Dissertation

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SCHOOL OF EDUCATIONAL STUDIES
UNIVERSITY SAINS MALAYSIA

Ruralization of Malian Fundamental Education : the Relationship Between its Degree of Implementation and Teachers' Perceptions

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RURALIZATION OF MALIAN FUNDAMENTAL EDUCATION: THE RELATIONSHIP BETWEEN ITS DEGREE OF IMPLEMENTATION AND TEACHERS' PERCEPTIONS

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NOTE: This report is still subject to change as it is not conclusive.

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I Introduction

The Republic of Mali with 1,204,221 square kilometers of which two third are located in the sahel and desertic zones, has a population of 7,620,225. 80% are illiterate and clustered in the countryside. 48% are less than 15 years old.

Since independence in 1960, being fully aware of the extreme poverty of their country and its geo-economic realities, Malian authorities have realized so soon that development is after all an educational act, an act of formation which allows Man to grasp, master and transform his environment.

So, in order to adapt the school system to the realities of the country, since 1962, Malian authorities brought about a reform of their educational system known as the 1962 reform.

On the structural ground, it is easily noticed that Fundamental Education is the basis of Malian educational system (Tables I and II).

Broadly inspired by the experience of Socialist Countries, the 1962 reform emphasized on the teaching in Malian schools of agriculture, manual work and on pupils' vocational guidance in Technical and professional Education.

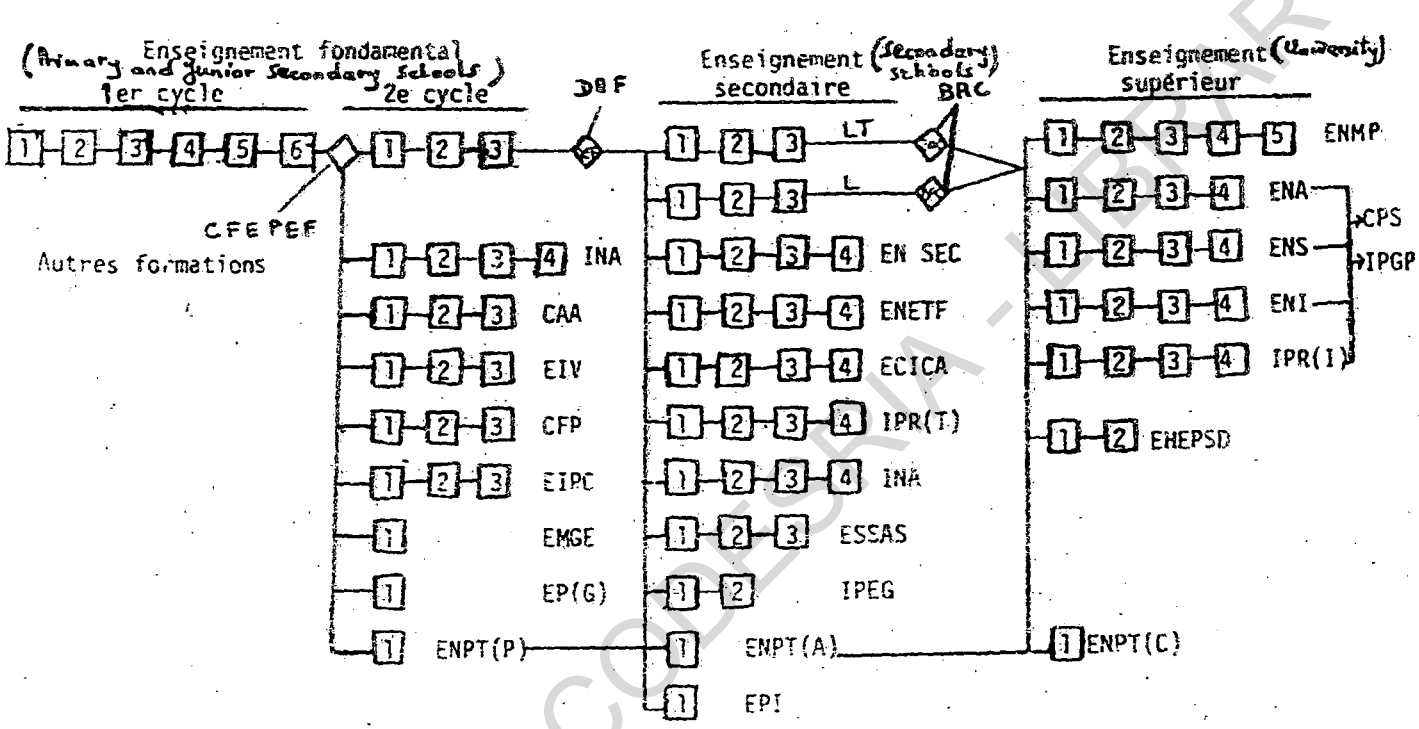
In spite of many laws and decrees, the teaching of agriculture and manual work in the framework of the 1962 reform, called ruralization, took an enormous time to be implemented.

The implementation of ruralization started in 1970 in the Sikasso region. By its climate and land, this region is the more agricultural region of Mali. This first implementation concerned 30 schools considered as Pilot Schools.

However, the "notorious failure of this experimentation of ruralization", according to Diambomba (1980), induced Malian authorities to revive it in 1979 with the technical and financial supports of the World Bank. Known in Mali as the new experience of ruralization, this second experimentation involves just nine schools in the same Sikasso area and concerns only the second cycle of Fundamental Education. The nine schools involved in the experiment have a special syllabus different from the syllabus used elswhere in Mali.

In October 1980, ruralization was generalized and all the primary and junior secondary schools (which make up the Fundamental Education in Mali) have been involved.

TABLEAU (TABLE) I : STRUCTURE DE L'ENSEIGNEMENT AU MALI SUIVANT LA REFORME DE 1962 -
(Structure of Malian Education in the Framework of the 1962 Reform)



Source: Diambomba 1980

KEY:

CAA : Centre d'Apprentissage agricole
(Agricultural apprentiship Center)

CFP : Centre de Formation professionnelle
(Professional training Center)

CPS : Centre Pedagogique Superieur
(Superior Pedagogic Center)

ECICA : Ecole Centrale pour l'Industrie,
le Commerce et l'Administration.
(Central School for Industrial
Commercial and administration)

EHEPSD: Ecole des hautes etudes pratiques
de secretariat de direction.
(School of higher practical studies
for office secretaries)

EIPC : Ecole des Infirmiers du 1er Cycle.
(School for hospital attendants of
first cycle)

EIV : Ecole des Infirmiers Vetérinaires
(Veterinary attendants School)

ENA : Ecole Nationale d'Administration.
(National School of Administration)

ENMP : Ecole Nationale de Medecine et de Pharmacie
(National School of Medicine and Pharmacy)

ENETF : Ecole Normale D'enseignement Technique
Feminin (Home Economics Training School
for females

ENI : Ecole Nationale d'Ingenieurs
(National School for Engineering)

ENPT : Ecole Nationale des Postes et Communications
P; preposes, A; agents, C; controleurs
(National School for Posts and Telecommunications
P; post office assistants, A; agents, C; controllers)

ENSec : Ecole Normale Secondaire.
(Teacher Training Center for Secondary junior Schools)

ENsup : Ecole Normale Superieure.
(Teacher Training Centre for Secondary Schools)

EP : Ecole de Police: G; gardiens, I; Inspecteurs (Police School: G; Controllers, I; Inspectors)

ESS : Ecole Secondaire de la Sante (Secondary school for health)

INA : Institut National des Arts. (National Institute for Arts)

IPEG : Institut Pedagogique d'Enseignement general (Teacher Training Center for primary schools)

IPGP : Institut de Productvite et de Gestion Previsionnelle (Institute of productivity and Management)

IPR : Institut Polytechnique Rural: T; Techniciens I; Ingenieurs (Rural Polytechnic Institute T; Technicians, I; Engineers)

L : Lycees (Secondary Schools)

LT : Lycees Techniques. (Technical Secondary Schools)

Examens principaux (Main examinations)

CFEPEF: Certificat de Fin d'etudes du Premier Cycle de l'Enseignement Fondamental. (Certificate of First Cycle of Fundamental Education Studies)

DEF : Diplome d'Etudes Fondamentales (Fundamental Education Diploma)

BAC : Baccalaureat. (French Bachelor's Degree)

NOTE : Some schools were ommitted by the reference;

CNDC : Centre National de Developpement Communautaire 4 ans apres DEF (National Center for Community development. 4 years after DEF)

