings under which they fall, then to classify these headings under categories, sub-categories, etc. It will
thus be possible to define a group of themes among which the
basic vocabulary can be distributed and then arranged.

There are numerous criteria that may be adopted for the
distribution of words under the main headings. If, for
example, one was dealing with plants and animals, an
empirical ordering closely linked to the child's first perceptions
might be adopted. Thus, for the animals:

- decide which ones walk and with what organs
- which ones swim and with what organs
- which ones fly and with what organs

One could also, perhaps, distinguish plants on the basis of
"green" or "not-green", "edible" or "non-edible", etc.
Local taxonomies might also be called on in order to adopt
and use some of their utilitarian or sacred criteria of classifi-
cation. It is clear that in this way we shall not be reinstating
the "scientific" categories of the botanist, but it is none-the-
less evident that our aims at this level are not those of the
naturalist. We are anyway not trying to involve ourselves in
exhaustive research designed to establish a link between the
vocabulary of usage and scientific formulation. What we are
trying to do is, more simply, to give shape and order to an
African language of instruction capable of effectively convey-
ing the subject matter of the school syllabus at clearly
defined levels.

We have in fact very scant knowledge of the young
African child's ability to discriminate and generalize. In
performing these operations, is his choice mainly determined
by attributes of colour (and what colours?), of form (and
what forms?) or of function (and what functions?). Like all
other languages, African languages break down external
reality by means of lexical interpretation, but it is cultural
customs that sort and order the elements represented by
words into categories based either on needs relating to the
environment or on analogies, associations and mythical
beliefs. For the African who is close to tradition, the world is
organized, and this organization between creatures and things,
between man and his environment, must be interpreted and
decoded. Here lies the deep meaning of certain African tax-
onomies, which are little different in this respect to European
or American taxonomies as reflected in the colloquial lan-
guage. It would, moreover, be false to state that these «pop-
ular» taxonomies are concerned only with domestic plants
and wild game. General curiosity and the desire to bring
order to the world are everywhere active and alert.

It is this curiosity and this desire on which we rely. By
making students aware of the crucial need to ensure that the subject matter of the syllabus is acquired, we shall easily find
the means of forming a framework capable of containing the
information. A sample framework of this kind might be
as follows:

- Fish-breeding and the rearing of animals (chicken, ducks,
pigs, and even cows) at school will lead straight to tax-
onomy research in ZOOLOGY.
- The school garden, the kitchen-garden, the growing of
coffee, cotton, peanuts, market gardening, the cultivation
of citrus fruits, cereals, etc. will give rise to specialized
lexical research in BOTANY.
- The organization of the family, kinship and the family
tree, social structures, etc. will constitute the field of
research for the SOCIAL vocabulary.
- Fire, water, air: protecting oneself from the sun, the
cold and the wind; the mechanisms of lifting, flying,
floating, balancing; the transmission or modification of
a movement, etc. — all these processes and techniques
will provide a basis for intensive lexical research into
PHYSICAL PHENOMENA.
- Nutrition, reproduction, disease and health are examples
of subjects which will serve to introduce the vocabulary of
BIOLOGY and HYGIENE.
- Lessons in moral behaviour, history and geography
provide the vocabulary of the HUMAN SCIENCES and
ANTHROPOLOGY.
- Lessons in drawing, singing and physical education will lead
to the development of the vocabulary of AESTHETICS
and MUSICAL STUDIES.
- Counting, arithmetic, balancing the accounts of the school
cooperative, taking bearings and measurements, all demand
suitable verbal expression of the notions of MATHEM-
ATICS, and so on.

The final conclusion is that by starting out from the activities
contained in the school syllabus one can, without forcing the
issue, cover all the semantic fields appropriate to the
child and his customary environment. The technical vocabu-
lar which needs to be established is not intended for any
more ambitious purposes, since the ends it is designed to
serve are purely educational and not encyclopedic.

This being the objective, the language research question-
aire devised by Professor Houiss 2 will serve the research
workers as an invaluable tool in their work. This question-
aire takes fully into account the African environment in
whatever is most immediately applicable in class and ensures
that nothing essential is omitted.

It is of course necessary to direct the students in their
ultimate choice of the lexical terms to be included. In
making this final selection, recourse will have to be had to the
following criteria:

- the criterion of frequency: is the term proposed acceptable
to most members of the working group?
- the criterion of extensiveness: is the term proposed one
that is recognised by students from different regions of
the land?

Whenever it is necessary to use paraphras to denote an
aspect of reality, one should also respect:

- the criterion of economy: the paraphras must be as short
as possible;
- the criterion of notional appropriacy: the paraphras
should be precise, functional and unambiguous.

After conclusion of the classification project based on these
criteria, the teacher training institute can then submit the
work to a competent specialist centre or to the national
commission for the new language of instruction (provided,
of course, that such a commission exists).

