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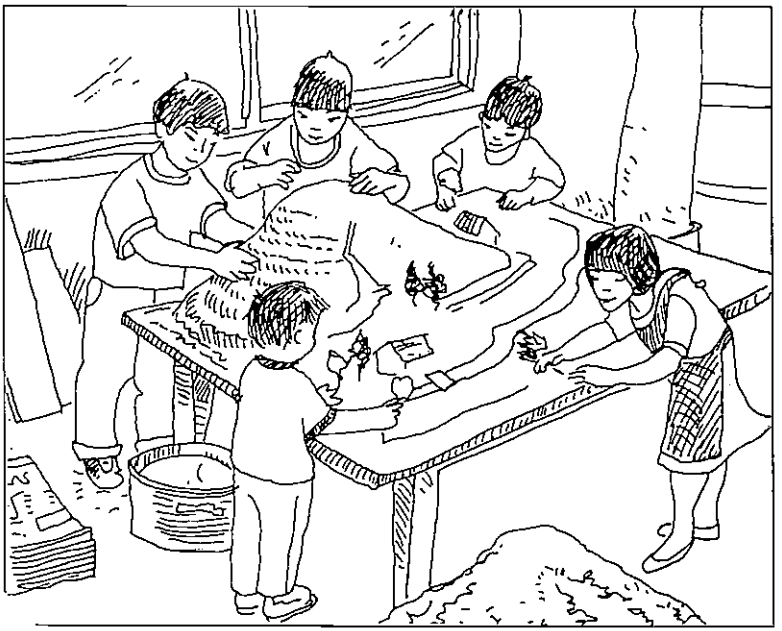
Manual for rural teachers



Food and Agriculture Organization of the United Nations

Ecology and rural education

Manual for rural teachers

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FOREWORD

Increasing the impact of rural education on development is a real challenge. It is important to simultaneously profit from the many positive aspects of previous teaching approaches and, at the same time, improve rural education with better techniques and structure. Then these tools must be disseminated and used to support development.

This manual has been drawn up with this in mind. It seeks to be a useful, practical working tool for the rural teacher. It is mainly based on experience gained in the project entitled "School, Ecology and the Rural Community" currently being undertaken in the mountains of Peru.

The text proposes an ecological orientation to primary education whilst adapting it to the requirements and interests of the rural child, and the planning of educational resources available for this purpose. To achieve this, rural school personnel must bear in mind the importance of the following tasks:

- understanding and appreciating the rural environment, interacting with it to improve the quality of rural life.
- taking the outlook of the community where the school is located as a reference for education.
- using the local area's resources, institutional or otherwise, but particularly human, for their contribution and for their importance particularly in favouring a revitalization of the region's cultural identity.
- supporting collaboration and teamwork between teachers and members of the community. This will involve tackling common problems, particularly ecological ones, and enhancing education by exchanging experiences and points of view.
- fostering rural teacher training, including scientific and practical updating related to the specific educational context, and advances in teaching methodology adapted to specific conditions and requirements.
- establishing an integrated approach involving teaching staff, local people and cooperation between schools and commitment to

solving the rural area's environmental problems such as soil degradation, deforestation and migration.

This manual is a practical instrument for bringing these ideas to fruition. It responds to a dynamic, participative conception of education and is directed to the rural teacher who has few material resources available but performs his/her work with enthusiasm, creativity and responsibility.

The manual offers ecological guidance and numerous examples which will aid in helping the rural child and his/her community to progress, whilst gaining a better understanding of their own development, aspirations and processes. It suggests projects and activities where reflection, action and experimentation are encouraged and promotes the development of sensitivity, intelligence, ethical values and manual skills.

Jean-Paul Lanly
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APPENDIX IV

I. INTRODUCTION

THE RURAL SCHOOL AND RURAL TEACHERS

The rural school is fundamentally important for development from different viewpoints. Educational experts and authorities and rural communities themselves agree on this. However, the specific conditions under which rural teachers perform their day-to-day teaching work are characterized by limitations and scarcities.

On their own, teachers feel powerless to overcome the problems affecting the rural school and their own performance. The difficulties they have to face lead to pessimistic attitudes which unwittingly contribute towards education becoming routine and producing limited educational results.

It is imperative to adopt a fresh approach in order to overcome such problems; a way of seeing and understanding a rural child's education adapting to actual requirements and providing teaching staff with the necessary, feasible, solutions.

The following is needed for designing the training and content which any corrective measure adopted should aim for:

1) To highlight and evaluate the rural school's mission within the framework of the national education system and the social characteristics typical of each actual situation.

2) To find out what capabilities of human, technical and material resources are actually available because there will be capabilities currently neither deployed nor used to their full extent. A qualitative improvement of the rural

school should commence with more efficient use of already available resources.

3) To re-evaluate the rural environment's social and natural characteristics and conditions. Firstly, the educational possibilities offered by society and the natural environment should be highlighted over and above the obstacles and problems hindering fulfilment of the school curriculum and calendar.

In short, this new approach will aid in understand that a school complying with its socio-educational mission will only be possible by developing its own potentialities and making optimum use of its current resources and possibilities. Moreover, the changes it requires will only be feasible with a committed, responsible input from rural teachers.

The rural school's mission

The rural school is destined to promote, guide and develop the intellectual, moral and technical capabilities of rural children. It must prepare them to face, understand and solve specific problems which hinder an improvement in their standards of living both in their community of origin and when they migrate to the cities.

In other words, the importance of the rural school lies in the effective contribution it should make to training rural children and young people to take an active, responsible part in the social, economic and political life of their community, region and country. In order to fulfil this mission, the rural school must:

a) Respect and value rural children's language, customs and particular funds of knowledge, bringing them into the school subjects and methodologies. This means they

must no longer be considered as expressions of backwardness which must be banished.

Daily schooling experience will provide training in respect for cultural diversity as a heritage to be used and not as an expression of under-development to be eliminated.

b) Respect, value and incorporate rural children's home and work experiences into the school curricula. These experiences should be used as a starting point for further learning.

Thus, school education will not mean a break with traditions but, on the contrary, a self-improving, integrating unit.

c) Re-evaluate the local rural community's natural, economic and cultural environment. The school should become acquainted with and use this environment's education potential and incorporate it into learning processes.

The positive parts of the rural families' environment and way of life will be assessed and used to develop a critical knowledge of the students with respect to their real life. All learning must lean towards specific performances contributing towards improving standards of living.

d) Use, extend and implement experiences and skills already acquired by children in their family and community in the task of education. Using school activities for solving problems arising in everyday life will also be a feature.

School education will thus train children in seeking specific alternatives to equally specific problems.

e) Incorporate relations existing between the local society and its environment into the teaching content and method. In order to fulfil the school curriculum, examples and activities will be chosen which promote attitudes of respect towards nature based on the knowledge of vital

complementary relationships between human beings and natural resources.

The environment and its different elements are the context of human life and the only possibility for the welfare and development of today's and tomorrow's rural family. The rural school should thus give training in knowing, protecting and suitably using these resources.

The best way of getting to know the problems of the environment itself and their importance in the day-to-day life of each community is to take education out into the school's surroundings. The teacher will seek opportunities for exploring the environment, evaluating and understanding its problems and demonstrating the possibilities of intervening to solve the problems detected.

f) Foster and guide collective work, social responsibility, cooperation, solidarity and individual satisfaction in the framework of group development.

In order to fulfil these aims, it will be most useful to incorporate the community's cooperation and reciprocity practices in which children are initiated by their parents and relations.

Thus, the rural school will train dependable, participating people who know how to respect and value the diversity of human qualities and will use them in seeking the common good.

Rural school and urban school

Sometimes, mistakenly, the urban school is over-valued and the rural school under-valued. It is assumed that the latter's limitations originate in the fact that it does not look like the former. This is not so. The rural school has its own importance which has nothing to do with whether it is similar to or different from the urban school.

1. Shared aspects

a) Both the urban and rural school form part of the same national education system. Therefore, they are both governed by one and the same educational policy and by common national principles and aims. Both must provide educational opportunities to children and young people whether they be city or country dwellers.

b) Both must match common aims and curriculum to particular realities. They should effectively respond to the specific requirements and interests of pupils, their communities and their natural environment. So it is not just the rural school which needs to adapt the basic curriculum to the characteristics typical of the environment. The urban school must also do so.

2. The rural school's peculiarities

a) Because of the natural and social characteristics of rural areas, the rural school has greater possibilities for structuring its educational curriculum in close correlation with its natural and social environment. It can take advantage of the direct, daily contact which children and young people

have with their environment, the skills and experience they gain by participating in working life and the diverse forms of socialization shaping their identity.

b) The rural school has a variety of possibilities for creating open air teaching areas based on direct observation and in close relationship with the communities' working and socio-cultural activities. Thus, school socialization is supplemented and enhanced directly and in practice with other socialization processes of rural community life.

c) Because of the organizational characteristics of rural communities and because of the principles governing their family and community lives, the school must seek forms and mechanisms for community participation.

d) Rural culture is rich in social and human values which should not be standardized by imposing a rigid system. At the same time, children should experience the evolution of progress in a valid, respectful and committed exchange.

Formal organizations already exist in many rural communities where parents meet to agree on and carry out work favouring their children's education. There are also vivid forms of cooperation and reciprocity which can be channelled towards greater participation in school education.

Rural teachers

Male and female teachers work very hard every day in rural schools. Nevertheless, they do not all or always achieve the desired results, despite their goodwill and dedication.

The rural school's quality and effectiveness can be noticeably improved if due advantage can be taken of the rural teachers' enthusiasm, goodwill, imagination and noble

efforts by channelling such qualities towards achieving their goal.

To do so, teaching performance needs to substantially improve in the following fields:

- drawing up educational aims.
- diversification of subject matter in order to adapt the basic curriculum to the local rural environment's characteristics and requirements.
- teaching methodology taking the rural child with his culture, his language, the knowledge he acquires in his family and community life, the living experience of his environment and his community's social practices, as a new starting point for learning.
- group dynamics for the classroom and in the open air.
- methodologies and suggestions for minor school projects in which practical skills whose results are useful for everyday living are developed.
- making teaching material with items from the surroundings which, apart from being inexpensive, may be made with pupil participation so as to develop their imagination, creativity and manual and intellectual skills.
- learning appraisal criteria and methods which recognise the validity of cultural diversity and aptitudes and the importance of critical judgement in subject matters and basic attitudes.

THE RURAL SCHOOL FOR DEVELOPMENT

The importance of the rural school gains greater credence when related to development needs. The contribution it may make towards the following is undeniable and irreplaceable:

- improving living standards of rural families and communities.
- guidance for self solution of local problems on the basis of conserving, defending and suitably using their own resources.
- intellectual, moral and technical training for active participation in local, regional and national social, economic and political life.

Achieving this contribution to the sustainable development of the rural environment means making the following demands on the rural school, through its teaching staff:

1) To establish a permanent educative dialogue with the environment in its environmental and geographical aspects, with productive and economic activities, with socio-cultural life and its history. This educative dialogue should be undertaken particularly with people who know the community because they live and work there. These people also pass on their knowledge and attitudes to the child and form part of his socialization process.

2) To provide scientific knowledge, form criteria, develop attitudes and skills. Re-education will respond to the

needs and interests of families and communities and to changes occurring in social and political production systems.

3) To give training in respect for and evaluation of the plurality of values and forms of knowledge, highlighting the complementary nature that exists amongst those making up a society and between the latter and their environment.

4) To guide and give training in solving problems affecting family and community life through knowing, defending and suitably using their own natural resources as a sure way to sustainable development.

5) To establish relations of coordination and support with local public or private institutions and agencies to jointly define actions.

IMPROVING RURAL SCHOOL QUALITY

If the foregoing is taken into account, there is no doubt about the urgent need to improve the rural school's quality. Nor is there with respect to the benefits which the pupils and their families would directly obtain. But where is one to start?

For some, the path must commence with substantial reforms in the educational system, by tracing out lineaments of educational policy, implementing the necessary processes, training teachers and providing them with materials, etc.

This is a correct perspective but it is not the only possible one. Another possibility could be lost from sight through waiting for structural changes to occur first. And such an opportunity commences by recognizing, valuing and using the potential of current teaching staff. This other path can commence immediately. It calls for less investment and does not oppose, but rather prepares for and goes out to meet the necessary structural changes.

II. THE RURAL SCHOOL'S CURRICULUM

A CONCEPT OF THE BASIC CURRICULUM

Any educational entity (school, academy, college, university) organizes its work so that its students achieve a pre-set group of aims. Such aims are organized in different ways: by grades or academic years (e.g., first, second, third, etc.); by areas (e.g., Letters, Science, Art); by lines of action, subjects or disciplines (e.g., Languages, Mathematics, History). Duly organized, these overall aims are given the name of "curriculum".

Contents are also often listed in a curriculum, especially when limits are to be given to the aims.

Examples:

> In the aim: "Solve problems taken from real life by applying the addition technique", the aim says it all and does not need to have a list of contents attached; but in the aim: "Accurately describe plant world beings and processes", it is necessary to delimit the contents, since the accumulation of "plant world beings and processes" is too large for it to be a study subject during a certain interval of time. It is then advisable to specify the contents via a summary of the topics which the aim covers. For the case of this example, the contents making up the summary could be: "Plants. Classification according to their structure. Plant parts. Stem and leaf functions. The plant nutrition process and water requirements".

As can be seen, the content summary attached to the aim makes the latter easier to understand.

On this basis, the curriculum may be defined as "the organic body of aims and contents which it is expected to achieve through schooling".

THE BASIC CURRICULUM

When the educational system is national, formed by a considerable number of education centres, the overall system is governed by a basic curriculum (BC) which is considered as a set of regulations for all institutions engaged in education.

The BC embraces all the aims and contents to be achieved by pupils but cannot simply be applied in the form in which it is drawn up: it needs to be adapted. Such adaptation is explained by diversities which exist in any country. Regions display great geographic, social, cultural and economic differences. However, the BC cannot cover all peculiarities; neither is it desirable for it to do so. Just the opposite is advisable: the BC should be formed by general elements but with the possibility of such components being adjusted to each actual situation via a curriculum adaptation process.

ADAPTING THE BASIC CURRICULUM

The BC is the basis for curriculum planning in education centres (schools, colleges) in all systems. It enables modifications to be made to the aims and content so that they may respond better to the needs and potentialities of those who will be educated there. This task is known as curriculum adaptation and is usually entrusted to regional or departmental sections in the education sector.

Diverse curricula are thus available as a result of such adaptation. They are closer to the respective real situations but are related to each other through originating from the

same basis. In this way, the unity of the system is retained, while at the same time enabling a curricular programme to be developed which is more closely related to the actual situation.

Unfortunately, this adaptation is not always undertaken and the national BC is applied instead of a curriculum suited to the region. This has negative consequences affecting both pupils and teachers.