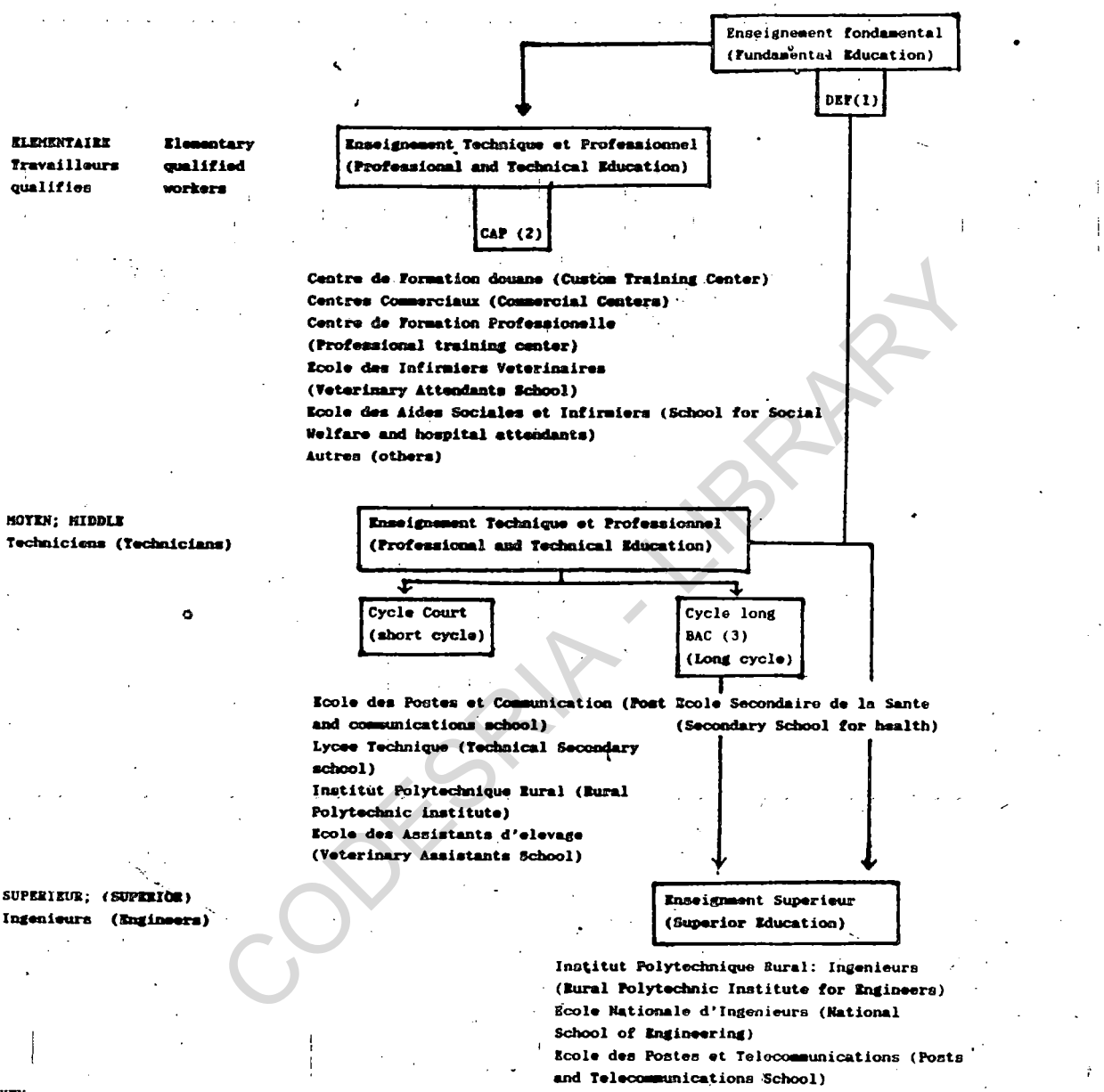
LA : Lycees agricoles: 3ans apres DEF. (Secondary Schools for agriculture. 3 years after DEF)

EEPS : Ecole des Educateurs Pre-scolaires. 2 ans sans DEF (Teacher training center for pre-schools. 2 years without DEF)

INS : Institut National des Sports: 4ans apres DEF (National Institute for Sports)

Source: Diabomba 1980.

TABLE II STRUCTURE DE L'ENSEIGNEMENT TECHNIQUE ET PROFESSIONNEL AU MALI
(Structure of Professional and Technical Education in Mali in the framework of the 1982 reform).



KEY:
(1) DEF Diplome d'Etudes Fondamentales (Fundamental Education Diploma)
(2) CAP Certificat d'Aptitude Professionnelle (Professional aptitude cerificate)
(3) BAC Baccalaureat (French Bachelor's Degree)

Source: Diambomba 1980.

II STATEMENT OF THE PROBLEM

Most curriculum change follow standard process (Tyler 1950; Taba, 1945; Wheeler, 1971; A.P.E.I.D., 1973). The models proposed by Tyler (1950) and Taba (1945) have similar steps (Taba, 1962). These basic steps are: (1) Diagnosis of needs; (2) formulation of objectives; (3) selection of content; (4) organization of content; (5) selection of learning experiences; (6) organization of learning experiences; (7) determination of what to evaluate and the ways and means of doing it.

Wheeler (1977), for example proposed five phases in curriculum process. The A.P.E.I.D. (1973) model contains many phases: (1) the presage evaluation; (2) The identification of aims, goals and objectives of the new curriculum; (3) The selection of contents; (4) The selection of teaching-learning strategies; (5) The development of new teaching materials; (6) A formative evaluation or in-service training; (7) The pilot tryout; (8) A second formative evaluation; (9) The large-scale implementation; (10) A summative evaluation.

Thus, curriculum development is more likely to succeed if it has gone through the basic curriculum development phases cited above.

However, generalized in a social crisis context, ruralization as carried out in Mali fails to follow certain basic and important procedures of curriculum development.

In fact, no presage evaluation had been undertaken.

Ruralization was generalized without any planning, syllabus and equipment.

Teachers and students' parents were neither sensitized nor consulted before the generalization of ruralization. This was a grievous omission on the part of the planners as preparation of the community facilitates curriculum renewal. (A.P.E.I.D. 1977).

Teachers received little or no training to teach ruralization.

No formative evaluation had been undertaken before the pilot tryout phase.

The large-scale implementation was brought about before the release of the results of the feasibility studies conducted by the National Pedagogic Institute (Ruralization Section) as mentioned above.

Apart from the "National Days of Reflection on Ruralization", held from January 7th, 1986 to January 11th, 1986 in Bamako and some official reports, no exhaustive evaluation had been undertaken by the authorities.

All these deficiencies in the conception and development of ruralization most likely explain clearly the authorities' gropins and the persistence of many problems in the Malian school system that ruralization should have solved, i.e., according to Hough (1989) on the one hand and to General Facts of Education, Laminal Text, (1989) on the other:

(i) the low enrolment rate in spite of vigorous campaigns waged at the community level to try to persuade parents to send their children to school;

(ii) the decline of the numbers of pupils at each level of education;

(iii) the production by the school system of many dropouts and an equally large number of unemployed graduates;

(iv) the shortage of teaching materials of all kinds in the schools.

At present, i.e.,ten years after the generalization of ruralization, there is a dire need to carry out an evaluation of some aspects of its implementation in order (1) to monitor objectively the efforts of the people responsible for its development and implementation, and (2) to propose °remedial solutions to a number of problems that have been raised since the generalization of ruralization to all the schools of Malian Fundamental Education.

It is hoped that this study will make a contribution in this direction.

According to Fullan & Pomfret (1977, pp. 336-340), implementation study allows: (1) to know what has changed between the time when the innovation was introduced and the time that its consequences became evident; (2) to understand some of the reasons why so many educational change fail to become established; (3) to get more and reliable information about the implementation or to clarify the distinction between

implementation with some aspects of the change process such as adoption (decision to use an innovation or to clarify the distinction between determinants of implementation with implementation itself; and (4) to interpret learning outcomes and to relate these to possible determinants.

Research literature (Downey et al., 1975; Doyle & Ponder, 1977-78; Kritek, 1976; Fullan & Pomfret, 1977; Berman & Pauly, 1975; Giacquinta, 1975; Berman & McLaughlin, 1976) show that curriculum implementation depends to a large extent, upon the daily activities of those institutional members. In particular, the teacher is the direct agent of curriculum implementation. As such, it is likely the teachers play a more critical and important role in the curriculum innovation process.

The purpose of this study is to assess the degree of implementation of some aspects of ruralization program as carried out in Mali since 1980 in order to explain the relationships between the degree of implementation of the objectives found in the "Guide to the Practice of Ruralization activities" and their attributes and nature as perceived by the teachers, and to explore the implication of these relationships for the development of appropriate implementation strategy. More specifically, this study seeked answers to the following questions:

(1) What are the objectives of the "Guide to the Practice of Ruralization activities"?

(2) What are their degree of implementation?

(3) What are teachers' perceptions about the objectives of

the "Guide to the Practice of Ruralization activities"?

(4) What are the relationships between the degree of implementation of these objectives and teachers' perceptions about them?

III SIGNIFICANCE OF THE STUDY

This study is motivated by the dearth of information on the subject in Mali. It will be the first to assess the degree of implementation of ruralization generalized since 1980 to all the schools of Fundamental Education in Mali.

This study could provide important feedback to the people responsible for the development and implementation of ruralization. The findings of an independent evaluation of ruralization could provide valuable information to the general public and other interested bodies. It is hoped that such information will help to clarify a number of issues that have been raised up since the generalization of ruralization to all the schools of Malian Fundamental Education.

Hopefully this study could help the National Directorate of Fundamental Education, the nerve centre of ruralization in Mali to monitor objectively its efforts in the development and implementation of ruralization.

For an agricultural country as Mali, ruralization could be a " vital force in directing social change and improving the lives and the environments of the community members " (Caro, 1971, p.1). So, it is hoped that this study will provide the authorities with appropriate implementation strategies which could be an adequate solution to the inadequacy of the school system to meet the needs of the social system by giving to the pupils and students the necessary training permitting them to work in the future in productive sectors or to practice productive activities.

IV THEORY

> "No matter what sort of bill you have, everything depends upon the men, who, so to speak, are inside of it, and who are to make it work. In the hands of the right men, any bill would produce the desirable results..."
>
> Adams, C.F.,Jr. (Kolko, 1965, p. 37)

According to Adams, how a social policy is actually used in practice depends on the people involved in implementing it. If they do not respond favourably to the policy, then even the most well intended or strongly supported legislation is unlikely to be implemented as planned. Similar argument may be applied to curriculum innovations.

By its conception and objectives, a curriculum is a social, economic, political, and technological change process of the society for which it had been elaborated (A.P.E.I.D., 1977). Moreover, an extensive review of research on curriculum implementation (Fullan & Pomfret, 1977) concludes that a curriculum change consists primarily of five dimensions: changes in (a) subject matter or materials, (b) organizational structure, (c) role/behaviour, (d) knowledge and understanding, and (e) value internalization.

Thus, how each of these dimensions is developed in practice in a curriculum innovation programme depends upon the daily activities of those institutional members in charge of applying or implementing it. The teacher as a direct agent of curriculum implementation, is likely to play a more critical and important role in the innovation process. In particular, not all teachers

have the same propensity to implement any given innovation (Crowther, 1972; Lukas & Wohleb, 1973). Their capacity to use the innovation is one of the most problematic aspects of implementation (Gross et al., 1971; Crowther, 1972; Charters & Pellegrin, 1973).

In the first place, teachers are expected to transmit the subject matters or contents to the students. In the process, teachers are expected to make such decisions as to what should be taught, how to present it and in what order, and what media to use. To be able to do so, teacher must be competent and well-prepared with respect to pre-service and in-service trainings. In this respect, the study of Downey et al. (1975) concluded that "basic teacher preparation (and development) is a crucial factor in the implementation, non-implementation, and misimplementation of the new program" (p.19). In particular, the knowledge and/or understanding that teacher has about the various components of a curriculum innovation, namely, objectives, rationale, values and assumptions, subject matter, implementation strategy, role relationships, and other structural changes may be critical.