In the following pages, we offer a few examples to illus-
trate our approach. Here one is working from the objects
themselves or from half-concrete, half-abstract represen-
tations of them, some of which are already conceptualizations
(photos, drawings, diagrams, etc.). What one is looking for,then, are the exact descriptions which would be expected to
appear in the dictionaries. These are dictionaries which the
teacher would need in order to conduct exercises in the
African language involving elements as diverse as a fruit of
some kind (the mango), an animal (the lizard), a technical
object (the kerosene-lamp), or a mathematical notion (loss
and gain). These examples are taken from work in progress

1. In many African countries, the school is also an educational
col-l-uld and his customary environment. The technical vocabu-
lar which needs to be established is not intended for any
more ambitious purposes, since the ends it is designed to
serve are purely educational and not encyclopedic.

2. In Anthropologie linguistique de l'Afrique Noire, cf. note to
p. above.
involving the participation of students from the Ecole normale supérieure at Bangui:

Botanical vocabulary

a lë ti keke : MANGO
(fruits) (mango)

pörö ti mango

mi ti mango

lë ti mango

pörö ti lë ni

Choice of terms

1. The working group unanimously accepted the terms proposed by the students who had been assigned to research into the taxonomy relating to fruits:
mango : mango
pörö ti mango : mango skin
mi ti mango : mango flesh

2. There was debate concerning:
lë ti mango
Part of the group felt that lë meant kernel (inside the shell), while others felt that it meant shell (covering the kernel). Hence a single term would designate two different realities, thus leading to ambiguity and imprecision.

3. Agreement was reached on the following expressions:
lë ti mango the kernel (lit. the seed of the mango)
pörö ti lë ni the shell (lit. the skin of the kernel).
In each case, the periphrasis is both precise (notional appropriacy) and economic (shortness).

4. Some members of the group would, however, have liked to have had as a synonym for "pörö ti lë ni" the following expression:
lë ti keke (lit. the fruit of the wood).
Most of the group did not however support this suggestion as the expression also related to "fruit" in general, hence the possibility of ambiguity.

Physical and technological vocabulary: BANGO NDO NA LAMPA? (How to get light?)

Remarks

- Adequate terms for the hook and the mesh have not yet been adopted.
- In place of the French metaphor of a hat (chapeau de la lampe), Sango uses descriptive periphrasis da ti vërë (lit. the house of the glass)
- vërë, mësi, picörö are well assimilated loan words (verre, mèche, pétrole).

The thematic lexicon, which is intended to establish the basic vocabulary of syllabus subjects, should be supplemented by a lexicon of the basic vocabulary of the language. For the text-books produced in the new language of instruction must use the same form, that is to say, one and the same standardized language understood by all the children. The basic lexicon will cover all the most frequent words as habitually used by schoolchildren.

This work will necessitate:

1. The compilation of a set of words suited to the requirements of the linguistic area under consideration and to the children's level of development.
2. The provision of a frequency count for the words most used in this set.
3. The alphabetic and thematic arrangement of the words included.
4. The translation of the words by succinct definition.

The basic vocabulary is the principal means by which the child acquires his first learning, and it will therefore be used in producing school text-books. The frequency count will help to measure the importance of the place that should be given to a particular word or stem. If this approach is adopted, one can be sure of being understood everywhere and by all.
Why is it necessary to have thematic arrangement and alphabetic ordering? Alphabetic ordering will enable textbook writers to check that they have not forgotten any of the commonest words in their works. Such omissions would be inadmissible in, for instance, a language learning or reading course. Thematic arrangement will enable textbook writers to choose the words they need to use on the basis of preference (bearing in mind their frequency of use) in studying a particular text linked to a particular topic of interest.

The production of a basic lexicon is generally undertaken by research workers or specialist institutes. The teacher training institute will be called upon to collaborate in this task, particularly by providing qualified informants and investigators and by assisting in the work of analysing the results obtained.

4. The basic grammar

What sort of grammar is involved?

The grammar book which the teacher training institutes should assist in producing is intended for purely educational use. Once they have reached a certain level in their use of the language — and this may coincide with the last year of primary school — the pupils will need to reflect on the system by which this language functions. They will need, therefore, to add a minimal objective knowledge to their subjective knowledge of the language. In other words, they will have to acquire the essentials of basic grammar in order to be able to acquire better understanding and a better command of the internal laws of the new language of instruction.

The grammar book to be produced will of necessity be a compromise between a scientific description of the facts of language as presented in linguistic research, and the educational requirements inherent in the activity of teaching. In fact, once it comes to classroom use, the linguistic factors are no longer the only pertinent ones. Consideration must also be given — if one wishes to be effective — to a whole host of factors relating to the habits and the experience already acquired in the field of grammar by teachers and future teachers. Now what, briefly, is this experience? Generally speaking, the trainee teacher enters the institute after about ten years of primary and secondary education. The instruction in grammar to which he has been exposed is essentially classical: the facts of language will have been presented to him exclusively through a normative grammar, incapable of providing an exact description of these facts. Grammar, conjugation and parsing will have been the distinct phases of his process of learning and improvement. Practically no attempt will have been made to introduce or tackle the problems of applied linguistics, initially because this does not enter into the current syllabus, but also because the teachers themselves — who are appointed without having received the required linguistic training — generally continue to teach the European language as though they were teaching the mother tongue. Hence, it may be confidently stated that the students at the teacher training institutes and serving teachers are acquainted with grammar only through an imported language. It need hardly be said that the way in which this language functions is by no means universal and therefore not directly applicable to languages from the African group.