When working with an unadapted curriculum, teachers suffer and feel unhappy in their work:

1) Through having to teach contents not in keeping with the reality of their surroundings, they cannot use active techniques (making visits, trips, panoramic landscape observation, etc.). They have to limit themselves to explaining things orally, without allowing pupils to be the real architects of their own learning. It will be repetitive teaching.

2) In order to present a real life case with which children have no contact, they need teaching material they do not possess (pictures, photographs, slides). As they do not have these, they are limited to usually insufficient verbal descriptions.

3) When examining topics not related to the children's actual life, they cannot use the environment's educational potential nor rely on the cooperation of the community.

4) They have to face problems of pupils being distracted and not participating. They behave in this way through lack of motivation from contents they feel are alien to their experience of life. This leads many teachers to negatively appraise rural children to whom they unfairly assign certain characteristics: laziness, lack of interest, low attention paying capacity, etc.

Children are also affected by an unadapted curriculum. The children that suffer most are those living in rural areas, in smaller towns and in regions dissimilar to the main region. The most harmful facts are:

- Pupils receive an education with alien contents of which they have no experience.
- Many contents taught are not indispensable because they do not belong to the rural child's real life situation.
- Other contents necessary for rural school children belonging to the world around them are left out of the curriculum.

Learning is bad as it is memory-based. It is difficult for purely verbal transmission of knowledge to generate motivation and interest. The pupils do not actively participate. Consequently, low marks, having to repeat exams and playing truant become more and more frequent.

Examples:

1) It is not rare to find the topic of drinking water, its advantages, characteristics, potabilization process, etc. in a national BC . This is undoubtedly a topic convenient for teaching to town dwelling pupils, but is it also advisable for country children who do not enjoy such a service? Could they even understand the "drinking water" concept? Nevertheless, in many cases they have to study the subject just as it was given in the BC. And very infrequently or never do they talk of matters which might be more pertinent, such as rules of hygiene for using water from streams, ways to avoid polluting them, the need to conserve springs and fountains.

2) Many BCs address sea-related subjects (shoreline, marine currents, economic importance of fishing, etc.). And if the curriculum has not been suitably adapted, teachers living in the mountain will have to "explain" the topic, i.e., verbally describe the sea, perhaps with the aid of photographs but within the classroom. They cannot go to the seaside to enable the pupils to experience the

sea, observe the coastline, chat with fishermen, handle their tackle, even get to know some of the fish caught. None of this will be possible. But, on the other hand, a reference to the region's geography, the organization of the catchment area and its dynamics, will have been left out. If adaptation had been made by introducing subjects closer to the pupil, children could make models, draw maps, go on trips, observe landscapes, in short, work with active methodology which is the only one ensuring that not only contents will be learned but also that skills and abilities will be developed.

THE BASIC CURRICULUM ADAPTATION PROCESS

Preliminary Considerations

A BC may be adapted in two ways: by heeding the characteristics of the pupils to be worked with and by considering the region's geographic, social and economic characteristics.

1) Modifications according to pupils' personal conditions

When drafting the BC, an ideal profile of the pupil is used which, in fact, is an average ideal. Naturally, there are children above the level proposed and there are others below it. So, on adapting a curriculum, it is necessary to make changes taking into account the actual characteristics of the children to be worked with.

Thanks to these changes, the curriculum is made equal to the level of the children who will be working with it and goals will be proposed to them which will always be ahead of them but never out of reach.

Example:

In the Language BC it is laid down that fourth grade pupils must "Read simple texts silently ....". But in any school, it transpires that children joining this grade still make mistakes in reading aloud (they do not read with intonation appropriate to the punctation, do not return properly to the beginning of the line, change or omit words, etc.). Considering that working with silent reading is not yet advisable, the teacher then decides to keep the previous grade's unachieved aim in this grade: "Read aloud, with suitable intonation and an audible voice, texts .... etc." In this case, he has introduced the change taking into account the children's reading level, which is a personal condition. This means he was flexible and realistic.

2) Modifications according to the environment's actual geographic, social and economic situation

Every region has its own characteristics, faces problems that may be different, makes plans or has already achieved things peculiar to it. In short, it has elements differentiating it from other regions and upholding its identity. Thus, the BC has to be restructured in accordance with such characteristics, enabling the curriculum to effectively respond to the community's educational needs.

Example:

The fifth grade Social Sciences BC lays down that pupils will be able to "Describe the locality's main economic activities : agriculture, livestock, industry". But a certain region's main economic activity may well be none of these, but mining or fishing. Seeing this situation, the locality's teachers incorporate the topic of most interest and put it first whilst only touching on the others. They have introduced a change into the BC because of actual life in the locality.

3. Modifiable elements

When the curriculum is adapted, modifications are mainly made to curriculum aims.

Curriculum aims generally have three elements to be recognized for introducing appropriate modifications:

- Skill
- Quality level
- Content

Skill is what it is expected a child can learn or improve (writing..., drawing,.... sowing...etc.).

The quality level is the degree of efficiency with which the pupil should perform the skill mentioned or the way in which he should perform it so that he may be deemed as having acquired it (write in legible handwriting...., draw accurately ..., sow in line,...etc.)

Content is the object on which the action of the skill falls (write simple texts in legible handwriting, accurately draw the parts of a flower, sow tree species seeds in line, etc.).

Often, these three elements are not expounded in a simple fashion. Neither are they accurately stated. Sometimes the achievement level is taken for granted, as happens in the aim of "Add up numbers from 0 to 9" or it may also happen that the elements are not in a stated order ("Solve problems taken from real life by applying multiplication and division techniques"). Nevertheless, an effort should be made to achieve identification and comprehension of the parts forming the aim.

Modifications can be made once these elements have been identified. Such modifications are inserted in the quality level or the content; it is not often necessary to modify skill.

Examples:

1) If "Write simple texts of your own creation in legible handwriting" is the aim, it may be reformulated as "Write texts dictated to you in legible handwriting". In this case, the demand of the aim will have been reduced since the pupil is not asked to construct the texts he is to write: he will limit himself to writing "texts dictated to him".

2) The modification could be made another way, such as: "Write simple texts created by yourself in legible handwriting with no spelling mistakes". Obviously, a new demand not mentioned in the original aim has been added ("with no spelling mistakes"). The quality level has been altered in both cases.

It may also happen that the aim remains as originally proposed and the modifications are made in the content syllabus.

Example:

In a BC, the aim of "Having basic information on the country's geographical location" specifies its contents via a syllabus: "Location on the continent. Latitude and longitude. Present limits. Major communication routes with other countries". But it is considered that some modifications should be made: latitude and longitude do not need to be detailed; what should be done is to show how the country is connected to others. So, without touching the aim, the syllabus is modified and remains as follows: "Country's location on the continent. Present limits. Communication routes with neighbouring countries and with those traded with in the area".

On this basis we can repeat an earlier statement: adaptation is a readjustment which is mainly carried out on two of the BC elements: aims and contents. This readjustment may consist of replacing, adding or removing both components.

Methodology

The steps to take for adapting a curriculum are as follows:

- Establish adaptation criteria.
- Review aims and contents.
- Redraw the aims and contents selected.

The first thing to do is lay down adaptation criteria, clearly indicating the meaning of the changes it is intended to make. To do so, the final status the BC will have after adaptation will be described.

Example:

When examining the BC, we can say: "The BC does not sufficiently stress woman's role in society; therefore, the necessary modifications will be made to it so that it reappraises the woman as a person with the same rights as the male. Likewise, it must show the role a woman has in the community's family, social and economic life". By doing this, we have established an adaptation criterion.

The document is revised with such criterion as a background. Places where a readjustment to meet such criterion can be made are identified.

Example:

If an aim says, for example: "To recognize the participation of members of the community in its organization", this aim can be modified by saying: "To recognize the participation of the community, particularly women, in its social organizations". This is a case of adaptation by modifying an aim.

In the same way, a content may be found which could be modified by taking the criterion being worked with into account.

Example:

> A syllabus says: "Main elements forming the environment: valleys, mountains, rivers". This may be sufficient but if we want to give an ecological slant to teaching, we could add the climate (temperature, rainfall, wind, etc.), the type of soil (stony, silted, etc.) and the vegetation. Then the pre-set adaptation criterion will be complied with, but this time working with a content.

ADDITIONAL OBSERVATIONS

If necessary, there is always the possibility of making a second readjustment by using another criterion. For example, it may be of interest to direct the curriculum towards a reappraisal of local culture. In this case, opportunities the BC may offer for addressing subjects related to art, domestic customs, religious expression, etc., will be sought.

Strictly speaking, adaptation is not undertaken in all subjects and when it is, there may be many ways of doing so. It may happen, for instance, that the Language BC is adapted but the Mathematics BC is unchanged. It may also transpire that one criterion is applied for adapting a certain discipline and another one for another.

It is important, however, that adaptations do not affect the coherence and balance of the resulting structure; neither must it be forgotten that the latter must keep to the spirit and directional nature of the BC. This is why only a few criteria should be considered, and valuable, long-lasting proposals should be adopted.

III. ADAPTING THE CURRICULUM IN RURAL AREAS

The rural school in most developing countries calls for intense adaptation work because BCs are heavily slanted towards urban type populations. One of the greatest efforts made up to now is the adaptation made for heeding native language speaking populations in various countries by developing bilingual and inter-cultural education programmes. Environmental education components have been added to these efforts over the last few years. Other equally important issues, such as health education, early, pre-school stimulation, prevention of cholera, responsible parenthood, etc., have been worked on via programmes especially directed to the adult population.

ECOLOGICAL EDUCATION IN THE RURAL SCHOOL

Education for development needs to integrate a vitally important topic in teaching: the problems of natural resources and their sustainable use. Ecological education has now been included in the education systems of many countries for addressing such problems.

We shall endeavour to briefly explain what motivates this book. It may be summarised in a single phrase: ecological education is that which teaches how to live in harmony with the environment. It seeks to show how important human action is to the environment and to explain that its future depends on what we do now. The present day landscape is a result of man's inappropriate use which has degraded it with wrong exploitation techniques.

In the rural world, the environment is something more than a means for life. It is a source of essential resources for the population which mainly lives off agriculture and livestock. For the rural dweller, the environment means soil, water, vegetation, but with very special characteristics. Subject to inappropriate exploitation to which is added the violence of seasonal rains and wind, soil easily erodes and becomes poor. Water is abundant for three or four months but is scarce during the rest of the year. Highly degraded in many regions, vegetation does not manage to protect the soil nor meet the population's needs for firewood and timber.

The environment is vitally important for people's economies. This is why the human being must learn and practice skills for conserving and using this environment without destroying it. He must know how to improve its potentiality as a source of resources without doing irreparable damage. This may be defined in four fundamental attitudes.

- to understand the relationship between degradation of the environment and present ways of exploiting it.
- to get to know his own surroundings and be aware of what it means to live in harmony with them.
- to bring positive attitudes towards it into everyday life.
- to be able to use resources in an appropriate way without degrading the environment.

ECOLOGICAL EDUCATION AND THE BASIC CURRICULUM

In order to incorporate the four aspects mentioned, ecological education needs to restructure the aims and contents of education. This reform must be undertaken particularly in the disciplines of Natural Sciences and Social Sciences. In short, such disciplines are privileged subjects for addressing contents bearing a relationship with the environment and its use by human beings.

But ecological education is not limited to the subjects mentioned. It involves the subject of Occupational or Farmwork Training and other similar ones whose main aim is work training. The reason for this is simple: pupils living in rural environments must be trained to actively participate in conserving their environment and use natural resources in a sustainable fashion. To do so, they are required to possess techniques enabling them to handle such conservation work, apart from certain intellectual knowledge and skills. Such techniques involve, for example, ways of tilling which do not harm the land, production of biological fertilizers and insecticides to replace chemical ones, production of trees and bushes for crop protection, etc. These procedures have to be taught to children and should appear in the basic curriculum, without forgetting that ecological education should be ever-present. A relationship with the environment must be sought in any observation made or activity planned.

The most suitable way to develop this work component is to carry out minor work projects performed by children with the support of their families. These projects are planned out of a problem affecting the community which the school can contribute towards solving.

Example:

> A community has dug infiltration trenches in the sides of a nearby hill with the purpose of reducing rainwater runoff and aiding its infiltration into the subsoil. The work was undertaken by adults because excavation work is extremely heavy. However, it can be seen that the trench edges may easily erode and that this would destroy the whole effort. In order to prevent the edges caving in, the school's pupils decide to produce a certain number of bushes and plant them to protect the threatened edges. These children then start a work project which will be performed in Occupational Training time. Guided by their teacher, the pupils will set up a small nursery, collect seeds of the bushes chosen, will undertake the jobs necessary for producing the plantlets and will finally plant them.

Many projects similar to that described have already been successfully undertaken in rural schools. Appendix II of this manual lists them.

IV. TEACHING METHODOLOGY IN THE RURAL SCHOOL

As we have seen in the previous chapters, the rural school needs to be transformed. Above all, there must be a change in its aims, contents and methodology. These three aspects are closely linked to each other to such an extent that one cannot be modified without affecting the others.

A change in teaching methodology in the rural school involves a curriculum suited to environmental characteristics. If contents and aims have been successfully adapted, it will be easier to apply an active methodology capable if getting children working with interest and enthusiasm. If they have not been adapted, there only remains verbal explanation and non-motivating tasks.

When the curriculum matches rural reality, new paths are opened to the teaching methodology: it is easy to take advantage of the environment's education potential, achieve pupil participation and open the doors to community participation.

Example:

> If the curriculum establishes that illnesses frequently found in the region are to be studied, gastric and bronchial illnesses occurring in this environment will be the subject of discussion. Children will then be able to identify their symptoms and the progress of them because several will have had some personal or family experience of these illnesses. It will not be difficult for them to identify the plants used to treat them and it will be amusing and valuable to go into the countryside and collect samples of medicinal plants. Thus, the environment's potential would be used with the children's participation. But a local medicine man could also give a talk. Besides speaking of these illnesses, he will give a valuable explanation of the rural conception of health. A discussion could then be held on what pharmacy medicines are, how these medicines are made and the use which the pharmaceutical industry makes of products from the countryside. In other words,

the topic will have been broadly addressed with the participation of children and members of the community.

CONCEPTION OF LEARNING

The need to use a different methodology which is not merely verbal responds to the manner in which learning and teaching are conceived. If teaching is understood to be the teacher transmitting knowledge, and learning is receiving and retaining this knowledge, then the oral explanation may suffice backed - if possible - by audiovisual material. But this is not how it happens: learning is something more than paying attention to the teacher's voice.

Learning is the result of an effort to get to know and understand the subject being studied. It consists of drawing close to reality, observing it, examining it, listening to the teacher's explanations, drawing certain conclusions, contrasting one's own conclusions with those of others and reading texts referring to the subject. This is how an organized set of concepts on what is being studied will be obtained by virtue of this effort.