It seems likely that planned educational changes that involve teachers in a conflict with their educational attitudes and beliefs would not be well received by those teachers (Waugh & Punch, 1987). Besides, teachers' perceptions or judgements of the practicability of a proposed curriculum as well as their perceived expectations and beliefs toward it could affect its implementation (Doyle & Ponder, 1977-78; Kritek, 1976). When

teachers perceive an educational programme as irrelevant to the need of the society and of the learners, they could oppose it, thus affecting its implementation (A.P.E.I.D., 1977). Thus, the teachers' valuing of and commitment to implementing the various components of a curriculum innovation is important, though valuing an innovation is not sufficient in itself for implementation to occur (Charters & Pellegrin, 1973). Moreover, people may end up not valuing an innovation not because they think it undesirable as a goal, but because the process of implementation has been frustrating (Fullan & Pomfret, 1977).

Some forms of organizational, structural, and role relationship changes are expected in curriculum innovations. Organizational and structural changes may take the form of changes in the formal arrangements and physical conditions, such as different ways of grouping students, alternative spatial or temporal arrangements (e.g., audio-visual rooms, laboratories, and time-tabling), the presence of new personnel to perform new roles (e.g., teaching assistant), and allocation of resource materials. An important manifestation of organization change involving the teachers is role relationship change. Such changes often concern new teaching styles, new tasks (such as new planning and curriculum development roles for teachers) to support these styles, new role relationship between teachers and students, teachers and principals, and so on (Huberman, 1973).

The implications of organizational, structural, and role relationship changes for the teachers are many.

For example, lack of time and energy, teaching overload, and multiple demands are frequently cited by teachers, in many studies, among the major implementation problems they face (Berman & Pauly, 1975, p.40; Charters & Pellegrin, 1973; Downey et al., 1975; Naumann-Etienne, 1974). Besides, teachers' own situation such as their incentive system is an important factor for curriculum implementation. In fact, teachers' personal cost appraisal enables them to establish the amount of return vis-a-vis the amount of investment not in monetary terms, but rather in terms of, for example, promotions, student response, personal satisfaction, and the effect on home life (Doyle & Ponder, 1977-78). Consequently, teachers' negative perceptions of their own situation, such as their own incentive system, cause generally negative reactions to the change process as a whole (Kritek, 1976).

The strategy through which a curriculum is introduced could also affect its implementation. Generally, the strategy which consist of introducing an innovation by force or coercion is likely to be counter-productive and inefficient because very soon one finds that the innovation is not meeting the needs of the learners and the implementer, i.e., the teachers (A.P.E.I.D., 1977). Indeed, the imposition of an innovation on the teacher can raise up in the teacher affective or emotive load vis-a-vis the innovation, and consequently could affect the implementing process (Ghani, 1988).

Teachers' participation in decision-making enables them to resolve some implementation problems such as knowledge and

understanding, clarity of change proposals, lack of feedback, and lack of meeting (Fullan & Pomfret, 1977). Berman & Pauly (1975) reported that implementation of change proposal was more difficult if teachers felt that they did not participate in day-to-day decisions. With Western Australia, McAtee (1978) found that teachers' attitudes to a system-wide change were positively related to their perceived participation in classroom. Thus, teachers' participations in decision-making aid the successful implementation of change as an extinguisher of uncertainty and/or as a suppressor of organizational members' estimation of risk (Giacquinta, 1975).

In addition, favourable organizational environmental climate could motivate and stimulate teachers in their effort in trying to implement an educational curriculum (Stern & Keislar, 1977; Fullan & Pomfret, 1977). Berman & McLaughlin (1976) found that the active support of principal and teachers increased the chance of successful change implementation, and according to Paul (1977), school support affects the change process and teacher reactions to it.

The theoretical basis of this implementation study is summarized below:

Planned Innovation: RURALIZATION	=====>	Institutional Users (TEACHERS)	=====>	Degree of Implemenation of RURALIZATION

Teachers' Perceptions of the
- relevancy
- acceptability
- feasibility
- complexity
- desirability
- compatibility

of Ruralization, and

Teachers' feeling of satisfaction/ dissatisfaction in implementing Ruralization

Teachers' Characteristics:
- sex
- age
- place of teaching (locality of the school)
- years of teaching experience
- years of experience in teaching ruralization
- academic qualification
- professional qualification

V REVIEW OF RELATED LITERATURE

The purpose of this chapter is to review the empirical literature related to the implementation studies and perceptions of innovation. While the theory of implementation will become the framework of this study, the review of empirical literature is to help with the choice of appropriate methodology, including the selection of relevant independent variables.

5.1 Implementation studies

In the last decade and half, much of the research interest in the field of curriculum has been focused on the diffusion and implementation of curricular innovations.

Curriculum diffusion process is seen as a social interaction between the people involved in it. (Harding et al., 1976). In the diffusion process, complex interactions also occur between the innovation and the people involved with it.

So, the process of curriculum diffusion could be looked at from different approaches:

(i) the evaluation of the various formal and informal channels or sources of diffusion.

(ii) the study of the social network using interaction analysis.

For the purpose of this study, the process of curriculum diffusion will be analysed from the key individuals or committees' influential role during the diffusion process and especially during the implementation stage.

The different people involved in the innovation as individuals with specific attitudes and values or as members of groups within organizations with specific custums, beliefs and norms could influence the process of curriculum change and specifically its diffusion. (Harding et al., 1976).

Each of these people and institutions plays influencial role in facilitating the adoption, adaptation and implementation of the curriculum innovations.

Kelly (1971) has shown that social and personal interactions can be seen as influencing the movement of an innovation through a social system and they arise from the perceptions of the innovation by the administrators or the teachers. Social climate for example, may be looked at through the perceptions of the people involved in the diffusion process.

Harding (1975) has found that several key people through their interactions had been influential in the diffusion of innovations within the educational system.

Kelly and Rudduck (1976) have also identified the importance of key people in the dissemination process.

According to House (1979), the rise of the political and cultural perspective has its roots in the increasing awareness of the complex relationships that exist between people in the movement of innovation and the influence of these relationships on the decision-making that is involved in the process.

In this social interaction process, teachers play a particular

role. In fact many studies on curriculum innovations implementation have identified teachers as main data source. (Cole, 1971; Hall and Louck, 1976; Crowther, 1972; Ashley and Butts, 1970; Solomon et al., 1977; Gross et al., 1971; Lukas and Wohlled, 1973).

In the malian context, for the success of ruralization, the authorities and developers emphasize on teachers' adoption of the innovation and their commitment to its implementation. (D.N.E.F., 1989).

The current documents on ruralization emphasize on the experimental method as a methodological constant to be used by the teachers in the framework of ruralization. (Cisse, 1985).

So in Mali, teachers in charge of implementing ruralization are seen as the key actors determining its success. It is hoped that they will play influencial role in implementing ruralization.

From the literature available, it seems that many factors have considerable influence on teacher's decision to use or to implement an innovation in the classroom such as social pressures, needs and constraints of the society in general and the educational system in particular, the innovation itself, the key person's personality, values, beliefs, attitudes and motivation, the other people from the diffusion network etc.. (Ghani, 1988).

As mentioned above, teachers play influential role in curriculum implementation. In the past three decades, the

preoccupation to study implementation became popular. Many studies had been undertaken in this direction. (Wang et al., 1984; Huling et al., 1983; Fullan, 1982; Berman, 1981; Leithood & Montgomery, 1980; Fullan & Pomfret, 1977).

Implementation studies tend to display one of two main orientations:

(1) The predominant orientation which refers to the fidelity of implementation try to determine the degree of implementation of an innovation in terms of the extent to which actual use of an innovation corresponds to intended or planned use.

(2) The other main orientation called mutual adaptation try to analyse the complexities of the change process vis-a-vis how innovations become developed/changed etc. during the process of implementation.

Among the studies which attempt to determine the extent to which actual use of the innovation corresponds to intented or planned use, there are two types: those that focus on organizational change (Gross et al., 1971; Naumann-Etienne, 1974; Lukas and Wholled, 1973); and those that examine specific curriculum innovations (Evans and Scheffler, 1974; Solomon et al., 1977; Hess and Buckholdt, 1974; Leinhardt, 1974; 1973; Cole, 1971; Crowther, 1972; Downey et al., 1975; AShley and Butts, 1970; and Hall and Loucks, 1976).

As noticed in the literature, there are five dimensions of curricular change that seem to constitute the various components

of implementation i.e.

(a) Subject matter or Material (Content)

(b) Organizational Structure

(c) Role and Behavior

(d) Knowledge and understanding

(e) Value Internalization.

Most of the studies which assessed the degree of implementation of specific curririculum innovations emphasized on each of the various components of implementation.

Gross et al. (1971) defined degree of implementation as "...the extent to which organizational members have changed their behavior so that it is congruent with the behavior patterns required by the innovation".

Naumann-Etienne (1974) also attempted to measure the degree of implementation of an organizational innovation in her examination of open education in eight elementary schools in Vermont. In this study, however, aspects of organizational behavior other than teacher-role behavior were included in the measuring instrument.

Evans and Scheffler (1974) examined the degree of implementation of a prepackged individualized IPI math curriculum based on the developers' conception of what constituted IPI math in practice. The 11 aspects identified and assessed concerned the organizational and the instructional.

Solomon et al. (1977) assessed the degree of implementation of a prepackged preschool curriculum. Observers were asked to rate

teachers on nine dimensions, such as "Roles of teachers in Their Team" (no elaboration given), Reinforcement and Behavior Management, Unit Use, and Parent Involvement. These indications suggested that considerable change in the role relationships are part of the curriculum.

Ashley and Butts (1970) use classroom behavior of teachers as the main measure of degree ofimplementation in examining a K-6 science program. The study's main value is in its conceptualization of the behavioral changes required by the curriculum.

Hess and Buckholdt (1974) examined the degree of implementation of a Language and Thinking (LAT) program for preschool, Kindergarten, and first-grade children. The following six components were rated by observers on a three-point scale:

1. Teacher preparedness for LAT lesson(s) observed.
2. Correct following of procedures as specified in the Teachers's guide.
3. Proper use of LAT materials as sugested in the guide.
4. Teacher effectiveness in maintaining student attention and elicitation of student responses.
5. Amount of positive reinforcement given to students.
6. Teacher affect (enthusiasm) towards the lesson.

Leinhardt (1974; 1973) investigated six main implementation components: context, allocation of time, allocation of space, assignment procedures, classroom management, and student

independence.