To this one might add that the requirements of the official examinations have always tended to give greater weight to grammatical knowledge than to actual competence in the language. The students have been trained with a view to an artificial breakdown of sentences based on fine analysis rather than with a view to discovering the intricacies of the syntactical mechanism. Hence the importance attached to the "label", i.e. to the nature of a word in relation to the diversity of its functions. Hence, too, the value accorded to an utterly unproductive formal nomenclature. As for the "deeper" influences regulating the internal functioning of the language — which means, ultimately, the very concept of a linguistic system — the students are generally unaware of their nature, of the terminology used to describe them, and even of their existence.

This, then, is the actual situation in regard to grammar, and this is also the reason why we have spoken of a compromise. Linguistic and educational considerations will not always necessarily point in the same direction, and it will sometimes be necessary to measure them up against one another and allow so much weight to the one and so much to the other. It is clearly a difficult matter to respect at one and the same time the psycho-pedagogic order of levels of comprehension, the logical order of the subject-matter taught, and the historical order the actual knowledge acquired for a given discipline or population. But a basic grammar is of such importance for the new language of instruction that the necessary time must be taken and the necessary effort made to produce a truly rational grammar, and one that can be used, i.e. a grammar in which all relevant factors will have been taken into consideration.

What has to be done?

The grammatical description of a particular language is a matter for specialists. This description consists basically in defining the grammatical categories of the language as it appears, and in providing an objective account of the functioning of the entire system within the confines of these categories. The students of the teacher training institutes will have a prominent role to play here, not only as informants but also as collaborators of the specialist grammarian.

1. As informants:

In order to base his grammatical analysis of a language on concrete facts, the research worker must be able to refer to authentic linguistic material. In general, he uses ready-made questionnaires which incorporate a certain number of working hypotheses for the exploration of the language. The aid of competent informants is indispensable if the linguist is to be able speedily to determine:

- the types of utterances permitted by the language under study;
- the various positions possible for the elements of different utterances (as in French the word order is by no means inconsequential in phrases such as: le serpent tue la mangouste / the snake killed the mongoose / and la mangouste tue le serpent / the mongoose killed the snake/);
- the possibilities of commutation, coexistence and mutual exclusion of these elements within the particular type of utterance;
- the possibilities of combination1.

1. These four criteria have been taken from Boujiaux-Thomas Enquê et déscrition des langues à tradition orale, Paris, Selaf, 1976. This is an important work which should be basic reading for research into linguistics and ethno-linguistics.
The task of listing and checking these various possibilities is in fact a work of grammatical exploration; in drawing up his inventory, the research worker will find his work made considerably easier if he draws upon the students' linguistic knowledge and skill. For the students are in fact already accustomed to grammatical analysis, and may save the research worker much of the time generally lost in futile verification when the informant is not "professionals".

2. As collaborators:

The questionnaires do not of themselves give an adequate picture of the natural functioning of the language. The research worker must still analyse records of spontaneous discourse such as is produced by speakers who are not subjected to any constraints. It is in fact coherent discourse, as it is naturally produced, that provides the definitive basis for grammatical analysis. The students will collaborate with the research worker in order to collect a sufficiently large body of usable texts: speeches, tales, stories, dialogues, etc. Children's conversations will also be carefully studied. The great variety of recording situations will make it possible to arrive at a better definition of the registers of language and to differentiate the grammatical levels.

The students of the teacher training institutes have more to give than to receive when it comes to developing teaching material for children. Their skill as speakers, their theoretical knowledge, and their concern with the problems of teaching, give them special status as collaborators with full responsibility in the operation. Their involvement in the conception of school text-books likewise forms a direct sequel to their professional training. The skills which they will have to invest in the research stage will later bring the maximum of benefit when they come to apply the results in the classroom, at which stage full responsibility will devolve on them as fully-fledged teachers.

This is why the large-scale participation of the students in creating the basic educational material is in itself as important and decisive a factor as the actual existence and availability of this material in the new language of instruction.

F. PROBLEMS IN REGARD TO DIVIDING THE SUBJECT-MATTER OF THE CURRICULUM BETWEEN OLD AND NEW LANGUAGES OF INSTRUCTION

The nature of the problems

The introduction of a new language of instruction into the curriculum does not necessarily entail the abandonment of the language of instruction thus far used. The only important pedagogical problem is to determine clearly, within the framework of the official instructions, which language or languages will most surely lead to the child's balanced personal development at all stages of his psycho-motor, emotional, psychological and intellectual growth, while also ensuring his future as a citizen, that is to say his ability to integrate himself harmoniously into the society of tomorrow.

This is the true question that the training institutes must not only raise but also solve! The proper approach does not consist, then, in an arbitrary choice of one or several languages of instruction and the assignment of objectives for each. This is putting the cart before the horse: rather should one first define precisely the objectives one expects a language of instruction to achieve, and then ask which of the languages available would make it possible to attain these initial objectives with the utmost sureness and economy.