Example:

> A pupil who achieves really valuable learning is a child who observes a plant's structure and compares it with another; who observes the drawing in his book or the classroom wall chart and in the light of this drawing, identifies the structure of the plant he has in his hands; who seeks other similar plants within the school's surroundings; who reports his findings to the teacher for confirmation or correction; who realizes that other pupils have also reached similar conclusions.

Because, apart from obtaining the necessary information, he is learning how to observe, to handle training materials, to work with others. Finally, the piece of information acquired might not help him in any way, but he

will have developed learning skills which will undoubtedly be of great use to him in resolving new situations.

If learning is thus conceived, it must be accepted that learning necessarily starts from contact with the actual fact being studied. Learning is observing an object, handling it, comparing it. Learning is observing an event, experimenting, drawing conclusions, relating them, forming one's own judgement on it, etc.

THE TEACHER'S ROLE

Observation at school is accompanied. It is an observation the pupil makes with others sharing the same task who have decided to achieve the same result. And to this effect, the main companion is the teacher. He it is who designs learning activities, guides their undertaking and finally directs the structuring of results.

In renewed methodology, what changes is the teacher's role. It is not that such a role is discarded: it just takes on different tasks. When methodology makes contact with reality, when it is necessary to act on it to get to know it, the teacher becomes the task guide. He takes on the original rank of "pedagogue", a term which, according to its Greek roots, means "he who conducts children", he who guides them in their work.

In this conception, the teacher already knows what children are seeking, but he is in no hurry to say it. He sets them a problem, directs them and asks them questions so as to guide their observations, so they may even discuss partial results. And, when necessary, he provides them with

information they require or gives them clues on how to find it.

It is obvious that conclusions drawn by children are elementary, incipient, hardly yet a germ of more elaborated knowledge. Here the teacher's role takes on another facet. Based on what the children have achieved, he organizes and completes the information in such a way that after his intervention, the pupils see their findings enhanced. To this effect, he is not just an animator, a person who conducts the dialogue and allows children to expound what they know.

Seen overall, schoolwork for a certain time - two months, for example - is not a succession of out-of-classroom activities nor a chain of group jobs or individual tasks. Schoolwork is formed by a series of moments when the teacher's explanations alternate with activities carried out by the pupils but in which the teacher is still present.

This new role means a different attitude towards children. It is important not to see them as a group of beings who are ignorant in the subject who must be kept quiet so that they can learn. This is frequent in the town but even more so in the countryside where prejudices which some teachers have about poor children come to the fore.

Often there is haste in teaching. But this haste becomes impatience when working with country children. Subjected to a curriculum foreign to them, they cannot easily learn. How can they if they are faced with objects or facts far from their day-to-day experience? An inland child may find it impossible to imagine the sea and a rough coastline. At other times, the children are faced with unsuitable resources with which they are not familiar or are impossible to comply with through lack of time. The rural child undertakes out-of-school activities assigned to him in rural communities

(collecting firewood, looking after his younger brothers and sisters and animals, etc.) How can he do much schoolwork at home?

THE RURAL CHILD'S FUND OF KNOWLEDGE

Viewed in this light, the rural school child must be conceived as a person able to learn with the same potentialities as city dwelling children, though with different experiences. In fact, the rural child knows the rural world in detail and he knows it because he lives and works in it.

This is why the rural child has a deep, extensive knowledge of nature. Nature is not just landscape for him: it is his work place.

The rural child's knowledge must be appraised and at the same time considered as the basis for learning. He will build on this knowledge to gain further knowledge which, to a certain extent, will be a prolongation.

TEACHING ACTIVITIES

As stated earlier, educative action runs through the school period as a succession of teaching activities, some of which take place in the schoolroom and some outside it.

The most appropriate activities for the rural school which also respond to the foregoing theoretical framework are:

- Demonstration.
- Guided trip.
- Visit.
- Panoramic landscape observation.
- Guided drawing.

- Working with models.
- Guided work.
- Talk or demonstration by members of the community.
- Relating personal experiences.
- Acting out situations experienced.
- Dramatization.
- Listening to stories.
- Studying a significant event.
- Investigation with adults.
- Days participating in productive activities.

Each teaching activity is shaped by three phases, which may be described as follows:

- Introduction or preparatory phase.
- Phase of contact with the actual situation under study.
- Phase for structuring the experience.

In the preparatory phase, children are required to demonstrate what they already know about the object or event they are going to study. Via a brief dialogue conducted by the teacher, the children expound their own concepts which they have obtained either from personal experience or because they were learned beforehand at school. Having finished this dialogue, the correct thoughts mentioned by the children are summarised. The thing is to prepare the way so that the following phase may be approached on the basis of what the children now know. This phase will also hold a diagnostic value for the teacher, thanks to which he will be able to direct a large part of his subsequent work.

At the moment of contact with reality, actions are taken enabling the children to enter into direct relation with what they are going to examine. It is the phase of the visit, of the demonstration, of guided drawing or of any other activity it is decided to undertake. With these actions, pupils are forming concepts which are still individual and not always accurate but which will be the basis for successive actions.

The phase of structuring the experience is the final phase of each activity. Concepts, opinions and conclusions which the children formed when studying the object are expounded. It is the phase of bringing everyone's experiences together. Here the teacher takes on a fundamental role: pupils submit their conclusions on the basis of a pattern chosen by him. They are discussed for a while and the most correct form part of a first summary. Naturally, this is all run by the teacher.

What is obtained at the moment of structuring is general in value. It is not the particular event observed: it is the opinion held on all events of its same nature.

The result is a summary chart, a diagram, a brief text which pupils put into their exercise book. But, however elementary it is, it is now a collective construction, an idea worked on by them all.

Later, outside the activity and thanks to an explanation from the teacher, an enhancing of what has been found will emerge. It will be the time for submitting further examples, for reading some text, for showing illustrations, for listening to some recording.

THE MULTIPURPOSE NATURE OF THE ACTIVITIES

One of the main features of these activities is their multipurpose nature. This means to say that such activities enable several aims to be approached, some specific to the subject and others rather more general in nature.

Example:

> On a guided trip, moving around several successive places to observe some common event, the aims proposed for this trip (getting to know the various ways of making furrows, identifying agricultural activities being performed in the community, having information on crops being produced, etc.) will be achieved, but, in addition, observation, data collecting, spatial organization skills will be strengthened. Finally, the sense of order, discipline and cooperation will be reinforced. Otherwise, if a traditional class were to be given in the classroom, pupils would approach the aim indirectly.

It is important to stress the multipurpose nature of activities because the tendency is to think that an activity like that proposed takes up too much time, which would be true if a sole aim were achieved by it. But the great value of teaching activities like those we are proposing is their multi-usefulness which overwhelmingly makes up for the effort made to conduct them.

V. PROGRAMMING LEARNING ACTIVITIES

Once the aims it is wished to achieve with the pupils have been established, learning activities must be programmed.

A learning activity is a set of actions the children take with the purpose of achieving the aims programmed or drawing close to them. Activity is not the educator's task, however intense his work is: it is what the pupils do.

But the set of activities is clearly the teacher's task. He carefully selects them in advance and to do so uses certain programming procedures, which we shall now discuss.

PROGRAMMING STEPS

Schoolwork programming almost always follows the same six steps. A clever teacher performs them fairly rapidly and when he gains experience, what he does one year helps him for the next. The steps are as follows:

1. Real time calculation.
2. Analysis of curriculum aims and contents.
3. Identification of achievement criteria.
4. Identification of activities.
5. Timetabling activities.
6. Implementation.

Real time calculation

This is when a study is made of the time available for undertaking the work being programmed. It consists of determining the number of school days (deducting days when

school attendance is suspended) and, if possible, the number of hours available.

The calculation depends on a prior decision: for how long programming is made. The period is usually pre-set by rules laid down in the education system. In some cases, a programme is made for a whole month, in others for lesser units of time (fortnight, week, etc.).

But it does not suffice to know that programming will cover a month. A clear idea must be had of what is, in fact, the time available, which we shall call "real time".

Real time is the sum of the days or hours available, without taking into account time lost through suspension of schoolwork: public holidays, administrative work, etc.

Example:

In June, there are 22 class days (weekends are not counted). But the teacher knows that in the middle of the month, schoolwork will be suspended for the children to have a medical exam. A community festival will also be held, involving a two-day break. Then, at the end of the month, he will be absent for one day to collect his wages and will take a further day to attend a course organized by the education authorities. He will thus only have 17 days available, not 22. These 17 days are the "real time".

Greater accuracy is achieved if working hours are counted. It may be, for example, that five hours a day are worked at school, deducting recreation periods. Then 85 hours can be programmed (17 x 5). But it might happen that work begins an hour later for reasons of weather; in this case it would be necessary to subtract 17 hours, leaving a final figure of 68 hours.

As can be seen, this has to influence programming: to programme for 85 hours is very different from programming for 110, which would be the hours available if there had been none lost (22 x 5).

With real time information now to hand, aims and contents worked on during this time can now be adjusted.

Example:

The teacher earmarks Wednesdays for working activities; but in June - which is our sample month - classes are suspended for the medical examination and the teacher's absence precisely on that day of the week. Consequently, only two sessions will be available for the school work activity, not four. This will force the teacher to readjust what he expected to do, since he will have less time than normal.

Analysis of curriculum aims and contents

The aims and contents to be worked on must be carefully analyzed. It is necessary to understand all the hypotheses underlying the aim.

Examples:

1) The aim of "Reading numbers from 0 to 9" does not involve recognizing digits and saying their name out loud. It involves much more: identifying the digits; relating the digit with the group it represents; with two digits, determining which is the greater, which is the lesser or if they are the same; putting digits given in an ascending or descending order, etc.

2) Likewise, a content like "Accentuation of polysyllabic words" is a subtitle which indicates more: recognition of monosyllabic and polysyllabic words, idea of accent, identification of the syllable accented, word classification, etc.

The dimension and scope of an aim or content can be seen when properly analyzed. This enables an approximate idea to be obtained with regard to the methodological steps to be taken and the time which should be involved. Such analysis will be a great help in identifying learning activities.

Identification of achievement criteria

On analyzing aims, it will be found that the level of quality they are expected to achieve is already indicated.

In some cases, the quality indication of a structure's aims may be very precise.

Example:

> "Typing commercial correspondence without mistakes using a manual typewriter at a rate of 30 words per minute"

But it is not frequent for aims to be defined so precisely in a school's curriculum. What happens in this case is that the aim is less precise because it is broader. This is why achievements expected must be indicated when planning activities. To do so, it is necessary to identify the situation where it is clear that the pupil has achieved the aim.

An appropriate way of doing this is to state the situation identified and then, in successive phrases, expound the quality indicators.

Example:

> With the aim "Orally express yourself spontaneously, clearly and coherently" we may do the following:
>
> > Situation: relate a personal experience in front of your classmates.
> > Indicators: do so in an audible voice, without hesitation or showing fear. Everyone should be able to understand the story.

The effort made to clarify aims is offset by the fact that such clarity helps in defining the methodology to be used.

Identification of activities

Having finished examining aims, activities enabling them to be achieved are identified. Activities are a group of actions the pupils take to draw close to the aim.

Activities fulfilling the conditions of being pertinent, economical and motivating should be chosen from amongst the many activities which may be of use.

An activity is pertinent when it leads directly to the aim planned.

Example:

> If the children are expected to learn how build a plant nursery, the best thing is for them to build one (this would be a pertinent activity); but if, instead of building it, they sow seeds in a plant pot, this activity will not lead to the learning sought. Sowing in a nursery is an activity calling for techniques and knowledge different from those used for sowing in a plant pot. It has some relation with the aim but does not lead to achieving it: it is thus not a pertinent activity.

But activities also need to be inexpensive; i.e., they should lead to the aim with little cost in time, energy and materials. If children are required to recall the location of neighbouring countries, it may suffice for them to draw a map. This activity will be less expensive than if they make a relief map with plasticine or clay. By doing the latter, they will obtain the same knowledge, but will have used more time and materials.

Naturally, activities must be motivating. This means to say they must awaken children's interest in achieving the aim, even going beyond it. If children take part in the activity simply through obedience but without becoming interested in the work, their attitude will be passive and the learning not very useful.

Sometimes the motivating element lies in the object or activity, but this does not always happen. Then the teacher must provide such motivation. He must find a way to fire the children with enthusiasm. For example, it may be that digging holes to plant trees is not too attractive to children. The teacher will set in motion the art of teaching to make them interested by showing them that what they do now will be useful later.

What is motivating must not be confused with what is merely attractive.

Example:

A spelling competition may awaken the children's enthusiasm but is not necessarily motivating. They will force themselves, do exercises, carefully prepare themselves, but their goal will be to win the competition and they will forget the aim which is to improve their writing. Once the competition is over, they will have improved in this field, but indirectly. And interest in good spelling will quickly fall away.

Timetabling activities

Once identified, it is easier to accommodate the activities in time, seeking an appropriate sequence for them.

This does not involve placing one activity behind another but, as far as possible, having one activity follow on from the previous one. The ideal thing is for two successive activities to mutually support each other.

Example:

If a farm has been visited to see cows being milked (Natural Science activity), the children may then write an essay on the subject (now as a Language activity). Thus the Natural Science activity uses a subject for the Language activity (support in one direction); and writing the essay allows for recall and structuring of the visit (support in the opposite direction). A good sequence has been built which is given the technical name of correlation.

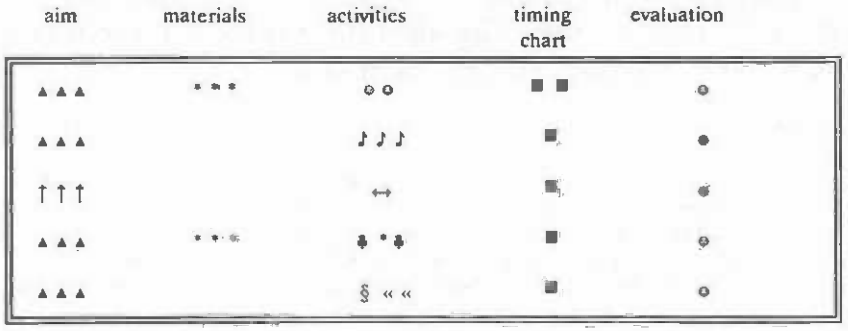
Programme Implementation

This is the final programming step. It consists of providing for the materials and equipment necessary for executing what has been programmed: maps, photographs, tools, etc. It is not always necessary to have everything when the work is commencing; it suffices to know where what is needed can be obtained and to bring it at the right time.

Provision of materials is important as part of programming. The possibility of carrying out an activity or not often depends on the space and materials available. It may be intended, for instance, to make a model of the community, because a methodology guide so advises, but classroom space is not available. So this activity cannot be performed unless somewhere else is used.