Crowther (1972) examined the implementation of an elementary social studies curriculum that was available to all teachers in the province of Alberta, Canada. Its measure of implementation reflected the major distinguishing features of the curriculum.

Downey et al. (1975) according to Fullan & Pomfret (1977), carried out a larger, more comprehensive study than Crowther of the same social studies curriculum in Alberta. Three major levels of implementation were investigated: (a) the appropriateness of and knowledge about the Master Plan (the Provincial Department of Education's Curriculum Guidelines), (b) the appropriateness and effectiveness of programs developed at the local level, and (c) the appropriateness and effectiveness of programs at the typical school/classroom level.

Cole (1971) also reports on a social studies curriculum in analyzing an apparently successful attempt to implement the Man: A Course of study (MACOS) curriculum - a social science curriculum for use in elementary schools. Cole's measure of implementation primarily concerned teachers' knowledge of MACOS and reported behavior in the classroom. Cole also tried to determine to what extent pupils behaved according to MACOS principles.

Hall and Loucks (1976) take fidelity or degree of implementation according to Fullan & Pomfret (1977), to its logical and methodological conclusion by using their approach on the assumption that the implementation of innovation can be

assessed by determining levels of use according to prespecified criteria.

In Mali, as the main component of the 1962 reform, ruralization is an attempt to adapt the school system to the needs and socioeconomic realities of the country. It aims to reduce the discrepancy between teaching and real life by promoting some activities linked with the rural area such as agriculture, fishing, handicraft, and small scale industry. It is also an attempt to rehabilate among the parents and their children the manual work.

The National Seminar on ruralization at fundamental level held in Sikasso from December 26th to 29th, 1976 defined ruralization in this way:

> "Ruralization in Mali may be defined as an attempt to adapt our educational system to the cultural and socioeconomic realities of our milieu; it is an effort, a step to obtain a real interaction between school and its environment by practical activities (gardening, fishing, handicraft, small scale industry, etc.) for a better training and a real insertion of the youth in the environment which they are to transform. It is marked by its functionality and its agreement with the community development plans. It must keep on being opened onto the external world". (I.P.N., 1977, p.25).

According to Cisse (1985), three ultimate objectives are deducted from this definition i.e.

(a) the training of the pupil as a producer

(b) the training of the pupil as a socio-cultural animator

(c) the training of the pupil in the perspective that he

can continue his studies.

Some immediate objectives had been defined in order to attain the three ultimate objectives mentioned above. According to Cisse (ibid), the immediate objectives aim that the ruralized school should be enable to:

(i) reequilibrate the educational process by linking the teaching with the activities of the environment;

(ii) create in the pupils a scientific spirit in order to initiate them to manual activities by the close association between the theoretical and practical aspects of the manual activities;

(iii) give to the pupils a multivariant training;

(iv) contribute to the functioning of the school by the improvement of its material and financial conditions.

Ruralization in the long run, aims at reducing the rural-urban drift by keeping up the dropouts in their environment. It aims also to foster the graduates to go back in their villages in order to practice rural activities and become self employed. The training of the pupil as a socio-cultural animator should permit him to teach to his unlettered friends and parents, the modern technics of agriculture, breeding, and handicraft.

In addition to its philosophy and objectives, ruralization comprises of the "Guide to the Practice of Ruralization activities" to be taught or implemented.

So, ruralization activities are grouped under this "Guide to

the Practice of Ruralization activities". This document, according to the developers of ruralization, is a synthesis of ruralization activities undertaken in the schools since 1980 (D.N.E.F., 1989). It is conceived for the teachers. Every teacher should aspire to it in order to give a scientific teaching by linking the different activities that are in the "Guide to the Practice of Ruralization activities" to the academic subjects of the school curriculum (D.N.E.F, ibid).

Ruralization activities refer to:

(a) Gardening
(b) Farming
(c) Nursery
(d) Retimbering
(e) Arboriculture
(f) Breeding
(g) Technology and Handicraft
(h) Home Economics
(i) Sports and cultural activities
(j) School Cooperative
(k) Scouting (called in Mali: Mouvement Pionnier).

The "Guide to the Practice of Ruralization activities" elaborated in 1989 is described in terms of objectives. Every objective is divided in some activities to be implemented and linked with an academic subject of the school curriculum (called in the "Guide to the Practice of Ruralization activities" level of integration). The different activities derived from the

different objectives for every subject of the "Guide to the Practice of Ruralization activities" constitute the syllabus of this subject and they have to be implemented successfully and faithfully by the teachers.

Besides, "The National Days of Reflection on Ruralization" held from January 7th 1986 to January 11th in Bamako emphasized on:

(i) the training of the pupils by the artisans and also in the factories;

(ii) the possibility for the schools to be assisted in their activities of ruralization by resource-persons;

(iii) the equipping of the schools with ruralization materials by the Students' parents Associations.

As mentioned earlier, there are five dimensions of curricular change that seem to constitute the various components of implementation i.e.

(a) Subject matter or Material (Content)

(b) Organizational Structure

(c) Role and Behavior

(d) Knowledge and understanding

(e) Value Internalization.

The reviewed studies had emphasized on each of these dimensions. For the purpose of this study, the degree of implementation will be assessed through the objectives of the "Guide of the Practice of Ruralization activities" to be taught or implemented by the teachers and which make up its contents.

Degree of implementation in this study is defined as teachers self reports of to what extent they have implemented or plan to implement the different objectives of the "Guide of the Practice of Ruralization activities".

As noticed in the literature, the factors that could plausibly influence the implementation are potentially enormous in number i.e. according to Fullan & Pomfret (1977) :

a. Characteristics of the Innovation
b. Strategies
c. Characteristics of the Adopting Unit
d. Characteristics of Macro Sociopolitical Units

Each of these categories contains a number of specific variables.

The relationships of the adopters or implementers' (teachers') personal and professional characteristics to the rate by which they have implemented an innovation have been the focus of much of the earlier researches on the diffusion of educational innovations (Corvin, 1975; Jenkins, 1971; Nicodemus et al., 1975).

According to Fullan & Pomfret (1977), only few studies have looked at the direct relationships between individuals teachers's characteristics to implementation.

Crowther (1972) and by Lukas and Wohlleb (1973) found that not all teachers have the same propensity to implement any given innovation.

Lukas and Wohlleb (1973) suggested that value orientation, type of previous training and ability to use the innovation could be related to implementation.

Downey et al. (1975) "conclude that basic teacher preparation (and development) is another critical factor in the implementation, nonimplementation, or misimplementation of the new program" p. 19.

Although age and level of education seem not to be related to effective implementation (Crowther, 1972; Evans & Scheffler, 1974), Lukas and Wohlled (1973) suggest that these relationships should be tested.

According to Giacquinta (1974), even if the role of significant individual characteristics remains to be developed, it should be included in any large-scale analysis of program implementation.

In the Malian context, teachers are seen as the key actors determining the success of ruralization. It is conceivable that teachers with different background, values and beliefs will implement differently the objectives of the "Guide to the Practice of Ruralization activities". So, for the purpose of this study, Teachers' characteristics which may influence their implementation of the objectives found in the "Guide to the Practice of Ruralization activities" could be:

(a) locality of the school

(b) sex

(c) age

(d) years of teaching experience

(e) years experience in teaching ruralization

(f) academic qualifications

(g) professional qualifications.

5.2 Perceptions of innovation

According to Ghani (1988), only few studies in the past have tried to explore the relationship between the diffusion and/or adoption of an innovation as to the ways that it was being perceived (Hurst 1983; Rogers and Shoemaker 1971; Fullan & Pomfret 1977; Fullan 1982). From the literature available, it seems that the perceptions of the attributes of innovations in relation to their adoption or implementation, can be grouped into two ways:

(a) The exogenic attributes. These are the perceived attributes of innovations associated with the context to which the innovations are to be implemented, such as availability of resources, acceptance by peer groups.

(b) The endogenic attributes. These refer to the inherent nature of the innovations which are associated with the structure of ideas and systems of beliefs and values found in them which evoke certain emotive responses to the innovations.

5.2.1 Perceived Exogenic Attributes of Innovations.

Hurst as some of the earlier writers on innovation, such as G.

Tarde and H. Barnett, has tried to explore the relationships between the diffusion and/or adoption of an innovation as to the ways that it was being perceived (Ghani 1988). Tarde suggested earlier that the perception of the innovation's compatibility with current ideas and practice would enhance its adoption.

On the basis of their review of research on the diffusion of innovations from all areas of studies, Rogers and Shoemaker (1971) have shown some indications that the potential adopters' perceptions of certain attributes or characteristics of the innovation may have some influence on the decision to adopt it. The perceived attributes that they identified and which have influenced the rate of adoption of the innovation are:

(a) Relative Advantage of the innovation over the old,
(b) Compatibility - to present practices,
(c) Complexity - in terms of clarity and understanding,
(d) Trialability - possibility of trying out of the innovation,
(e) Observability - of concrete manifestations of the innovation.

Formulated on the basis of results of research on diffusion of mainly simple technological innovations in agriculture and medicine, these categories according to Ghani (1988), have some relevance to the diffusion and adoption of educational innovation.

In their review of research on the implementation of curricular projects, Fullan & Pomfret (1977) have also suggested that the

characteristics of the innovation may be one of the determinants or factors in the implementation of curricular innovation. The perceived explicitness and complexity of the innovation were the two important characteristics suggested by them.

More recently, Fullan (1983) has added to these two characteristics, the perception of needs and relevance of the innovation and of the quality and practicability of the innovation.

Based on a review of literature, Hurst (1983), in his attempt to draw up a guideline for implementers of curriculum innovations, had identified 6 factors influencing implementation which he had referred to as conditions of acceptance. Four conditions among these conditions of acceptance can be considered according to Ghani (1988), as the conceptualization by the earlier writer. These are:

(a) relevance or desirability - the outcomes of the innovation is perceived as beneficial and coincide with the implementers' value system,

(b) effectiveness or reliability - in terms of the perceived probability of the outcome being achieved in the implementers' situation,

(c) feasibility - in terms of the availability of necessary resources,

(d) efficiency - in terms of perceived return of investment in time and effort.

Harding (1975) in her study of the implementation of the Nuffied "O" level Sciences courses including the Biology curriculum, has also developed the curricular decision-making model in which 4 dimensions are related to the above categorizations i. e. the feasibility, acceptability, relevancy and dissatisfaction of previous practice.