Tasks to be performed by the training institutes

Following the example of contemporary linguists, who assign different functions to human speech, the training institutes will need to set themselves the task of drawing up and classifying the educational purposes, i.e., the functions, that should be fulfilled by the language or languages of instruction in the country. The starting-point for the analysis will be the content and spirit of the official instructions, the curricula in force, the general aims of the government, and the scholastic profile of the primary school leaver. On the basis of this analysis, it will then be necessary to determine which of the languages concerned could most fully and rapidly respond to a given educational function. Once this study has been made, it will then be possible to present the authorities with whom the final decision lies with precise recommendations for the distribution and linguistic balance of the material at the different levels of schooling. These proposals would, naturally, be substantiated by sound and convincing arguments.

This approach would enable the teacher training institutes to state clearly the terms of a problem which has often led partisans and opponents of the introduction of national languages to overstate their case through assertions that merely beg the question, lyrical outpourings, hasty conclusions and unfounded asseverations.

What has to be done?

Since the analysis of the aims and purposes of primary school takes as its starting-point the official instructions and curricula specific to each country, it would not be appropriate to elaborate here on this phase of the work, which is governed by essentially local considerations and which it would be unwise to judge in advance. Let us say simply that a definition of the scholastic profile of the primary school leaver is not only an overwhelming necessity for the educationalists but also a guarantee for the schoolchildren concerned. And the problem of the choice of language will provide an excellent opportunity for determining this profile wherever this has not been done.

On the other hand, it is immediately and everywhere possible to determine, in sufficiently fine detail, the basic educational functions of a language of instruction in an African setting. It is these functions that are of prime importance, and the choice of a particular vehicle of instruction is strictly subordinate.

Generally speaking, it seems to us that in the African primary school the language of instruction must fulfil four essential functions, as described below:

1. It must provide a link between the school and the environment

At present, the general attitude in schools is to neglect the most effective means of communication used by the environment in which the school is placed, which results in a regrettable and frequently criticized "scission". The school and the environment must speak the same language if the one really wants to open out to the other. How can the school give fresh life to the basic African values if it uses only an imported instrument which is incapable of expressing these values in depth and which distorts and impoverishes the initial information? How can the school help to enhance the environment, improve productivity and make development structures in town and countryside alike more rational if it is not in deep intercommunion with those who toil in the fields and
factories? The national languages are incontestably the most effective means of bringing about this symbiosis which is the sole way of opening up the prospects for harmonious collective development. Consequently, the function of linking the school and the environment can devolve only on the local languages, which can account for everyday reality without impoverishing or deforming it, and which bind the school and the environment into a coherent socio-cultural entity.

2. The language of instruction must provide an appropriate medium for early learning

It must be realized that the powers of interiorization which are peculiar to speech, and which are identified with thought and with reflective consciousness, are exercised — in the child's early stages of development — through the mother tongue, since this still offers the only outlet for active verbal expression. If the child is unexpectedly deprived of the linguistic medium to which he is accustomed, and if a new instrument of expression is imposed on him which he cannot handle and by which he is disconcerted, he is reduced to the external acquisition of no more than a few mere rudiments, too scant and too incoherent in their functioning to permit him to master reflective thought. By refusing to provide him with the verbal means to match his basic needs of expression and creativity, the school ends up by thwarting the growth and flowering of his intelligence and personality; it drives him to turn in upon himself and adopt an attitude of passivity. As a result, his ability to understand becomes non-indigenous languages should be unable to convey authentically the methods and techniques characteristically employed in agriculture and the handicrafts in a traditional African environment. In other words, what is needed for educational purposes is an appropriate dual-language system, in which the European language will most likely, for some time at least, have a large part to play.

4. The language of instruction must perform an inter-cultural function

The language used for instruction should also promote the emergence and expression of a specific African culture, reflecting all the aesthetic, philosophical and ethical values held and shared by the various ethnic groups occupying the national territory or a particular region. It should also make possible the universal dissemination of the national culture so that it may enrich other cultures by what it has to offer and in turn benefit from cross-fertilization with them. Although there certainly do at present exist some African languages capable of acting as an internal "unifier", there are on the other hand very few indeed that could straightway serve for the universal dissemination of the national culture. This function at present rests with a small number of languages widely spoken throughout the world. Paradoxically enough, moreover, it is through them that the literatures, cultures and, in a general sense, the civilizations of African countries are known and judged by the other peoples of the world.

What strikes us as essential, even more than the classification suggested above (which is certainly incomplete), is the principle itself of classification according to the criterion of functions. The adoption of this criterion would make it possible to apportion different "zones of influence", to be realistic in determining precisely how a dual-language system should be applied for educational purposes, to ensure that the languages concerned are used in complementary fashion, and finally to present the decision-making authorities with clear choices based on realities which they themselves can easily appreciate and verify.

5. Other functions

The language of instruction often assumes other far from negligible functions outside the purely pedagogic context:
- it acts as a reinforcer of national unity;
- it is a factor in speeding up economic growth;
- it promotes equality of opportunity for children at all socio-economic levels;
- it encourages the return to cultural authenticity.