THE PLANNING MATRIX

Each education system applies its own planning scheme; however, although there are variants, they all use a common matrix, which is as follows:



This diagram means several things: an aim may be related to another and both may be achieved in the same activity.

In the opposite way, an aim may have several activities.
activities can be undertaken on successive days or not.
evaluation criteria are established only for aims.
it is not always necessary to use special materials to perform the activity planned.

Naturally, variants existing are mostly formal variants.

THE CORRELATION OF LEARNING ACTIVITIES

Classical teaching texts state that teaching diverse contents corresponding to two or more subjects can be done by using three methods: globalization, correlation and departmentalization. Let us look at some examples of each:

Examples:

1) GLOBALIZATION: A first grade master makes the children sing a song whose words mention "Five little fingers". As they are singing, the children make gestures with their hands pointing to their fingers and repeating the first five numbers several times. They are thus performing a multipurpose activity which merges elements of mathematics (counting from one to five) with experiences of music (singing) and psychomotor training (moving fingers, pointing to them, feeling them). Here skills relating to three subjects are being exercised simultaneously in one and the same activity: Mathematics, Art and Language. This is why it can be said that a globalized form is being used for teaching.

2) CORRELATION: Early in the morning, fifth grade children visit a carpenter's shop; one hour later, back in the classroom, they write a report on the visit. As we see, they are performing two activities, one Social Sciences (the visit) and the other Language (drafting). These activities are carried out successively, one after

the other, but they bear an obvious relationship. In this case, work is being performed in a correlated fashion.

3) DEPARTMENTALIZED PRESENTATION: A sixth grade teacher finishes a class on body expansion. He makes the children go out for a moment for recreation and then begins a session on classifying words according to the accent. One class is Natural Sciences and the other Language. This time two classes are held which bear no relationship to each other. Now work is being undertaken in a departmentalized fashion.

In the activity we have taken as an example of globalization, the teacher avails himself of three curriculum programmes with different requirements. The Mathematics programme proposes a numbering exercise, Artistic Education suggests singing songs as a chorus and the Language programme, in the training part, raises the need for the children to become aware of their bodies through motor activities. An activity has been programmed from these separately proposed subjects which allows the three requirements to be fulfilled at the same time: the "Five little fingers" song serves as a pretext.

Something similar occurs in the case described as an example of correlation: the Social Science programme asks pupils to get to know productive activities of the community and the Language one proposes that they develop writing skills from actual experiences. Both aims apparently have little to do with each other, but the teacher has skilfully related them: he has made the workshop experience serve as a topic for practising writing and has established appropriate correlation with it.

It can be seen through these examples that globalization, correlation and departmentalization are different forms of working and that using them is up to the teacher. He it is who decides whether to link the elements presented to him separately in the programme or not.

Something further on correlation

Globalization is a way of working very much used in initial education and in the early grades of primary or basic education. On the other hand, departmentalization is used more in secondary education and at university level. It is not that one is better than the other, it is just that each has its place. For now, correlation is of particular interest as it is a form suited to any educational grade.

As was stated earlier, correlation establishes a link between two or more learning activities. Thanks to this link, activities succeed each other naturally, as if one led on from the other. Thus, the child's experience is enhanced and reinforced during work since activities entering into correlation feed off each other and reach the child more easily. This helps the pupil a lot as he does not have to drastically change from one subject to another.

Let us look at these advantages whilst examining the following situations. These are two phases in two sections of the same grade working in different ways:

1) Section A (working in a correlated manner)

Example:

> Physical Education Class: A motor game is played. Under the teacher's orders, the children form groups of two, five, three. Those who cannot get into the group remain outside. The game is repeated several times because it is fun. The children run, breathe well, take physical exercise but also strengthen the idea of a group, of number, of equality of groups. The pupils do not know, but the teacher is aware of it. He wants them to use the group concept a lot and so insists on the game with which he is achieving a Physical Education aim and preparing for Mathematics learning.

Break: A way of resting. The children collect seeds with a precise indication; they must be of only two species which the teacher tells and shows them beforehand. Here he is endeavouring to reinforce the sense of sight and touch and, above all, the ability to compare and classify. As can be seen, collecting seeds has a very specific pedagogic end.

Mathematics Class: Back in the classroom, the pupils form groups with their seeds: of three, two, six, as the teacher orders. The idea of groups according to number is exercised with this activity, and, to a certain extent, a comparison of groups is also made. This leads to perceiving the idea of a number as a property of groups. Later, they draw groups with a different number of elements in their exercise books and this is now entering the realm of mathematical symbolism.

Remarks: The correlation mechanism is clearly seen. The teacher has taken a Mathematical content as his work goal: the formation of groups and their graphic representation. And, from the very beginning, he began to work towards that goal. He organized the Physical Education game to achieve the aims of this subject whilst thinking of what he was going to do hours later in Mathematics. He then used the recreation period. Collecting seeds was fun for the children but also served for obtaining the material necessary. But, why seeds? Because the teacher wanted them to distinguish objects by size and shape and this could be done by collecting the material necessary for later work. Finally, when the Mathematics activity arrived, the children were already prepared for the classifying exercise and drawing practically without knowing it. Likewise, collecting seeds had other aims: it enabled them to know which belonged to certain plants and then to sow them in the school nursery. Thus ecology was brought in to an activity performed for a subject which at first sight bore no relation to it: the subject of Mathematics.

2) Section B (working in a departmentalized manner)

Example:

Physical Education Class: Motor game. The children race. They all run in groups of three. The winners compete against each other and a champion emerges. They have a lot of fun. A race has been run and the children have enjoyed some physical exercise.

Art Class: Back in the classroom, the children sing a song entitled "Little tree from my land" (this is a chorus singing experience which also enables them to calm down from the physical exercise).

Mathematics Class: The teacher proposes various numbers and the children must represent the groups that fall to them. They can do it by drawing little houses or

simply "little circles". Here they are working on reading numbers, forming groups, drawing.

Remarks: In this case, the activities programmed by the teacher are good for each subject's aims, but they have no link between each other. After racing, the children sing something about trees and from there continue with an exercise involving numbers. Mutual reinforcement of activities is not achieved as it was with the correlated system. On the contrary, the pupils are made to move from one activity to another. And something even more important: knowledge of ecology is not enhanced.

The result of this is work programming for a whole period (month, fortnight, week). The manner in which information is organized depends on each system. Different formats are usually employed which, with different diagramming, contain almost the same data.

Whatever the format used, what is programmed must be specific, coherent and feasible. And, above all, it must be useful.

Programming is specific when what is to be undertaken is clearly programmed. If someone writes that children will "Read fables, legends and poems related to their real life" he is not saying anything and is promising too much. The statement must be more specific: "reading the fable 'The fox and the grapes'". This is precisely what will be done.

Programming is coherent when aims, content, activities and materials relate to each other. It should not happen, for example, that whilst the aim says "Use gardening tools properly" the pertinent activity is "Drawing a picture representing tools" As can be seen, drawing does not lead to the aim. There is no coherence between them.

Finally, programming is feasible when what can be done is programmed. It must not happen that programming announces a group of tasks and then something else is done. If, for various reasons, the teacher is going to apply a

methodology centred on explaining, copying and dictating, it should be stated in the planning.

IMPLEMENTING WHAT HAS BEEN PLANNED

If planning has been well done, it will not be difficult to carry it out. Good planning organizes and simplifies the task and avoids falling into improvisation. The teacher knows from the beginning what he is going to do, in how much time and up to where he should go. He is not advancing blindly.

But it is not a question of mechanically fulfilling what is programmed. Evaluation has much influence here. Observation of the progress made by the children and by the actual teaching work obliges programming readjustments. It may be, for example, that a subject is not understood by the pupils, or that an expected skill was not successfully achieved. It will then be necessary to include some additional activity or postpone learning to a future period.

APPENDIX I

SUBJECTS SUITED TO THE RURAL SCHOOL

As a suggestion, we now present a set of contents which could be included in the BCs used in rural schools. Such contents can be added when the curriculum is being drafted or when it is being adapted.

We are not including contents normally appearing in BCs in this list. Thus, for example, we do not mention aspects of human anatomy (the skeleton, skin, etc.) because this type of content is always taken into account in BCs.

Health

- Illnesses frequent in the rural environment: respiratory illnesses (influenza, bronchitis), gastric illnesses (enteritis, cholera, typhoid). Intestinal parasites and skin parasites.
- Care of the sick. Traditional medicines and pharmacy medicines. Plants used in the community for treating illnesses. Other methods of treatment.
- Polluted water and illnesses. Pollution of drinking water and water used for irrigation.
- Body, household and environmental hygiene. Importance. Ways of performing it in the country.

The family

- The rural family. Links of kinship. Importance of relations. Godparents. Rural aid and reciprocity. Work performed by men, women and children.
- The rural family as an economic unit.
- Emigration: temporary and permanent. Causes. Problems of emigrants outside the community.

Food

- Usual food in the community: food of plant origin and food of animal origin.
- Dietary balance with community food. Problem of replacing traditional food with food produced outside or industrially.
- Preserving food, usual techniques.

Rural organization

- Principles of rural organization (collective work, reciprocity, democratic organization and job rotation).
- Rural organizations (communities, cooperatives, unions). Importance of organization for managing natural resources and undertaking projects.
- Economic relations. Purchase and sale of products in the community.

The environment

The geographic environment: hills, rivers, valleys, plains. The catchment area in which the community is located. Land used for agriculture, grazing, land suitable for forestry. Characteristics.

Natural elements making up the environment: rain, sun, wind, types of soil, exposure (as related to the sun).

Climate and factors forming it (light, temperature, water). Variations according to altitude and season. Relationship of environmental factors with vegetation, agriculture and livestock farming.

Environment created by man: the populated centre and its elements: districts, main square, streets. Land communication: paths, trails, roads.

Socio-cultural environment: Markets, fairs, trade with neighbouring villages. Village festivals and traditions. Description and significance.

Plants

Vegetation components: grass, pasture, bushes, trees. Plants native to the community. Uses (food, livestock, agriculture, medicine, building, domestic, craft).

Cultivated and wild plants, weeds. Plant cover and soil and water conservation.

Animals

- Community animals. Diversity of animals.
- Usefulness of animals (food, farm work, hide and wool, transport). Domestic animals. Wild animals and their economic and ecological importance: control of harmful insects, pollination, seed dispersion. Harmful animals.

Water

- Importance of water (for human life, livestock, agriculture, etc.).
- Community water sources (rain, springs, rivers, wells). Surface water (glaciers, lakes, water courses), groundwater. Rivers and lakes. River course and regime. Springs or fountains.
- Man's work with respect to water sources (channelling, artificial ponds, protective fences).
- Water pollution problem. Forms of pollution (discharge of domestic and industrial waste and of waste water; insecticides and farm fertilizers). Other problems: lack of bank protection and silting in low areas.
- Water management and its use in the area.

Soil

- Composition and types of soil (sandy, silty, clay, organic soils).
- Soil formation. Texture, structure, stratification and depth. Relationship between land slope and soil quality.
- Conservation of fertility (nutrients, organic matter, soil organisms).
- Land management (fallow, crop rotation, fertilization).
- Erosion and its consequences. Methods of preventing it. Control of erosion.
- Soil - water - plant relationship.

Farming

- Farm work: land preparation, sowing, culture care (irrigation, weeding, earthing up, pest control), harvest.
- Tilling. Farm tools. Tilling methods and soil conservation.
- Irrigation. Importance. Traditional methods. Innovations in irrigation: drip irrigation, sprinkler irrigation.
- Fertilization. Organic fertilizers (farmyard manure, stubble, compost, green manure). Mineral fertilizers. Advantages and disadvantages.
- Seeds. Forms of seed (grain and tubers). Germination power. Seed production (collection, handling and selection).
- Community's farm production. Its destination.

Forestry

- Land most suited. Production and propagation of trees and bushes.
- Uses of trees and bushes: firewood, timber, fruit, forage and fibre. Trees and bushes and agriculture: windbreaks, live hedges, borders, channel and hillside protection. Places suited to planting.
- Tree and bush management: protection, pruning and thinning.
- Species suited to the region. Species which improve soil fertility (leguminous). Multipurpose species. Importance for wildlife and environmental improvement.
- Function of trees and bushes in soil and water conservation.
- Forestry in the community. Nurseries, plantations.

Livestock farming

- Livestock species bred in the community: large and small livestock. Its use.
- Animal feeding.
- Animal health. Infectious diseases and parasitic diseases. Fractures and injuries. Hygiene. Importance of vaccines.
- Activities for improving livestock: food and health care, breeder selection.
- Pasture production and management.

Energy

Energy in the rural environment. Energy from firewood and its rise in price. Oil by-products and electricity. Other energy sources: wind and water.

APPENDIX II

SUGGESTED PROJECTS

Experiments already performed in many rural schools have proved that their pupils are capable of successfully participating in different work projects. Such projects provide them with valuable learning experiences but at the same time enable them to contribute towards solving problems facing rural communities.

We now present a list of projects which can be organized in primary schools. We have identified the main activities for each one. Understood as groups of tasks occupying a time lasting beyond a work session, activities have been presented in the order in which they should be undertaken, with certain variants.

From the curriculum point of view, each activity can be turned into a learning aim. In general, it is advisable to convert the activity into a skill "Build", "Make a Plant Nursery", "Implement", etc.). If it has to be given, the quality level is added together with its respective content.

In the case of work activities, it is not always necessary to indicate the quality level expected since there already exists a performance pattern for each activity which must necessarily be respected. Thus, for instance, the pricking out activity involves many things: lifting the plantlet out without damaging it, placing it in a suitably sized hole, pushing it down to the neck, neither further up nor down, etc. If any of these conditions fail, than the work has not been performed well. This is why quality is taken for granted when mentioning skill.

Tree production

1) Propagation from seed

- Building the nursery bed (material selection and preparation, arrangement of layers, slope forming).
- Seed collecting, nursery bed treatment (disinfection of substrata, sowing, covering, watering).
- Culture care (watering, handling coverings, pest control).
- Pricking out (preparation of subsoil, bag filling or raised border preparation, plantlet lifting, digging holes, pricking out).
- Culture care (watering, handling covers, removing young plants, weeding, pest control).

2) Propagation from cuttings

- Making the raised border and preparing the substrata.
- Obtaining cuttings.
- Planting cuttings
- Culture care (watering, covering, weeding).
- Pricking out (lifting out, root pruning and planting).

Planting

- Choosing planting position according to use (clumps, windbreaks, boundary, quickset)
- Land marking out (in rows, staggered, etc.)
- Land clearing and hole digging.
- Selecting and lifting out young plant.
- Preparation (root pruning).

- Transportation and planting of young plants.
- Culture care (mulching, watering, protective fencing).

Compost production

- Building the compost mound (in holes, heaps, etc.)
- Selection of useable matter and placing in layers.
- Watering and aerating.
- Periodic turning of matter.