5.2.2 Perceived Endogenic Attributes of Innovations.

Barnett (1953) earlier had suggested that ideas form the basis structure of all innovations. Then, Rogers and Schoemaker (1971) further, suggested that each innovation may be seen to have two components which are:

(i) the idea component
(ii) and the object component.

According to Ghani (1988), the idea component in all innovations may be new in itself or new in the way it is perceived while the object component which is the material or physical manifestation of the idea will not be present in all innovations. So, according to him, in the study of curriculum diffusion and implementation, it would be appropriate to look carefully at the ideas that underlie these innovations both in pedagogic and content areas of the project.

The differences in perception (in terms of the affective load or emotive content of the concepts found in a topic) may have some influence on the adoption and implementation decision-making and ultimately, on the diffusion of innovations through an

educational system (Ghani 1988).

For the purpose of his study, based on the analysis of the Nuffied - based Modern Biology, Ghani (ibid) had identified in relation of both the pedagogic and content areas of a topic, some attributes similar to the conceptualization by the earlier writer i.e.

(a) the complexity of the innovation in terms of the understanding of it,

(b) the desirability of the innovation, specifically in terms of the value system inherent in it,

(c) the emotionality or affective load that the innovation invokes from the teacher,

(d) the compatibility of the value and belief systems to those present in the teacher and peer group.

As mentioned earlier, ruralization curriculum in Mali comprises of the "Guide to the Practice of Ruralization activities" to be taught or implemented which make up its contents. Most of the subjects of the "Guide to the Practice of Ruralization activities" have never been taught or implemented in Malian Fundamental Education before ruralization. Even those of them which were being taught before ruralization, had their contents (syllabus) changed and adapted to the philosophy of ruralization i. e. to link the teaching with its environment or the real life.

The "Guide to the Practice of Ruralization activities" has been described in terms of operational objectives. The description of the syllabuses in terms of operational objectives aims generally

to make easy the planning of the teaching and its communication between the persons involved in the teaching process.

Besides, the operational objectives should include an element of every domain of the taxonomic system i.e.

(i) the affective domain;
(ii) the cognitive domain;
(iii) the psychomotor domain.

These operational objectives were first identified then selected on the basis of an analysis of the learning-outcomes desired, then specified in terms of activities to be implemented.

The activities related to the different contents of the "Guide to the Practice of Ruralization activities" refer to many factors among which the context to which ruralization had to be implemented were, the availability of resources, the acceptance by peer group. They refer also to the outcomes to be achieved in the teaching context, to the teaching method, the efficiency in terms of minimizing the teaching time and effort, the philosophy and objectives of ruralization.

So, it is hoped that the operational objectives in the "Guide to the Practice of Ruralization activities" could be the picturing of ruralization. Consequently, they may reflect the inherent nature of the innovation i.e. its structure of ideas and systems of beliefs and values which may evoke certain emotive responses to it.

In the framework of ruralization, it is also conceivable that the evocation of the objectives of the "Guide to the Practice of Ruralization activities" as stimuli to a teacher may evoke affective load in the teacher.

For the purpose of this study, the exogenic and endogenic attributes found in the above review of literature on perceptions of innovations could be used for the different contents of ruralization. These attributes are:

(1) For the exogenic attributes

(a) the feasibility of implementing the innovation given the constraints (resources and facilities) and needs (pupils and teachers) found in his classroom;

(b) the acceptability of the innovation to the different communities in the teaching context;

(c) the relevance of the innovation to the needs of the teaching situation.

(2) For the endogenic attributes

(a) the complexity of the innovation in terms of the understanding of it,

(b) the desirability of the innovation, specifically in terms of the desirability of the value system inherent in it,

(c) the emotionality or affective load that the

innovation invokes from the teacher,

(d) the compatibility of the value and belief systems to those present in the teacher and peer group.

In the Malian context, teachers are in charge of implementing ruralization. They should adopt and implement it successfully and faithfully. So, their perceptions about the objectives of the "Guide to the Practice of Ruralization activities" seen as the level of teachers' adoption of these objectives could be related to the implementation of the innovation.

Ruralization as an innovation, is implementing in a milieu which has already its style of life, ideologies, philosophy, and on the whole its perceived vision of the world. In education, where innovations are basically ideas and practices according to Ghani (1988), the imposition of an innovation to the teacher can destabilize the equilibrium that exists between the teacher and the social system and consequently can raise up in the teacher, affective or emotive load vis-a-vis the innovation. In the framework of ruralization it is conceivable that teachers' perceptions of the "Guide to the Practice of Ruralization activities" may be related to the degree of its implementation.

Although there does not seem to be any literature on the relationships between teachers' characteristics and the perception aspects of the innovation relevant to their implementation, it would be useful according to Ghani (1988), to study how teachers with different value orientations and background perceive the innovation.

According to the "set dynamic" theory of perception (Allport, 1955), what an individual perceives may be influenced by his belief, value, personality and motivations. So, it may be possible that teachers with different beliefs, values, personality, background and motivation perceive differently the objectives of the "Guide to the practice of ruralization activities".

For the purpose of this study, teachers' characteristics which may influence their perceptions of the different objectives of the "Guide to the practice of ruralization activities" could be:

(a) locality of the school
(b) sex
(c) age
(d) years of teaching experience
(e) years experience in teaching ruralization
(f) academic qualifications
(g) professional qualifications.

VI RESEARCH QUESTIONS

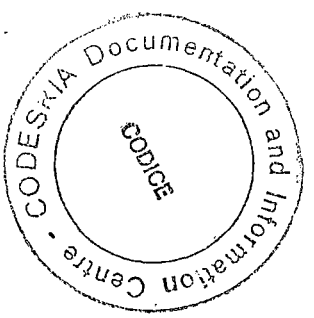
In order to explain the relationships between the degree of implementation of the objectives of the "Guide to the Practice of Ruralization activities" and their attributes and nature as perceived by the teachers, and to explore the implication of these relationships for the development of appropriate implementation strategy, the following research questions for this study are:

1 What are the objectives of the "Guide to the Practice of Ruralization activities"?

2 What are their degree of implementation?

3 What are teachers' perceptions about the objectives of the "Guide to the Practice of Ruralization activities"?

4 What are the relationships between the degree of implementation of these objectives and teachers' perceptions about them?



VII Research Design

The purpose of this chapter is to discuss the various methodological procedures used, including the instrumentation employed to gather data for the study.

7.1 The Research Site

The 7 regions of the Republic of Mali plus the District of Bamako will be if possible the site for the study. If not, the Region of Mopti clustered in both sahel and desertic regions and the region of Sikasso with the more favorable climate of the country will be chosen for the site of the study. These two regions have the representative characteristics of the country.

7.2 Methodology

7.2.1 Degree of implementation

The reviewed studies have shown that direct classroom observation, questionnaires, documentary analysis, combination of direct observation and questionnaires, combination of documentary analysis and questionnaires have been a range of methods used in studying the degree of implementation of curricular innovations.

For the purpose of this study, in order to assess the degree of implementation of the objectives found in the "Guide to the Practice of Ruralization activities", special questionnaire will be developed based on teachers self reports.

As mentioned earlier, the "Guide to the Practice of

Ruralization activities" comprises of 45 objectives to be implemented by the teachers. Each objective is divided into one or more activities to be implemented by the teachers. So, the degree of implementation of an objective of the "Guide to the Practice of Ruralization activities" will be assessed through the the activities derived from it i.e.

non implementation at all of the activities termed as non implementation of the objective;

the implementation of 1/3 of the activities termed as low implementation of the objective;

the implementation of 2/3 of the activities termed as intermediate implementation of the objective;

the full implementation of the activities termed as full implementation of the objective.

In order to provide some measure of validity for the results from Teachers self reports questionnaire, the actual level of implementation of the objectives of the "Guide to the Practice of Ruralization activities" by the teachers will be done by the researcher based on Teachers records. The level of implementation of the objectives will run from non implementation through low and intermediate implementation to full implementation i.e.

non implementation at all of the activities derived from an objective termed as non implementation of this objective;

the implementation of 1/3 of the activities derived from an objective termed as low implementation of this objective;

the implementation of 2/3 of the activities derived from an objective termed as intermediate implementation of this objective;

the full implementation of the activities derived from an objective termed as full implementation of this objective.

7.2.2 Perceptions of innovations

Observational techniques, questionnaires, focused interviews and documentary analysis have been according to Ghani (1988), a range of methods used in studying the factors influencing implementation.

For the purpose of this study, in order to measure quantitatively the perceived attributes of the objectives found in the "Guide to the Practice of Ruralization activities" to be taught or implemented in the framework of ruralization, special developed questionnaires will be used as the main method. These questionnaires will be backed by some structured interviews to provide some information on the teachers' view on the problems and issues related to the implementation of ruralization, to provide some measure of validity for the results from the questionnaires.

Feasibility, acceptability, and relevance identified in the studies reviewed earlier, form the major part of a model called by Harding (1975), the "Teacher Decision-making". This model has a fourth dimension which is Dissatisfaction. According to the model, the probability of adoption or implementation of innovation increases if the innovation is viewed as having high

feasibility, relevance, and acceptability and the teacher has high dissatisfaction with his own teaching (prior to the innovation).

In the context of ruralization, where teachers have already been involved in the implementation process, it is more pertinent to relate their feeling of dissatisfaction with regards to their efforts in trying to implement the "Guide to the Practice of Ruralization activities". So, this model could be modified and used to measure quantitatively teachers' perceptions of the exogenic attributes of ruralization in terms of the following attributes:

(a) Satisfaction with the teaching of the objectives of the "Guide to the Practice of Ruralization activities";

(b) Relevance of the objectives to pupils;

(c) Feasibility of teaching the objectives in own school;

(d) Acceptability of the objectives to Community in and around the school.

As the endogenic attributes of an innovation include a number of attributes such as, Desirability and Emotionality, which have certain amount of affective content or load, Osgood and his colleagues (1952; 1969) developed the "Semantic-Differential Test" to measure the meanings of words/concepts in terms of the factors which they have identified to be found in the semantic space held by individuals i.e. Desirability, Emotionality, Compatibbility and Complexity.

This instrument is based on one of the methods that have been used in the study of connotative meanings of the endogenic attributes of the innovations. (Ghani, 1988).