Division of the subject-matter between the old and the new languages of instruction is governed, therefore, by considerations relating to the political, economic, social, scientific and cultural circumstances of each African people. And this brings out with ever greater force and clarity the specific task of the teacher training institutes: to develop resolutely the educational functions of the new language of instruction. By so doing, they will be fulfilling their proper role in the national education system, and at the same time defending the interests of the pupils themselves, around whom all language and educational reform projects resolve, both in their conception and in their ultimate aims.
III. The conditions for implementation

A. Co-operation with research institutes

The specialist institute is, clearly, an essential prerequisite. The relations between the teacher training institute and the specialist institutes (the National Education Institute, the Institute of Applied Linguistics, the Institute of Ethnology, etc.) should be particularly close and on-going, for the investigations carried out by the students are not mere arbitrary research studies; they are inquiries into situations which constitute genuine problems and which involve the future of the country at the same time as that of the new language of instruction. The research workers from these institutes, accustomed as they are to the terrain, are better acquainted than anyone with the progress already made in work on the indigenous languages, they know what distance has still to be travelled before it can be applied in teaching, and they are not unaware of either its achievements or its shortcomings.

Clearly, the role of the specialist institutes cannot be precisely defined until after preliminary consultations have been held, based on an analysis of the language situation specific to each country. At all events, it will be necessary to specify the ways in which the institutions will collaborate, complement each other’s work and offer reciprocal aid. Here, then, are several propositions which are simply intended to clarify the question by indicating certain tasks which might be undertaken by the specialist institutes before, during and after the field-work to be carried out by the teacher training institutes.

1. Before
   - They would run work sessions designed to provide information and further professional training for the teaching staff at the training institute;
   - They would supply the training institute with relevant information on the language situation in the country and on their own research work;
   - They would determine the topics and directions of applied research undertaken by the training institute with regard to the linguistic aspects of the country’s economic and cultural development;
   - They would participate in the production of questionnaire forms and data collection grids, and, more generally, in the development of the students’ work kit.

2. During
   - They would participate at regular intervals in the students’ working groups and in training activities;
   - They would help to ensure that field-studies were properly carried out, and that the scientific nature of research was respected in all the students’ different activities:
     - They would render assistance "on request" within each training institute, particularly in establishing a scale of priorities in regard to the limited or transitional objectives corresponding to each specific operation.

3. After
   - They would organise and direct the selection and further exploitation of the data collected and analysed by the students;
   - In conjunction with the research team of the training institute they would collaborate in systematic research into the possible applications in formal and non-formal education.

These are no more than general indications. It will in fact be necessary to conclude a proper “cooperation agreement” between the specialist centres and the teacher training institutes. The actual forms of this cooperation will have to be defined after consideration of the financial implications (travel expenses for the research workers, local expenses during their stay), administrative implications (since the staff of the teacher training centres do not come under the same administrative authorities as the staff of the specialist institutes), professional implications (the research workers at specialist institutes generally work on projects planned in advance, and their plan of work will have to be fitted in with whatever work it is proposed they engage on in the teacher training institutes). In those instances where a country does not have a specialised centre of linguistics, the training institutes will need to solicit the collaboration of qualified research workers or "external assistants" working outside the national territory.

B. The remodelling of the teacher training programmes

The participation of trainee teachers in the introduction of instruction in African languages presupposes a determined remodelling of the general and professional training programmes at present offered by the teacher training institutes, in both content and spirit.

1. The spirit of the programme

In the traditional teaching relationship, the teacher appears as "the one who knows", in contrast to the student who "does not know", or does not yet know. It is the teacher, then, who brings to the class his own knowledge, which he then reinforces through explanation and precept; the
student, meanwhile, gains awareness only of his own inferiority and inexperience. By contrast, the moving spirit behind the new programmes implicitly requires the teacher to abandon the easy over-evaluation of his instructional role in order to allow the student to step into the picture as full partner in a joint quest and as co-designer of the solutions and replies to the various linguistic and pedagogical problems which are presented to all. If the programmes of the training institutes are treated in this spirit, the teacher-student research teams will be geared to maximum productivity, with teachers and students alike fully committed, both intellectually and emotionally.

2. The content of the programme

The role which devolves on the students is that of active and responsible agents capable of undertaking field research. They must, then, be suitably equipped and provided with the means necessary for the proper exercise of the functions assigned to them. The new programmes of the training institutes must be designed to encourage the development of the theoretical knowledge and the practical skills and abilities needed for the successful accomplishment of an operation which is, at the same time, the culminating achievement of a good training. Indeed, it may be asked whether there is any more rewarding education than one which involves the participation of the future teachers in the design, development, testing and evaluation of the educational material which will later be supplied to them for use in their classes?

a) The theoretical knowledge

Although the students are not asked to formulate linguistic descriptions, which, on account of the specialized knowledge they require, do not lie within their immediate grasp, their collaboration is inconceivable without a minimum understanding of theory and concepts. The introduction to linguistics they will be given must of necessity include the basic elements of phonetics and phonology, intonation and the study of tone-values, the rudiments of morphology and syntax, an analysis of the systems of lexical production, and the use of diagrams suitable for metalinguistic illustration (derivational trees, boxes, various symbols, etc.).