Vegetable production

- Making beds or raised border.
- Sowing.
- Lifting out from nursery bed, pricking out (according to species) and planting in final location.
- Culture care (pest control, watering, handling coverings).

APPENDIX III

ACTIVITIES PROPOSED

We now detail each of the activities recommended for teaching work in rural schools.

DEMONSTRATION

Description and aims of the activity

Demonstration is what the teacher performs in front of the pupils, generally with the purpose of their seeing a process (e.g., the soil erosion process), the working of some mechanism (e.g. a water pump) or some operation (e.g., how to make a graft).

Example:

> The way in which erosion occurs on a hillside can be demonstrated with a model of a hill. The model is made and, using a watering can, water falls as though it were rain. The falling water can be seen washing away the soil. Thus, in a few minutes, a phenomenon is reproduced which happens in nature over such long intervals that it cannot be observed until after it has occurred.

Preparation by the teacher

Once the activity has been chosen, the materials to be used must be prepared. It is then advisable to make a trial run. This is done to time the demonstration and to allow for any unforeseen problem.

Example:

Stones of different sizes are collected for building the model. A mound of about 50 centimetres high is made with them. This is then covered with wet earth, attempting to reproduce the actual hill, which will have sides with different slopes, smooth areas, small valleys, dips. It is pushed down firmly to compact it and is left to dry in the shade so the material does not crack. It is important to include some pastureland on the hillside to demonstrate the protection function which vegetation performs against erosion.
Rain will be simulated falling from a fine watering can or recipient with holes in the base forming a sieve.

When the demonstration is being prepared, an analysis is made of what the demonstration is to include so as to break it down into its main stages or steps. The analysis is important for making the demonstration in an ordered manner and for properly performing the subsequent structuring.

Example:

Being a question of erosion, the following phases at least can be determined:

Commencement of rainfall and surface soil wear. Wear occurs in a regular fashion in areas lacking vegetation. Earth is not washed away from the area where pasture has been planted.
Loss of soil and earth being deposited on the bottom planes.

Undertaking the activity

The activity is conducted by the teacher. The pupils should place themselves near him, preferably forming a semi-circle.

First the actual phenomenon to be reproduced is discussed. It is important for the stages in which the phenomenon occurs to be well established.

The demonstration commences and an effort is made for the pre-set stages to be easily seen. When a stage is

finished, a break is taken. The children should then describe the phenomenon observed and from what they observe, propose causes. After this, the demonstration continues.

Example:

> Using the fine shower watering can, water falls like rain. The children should be observing the hillside surface being washed away. They should see this occurring because of the water running downwards.
> At the end of the operation, washing away will have been so intense in some parts that the stones acting as the base of the model and representing the hill's rocky part, called parent rock, will be seen. The earth remains on the part protected by the pastureland.
> The eroded material is deposited in the low area, with harmful consequences. For instance: it damages irrigation channels which become shallower, it covers fertile layer of croplands with sandy, stony earth.

Structuring and interpretation of the experience

Once the demonstration has finished, what has been seen is recounted step by step. The object is to describe what was observed and explain the reasons causing it. In the example mentioned, pupils will have many observations to make, because the demonstration is connected to a natural environment they know well. In general, this is a rule which should always be followed: include the children's experience and reflect on it for them to build up further, more complete knowledge. Conclusions will be written down on the blackboard to be copied into exercise books after being corrected and placed in order.

Afterwards, what has been observed is applied to real life. The aim is to examine real situations in the community where the phenomenon studied occurs. In the case of the example given, a panoramic observation of the landscape can

be made in order to recognize eroded areas on some hillside near the school.

The experience should end with a moment of reflection and constructive proposals. In the case mentioned, it is important to make suggestions for possible erosion preventing measures and proposals on how to put them into practice in the community.

Additional recommendations

As was stated earlier, it is very important for the teacher to carry out a trial demonstration before actually performing it with his pupils. He will thus be able to appreciate the problems, see at what moments he may need help and how long the explanation takes.

1) Participation of members of the community

Participation of members of the community may be useful if demonstrating a task. When wanting to show how a graft is made, there is likely to be someone practical in the community who can be invited to make the demonstration.

The teacher is important in this case. With his questions and remarks, he can try and get the guest to better explain what he is doing. We must not forget that a skilful person tends to work quickly and misses out details which may be of great interest to pupils.

Organizing children for the activity

It generally suffices for pupils to be grouped round the teacher. But it may be necessary for one pupil to act as his assistant in the demonstration. In this case, the pupil must be told beforehand what he is to do and an attempt should be made to have him participate in the preliminary trial the teacher makes.

GUIDED TRIP

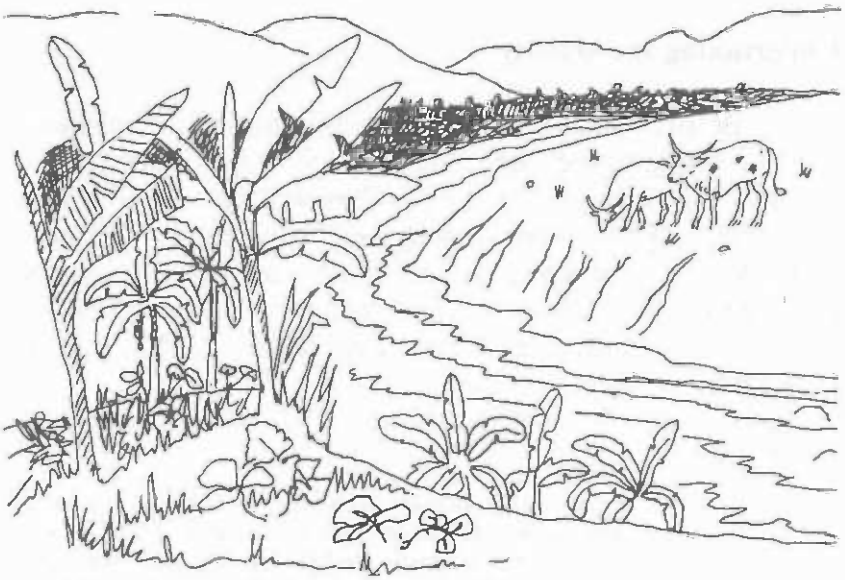
Description and aim of the activity

Pupils make observations on the guided trip whilst moving around the neighbourhood of the school, following a pre-set route. The guided trip will be made when wanting to compare diverse states of a certain object or to make comparisons between similar elements found some distance from each other.

Example:

> The differences in wild vegetation between a ravine, a hillside and a hilltop can be observed during a guided visit.

This activity is called a guided trip because it is made under the direction of a teacher or a member of the community who conducts the observations made and explains what could be important.



Preparation by the teacher

The route to be followed and places where observations are to be made must be pre-set. Thus, if children become separated, they will have a prearranged place to meet and regroup. Also, the time needed to complete the trip can be calculated by knowing the route in advance.

Since three places are to be observed, three meeting points will be chosen. The first could be the foot of the hill where the ravine begins; the second could be located

somewhere on the hillside which has some landmark like a rock or a certain tree, for instance; the third will be the furthest area it is intended to reach.

Undertaking the activity

Before starting the trip, the children will be told what they are going to see, the route they will follow and stopping points for making observations. They will also be told what materials they will need. It may be, for example, that apart from exercise books and pencils, they should take some tool for digging in the earth or a bag for collecting various objects: soil samples, seeds, etc., depending on what is being studied.

Example:

> In the case of the trip, it is important for children to know that two elements will be observed: wild vegetation and the environment. It should be very clear that the object is to identify pastures, grasses, bushes, trees and any other type of vegetation other than a farm crop. It will be valuable to see the relationship of vegetation with soil erosion and the effects of livestock browsing.

When starting the trip, the first stopping place to act as a meeting point should the children become scattered is mentioned.

At each stopping place, the teacher conducts the observation, gives the necessary explanations, asks the pupils questions, encourages their comments and replies to their queries.

Having finished observation at this place, the conclusions are summarised. The next meeting point is indicated and the trip continues.

Example:

Moss, lichen, various herbs, bushes and trees which require humidity can be seen in the ravine. The plant and environmental characteristics will be observed (humidity, type of soil, amount of light, temperature). The importance of plant species at the edge of the river and channels for holding banks together and preventing water evaporation will be noted. Still in the ravine, a first structuring is made: what plants have been seen, what their names are, what type of plants they are, what characteristics the place has. A check will be made on whether there are forage trees present, like the willow.

Afterwards on the hillside, another kind of vegetation can be seen: grass, bushes, etc. Some of the plants which they saw in the ravine will not be found here. Now the children can be left to try and reason out the ecological and economic implications. The environment will also be observed. The differences discovered between the vegetation in the two areas will be discussed (for instance, leaves adapted to withstand drought). Here partial conclusions drawn are summarised. A comparison can be made on the hilltop on the basis of the observations made in the previous two places : Are the same plants seen before found here? What plants are seen now? Are the environmental features the same or not? What are this place's peculiarities? Thus, the dialogue starts to be structured.

Structuring and interpretation of the experience

Back in the classroom, the teacher conducts a brief session in which the information obtained is organized. This, basically, is a review of what they saw and the conclusions they drew. The review should lead to building a text or a summary chart. It is recommended that each item relates to a stopping place.

Example:

As there were three stops, the trip will be structured into three parts: the ravine, the hillside and the hilltop. What was observed on vegetation and characteristics of the place in each part will be noted down and any relationship between them will be sought. The ecological approach will enable a connection between the vegetation present and environmental factors to be found. The great importance of some plants for maintaining the environment can be stressed.

In the case of the guided trip, structuring may use a collective drawing. The teacher traces out the route followed, points out the stopping points and the pupils provide the information obtained. The drawing may be made on the blackboard or on a large piece of paper.

A sketch of the hill is made and the places observed are indicated on it. Duly classified data obtained are written at each place. It will be motivating to use conventional symbols for grass, bushes and trees.

Then comparisons are made: what plants are typical of each place and which are found in all three. The aim is to check certain general statements: can it be said that the same vegetation can be found in all the community's ravines? Do all hillsides have the same characteristics?

Additional recommendations

1) Participation of members of the community

Many opportunities may arise for members of the community to participate in the trip. In order for best advantage to be taken of these opportunities, it is advisable to first find such members and ask for their cooperation, explaining what is expected of them. However, the opportunity must not be missed of chatting to some of the people met by chance on the route, who may be able to provide something valuable for the work being performed.

2) Organizing the children for the activity

Small groups of three or four pupils who will stay together for the whole trip should be organized. Apart from allowing for better monitoring which will prevent any children being lost, these groups will encourage observation enhanced by group discussion and cooperation for collecting samples and for making final structuring. As they are children from the early school years, all groups will observe the same thing. With older pupils, different observations can be made but structuring work is then more complex.

VISIT

Description and aims of the activity

A visit is programmed when it is required to interview a person in his working environment to receive first hand information on a certain occupation, get to know the items being worked with and see how they are used.

Example:

1) A carpenter making furniture with wood and reeds growing by the riverside may be visited. He will be asked what wood he uses (willow, eucalyptus), where it comes from, whether it is scarce in the community. Tools and how to use them will be shown. He may be asked about the sale of his furniture, whether he takes it to market, whether he has a permanent buyer in the town.

2) In a craft textile worker's workroom, the looms she handles, the instruments she uses (spindles, distaffs, combs, needles, etc.), the different materials she uses (wool, thread, dyes, fixatives) will be shown. The craftswoman herself will explain and demonstrate how to use them. Also, she can be seen working on her looms which will be more of a practical experience than if a story on textile craft work was told in the classroom.

A visit has the advantage of being real. No verbal explanation, no drawing or model can provide the overall view obtained from a visit.

Preparation by the Teacher

The person who will be visited is interviewed sufficiently in advance. It is not just a question of asking for his consent.

The aim is to explain how important it is for the children to know the work he does. The aims pursued should be explained to him. How the visit is to progress will be programmed with him.

There should not be too many aims proposed. If too much is expected of a visit, this may lead to a poor result.

Example:

> Various things can be seen in the craft textile lady's workroom; why she uses different types of looms, what different ways there are for preparing wefts, whether the wool is dyed or is used in its natural colour, what differences of quality can be achieved according to the materials used. She can be asked about the plants she uses for dyeing, from which animals the wool comes, whether the wool changes in quality when the animals have diseases or are badly fed because of the scarcity of vegetation. Should she use thread of a plant origin, it may be ascertained whether there is a lack of local raw material. But not everything can be observed and understood on a single visit. So it is useful to choose only some points. For example, it may be desired to know the sequence for making a garment: wool preparation, including spinning and dyeing, weaving on a simple loom, which means wefting and weaving and finishing of the garment. The purpose of the visit will be to get to know all this.

When preparing the activity, the children will be given an initial idea on what they are going to observe. Thus pupils are not going to "discover" but to check and complete superficial information through direct experience.

In the case of the visit to the craftswoman, the steps followed for preparing a woven garment will be explained. The idea thus received will enable them to acquire further information.

Undertaking the activity

As the aims of the visit are known to the teacher, the children and the person visited, it will be easy to undertake the activity by following well defined steps.

Example:

> Steps to be observed could be: wool spinning, dyeing, skeining, weft preparation, weaving, finishing.

A summary will be made at each step with the aid of the person visited. At the appropriate moment, the teacher will ask for some additional explanation or will emphasize something said so that the children will understand or remember better.

Structuring and interpretation of the experience

It will be important to describe what has been observed and to explain why certain operations are performed in a certain way. The teacher who always bears in mind the need to use every opportunity in order to seek better ecological knowledge will find a lot of material here.

Additional recommendations

1) Participation of members of the community

A visit is one of the most valuable activities regarding the participation of members of the community. In an activity like this, the centre of interest is the person visited and his work. And as he will surely feel quite at home, it is likely

that his explanations will be clear and well illustrated with the objects and procedures he uses.

2) Organizing the children for the activity

In the case of small children, it is best for them all to observe the same thing, because their observation is less detailed. When older, they will complete the data obtained amongst them all.