The "Semantic-Differential Test" developed by Osgood and his colleagues (1969) had a series of fixed format items where the respondents are required to indicate their perceptions of a specific innovative aspects of innovations with reference to a set of paired and opposite adjectives (termed as qualifiers). Each of these qualifiers or pair of adjectives was set at the ends of a 7-point scale and the teachers were required to tick at the point of the scale which closely approximate their perceptions of the concept in relation to that particular pair of adjectives.

According to Osgood et al. (1969), the qualifiers/paired adjectives may be classified in three main factors namely; evaluative, potency and activity which formed the main axis which determine the location that a concept occupies in the semantic space held in the mind of an individual. Consequently, differences in perceptions of the concepts for whatever reasons will result in differences in the location of the concept in the semantic space among different people.

The dimensions or factors used to construct the Semantic-Differential Questionnaire related to the endogenic attributes of innovations were Emotionality, Desirability, Complexity and Compatibility.

Sometimes the "Semantic-Differential Test" is not easy to

construct, analyse and interpret as its understanding presents a problem to the generality of respondents. (Ghani, 1988).

The attribute of emotionality is according to the researcher, a diffuse feeling difficult to interpret and apprehend and therefore it will be necessary to drop it.

So, for the purpose of this study, special questionnaire will be developed to measure quantitatively the endogenic attributes found in the "Guide to the Practice of Ruralization activities" in terms of their complexity, desirability, and compatibility.

.7.3 Construction of questionnaires

7.3.1 Degree of implementation

Based on the discussions earlier, two questionnaires will be developed to assess the degree of implementation of the objectives found in the "Guide to the Practice of Ruralization activities" and to be implemented by the teachers.

The first questionnaire will be developed to collect Teacher self report of the extent to which he or she has implemented or plan to implement the different objectives found in the "Guide to the Practice of Ruralization activities".

An Implementation Check List similar to the first questionnaire will be developed to assess based on teachers' records, to what extent the different objectives of the "Guide to the Practice of Ruralization activities" are being implemented by the teachers.

As mentioned earlier, the level of implementation of the activities derived from an objective will serve as level of implementation of this objective. So in the first questionnaire, the teacher will be required to tick off;

(i) "yes" if he has implemented an activity;

(ii) "plan" if he has not implement it but plan to implement it in the future;

(iii) "no" if he has not implement it and is not planning to implement it in the future.

The same procedure used for the first questionnaire will be used by the researcher based on teachers' records to assess to what extent the objectives of the "Guide to the Practice of Ruralization activities" are being implemented in the schools.

The first part of the first questionnaire will be developed to collect data on teachers' personal and professional characteristics which may influence their implementation of the objectives found in the "Guide to the Practice of Ruralization activities".

7.3.2 Perceptions of Innovations

Two questionnaires will be developed to assess teachers' perceptions of the exogenic and endogenic attributes of innovation.

The first questionnaire to be developed to gather teacher's perceptions of the exogenic attributes of ruralization will be

based on Harding's model of Teacher decision-making used to study the adoption of curriculum projects by teachers in the context of the British schools (Ghani 1988).

The first set of items related to the level of implementation in this model, will not be used in this study because the level of implementation of the different objectives of the "Guide to the Practice of Ruralization activites" will be assessed through special questionnaire using teachers self reports.

Only the four sets of items of the Harding's Teachers Decision-making model related to the exogenic attributes of innovations such as Feasibility, Relanvance and Acceptability, and a measure of the Teachers' feeling of satisfaction/dissatisfaction in their attempt to implement an innovation will be used for the purpose of this study in order to assess the Feasibility, Relevance and Acceptability of the different objectives found in the "Guide to the Practice of Ruralization activities" and Teachers' feeling of satisfaction/dissatisfaction to implement these objectives. The level of perception of an objective will be determined through the level of perception of its related activities.

Teachers will be required to indicate on a five-point scale their feelings or perceptions about each of the different activities found in the "Guide to the Practice of Ruralization activities" as to whether these activities are

(a) relevant to the different needs of his teaching situation;

(b) acceptable to the different communities in and around the school;

(c) feasible in terms of the given constraints (ressources and facilities) and needs (pupils and teachers) found in his or her classroom i.e. in term of its practicality.

They will be required also to indicate on a five-point scale their feeling of satisfaction/dissatisfaction about the implementing of the different activities found in the "Guide to the Practice of Ruralization activities".

As mentioned earlier, the "Semantic-Differential Test" has been used to assess teachers' perceptions of the endogenic attributes of innovation. But, because of many problems linked with the construction and drawing of this test and its comprehension by the respondents, a special questionnaire will be developed to assess teachers' perceptions of the endogenic attributes of the innovation.

Teachers will be required to express on a five-point scale their perceptions or judgements as to whether the activities contained in the "Guide to the Practice of Ruralization activities" are

(a) Complex in term of the complexity of their conceptual structure and/or in terms of the level of difficulty of

the concept and ideas to be implemented i.e. in terms of the ease of understanding them;

(b) Desirable in term of their inherent values and beliefs;

(c) Compatible i.e. if their implicit values and beliefs are compatible with those held by the teacher and his/her peer group.

Each of these questionnaires in its first part will collect data on teachers' personal and professional characteristics which may influence their perceptions of the innovation.

As mentioned earlier, the level of perception of an objective will be determined through the level of perception of its related activities.

So, in order to determine the level of perception of every objective, a five-point scale for every attribute will be developed running from the highest to the lowest level.

The summated maximun and minimun scores of the perceived activities related to this objective will be used to determine its level of perception by the teacher.

The scales to be used to assess teachers' perceptions will be based on the Delphi Scale design (Turoff, 1970; Jillson, 1975). No neutral answer will not be allowed. In fact, a neutral position according to Turoff (1970), offers very little information in policy debates and it is usually desirable to force the respondent to think the issue out a point where he can take a nonneutral stance. In other words, the lack of a neutral

point according to him, promotes a debate which is in line with developing pros and cons as one primary objective.

7.4 Population

The population of this study comprises of teachers in Mali.

7.4.1 Teachers

In 1987-88, there were 8,066 teachers for 307,807 pupils in the first cycle of Fundamental Education (primary school) and 3,499 teachers for 47,767 pupils in the second cycle of Fundamental Education (junior secondary school). (D.N.P.E.S. 1987-88).

Teachers' condition is not much satisfactory:

(i) hard conditions of work and no didactic materials (Hough, 1989);

(ii) low wages which often come late;

(iii) wage-freeze for some years now since the Gat embarked on the International Monetary Fund (I.M.F.) sponsored Structural Adjustment Program.

The urban centres have plethoric totals of pupils. This introduces in certain schools the two session system per day (morning and afternoon with the same or two different teachers teaching the classes). (M.E.N. 1989).

In the rural area, the two division classes is established in certain schools. It is composed of groups of consecutive levels. This allows to absorb again the shortage of teachers in these schools, for only three teachers can take six classes.

With these innovations in the school just as ruralization, the teachers who are less motivated must now work even harder than before.

Henceforth the teachers in the urban centres have no time for the "cours a domicile" (home teaching, when the teachers go to pupils' homes to teach them for extra money paid by the parents). Those, who are in the rural areas have no time to work in their personal grounds or in their truck farms.

The "cours a domicile" and the truck farms provide livelihood for the teachers whose wages are often paid late.

Ruralization deprives teachers for part of their vacation because every teacher must stay at school to follow the pupils in their rural and truck farms works.

In Mali, there are two categories of teachers in Fundamental Education.

The first category of teachers teach in the first cycle (primary school) while the second category teach in the second cycle (junior secondary school).

Teacher training policy has undergone changes depending on the needs of the country since independence.

In conformity to the objectives of the 1962 Reform, the Regional Pedagogic Centres (called in Mali, Centres Pedagogiques Regionaux: C.P.R.) have been created to find a solution to the

urgent shortage of teachers in the first cycle of Fundamental Education. So, the requirements of recruitment in the "C.P.R."'s had not been most rigorous; the period of the training in the "C.P.R."'s was one year for those with, six or seven years of basic education initially. The level of the requirement was later raised to eight years of basic education with one year training in the "C.P.R."'s, and much later only those who completed their nine years in Fundamental Education were accepted. Afterwards, only those who completed and passed their Fundamental Studies Diploma (called in Mali, Diplome d'Etudes Fondamentales: D.E.F.) would be accepted for a year.

With the aim of improving the quality of the training, the "C.P.R."'s were elevated in Primary Schools Teachers Training Centres known as Pedagogic Institutes for General Education (called in Mali, Instituts Pedagogiques d'Enseignement General: I.P.E.G.). The period of training in the "I.P.E.G."'s was raised to two years and for "D.E.F." holders.

Meanwhile, the products of the first part of the Bachelor's Degree (Diploma of the eleventh year of the schooling called in Mali, Baccalaureat Premiere Partie) and the products of the second part of the Bachelor's Degree (Diploma of the twelfth year of the schooling called in Mali, Baccalaureat Deuxieme Partie) could be accepted in the "I.P.E.G."'s for one year to qualify as teachers.

The products of the first part of the Bachelor's Degree and "D.E.F." holders become teachers in the first cycle of

Fundamental Education (they are called in Mali, Maitres du Premier Cycle: M.P.C.) and the products of the second part of Bachelor's Degree become teachers in the second cycle of Fundamental Education. This second category is called Teachers of the Second Cycle (called in Mali, Maitres du Second Cycle: M.S.C.).

If one "M.P.C." obtains the Professional Aptitude Certificate (called in Mali, Certificat d'Aptitude Professionnelle: C.A.P.), he becomes "M.S.C." and stays in the first cycle of Fundamental Education. The "M.P.C." can write this "C.A.P." examination only after three years of his preparatory period. If he fails, he can continue to attempt the examination until he passes.

Because the knowledge of the teachers in the first cycle of Fundamental Education was low in one hand and insufficient in French, the language of schooling in the other, the Government decided to increase the teachers' training period from two years to four years for the products of the "D.E.F." in 1986. After their training, they become "M.S.C." but stay in the first cycle of Fundamental Education.

Since in 1989-90 only the products of the second part of the Bachelor's Degree are accepted in the "I.P.E.G."'s for two years after passing a competitive examination and they now teach in the first cycle of Fundamental Education. They are called "M.S.C." but stay in the first cycle of Fundamental Education because they have no specialization.