b) Practical skills

The technical details of the procedure for field-research investigations will be prepared with the utmost care, and the student will have to be thoroughly trained in the use of his equipment. This equipment will consist basically of a tape-recorder, a questionnaire form, a guide to the system of phonetic notation and calculation and summary tables. The student will be trained to make high-quality tape-recordings, not in the studio but in difficult field conditions. He will also have to be able to undertake regular maintenance of the recording equipment he uses, even during the vacations. In order to handle the questionnaire forms correctly the student will need to have knowledge of the techniques of information retrieval, organisation, sorting and classification, codification, rank-ordering, etc... The systematic acquisition of all these practical skills will be actively encouraged through activities practised in the various disciplines at the teacher training institute, while intensive practical training will be given in phonetic notation in order to ensure that this indispensable technique is thoroughly and rapidly acquired.

c) Personal skills

The institute's programme of activities should help to develop a positive attitude towards team-work and research. The ability to work as a member of a team and to participate in group thinking could be encouraged in various ways, particularly by replacing — wherever this practice still obtains — the paper traditionally prepared at the end of the academic year (the very epitome of individual work) by a teamwork project in which each student would have a particular responsibility within the group.

3. Professional training

The "common core" of the professional training course will, naturally, include the usual information on problems of learning and improvement. Considerable emphasis will be laid on study of the child's development, the influence of the environment, the specific needs and interests arising at each stage of development, the principles and methods of functional education, active teaching methods, the preparation and keeping of personal files, etc. Particular stress will be laid on the physiological and psychological aspects of learning to read and write, and also on all the educational functions of a language of instruction.

If under the system in force the student's future posting is determined in advance, then the professional training programmes will differ in certain respects once the common core has been provided, depending on the specific linguistic situations in the different regions to which the students will be posted. The actual content of the programmes will naturally depend on the educational status of the language concerned. Will the teaching be done in the African language? Will one be teaching the African language? Will these two possibilities be combined?

a) Teachers instructing in the African language

In this instance, the training programmes must improve or reinforce the personal knowledge which the student as a speaker already possesses. It would indeed be difficult to imagine a teacher instructing his pupils in a language in which he himself is not proficient. The main weight of the effort must therefore be brought to bear on making available and using an effective functional vocabulary so that specific notions can be conveyed without ambiguity. The teacher's pronunciation must be understood by the children in order to avoid setting up blocks to communication, which would be a very serious matter given the importance that must be attached to oral instruction. In this respect, the audio-oral laboratory, with the systematic and varied exercises it permits, is a particularly suitable means of unifying and standardizing the future teachers' phonetic and grammatical performance in the new language of instruction.

Even though there may be no explicit teaching of the African language with a view to acquiring a full understanding of the laws that govern its functioning, the teaching given in the mother tongue, and hence the implicit use of its grammar, results in the pupil being systematically impregnated with it. This means that the teacher must be able to identify what is good and what is bad grammar. The training programmes will therefore include, at least at an elementary level, grammatical description of the new language of instruction.

Lastly, a considerable part of the student's training should be devoted to study of the processes of language learning at all levels, and in particular the various processes and stages of
communication in the child. Strong emphasis should be placed on the deep differences which separate the child's language from that of the adult, corresponding to the differences in their mental make-up and their respective needs. Hence, there can be no question of modelling the patterns of progression (graded learning) followed at the institute on those already in use in adult literacy programmes.

b) Teachers teaching the African language

In this instance, the student should have not only perfect practical knowledge of the new language of instruction, but also a firm theoretical and grammatical grounding, for as a teacher he will need to make his pupils think about the laws and mechanisms governing the operation of the language within its particular system. The student will clearly be prepared for this task through the direct contact he will have had with the facts of language while helping to carry out the research inquiries. We should like to draw attention, however, to certain specific aspects of training for which provision will have to be made for students intending to teach African languages.

i) Orthography and transcription of sounds

Different written codes sometimes coexist in the same language, and such a state of affairs is obviously unacceptable in education. But, whether or not the language has been officially codified, the students will become acquainted with the general principles normally observed in the transcription of African languages. The value of these principles will be discussed, and the students will be led to discover the reasons for their existence. In their working groups, the students will examine in greater depth the particular problem of graphic symbolism. This final stage in fact marks the end of a research study and, at the same time, a starting point for classroom applications. Discussions will be held with the students concerning the reasons behind the choice of a particular graphic system in the codes already used, and stress will be placed on the historical and practical factors influencing the various sets of symbols.

ii) Segmentation and the teaching of reading

The standardization of an alphabet does not solve the problem of reading and writing a text. The pupil must also be able without difficulty to recognize groups of words (nominal or verbal groups, for example) and match them unhesitatingly with the phonic sequence to which they give rise. This in a general sense raises the problem of word segmentation and the objective criteria governing it. The student, doubtless, will not be directly involved in the choice of alphabets and criteria, but it is important that he should understand these choices and that he should accept and use the alphabets with full understanding of the reasons involved.

The progression or sequence of learning in the learning phase will take into account the form of new letters whenever these exist. It will therefore be necessary to redefine the basic or "generative" letters which serve as the start-3-point in learning to write. The teacher training institute will have to put forward clear-cut proposals in order to establish a new progression or graded sequence in terms of increasing difficulty in the written representation of elements of the new alphabet.

The general and professional training programmes to be provided by the training institutes are in fact closely dependent on whatever solution is adopted for the introduction of African-language instruction in the primary schools. These training programmes will therefore be geared ultimately to the specific situation in each country, and the activities outlined above form no more than a sort of minimal common core.