PANORAMIC LANDSCAPE OBSERVATION

Description and aims of the activity

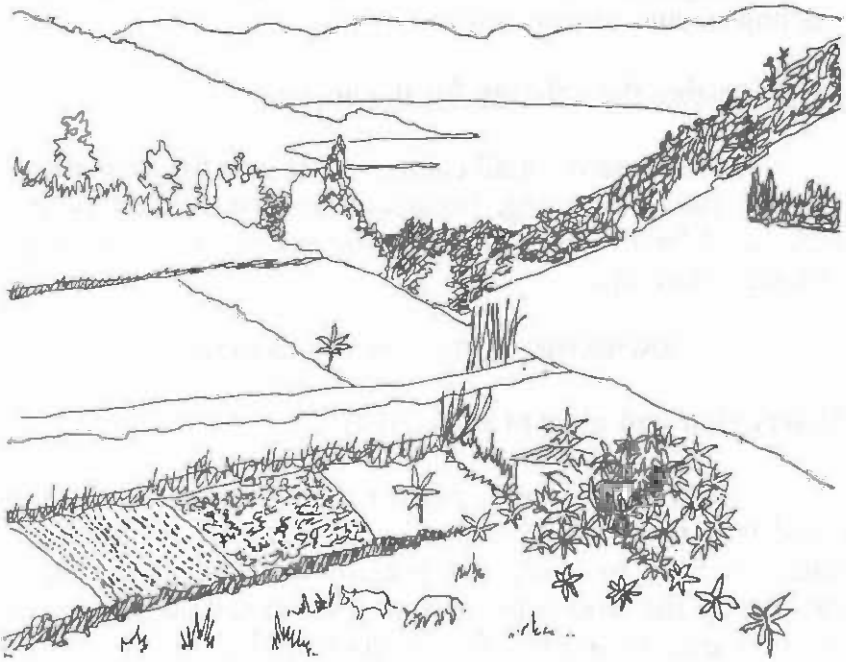
As its name implies, panoramic landscape observation consists in the overall observation of a landscape. It is used when wanting to study the presence of certain elements making up the landscape, to examine the relations between them or determine the size of a geographical item.

Example:

> A panoramic landscape observation may be made for identifying the areas of a community earmarked for agriculture and those which will be used for grazing. A search may be made for eroded areas where it will be appropriate to plant trees and bushes and make terraces.

There may be two kinds of panoramic landscape observation:

- Observation by sectors.
- Observation by interesting places.



Observation by sectors is that which concentrates on a part of the landscape, examining several elements in that place. Having finished the examination, another sector of the landscape is observed, which may be different from the sectors analyzed previously.

Example:

The lowest part of the catchment area can be seen, the space used for crops and land for livestock, a river, the route of irrigation channels, areas occupied by houses and market gardens, the type and abundance of vegetation, etc.
Moving on from here, a hillside is seen: cultivated land, fallow land, irrigation systems; it can be seen whether there is erosion and soil conservation constructions (terraces, infiltration trenches, containment barriers). The soil

protection function fulfilled by bushes and trees will be noted. What land is cultivated, whether there are trees to protect cultivated land and how they are located will be seen. It will be easy to see how houses are distributed, the presence of mule trails or cattle tracks, etc.
Finally, the hilltop is observed, whether there is livestock, the absence of crops, the difference in vegetation as well as the fact that there are no houses there.

Observation by places of interest is different. In this case, the object is to observe a certain element and to find it in several parts of the landscape.

It may be grazing places. A first place used for this activity is located and carefully examined, describing the site's ecological characteristics, the type of livestock grazing there, its area, etc. Then another place is observed where the same activity occurs. Does it have the same characteristics as the previous one? Is it at the same altitude? Is there any difference? Once these and other aspects which might arise have been investigated, a third place is observed and so on.

Undertaking the activity

Before leaving the classroom, the children should be told why this activity was chosen, what is going to be observed should be specified, and what it is expected to learn from the observation should be mentioned.

The group of pupils will meet at the place from where observation is going to start.

The teacher guides the observation by asking questions. If the decision is made to make an observation by sectors, it is necessary to correctly delimit the sector to be observed. It may be a hill: then everyone's attention is drawn to that hill. If observation is to be made by places of interest, one is indicated and is correctly identified so as to find other similar ones afterwards.

Children who know the area must be listened to. It is very likely that they will get their companions to see aspects they would perhaps not otherwise discover.

Partial conclusions may be drawn as they are making the observation. The veracity of such conclusions can be confirmed by further observations.

Example:

> It is likely that when a grazing place is observed, very obvious erosion can be seen and there are areas with rock outcrops where grass no longer grows. Does the same happen with other places also used for grazing? What may be the causes? What impacts does erosion have on the environment and, consequently, on livestock production? How can these negative effects be corrected? What conservation work can be carried out? Is it possible for grazing to be organized so that it gives time for pasturelands to recover? Is it done in the community? Are there areas where the soil is better conserved, and if so, why?

Structuring and interpretation of the experience

For children to understand better and be more motivated, drawings and summary charts can be made which will be explained and related to each other. Ecological involvement which should always be present in school work must not be forgotten.

Additional recommendations

It is possible that something will occur during observation which will attract attention but does not relate to the aims of the activity as planned. In this case, it is advisable to try and integrate it, give it the attention it deserves and satisfy the children's curiosity. The programme will then continue. For example, a wild animal may be found and used

to describe the area where it lives and the ecological function it fulfils.

1) Community participation

The teacher's and pupils' work suffices for this activity. However, if the teacher does not know the environment well, in many cases he may ask for information from a member of the community who does know it and has experience of the different rural tasks. This is done before the activity, when the teacher is preparing for it. Ideally, the teacher would first go over part of the route together with this person and ask him the questions he needs to.

GUIDED DRAWING

Description and aims of the activity

Considered as an artistic training activity, drawing may also be a learning activity in subjects like natural or social sciences. But in this case it is guided, not free drawing. It is called guided drawing because the teacher proposes the subject and also constantly intervenes to ask for details, make suggestions and even to correct.

The aim is for the children to expound what they know of a certain aspect of real life through a fairly detailed drawing. When drawing, they will realize how important certain elements are, will become more aware of what they already know and will also discuss the subject.

Example:

A group of children are asked to draw scenes of the rainy season; floods, problems in land communication, cave-ins, channel blocking, activities undertaken, clothing worn. Another group will draw the dry season, showing the problems involved for obtaining sufficient water for irrigation and domestic use, activities, etc. Whilst the pupils are drawing, they can be questioned, as a way of making them see details which have been omitted. Afterwards, a comparison can be made between both phases, and the reasons for what has been observed can be explained.

Seen in this fashion, guided drawing is also valuable to the teacher since he will get to know the ideas and conceptions of the children who often tell of the experiences they have had in the cultural environment.

Example:

> If a child draws a ceremonial place near the market garden, with flowers and some containers for them, it may be that some "payment" was made to the earth. This would give rise to a discussion with him and then with the rest on worshipping the earth which may be a very important religious fact for his community.

Undertaking the activity

The work commences by talking to the children on the subject which will be addressed in the drawing. This dialogue is not simply an introduction but is an important part of the activity.

Having raised the matter, the children are asked to give suggestions on what should be drawn; then they all discuss whether what has been suggested should be included or not. It is advisable to note down any decisions on the blackboard.

After the initial conversation, the work is performed. Whilst the children are drawing, the teacher comes by and talks in a low voice about what they are drawing. They may be asked to identify the event or object being drawn and to give some clarification at any time.

When the children have finished drawing, discussion commences. They sit in a circle round the teacher so that they can see the drawings. The most complete drawings are chosen and those who drew them are asked to describe them. The other pupils comment on them and suggest relations and conclusions.

Structuring and interpretation of the experience

When several drawings have been examined, conclusions drawn from the work performed are organized. They are placed in order so as to better understand and recall the events reproduced and the causes of them. The first example is rich in ecological implications which will be stressed. It should be used to better understand relations between the environment and ways of life.

Additional recommendations

The purpose of this activity is not to produce an artistic drawing but a realistic one full of information. It is an opportunity to use informal materials like seeds, small stones, leaves and pressed flowers or anything the pupil thinks fit.

Participation of members of the community

Exhibiting drawings is an important occasion for the community to visit the school. It should be used to create a more solid, participative link between the rural teacher and the community.

1) Organizing the children for the activity

At first the work is individual. But there is a second phase when it is discussed in order to enhance information. All the children should take part at this stage. The same happens when carrying out information structuring.

When children are required to carefully observe an object, guided drawing is an excellent activity. Once the

subject it is desired to study has been identified, they are asked to draw it. As they progress in the work, they are made aware of missing or badly reproduced details.

Example:

> If pupils are required to observe parts of a flower and their characteristics, one way of achieving this is to make them draw it. It may happen that at the first attempt they will draw a flower in a conventional manner. But from that first drawing, it will be possible for them to improve their observation. Does the flower really have four petals? And that little tube in the middle? And the stamens? How many are there? Are there not some little green leaves below the petals?, etc.

This activity may have diverse objects: plants, animals, tools, landscapes. In any event, it is not a question of the reproduction being exact; a true portrait of the object is not expected. What is being sought is rather that the drawing be the way for them to observe better, even though it does not have great artistic quality.

Sometimes, the drawing may be done from a school illustration, particularly if it is simple and lends itself to being copied.

WORKING WITH MODELS

Description and aims of the activity

Models are reproductions of real objects, sometimes in a smaller dimension (e.g., model of a building), at other times in a larger size (e.g. model of an insect's body). A good example of a model is the village which is represented by its people, houses, sheds, animals, trees, hills, streams, all reproduced in miniature. Models are in proportion to real

objects but their structure is sometimes simplified because some details are omitted.

Certain models are static but there are others which may function in a similar fashion to the real thing.

Example:

A model representing a catchment area may be built, with the river at the bottom and the two slopes on its sides. An attempt will be made to represent streams feeding the main river, the ravines down which they flow, lakes or glaciers giving them their origin. Farmland, forests, grazing areas, villages, paths and roads may be indicated. Thus the children can "observe" the whole basin and establish the relations between its elements; the importance of the slope, of vegetation, of water, of exposure (direction faced by the hillside with respect to the sun) and of activities being performed in the different parts of the catchment basin. The teacher may indicate important points and the children will rapidly locate them, something which is not easy if a real panorama is observed.

Of course, models do not replace the real thing, but they enable their structure, characteristics and way of operating to be understood. After working with models, it is easier to observe and understand the reality they represent. The purpose of this activity is to show an object or process whose actual dimensions make direct observation difficult.

Steps in undertaking the activity

The first step is to build the model. This can sometimes be done with the children's help. In other cases it may happen that the model is ready, having been built the year before by the teacher.

It is very important for the objectives of the work to be well defined because whether the pupils take part in building it or not depends on this. There are cases when building the model has a value for education; in others, simply for amusement.

Example:

If we are dealing with a model of a catchment area, it may be very useful to build it with the children. Thus, they will gradually get to know the different elements and will have to make careful observations of the real situation to be able to reproduce them.

On the other hand, if it is a question of showing the structure and operation of a battery torch, it may be better to have the material prepared beforehand.

Preparation by the teacher

If the model is to be built with the children, the necessary materials and tools should be assembled beforehand. Work cannot be interrupted because something is missing.

It is important for the teacher to know how to achieve good construction. It may be extremely frustrating if the model building has to be suspended because the materials break easily or because the object will not stand up.

If the object which is going to be reproduced is not familiar to the children, illustrations must be available (photographs, drawings, diagrams) which can show how the object is in real life.

Undertaking the activity

The model should be built quickly so that it is finished in a few sessions. The ideal is for the work to take up only one session, but there are cases when more time is required.

The model should be simple, with just the essential elements. No attempt at absolute realism in the representation should be made. A few conventions are sufficient. An attempt should be made to have all the children participate and contribute with ideas.

Example:

> The river and streams could be represented with blue paper. Mountain-top snow can be simulated by dusting with chalk or with plaster. Trees will be dry twigs, lichen and small stones; paper soaked and compacted to give a sense of relief and any other material the pupils wish to provide can be used.

The second phase of the work is to analyze the reality represented. At that moment, the model is operated or is examined in detail, assuming that the reality is as it appears in the model.

If a working model, it is operated for a few moments and then explanations are requested. If it is possible to stop the movement or slow it down, this will enable a more detailed analysis to be made.

If it is a model showing a structure, this can be observed by parts for better understanding, but always establishing the necessary relations between them.

Example:

> The model of the catchment basin may allow for an analysis by parts. The mountain top can easily be shown and why it is called a watershed can be explained. It will be easy for the children to understand that water from glaciers or rainfall separates on both sides of the mountain. The main river can be shown which, running through the deep part of the basin, receives water from the little streams flowing down from the mountain. It will also be possible to point out the high and low parts of the basin and the importance of vegetation to catch rain and regulate water production in the country, the activities carried on in each area, their economic importance, etc.

Having finished the model, panoramic observation of the basin where the school is located is made and an attempt is also made to detect the same elements identified in the model.

Structuring and interpretation of the experience

Conclusions may be placed in order with the model in view. It is thus easier to remember deductions. It is advisable for summary charts to be made, devoting one chart to each part.

The following could be the structuring items for the case serving as an example.

- Catchment basin definition.
- Parts of the basin. Main and secondary basin. Hilltop, valley, watershed, hillsides.
- Uses of the different parts of the basin: flat areas for farming, slopes for livestock and trees. Relation between altitude, slope and land uses.

Additional recommendations

1) Organizing the children for the activity

In many cases, it will be good for children to participate in making the model, particularly when a quickly built one is involved. By taking part in this task, the children will acquire a lot of important information, at the same time setting their creativity into motion for solving small problematic situations.

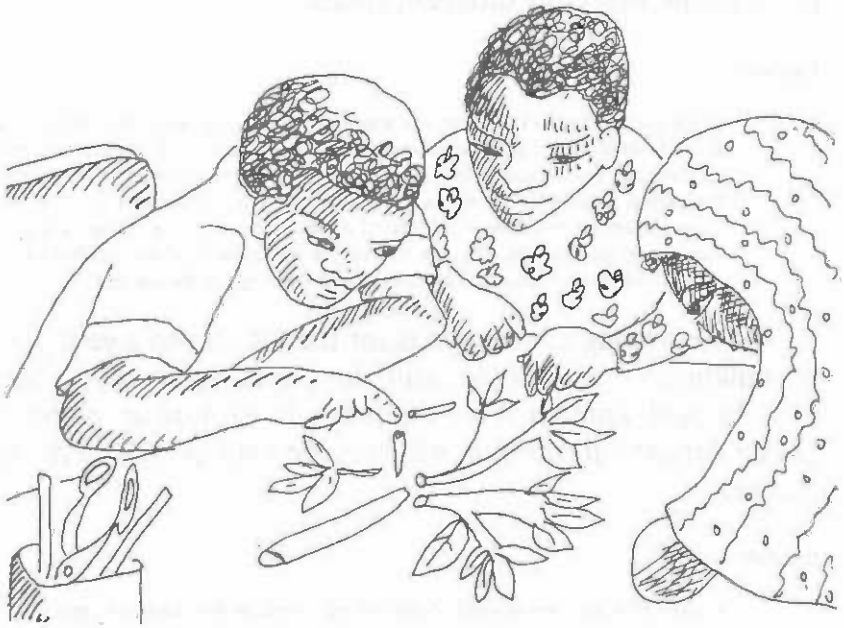
STUDYING AN OBJECT

Description and aims of the activity

As the name itself implies, studying an object consists of a detailed study of a particular object. This activity is used when trying to describe in detail the characteristics of the object under study or the changes it undergoes during a certain process.