Concerning the teachers who are in the second cycle of

Fundamental Education, they are trained in the Secondary Teachers Training Schools (called in Mali, Ecoles Normales Secondaires: E.N.Sec.).

With the same aim to satisfy the shortage of teachers in the second cycle of Fundamental Education and also to improve the quality of the training, the authorities of the Education increased the period of the training in the "E.N.Sec."'s from two years to three, then to four years. The changes with time have been taking place within four sections which are "Humanities - History and Geography", "Mathematics - Physics", "Biology - Chemistry", and "Languages". (I.P.N., 1989). As regards recruitment the "E.N.Sec."'s had admitted more of the products of the "D.E.F.", the second part of the Bachelor's Degree, and the dropouts of the Superior Education.

Since in 1989-90, only the products of the second part of the Bachelor's Degree are accepted in the "E.N.Sec"'s for two years after passing a competitive examination and they teach in the second cycle. They are called also "M.S.C.".

The competitive examination for admission into the "I.P.E.G."'s and the "E.N.Sec."'s started in 1986. (I.P.N., 1989).

Teachers are in charge to teach ruralization. Some of them received the training to do it when they were studying in the "I.P.E.G."'s or "E.N.Sec."'s. In fact, ruralization was initiated from 1970 in the "I.P.E.G." of Sikasso. After that, it was institutionalized and generalized to all the "I.P.E.G." and

"E.N.Sec." in Mali. Since then, ruralization became an integral part of the curriculum of these Teachers Training Centres.

However, there are some teachers who did not receive any training in ruralization. These are the teachers who qualified and were already teaching before ruralization became part of the curriculum in the Teachers Training Centres.

Teachers are in all the Malian political and social institutions in which they have the majority (as in the National Executive Committee of the Party, the National Council of the Party, the Parlement). They constitute a great political and social force to be reckoned with in Mali, and they also form the majority in the civil service.

7.5 Sampling

For the purpose of this study, the schools will be the analysis units. As mentioned earlier, there were in 1987-88 in Mali 8,066 teachers in the first cycle of Fundamental Education and 3,499 teachers in the second cycle of Fundamental Education.

On the basis of 7 teachers in every primary school in Mali, the total number of primary schools in Mali could be estimated to about 1,152 in 1987-88 while the total number of junior secondary schools at the same period could be estimated to about 350 schools on the basis of 10 teachers in every junior secondary school.

For the sampling of this study, 7/10 th of the 5% of both

primary schools and junior secondary schools of Fundamental Education in Mali will be chosen. So, 40 primary schools (about 7/10 th of the 5% of primary schools in Mali in 1987-88) and 14 junior secondary schools (about 7/10 th of the 5% of junior secondary schools in Mali in 1987-88) will be chosen for this study.

Of the 40 primary schools to be sampled, 20 will be chosen in the rural area and the other 20 in the urban centres. 7 schools among the 14 junior schools to be sampled will be from the rural area and the other 7 schools will be from the urban centres. The same balance will be applied between the northern part of the country versus the southern part.

The sampling schools will have the same size i.e.

(i) same number of teachers
(ii) same age for the schools - at least 10 years old
(iii) same years of experience for the headmasters - 5 years and above.

All the teachers from the 80 schools sampled will be served with the questionnaires of this study i.e.

(i) for the first cycle of Fundamental Education - 7 x 40 = 280 teachers
(ii) for the second cycle of Fundamental Education - 10 x 14 = 140 teachers.

So, the total number of teachers to be involved in this study will be 420 teachers. In order to provide some measure of

validity for the results from the questionnaires, some of the teachers (one will be chosen randomly in every school) will be interviewed to provide some information on the teachers' view on the problems and issues related to the implementation of ruralization.

According to Gravel (1986), the stratified sampling is more advantageous if one would like to do some comparisons between strata and analyse the variables of the study in relation to the stratification variables. It avoids according to Bailey (1978), the possible biases of taking a systematic sample from a nonstratified sampling frame but can also save time and money. It will facilitate the analysis of the results of the study and the generalization of these results.

7.6 Timeframe and fieldwork

December 1990 to June 1991 will be consecrated to collect data for this study. In March, students and teachers will be on leave for two weeks and the collecting of data will be stopped during this period.

The immensity of the country coupled with the difficult and rare ways of communication will not make easy the fieldwork. Buses and taxi are only available once a week to reach some administrative subsections centres known in Mali as "chef-lieux d'arrondissements". From any of these centres to reach the villages, one needs pay motorcyclists, cyclists, or canoes and in some extreme cases, rent both camel and guide.

The treatment and analysis of the data will occupy the period from July 1991 to Juanuary 1992.

The period from February 1992 to July 1992 will correspond to the writing of the final report.

The thesis will be submitted hopefully to the internal Supervisors by August 1992 and to the University by January 1993.

7.7 Proposed data analyses

The data will be keypunched on diskettes and then processed and analysed using the SPSSS package. Correlations will be used to analyse the data of this study.

VIII Results

The expected results will be:

(a) the profile of teachers,

(b) the profile of implementation of the objectives of the "Guide to the Practice of Ruralization activities"

(c) the profile of teachers' perceptions of the objectives of the "Guide to the Practice of Ruralization activities"

(d) the results of the different correlations.

IX Discussion / Recommendations / Implications

The different results of this study will serve as basis of discussions in the framework of this study.

On the basis of the findings of this study, recommendations and suggestions could be given to the schools, the National Directorate of Fundamental Education the nerve centre of ruralization in Mali, the political authorities, and other interested bodies.

It is hoped that the findings of this study will help to clarify a number of issues that have been raised since the generalization of ruralization for the development of appropriate implementation strategies.

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APPENDIX

QUESTIONNAIRE I

The purpose of this questionnaire is to find out the degree of implementation of the "Guide to the practice of ruralization activities".
We would like to gain an insight on how you have implemented or plan to implement the different objectives of the "Guide to the practice of ruralization activities".
Please base your answers on your own experiences in trying to implement the "Guide to the practice of ruralization activities" or on your intentions to implement it.
All replies are strictly confidential.

PART I: BACKGROUND INFORMATION

Please tick (✓)the appropriate answers

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I Locality of your school

Section A

1. rural ( ) 2. urban ( ) — I.A ¦...¦

Section B

Region: 1. Kayes ( ) 2. Koulikoro ( )
3. Sikasso ( ) 4. Segou ( )
5. Mopti ( ) 6. Tombouctou ( )
7. Gao ( ) 8. Bamako District ( ) — I.B ¦...¦

Section C

1. First Cycle ( ) 2. Second Cycle ( ) — I.C ¦...¦

2 Sex

1. male ( ) 2. female ( ) — 2 ¦...¦

3 Age

¦...¦...¦ years old — 3 ¦...¦...¦

4 Years of teaching experience

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4 ¦...¦...¦

5 Years experience in teaching ruralization

5 ¦...¦...¦

6 Academic qualifications

1. qualification below C.F.E.P.C. ( )
2. C.F.E.P.C. ( )
3. D.E.F. ( )
4. BAC I ( )
5. BAC II ( )
6. Others
(specify)

6 ¦...¦

7 Professional qualifications

1. Moniteur ( ) 3. M.S.C. ( )
2. M.P.C. ( )

7 ¦...¦

8 Have you attended pre-service training to teach ruralization?

1. yes ( ) 2. no ( )

8 ¦...¦

9.1 Have you attended in-service training to teach ruralization?

1. yes ( ) 2. no ( )

9.1 ¦...¦

If yes:

9.2 When did these take place?

(i) _____
(ii) _____
(iii _____

9.3 For how long?
(Please specify day or month)

FOR OFFICIAL USE

9.3		

PART II:

INSTRUCTIONS

For each of the activities given below, please tick:

"yes" if you have implemented it;
"plan" if you have not implemented it but plan to implement it in the future;
"no" if you have not implemented it and are not planning to implement it in the future.

OBJECTIVES	ACTIVITIES	Have you implemented?		If not, would you implement it in the future?	
		Yes	No	Yes (Plan)	No
1.....					
	1.....				
	"				
°	"				
2.....					
	1.....				
	"				
	"				
"					
	"				
45					

IMPLEMENTATION CHECK LIST

The purpose of this questionnaire is to find out based on teachers' records the extent to which teachers have implemented the "Guide to the practice of ruralization activities".

INSTRUCTIONS

"Yes" will be ticked by the researcher if the activity has been implemented by the teacher;
"no" will be ticked by the researcher if the teacher has not implemented the activity.

OBJECTIVES	ACTIVITIES	Is the activity implemented by the teacher?	
		Yes	No
1.....	1.....		
"	"		
45	"		

QUESTIONNAIRE II

This questionnaire has two purposes, which are to measure;

a. the degree of satisfaction that you may had (or will have) in teaching the different objectives of the "Guide to the practice of ruralization activities";

c. your perceptions of these objectives in terms of their relevancy, acceptability and feasibility to the different needs and constraints found in your teaching situation.

Please base your answers on your own experiences in trying (or planning) to implement the different objectives of the "Guide to the practice of ruralization activities".

All replies are strictly confidential.

SECTION 3A: THE SATISFACTION IN IMPLEMENTING THE OBJECTIVES OF THE "GUIDE TO THE PRACTICE OF RURALIZATION ACTIVITIES".

Please indicate the extent, by entering the appropriate number in the boxes, to which you are SATISFIED/DISSATISFIED with your teaching of these activities of the "Guide to the practice of ruralization activities" i.e. in term of your commitment to implement them.

Scale Reference	Definitions
1. Highly Satisfied	Totaly happy to implement it even without any administrative enforcement Totaly happy to implement it and thinks that there is no need to be remunerated
2. Satisfied	Happy to implement it even without any administrative enforcement Happy to implement it without remuneration but thinks that it should be considered
3. Moderately Satisfied	Moderately happy to implement it Thinks that should be remunerated
4. Dissatisfied	Would not implement it without remuneration Do it because of administrative enforcement
5. Highly Dissatisfied	Will not implement it even with remuneration If given the option, will not implement it even with administrative enforcement

5-highly satisfied
4-Satisfied
3-moderately satisfied
2-dissatisfied
1-highly dissatisfied

OBJECTIVES	ACTIVITIES	SATISFACTION
1.....	1.....	.....
".....	1.....	"
45.....	1.....	"

SECTION 3B: THE RELEVANCE OF THE OBJECTIVES OF THE "GUIDE TO THE PRACTICE OF RURALIZATION ACTIVITIES"

Please indicate, using the code given below, the number which best represents your feelings as to whether these following activities of the "Guide to the practice of ruralization activities" are RELEVANT to the different needs to be found in your teaching situation i.e. in term of their effectiveness/or benefits for the learners and the society.