It should be constantly borne in mind that student participation in the various investigations and in the various phases of research is being directed towards situations that constitute a genuine problem, both educationally and linguistically. This is why participation in research studies is the best professional preparation the students can have for teaching an African language and teaching in an African language.

iii) The teacher trainer's new profile

While one may with justification deplore the lack of linguists and the dearth of institutes specialising in African linguistics, it must nevertheless be noted that during the past five years immense steps forward have been taken not only in Europe but in Africa as well. The field of study has been greatly extended, so much so that it is now becoming difficult to point to an African language used by any considerable number of speakers that has not been made the subject of an analytic description either under way or already completed. On the other hand, this progress itself, accompanied by the ever-growing number of African languages being integrated into school curricula, has revealed only too clearly the grave lack of properly trained teachers. And no doubt many of the difficulties thus far encountered in all language reform projects can be traced back to the weakness of this vital link.

The educational psychologist and teacher trainer is in fact an essential bridge between the specialized linguist, concerned with describing the characteristic facts of the language, and the teacher who uses this language as either an instrument or a subject of instruction. He it is who is responsible for studying the results of research work and, after painstaking analysis, deriving therefrom procedures for their classroom application. It is his task to convert the findings into lay terms, rewriting, for example, a particular morpho-syntactic description so that it becomes serviceable both to the teacher and to the pupils. It is up to him to translate — without distorting the facts, and in a form acceptable to schools — some of the results obtained by the research worker. It is also his responsibility to present this information in the context of genuinely educational structures and frameworks, i.e. such as would be conducive to the most rapid and yet most soundly based learning.

Thus we see the profile of a new type of teacher trainer beginning to take shape: he will be a true «didactician», with the ability to integrate applied research activities on the new language of instruction with teaching activities and educational training. Once again it must be stressed that the language reform scheme based on the introduction of a new language of instruction in the school curricula cannot succeed in practice unless it is backed up by fully-trained teaching staff. The recruitment of teacher trainers must therefore be adapted to the new conditions stemming from this major innovation which the promotion of national languages and cultures represents. Competence, experience and practical ability must, certainly, be required from the very outset, but this in itself will not be enough. There must also be a new conception of the teacher-student relation, a new, powerful motivation in the direction of team-work, a new, heartfelt desire for interdisciplinary action as against the compartmentalization which so often characterizes the traditional specialist. There must also be a great readiness to entertain the notions of self-instruction and peer-group learning, as well as all the other new forms of action that will unfailingly spring up once the reform movement is finally and irreversibly under way.
IV. Conclusion

From thesis to textbook

When one comes to consider the problems involved in the integration of African languages into the school curricula, one cannot help but be struck by the disturbing absence of text-books and general teaching materials. Although it may be comforting to note that the national languages likely to appear in the curricula have been or are the subject of scientific study, it must be clearly acknowledged that in the areas of classroom application almost everything still remains to be done...

Analysis of the current state of affairs in the educational systems of different African States reveals major and deep-seated disparities. Some countries have long since been using one or several indigenous languages in the curricula, but are unable to solve either the problems of teacher training or those of the production of suitable educational material. Other countries have introduced national languages into primary teaching in the hope that the dynamism of the operation itself will compensate for the inadequacy of the preliminary research, the insufficiency of educational material, and the lack of qualified teacher trainers. Other countries again have undertaken applied research on their national languages and endeavoured to provide their teachers with suitable educational material before moving on to actual classroom application.

In the final analysis it would appear that the inadequacy of the teachers' training and the lack of suitable text-books represent major obstacles to the implementation of language reform. These shortcomings are understandable in view of the fact that in many countries such needs have emerged only recently. Unfortunately, the production of text-books is no simple matter. While the research student's thesis finds its justification in its scientific factual content, the school text-book would be quite unusable if only these criteria were applied to its production. The text-book's educational impact derives from many factors, some of which relate to linguistic analysis, but many of which concern educational psychology, sociology, history, psychology, etc. There are choices which must be made, particularly in the use of nomenclature and in the sequential grading of subject-matter, and these choices will often entail a compromise between the many different factors present. Hence the need for this carefully calculated balancing of material which makes the production of text-books such a difficult and delicate task.

It is therefore absolutely indispensable that the teacher training institutes participate in the initial research as well as in development of the fund of educational material for use in the new language of instruction. Through this participation a vital dimension is added to the language reform project: this is the dimension of teaching itself, thanks to which one can be sure that all the pertinent factors will be taken duly and realistically into account. This is why the active involvement of future teachers in the promotion of national languages is in itself of even greater importance than the positive results thereby obtained on the linguistic level. And since this involvement forms the basis of the teacher's training, it comprises its own final end. To dispense with the assistance of future teachers, and resort only to the work of specialists, would be to jeopardize, at one and the same time, the teachers' training, the pupils' education and the country's cultural development. And who would dare assume such a responsibility?
The few practical examples of technological processes and functional thought given below are drawn from an environment familiar to village children. Each example should lead the child towards accurate formulation of his thoughts and, by stimulating his interest, induce him to use not only the expressive but also the cognitive functions of the language.