Example:

A pool of water may be an object studied with this activity: forms of plant life (water plants, moss, algae), forms of animal life (frogs, fish, insects at their different stages), water quality (turbidity, colour, temperature, pollution) and quality of the soil. Phenomena occurring in the pool (plant flowering, changes in animal life, evaporation, etc.)



Undertaking the activity

In general, it is recommended that this activity be carried out in small groups (two or three pupils), organized so that they can all have access to the object under study. This can be done by trying to provide each group with a sample of the object to be studied or by having them come close to the object at different times.

Example:

> In the case of the pool of water, it is easy to distribute the task. The simplest way is for them all to see the same things, but placing themselves in different areas; another, more complicated way, advisable if the children are older, is to share out the subject; some observe plants, others animals, others the water, etc.
> Another subject could be the study of a fruit, in which case the work may be carried out individually, although it is best to bring two or three pupils together to establish mechanisms of cooperation and exchange of deductions.

A working alternative is for the teacher to give a prior explanation of the subject and the pupils to try and check what he said; another is for the pupils to explore an object to gather certain information which is then corroborated by the teacher.

Example:

> If parts of a fruit are studied, it may be advisable for the teacher to give a prior explanation, speaking of a standard fruit, showing it or making use of a picture; the children may then make a detailed study of various fruits, attempting to identify the parts.
> In the case of the pool, it will be better for the teacher to give a brief description of what it will be possible to see, which the children will add to because it will certainly be known to them all. On approaching the pool, observation will now have an orientation; after a first structuring, it can be completed on another visit or the same pool can be compared in another season of the year.

It is important for pupils to take utensils with them to collect material and make a more complete observation (in the example, trowels to excavate sediment, jars for collecting small animals and see the water turbidity against the light, bags for collecting water plants, etc.).

Observation is always made by stressing the ecological interest of what is under study. The teacher conducts it and suggests what the pupils should be observing by asking questions.

Example:

An advisable sequence for the pool may be as follows: observation of the pool's bottom, of its surface, of the vegetation showing above the surface, of the insects inhabiting it, and of the surroundings.
The fruit can be examined in two stages, relating to its inside and outside.

Structuring and interpretation of the experience

Placing conclusions into order depends on the object studied and the way in which the observation has been undertaken. A sketch is made and whilst discussing it with the pupils, the conclusions reached are noted down. The object's relations with the environment must always be stressed. The pool example is particularly interesting because it can be considered an ecosystem. This is a good opportunity for encouraging the children's capacity for expressing themselves and listening to their companions, defending their opinions and exchanging constructive ideas.

Additional recommendations

1) Need for the teacher's presence

Unlike guided work where it is possible to work without the teacher, he should be there at all times when studying an object, advising on observation. Whilst he speaks with the pupils he can note down the conclusions they are reaching.

Should books and pictures related to the subject under study be available, they should be consulted as frequently as possible in order to look for information or check an opinion.

2) Participation of the community

On certain occasions, a person in the community may be able to provide more information on the object studied than the teacher. In this case, there should be no delay in asking for his help.

GUIDED WORK

Description and aims of the activity

Pupils carry out tasks with the teacher's guidance, but not necessarily in his presence.

Example:

> Guided work could involve building a herbarium. To do so, the teacher will give prior instructions on how to collect leaves or stems, the technique for drying them, how to put them in order, etc. but it will not be necessary - or possible - for him to accompany all the pupils during the work. They must do it on their own.

The aim is for the children to collect information by going to direct sources. In other cases, it will act for preparing a subject or checking something explained theoretically. The product obtained may be an object (model, plant collection). Or it may consist of organizing surveys, using questionnaires which the children fill in by asking older people.

Undertaking the activity

Before the children start doing the work on their own, they must know the purpose of it. Children should not carry out a task if they do not know why they are doing it. Also, useful instructions should be clearly given so that the task may be performed correctly. It must not be forgotten that in order to carry out guided work, materials are used or older people's time is taken up, which is why it should not be interrupted or discontinued.

Example:

> In the foregoing case, first of all, the pupils must know why they are going to collect leaves or other plant matter. It may be that a study of the different leaf shapes is what is required or that the children are required to find out the diversity of plants in the community or to learn how to classify plant matter. Whatever it is, it is important for the purpose of the work to be known to the children.
>
> Pupils must know that healthy leaves are to be searched for (although it may be interesting to collect samples of those damaged by some pest or by livestock), removed without damaging the plant, the leaf and its stalk kept and then placed between sheets of paper to dry out.
>
> At another time, agreement should be reached with the pupils on the classification to be used for putting the material in order, and they will be taught the correct way to stick the samples onto clean sheets of paper. It is good for pupils to take note of the environment where they collect their samples and find out whether they are scarce, whether they are used for feeding livestock or are medicinal, etc.

If possible, instructions should be given in writing, with comments on the operations to be performed and their sequence.

Work commences when the instructions have been explained. Pupils will work on their own but it must be possible for them to consult the teacher whenever they wish. For his part, the teacher will be constantly asking for information on the work's progress.

Once results are submitted, the conclusion of the work, the veracity of the information and seriousness with which the work has been performed is checked.

Structuring and interpretation of the experience

Structuring the experience is possibly the most valuable stage in guided work. Everything the pupils have done becomes basic material for explaining and organizing information. This is the time to discuss the results, answer questions, make comparisons, and look for further data, until a complete picture of the information being sought is obtained.

Additional recommendations

1) Participation of members of the community

A large part of guided work commits members of the community to some extent. The intervention of some older person to provide materials, offer information and help in carrying out some operation will always be important. This is why children should be able to explain why they are performing the task, since it is of no use to say that the work is being done because the teacher says so.

2) Organizing the children for the activity

The work is normally more consistent when performed by small groups (two or three per group). Cooperation between group members as a way to enhance the child's work and personality must always be encouraged.

There may also be phases of cooperation between different groups. In the case of building herbaria, it is very useful to exchange material collected since some pupils may have located a source that others have not.

TALK OR DEMONSTRATION BY MEMBERS OF THE COMMUNITY

Description and aims of the activity

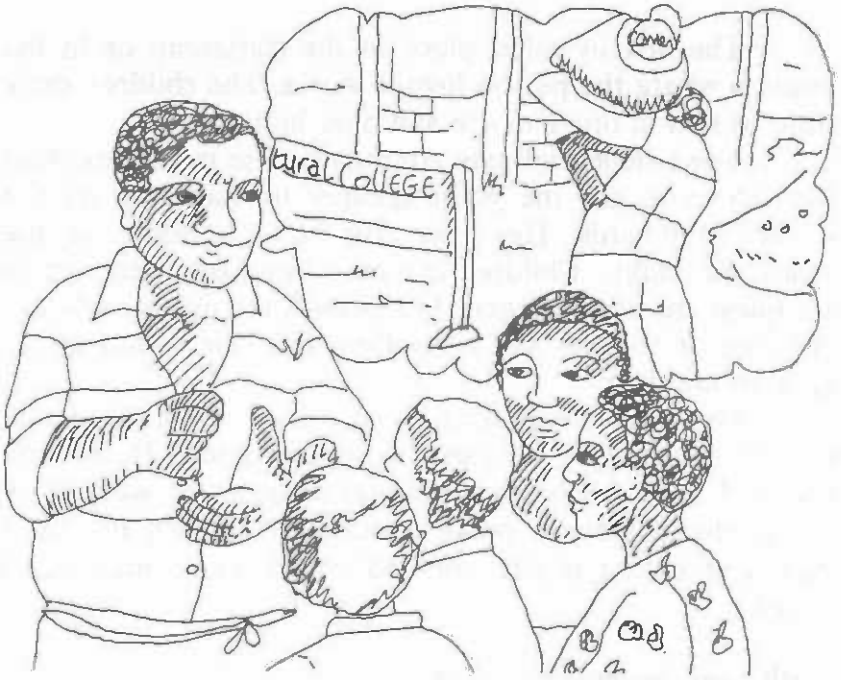
The main actor in this activity is a member of the community who is invited to explain to the children some event or task he knows well. This talk may be given in the school but it is best when given in the workplace of the person concerned. The member of the community will feel more comfortable and will have all the materials he needs close by.

The aim is for the pupils to obtain first-hand information from an authentic source.

Example:

> The participation of an elderly member of the community is invaluable for relating historical events or ancestral traditions of the community. The narration he makes of events will certainly be passionate since he may have actually witnessed them or may have received information from stories told by his ancestors.
> Likewise, many complex techniques - agricultural, forestry, livestock - will be better presented if a member of the community engaged in this work who knows it well demonstrates or explains it.

This activity relates the school to the community through people who demonstrate their occupation and way of life.



Preparation by the teacher

Simply inviting the person chosen does not suffice for this activity. It is necessary to first work with him and explain the aims being pursued, stressing the significance and importance of his cooperation and making recommendations on the case. The children's ages must be emphasized so as to avoid a talk beyond their comprehension.

If the guest speaker is going to carry out the demonstration in the classroom, the necessary tools and materials must be made available.

Undertaking the activity

The activity takes place in the classroom or in the location where the person invited works. The children draw close to him in order to see and hear him easily.

The teacher will pay attention to the most important facts so as to ask the guest speaker to elaborate on the subject afterwards. He must also be able to sense the children's doubts. Children are not always open enough to ask questions of a stranger. In this case, the teacher will ask the speaker the children's questions on their behalf at the appropriate time.

Once the demonstration or story is over, discussion will be encouraged between pupils and guest. If the talk revolved around a technical matter, it could be well worth the teacher's while to make a summary of what has been explained so the pupils can understand and remember it better.

Additional recommendations

It is usually pleasing to the guest if the children show him some appreciation for his efforts. They may sing to him in a chorus or someone might recite a poem and each pupil could say goodbye to him personally.

RELATING SITUATIONS EXPERIENCED

Description and aims

This activity consists of freely relating events which the pupil has seen or in which he has participated. But they are not anecdotes which occur infrequently in day-to-day life but those which in some way show a characteristic aspect of life in the community.

Example:

> An older child may speak of his participation in activities for preparing a millet, corn or rice dish. This event is important because it can show elements of technology, religion and social relations typical of the community. The story the child tells on how night watches were set up to prevent potato stealing or the description of the potato dehydration process, etc. are not unimportant passing occurrences; on the contrary, they tell a lot about the community's culture and situation.

The idea is not for pupils to talk about unimportant personal happenings; the question is to relate personal stories enabling the elements characterizing the community's life to be discovered.

Undertaking the activity

An atmosphere of silence and attention is sought so that the story may proceed without problems. The child telling the story is constantly encouraged. If necessary, a pause will be made in his narration for the teacher to make a summary of what has been told up till then.

Once the child has finished his story, he is asked for more information on some important aspects. This is necessary even if he has touched on them because the

intention is to have the remaining pupils pay greater attention to the detail being repeated.

The others are then asked if they have had a similar experience. Those who wish may talk of such experiences.

Structuring and interpretation of the experience

Since certain points in the main story will have been repeated in the stories told later, it will be easy to organize information and conclusions. Anecdotes and personal happenings are discarded and only the essential and most general are left.

Example:

> It could be that the child was describing the various stages in making the millet, corn or rice dish; consequently, this may be noted down. And the same can be done if the activities performed by people, the types of potato used, the precautions which must be taken, etc. were talked of.

Additional recommendations

It is necessary to ensure that the child chosen to relate the first story has a wealth of experience on the subject about which he is to talk, since what he says will be the basis for subsequent expansion.

1) Organizing the children for the activity

The children will be organized as usual in the classroom. Nevertheless, it may be advisable for them to draw close to the story-teller since his voice may not be clearly audible.

ACTING OUT SITUATIONS EXPERIENCED

Description and aims of the activity

This activity consists in acting out typical situations characteristic of the social life of the family and the community. Its purpose is to demonstrate behaviour and reactions characterizing the action of people when intervening in a proposed situation, which will then enable an analysis to be made of actual behaviour.

The role game is always an improvisation. But when improvising, the person acting unwittingly reproduces behaviour established in his community. This makes the role game a valuable medium for studying elements of social life.

Example:

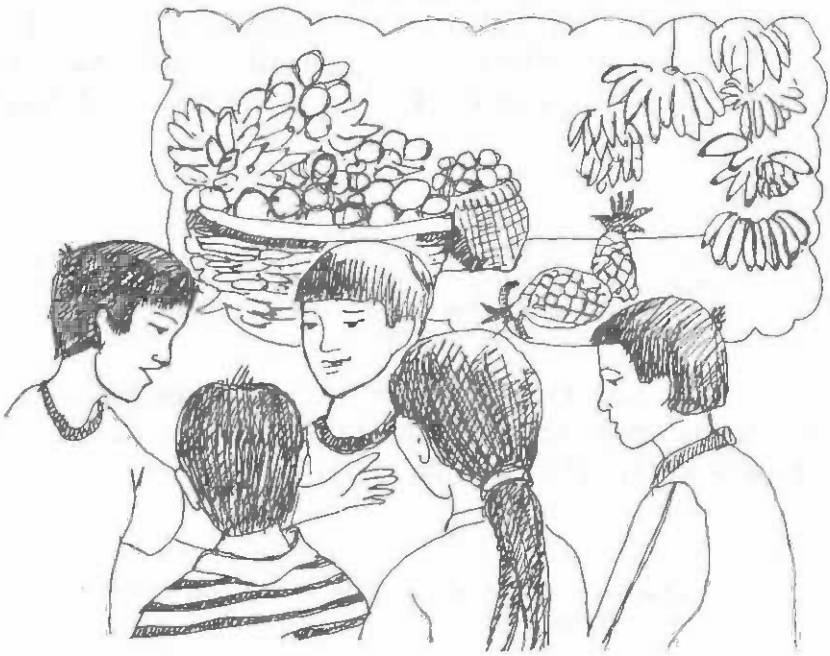
> If a role game is performed to show family life at the beginning of the day, and children act as the father, mother and children, it will easily be seen how housework is shared out. Perhaps it will be the mother who wakes up first to light the kitchen stove and cook. She may wake the children up to bring water or firewood, and for one to go and let out the sheep. The father will get ready and go out and water the market garden. The role each member of the family plays will be ascertained and later critically analyzed. This will be acted out by the children without needing to learn a script as in the theatre because what they will do will be to simply reproduce what they actually see.

Preparation by the Teacher

The teacher will choose the aspect of actual life that he wants the pupils to express. But this will not suffice. He must also find a situation enabling the behaviour sought to be displayed. He will also choose several roles which will have to be acted out in the situation.

Example:

In the role game described above, the situation is a family waking up on a working day; the roles are "father", "mother", "girls", "boys". In all, there may be five or six participants, each playing a family role.
In order to make the situation somewhat problematic, it may be pretended that the family has overslept and has to get to work very quickly.



Undertaking the activity

Pupils not taking part will stand where they can see the play without problems, preferably all together. If the group is scattered, each in his usual classroom place, the children who are acting may have difficulties since they will not be clear about for whom they should "act".