Scale Reference	Definitions
1. Highly Relevant	Will have a positive effect and little or no negative effect Social benefits will far outweigh social costs Justifiable on its own merit Valued in and of itself
2. Relevant	Will have a positive effect with minimum negative effects Social benefits greater than social costs Justifiable in conjunction with other activities Little value in and of itself
3. Moderately Relevant	Will have equal positive and negative effects Social benefits equals social costs May be justified in conjunction with other relevant or highly relevant activities No value in and of itself
4. Not Relevant	Will have a negative effect with little or no positive effect Social costs greater than social benefits May only be justifiable in conjunction with a highly relevant activity Harmful in and of itself
5. Not at all Relevant	Will have major negative effect Social costs far outweigh any social benefit Not justifiable Extremely harmful in and itself

5-highly relevant
4-relevant
3-moderately relevant
2-not relevant
1-not at all relevant

OBJECTIVES	ACTIVITIES	THESE ACTIVITIES ARE RELEVANT
1.....	1.....	.....
".....	1.....	"
45.....	1.....	"

SECTION 3C: THE ACCEPTABILITY OF THE OBJECTIVES OF THE "GUIDE TO THE PRACTICE OF RURALIZATION ACTIVITIES"

Please indicate, using the code given below, the number which best represents your feelings as to whether these following activities of the "Guide to the practice of ruralization activities" are ACCEPTABLE i.e. with regards to the acceptance of their aim, practices, and methods by the community in and around the school.

Scale Reference	Definitions
1. Highly Acceptable	Does not suscitate any objection Suscitate interest and assistance from the people in and around the school
4. Acceptable	Suscitate some reserve from the people in and around the school
3. Probably Acceptable	May not suscitate reserve with further elaboration
2. Unacceptable	Rejected as not determining activity to the major issue
1. Highly Unacceptable	Repugnant Should be dropped as an activity to consider

5-highly acceptable
4-acceptable
3-probably acceptable
2-unacceptable
1-highly unacceptable

OBJECTIVES	ACTIVITIES	THESE ACTIVITIES ARE ACCEPTABLE
1.....	1.....	..... / ..... / "
".....	1.....	"
45.....	1.....	"

SECTION 3D: THE FEASIBILITY OF IMPLEMENTING THE OBJECTIVES OF THE "GUIDE TO THE PRACTICE OF RURALIZATION ACTIVITIES" IN YOUR OWN SCHOOL

Please indicate, using the code given below, the number which best represents your feelings as to whether these following activities of the "Guide to the practice of ruralization activities" are FEASIBLE to be implemented in your school or your classroom i.e. in terms of their praticability with regard to the availability of resources.

Scale Reference	Definitions
1. Definitely Feasible	Can be implemented No research and development work required (necessary technology is presently available) Definitely within available resources No major social roadblocks Will be acceptable to general public
2. Probably Feasible	Some indication this can be implemented Some research and development work required (existing technology needs to be expanded and/or adopted) Available resources would have to be supplemented Some social roadblocks Some indication this may be acceptable to the general public
3. May or May Not be Feasible	Contradictory evidence this can be implemented Indeterminable research and development effort needed (existing technology may be inadequate) Increase in available resources would be needed Major social roadblocks Some indication this may not be acceptable to the general public

4. Probably not feasible	Some indication this cannot be implemented Major research and development effort needed (existing technology is inadequate) Large scale increase in available resources would be needed Major social roadblocks Not acceptable to a large proportion of the general public
5. Definitely not feasible	Cannot be implemented (unworkable) Basic research needed (no relevant technology exists, basic scientific knowledge lacking) Unprecedented allocation of resources would be needed Socially unacceptable Completely unacceptable to the general public

5-definitely feasible
4-probably feasible
3-may or may not be feasible
2-probably not feasible
1-definitely not feasible

OBJECTIVES	ACTIVITIES	THESE ACTIVITIES ARE FEASIBLE
1.....	1.....	.....
".....	".....	"
45.....	".....	"

QUESTIONNAIRE III

The purpose of this questionnaire is to find out how some of the different objectives of the "Guide to the practice of ruralization activities" are being perceived by the teachers who are involved in the teaching of it.

We would like to gain an insight on your perceptions of these objectives in term of their complexity, desirability, and compatibility.

All replies are strictly confidential.

SECTION 4A: PERCEPTION OF THE COMPLEXITY OF THE OBJECTIVES OF THE "GUIDE TO THE PRACTICE OF RURALIZATION ACTIVITIES"

Please indicate, using the code given below, the number which best represents your feelings as to whether these following activities of the "Guide to the practice of ruralization activities" are COMPLEX in term of the complexity of their conceptual structure and/or in term of the level of difficulty of the concept and ideas to be implemented i.e. in term of the ease of understanding them.

Scale Reference	Definitions
1. Very Complex	All terms are incomprehensible to people Not well formulated Should be dropped as an activity
2. Complex	Incomprehensible to people Needs to be reformulated
3. Moderately Complex	May be more comprehensible to people with better formulation
4. Not Complex	No ambiguous terms for most of the people Little or no difficulty for most of the people to understand it
5. Not at all Complex	Clear to everybody No ambiguous terms Not difficult to understand No confusion in its interpretation

5-very complex
4-complex
3-moderately complex
2-not complex
1-not at all complex

OBJECTIVES	ACTIVITIES	PERCEPTION OF COMPLEXITY
1.....	1.....	.....
"	1.....	"
45.....	1.....	"

SECTION 4B: PERCEPTION OF THE DESIRABILITY OF THE OBJECTIVES OF THE "GUIDE TO THE PRACTICE OF RURALIZATION ACTIVITIES"

Please indicate, using the code given below, the number which best represents your feelings as to whether these following activities of the "Guide to the practice of ruralization activities" are DESIRABLE to you i.e. in term of the importance of their inherent values and beliefs for you.

Scale Reference	Definitions
1. Highly Desirable	A most relevant point First order priority Has direct bearing on major issues Must be resolved, dealt with or treated
2. Desirable	Is relevant to the issue Second priority Significant impact but no until other activities are treated Does not have to be fully resolved
3. Neither Desirable nor Desirable	May be relevant to the issue Third order priority May have impact May be a determining factor to major issue
4. Undesirable	Insignicantly relevant Low priority Has little impact Not a determining factor to major issue
5. Highly Undesirable	No priority No relevance No measurable effect Should be dropped as an activity to consider

5-highly desirable
4-desirable
3-neither desirable nor desirable
2-undesirable
1-highly undesirable

OBJECTIVES	ACTIVITIES	PERCEPTION OF DESIRABILITY
1.....	1.....	.....
".....	1.....	"
45.....	1.....	"

SECTION 4C: PERCEPTION OF THE COMPATIBILITY OF THE OBJECTIVES OF THE "GUIDE TO THE PRACTICE OF RURALIZATION ACTIVITIES"

Please indicate, using the code given below, the number which best represents your feelings as to whether these following activities of the "Guide to the practice of ruralization activities" are COMPATIBLE i.e. if the implicit values and beliefs of the activities are compatible with those held by you and your peer group.

Scale Reference	Definitions
1. Highly Compatible	Does not suscitate any objection from anybody Everybody agrees with it
2. Compatible	Suscitates little or no objection Most of the people agree with it
3. Moderately Compatible	May be more acceptable if people have been more interested in it
4. Uncompatible	Is not accepted by most of the people
5. Highly Uncompatible	Is not accepted by anybody

5-highly compatible
4-compatible
3-moderately compatible
2-uncompatible
1-highly uncompatible

OBJECTIVES	ACTIVITIES	PERCEPTION OF COMPATIBILITY
1.....	1.....	.....
".....	1.....	"
45.....	1.....	"

INTERVIEW SCHEDULE

PART I

I.1 Have you attended pre-service training to teach ruralization programme? — I.1 yes ( ) no ( )

If yes:

I.2 When did this takes place? — I.2

I.3 Has the training been beneficial to you? — I.3 yes ( ) no ( )

I.4 In what way? — I.4

I.5 Have you attended in-service training to teach ruralization programme? — I.5 yes ( ) no ( )

If yes:

I.6 When did this takes place? — I.6

I.7 Has the training been beneficial to you? — I.7 yes ( ) no ( )

I.8 In what way? — I.8

PART II:

II1.1 Do you think the ruralization program is beneficial to all pupils? Why?

II1.1 yes ( ) no ( )

If no:

II1.2 For what kinds of pupils is it most useful? Why?

II1.2

II1.3 For what kinds of pupils is it least useful? Why?

II1.3

II2.1 In your opinion, has the ruralization program qualitatively improved the Malian educational system?

II2.1 yes ( ) no ( )

If yes/no

II2.2 In what way?

II2.2

II3.1 In regard to the ruralization program, what has the Ministry of Education done which might have helped in fulfilling its implementation?

II3.1

II3.2 And what has the Ministry done which might hindered its implementation?

II3.2

II3.3 What have you done to overcome the problems?

II3.3 [ ]

II4.1 Could you pick from the "Guide to the practice of ruralization activities" THREE subjects (topics) which you regard as most important/relevant in linking the teaching to the environment?

II4.1
(i)_____
(ii)_____
(iii)_____

II4.2 Now, which THREE subjects (topics) would you regard as least important/relevant in linking the teaching to the environment?

II4.2
(i)_____
(ii)_____
(iii)_____

II5 Which the following explicit and implict objectives of ruralization have been achieved by your school?

II5.1

(i) the training of the pupil as a producer (i) ( )
(ii) the training of the pupil as a socio-cultural animator (ii) ( )
(iii) the training of the pupil in the perspective that he can continue his studies (iii) ( )
(iv) to contribute to the functionning of the school by the improvement of its material and financial conditions (iv) ( )
(v) the reduction of the rural-urban drift (v) ( )
(vi) the qualitative improvement of the Malian educational system (vi) ( )

II6.1 Could you give THREE major factors which are inhibiting the implementation of ruralization in your school?

II6.1
(i)_____
(ii)_____
(iii)_____

II6.2 What do you think you can play in solving them?

II6.2