The illustrations are given not as models to be copied, but as authentic samples of work, for they were actually devised and produced by future teachers at training institutes.

These exercises in verbal expression have already been profitably used in various schools. They form part of a more comprehensive collection of exercises which should accustom the pupils to making conscious use of the logical instruments of the language and to giving satisfactory verbal expression to the whole spectrum of spatial, causal, temporal and other relations.

I. Technological thinking

Aims: To induce reflection and stimulate verbal expression, in the African language, of technical processes drawn from the environment.

To give pupils an awareness of the technical value of skills developed in the village and to enable them to discover that these skills are in no way inferior to those introduced from the cities or from abroad.

EXAMPLE 1: The catfish trap

FIRST LEVEL OF APPLICATION: Children aged 10-12 (intermediate course). Given that the catfish (a fish that keeps to the river-bed) swims up to catch its (live) prey on the surface, swallows it and returns immediately (almost vertically) to the bed:
- describe in detail how the trap operates;
- explain why this trap is specially suited for catching the catfish;
- mention all precautions to be taken for the trap to work efficiently.
SECOND LEVEL OF APPLICATION: Children aged 8-10 (elementary). Given that the series of drawings A illustrates the behaviour of a river-bed fish, and series B that of a surface fish;
- get the pupils to say in which instance the trap worked;
- get them to explain why it worked in one case but not in the other;
- get them to describe the specific qualities of this trap;
- get them to work out the basic conditions that must be fulfilled if the trap is to be 100% effective.
EXAMPLE 2: The wicker-funnel trap
Reflection generated by a comparison of a local funnel-trap (in wicker) and an imported trap (wire supports).

FIRST LEVEL OF APPLICATION: 12 year-old pupils (intermediate).
- The pupils should examine and explain in the African language the characteristic features of each trap:

[Diagram showing characteristics of imported and local traps]

- They should describe the functioning of the two traps (the imported one having a fixed entry, the local one having an entry of adaptable shape);
- Which of the two traps will catch the greater quantity of fish?
- Which of the two traps will catch the greater variety of fish?
- Explain why.

The pupils should draw up a comparative table of the characteristic features of the two traps.

<table>
<thead>
<tr>
<th></th>
<th>pingbango : ni</th>
<th>nengo ni</th>
<th>ngere ni</th>
<th>ha wa so ake gbu susu mingi</th>
<th>peko ti kondë</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(solidity)</td>
<td>(weight)</td>
<td>(cost price)</td>
<td>(effectiveness)</td>
<td>(total)</td>
</tr>
<tr>
<td>LIA TI PUTU</td>
<td>xxx</td>
<td>xx</td>
<td>x</td>
<td>xx</td>
<td>8</td>
</tr>
<tr>
<td>(imported trap)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LIA TI KODORO</td>
<td>x</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>10</td>
</tr>
<tr>
<td>(locally made trap)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Rating : xxx — good
xx — average
x — poor

Remarks: — The comparative table made it possible to work out which trap had the most functional features.
— At a different level, the stable showed the different ratios affecting the user’s choice of trap (e.g.: price / solidity, price / appearance, price / return, etc).
— These notions, naturally, were all expressed without the use of a European language.
SECOND LEVEL OF APPLICATION: Children aged 8-10 (elementary). Before comparing the traps, describe each one in turn, asking the pupils to give precise terms for each functional part.

- Using the series of drawings below, ask the pupils to explain the functioning of each trap. Ensure that the fundamental difference (the adaptability or non-adaptability of the funnel mouth) is brought out.

- If the fisherman wants to catch as many fish as possible of all sizes, which trap suits his purposes better? The pupils should be led to discover and explain the other advantages and defects of each trap: strength, transportability, weight, price, convenience of size, etc.
EXAMPLE 3: The bridge

LEVEL OF APPLICATION: Children aged 8-10 (elementary).
What type of bridge should be built, given that the bridge:

1. must be suitable for use by adults, children, the aged and the handicapped;
2. must be able to stand up to the frequent, sudden and violent flooding of the river it crosses?

which will be the right construction?

logs

yes, no? Explanation: no, because a flood would sweep the logs away.

beam + single handrail

yes, no? Explanation: no, because children and handicapped persons would not be able to use the bridge.

liana ropes

yes, no? Explanation: yes (with an explanation of the technical principles governing this type of construction)
2. Expression of the relation between cause and effect

**Aims:** To get pupils to express in the African language a series of cause-and-effect relations discovered through situations.

**LEVEL OF APPLICATION:** Children aged 10-12 (intermediate).

**METHODS:** Analysis of a series of causal relations set in a natural environment.

**EXAMPLE:** The animal life-cycle in the savannah plains.

The figurative conventions adopted are shown below:

**PROCEDURE:** Get the pupils to work out the animals' life cycles by asking them to explain the reasons for each transition from one situation to the next. The person running the exercise should not be satisfied with mere connection through juxtaposition, but should aim at eliciting the verbal expression of subordinate relations. The European language may not be used.
the predators, in great number, eliminate great numbers of antelope

predators in great number therefore fewer antelope

a few antelope therefore therefore rich grazing no predators

fewer antelope therefore therefore departure of the predators renewal of grazing
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