The teacher explains the situation to all the children. He then chooses those who are going to act and gives them their roles. The children will have to improvise the "stage" with items to hand.

Example:

> A garment laid out may form the bed, an overturned chair will be the kitchen range, a few branches will be the firewood and a large stick could be a farmworker's tool. The children will lie down as though they were a sleeping family and at a signal will start acting.

The teacher will encourage the children but without suggesting what they must do. Rather, he will ask the right questions with respect to the actual situation.

Example:

> What does the mother do as soon as she is awake? And the children? Do they carry on sleeping?, etc.

Structuring and interpretation of the experience

Once the play is over, a summary of what has been seen during the role game is made and opinions are given on what has been observed, judging whether "it also happens in real life". If the role game was well run, it is likely that the children will recognize their own life.

Conclusions are placed in order according to the aim as planned by the teacher. In the example, if it was observed that the female characters are discriminated against in the family structure (if the women and girls are excluded from certain rights or overloaded with work) it is important to stress this and show the damage that such discrimination causes to all members of the family.

Additional recommendations

1) Organizing the children for the activity

Pupils who are going to participate will not be chosen for their acting abilities or their liveliness. It is important for them all to have the opportunity to act throughout the school year. Choosing them in turn may be a way of encouraging the more timid or backward.

Those children who are not acting must keep quiet. They will intervene when carrying out the subsequent structuring.

If, during the role game, a hilarious scene arises, precisely because the play has been extremely realistic, it must be accepted with great naturalness. It may be, for instance, that a child pronounces a swear word simply because this is what happens in reality. In this case, the fact must be ignored although it may be discussed later.

DRAMATIZATION

Description and aims of the activity

Dramatization is the representation of an event narrated previously. It is used to present events and characters historically important to the community in an objective way. At the same time, it serves to provide more extensive information on the moment or season when the events occurred. But it can also be used to test situations which the child will have to face when he grows up, such as going to sell in the market or dealing with some representative of authority.

Unlike the role game, where ordinary day-to-day events in the community are played out, special events involving national heroes are represented. In this case, two children will act, each representing a character.

Undertaking the activity

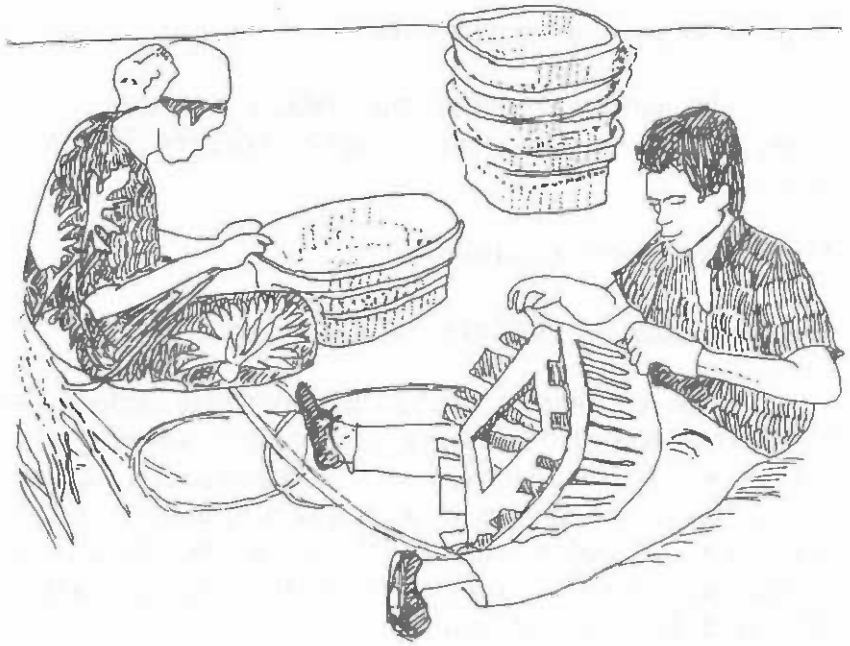
In any of the subjects mentioned - dramatizing a historical event or a situation in which the child will participate when he grows up - the teacher will tell the story, describe the ambience, the personality of the characters, their gestures and their way of dressing. This narration should be very lively. Bear in mind that, although this tale is a preparation for the children, it is basically a first presentation of facts. The representation subsequent to the story will be more or less a review of it.

Then pupils who are going to participate as characters are chosen, what they are to say is suggested to them and they are told how to act but are not given a script. It is not

necessary for the phrases the children use to be learned by heart as happens when a play is being acted. On the contrary, improvisation in discussion will aid the development of creativity and will reinforce expressivity and imagination.

With the help of the children and following their initiatives, a simple stage is set up where things are more likely to be left to the imagination. Also, a wardrobe is improvised. This is done with all the classroom pupils.

Whilst the stage and wardrobe are being prepared, many highly important opinions are exchanged. The children must tell the teacher of their doubts, but they must also look at illustrations or read some text.



Example:

The description of certain historical details will provide an opportunity to explain, for example, the type of clothes, shoes, hat, etc. worn by the character(s) involved, and their origin.

The performance progresses in a simple fashion. It is important for events to be presented in order. The teacher will not hold back from intervening when there is some hesitation so that the play can continue uninterrupted.

Example:

In the case of a story of a national hero, for example, the social significance of the relationships between the actors should be highlighted, or the differences in their ethnic origins.

Structuring and interpretation of the experience

The most valuable occurs before and during the dramatization and, in general, leaves experiences difficult to structure.

Additional recommendations

1) Participation of members of the community

Outsiders present in the classroom may impede the normal progress of the activity since their presence usually inhibits the children. However, if the dramatization was well staged, it could be presented to parents later on. This will be one more occasion among those which should be continuously pursued to capture the interest and participation of families in school activities.

2) Organizing the children for the activity

This activity requires the mass participation of the children: those acting, those preparing the stage and the wardrobe, those helping with special effects (lights, sound, etc.). This is why working in small groups is usually best. Also, there is the advantage of pupils participating in diverse tasks according to their own abilities.

LISTENING TO STORIES

Description and aims

Stories related by the teacher or some guest speaker are heard in the classroom. The story may relate to some historic event or belong to the accumulation of community traditions.

By listening to tales, the children are required to analyze an event important to their community, region or country.

Example:

It may have been something leaving a profound impression on the community: an earthquake, an avalanche, prolonged rainfall, a forest fire. The story will tell how the village was cut off from communication, crops were damaged, animals were lost, whether aid arrived in the form of food and medicine, how the village was saved by help from outside and by its own inhabitants, etc. It will be important to demonstrate the fragile nature of the ecosystem and to analyze whether the possibility exists of taking measures to prevent similar disasters.

But it could also be a traditional story, such as a legend explaining the existence of a chain of mountains.

Preparation by the teacher

A preliminary step is to choose the story it is wished to tell the pupils. It is not enough that it be attractive and interesting; it must have sufficient content to show aspects of the community's life: its environment, organization, culture, tradition, achievements or plans. The next step is to seek out the greatest amount of information possible so as to present a complete story, if possible with attractive details, which will motivate the children.

Undertaking the activity

The teacher will tell the story in a natural way. The children may interrupt to ask for clarification or explanation. If this happens, the teacher makes a brief comment on the matter and picks up the thread of the story again. If illustrations on the event are available, only those necessary for the children to better understand what is being narrated are shown. But, for the moment, the activity is based on the story.

In a second phase, when the story has now been told, additional material gathered is shown and discussed (illustrations, photographs, significant objects). Analyzing this material provides the opportunity to repeat, extend and discuss the narration.

Example:

> This is the opportunity to show some old photographs, or perhaps someone still has a newspaper cutting with news of the disaster.

Structuring and interpretation of the experience

Several children contribute towards reconstructing the story. They do it in the style of a "chain story": one child commences, covers a part and when finished another child follows and so on. The teacher can thus ensure that all the children know the story and can repeat it.

Once the verbal repetition has been finished, a summary is written on the blackboard noting down only the major events. When giving oral accounts, descriptions and data are usually included to enliven the narration. These are discarded when carrying out the structuring since the object pursued is to remember and interpret the main facts. What is done is to examine the meaning and consequences of some of the facts noted down. This examination depends on the aims being pursued when the story is chosen. And one of the aims which should never be forgotten is to indicate and explain the ecological dimension which will always be present in schoolwork.

Additional recommendations

This type of story differs from the type used for Language exercise or the type told the children for entertainment. The methodological procedures must not be confused. In the case in point, it is important to draw attention to significant facts in the story, always dependent on the aims. But a constant attempt must be made to hold the pupils' attention, because some may have difficulties in capturing the merely verbal relating of an experience.

1) Participation of members of the community

This activity provides an excellent opportunity for the participation of members of the community. Many people can talk of the history of the community and of life elsewhere, particularly older people. They themselves know traditions and legends ingrained in the community's memory.

Example:

> An older member of the community who experienced the events narrated and cooperated with other villagers to repair the damage may be invited. He may be able to relate some personal anecdote, changes which have taken place in the village and the region and how long it took to repair the damage. It will be interesting to know whether the community's assembly meeting shared out the work and how children participated.

Listening to stories means that an important concept is assumed: narrated stories handed down from generation to generation form part of the community's values. Legends also form part of collective culture, identify and enhance it. The rural school should know them and know how to appreciate them. Stories told must therefore be treated with respect. If in some way they contradict a logical explanation of events, they should not be criticized or challenged. It is always possible to find that part of truth which a tradition has in its background.

Example:

> If the other example suggested, i.e., the story of traditional legends in the community, tells of an angry god who shook the earth to punish men and that is why the mountain chain seen from the community exists, this may be interpreted as a cataclysm which happened thousands of years ago and caused the mountains to emerge.

2) Organizing the children for the activity

It is not necessary to organize the children in any special manner. It may be suitable for them to sit down comfortably around the story teller and thus set a favourable climate for communication.

STUDYING A SIGNIFICANT EVENT

Description and aims of the activity

This is a complex activity consisting of studying diverse facets of an event which is important to the community's life (a task, a festivity, a fair). The aim of the activity is to learn of the fact and be aware of its influence.

Example:

> A significant fact may be the festival of one of the community's religious figures. Taking it as a subject for study will provide an opportunity to analyze the music, dances, dress, history of the festival, its meaning, etc.

A significant event is studied by applying guided work techniques but may be combined with dramatizations, guided drawing or stories of situations experienced.

Basically, studying an event is a small learning unit whose main theme is the event selected.

Preparation by the teacher

This activity calls for careful preparation. Before proposing it to the children, the following points must be very clear:

- aspects which will be studied
- way of organizing the pupils

Guidelines or questionnaires for each task must be ready in advance. Also, the teacher will draw up a time schedule for submitting each group's partial results to the rest.

Example:

If it is a question of studying a community festival, work could be divided by groups as follows:

- What the reason for the festival is.
- History of the festival (since what year it has been celebrated, how it was celebrated before).
- Dances danced on that occasion. The meaning of each one.
- Who the sponsor of the festival is and what his obligations are.
- What the programme of activities is and in what order they occur.

Undertaking the activity

The activity commences when responsibilities have been shared out and work teams organized. Pupils make the necessary checks by asking their families and then discuss the major data with the group. Results are submitted keeping to the teacher's pre-set plan.

As each group is explaining its work, partial structurings are made.

Structuring and interpretation of the experience

Necessary notes are written on the blackboard in keeping with the teacher's pre-set plan. In this case, maximum pupil participation should be required, even of those not put in charge of the topic in question, since they also know the activity.

Additional recommendations

It is best to devote long sessions to the submission of results. In this way there is time to discuss them and make partial structurings. They can be accompanied by drawings, plays, music and anything else which will allow for better understanding of the event studied.

1) Participation of members of the community

Since this activity is performed with questionnaires and observations made in the community, there are many occasions here for its members to participate. These occasions must be deliberately sought since the children's experience does not suffice to complete the required information.

2) Organizing the children for the activity

As was stated earlier, this activity calls for small work groups to be formed. They will give their results to the others at the end. The children themselves can share out the work and assign responsibilities within the group. They will thus learn to cooperate with each other and work together as a team.

DIALOGUE EXPLANATION

Description and aims of the activity

This is an activity somewhat different from the others.

Firstly, because it is the most frequent. Most of school time is spent in dialogue explanations, combined with guided drawings, demonstrations, visits, etc.

Secondly, this activity is different because the source of knowledge is mainly the teacher himself. It is he who provides the concepts, data and explanations, etc., which the pupil must learn. Up to now, we have seen the following cases:

- activities in which the child's fund of knowledge is used (relating personal experiences, role game, guided drawing).

- activities in which knowledge is achieved by the pupils themselves under the teacher's guidance (panoramic landscape observation, studying an object, studying a significant event).

- activities where knowledge which may be provided by members of the community is used (visits, talks by community members).

But there are others in which the teacher is the one providing the backbone of information. One is the dialogue explanation.

The aim of this activity is to give pupils information which enlarges and organizes the information they already

possess from their own experience or from school study in previous years.

Preparation by the teacher

It is very important for the teacher to clearly identify the topics to be dealt with and to organize the ideas and information which will be communicated to the pupils within each one. To do so, he must consult the necessary books. In some cases, he will need to speak with well informed people in the community, since any knowledge which is provided must bear a relation to the reality of the pupils' lives.

Undertaking the activity

This is undertaken by stages. A few minutes' explanation is dedicated to each one and a dialogue is struck up with the children. They should have the opportunity to submit further examples, raise any doubts they may have and answer the questions asked by the teacher.

Bear in mind that these are not questions to see if the pupils have understood. Rather, they are questions leading to reflection, to applying what has been learned to real life. The explanation must be made in simple words and, if it is necessary for some word which is new to the children to be introduced, the teacher will explain it and will write it down on the blackboard.

Once the dialogue has finished, the explanation is renewed until, finally, by combining the two actions, what was planned for the session is finished.

Structuring and interpretation of the experience

Once the dialogue explanation is over, what the teacher had said is reconstructed with the children's participation. Everything is written down on the blackboard and the result is copied into exercise books.

Additional recommendations

Making a pause in his explanation, the teacher intersperses questions to check whether the children are understanding what has been said, or to attract their attention. These questions and pertinent answers are not an actual dialogue. But they are important to have the pupil participate and to make him more attentive.

This activity is more passive for the child than others we have proposed where he observes, investigates, compares and where opinions and judgements are formed. This is why an attempt will be made to encourage the pupils' interest, awaken their curiosity and increase their motivation, as far as possible.

APPENDIX IV

ACTIVITIES SUGGESTED IN RELATION TO SUBJECTS

We would suggest the following activities which might be suited to the subjects appearing in the previous Appendix. The activities mentioned are the most advisable but not necessarily the only way to deal with the subjects referred to.

DEMONSTRATION

Health:	Care of the sick.
	Body and household hygiene and ways of practising it in the country.
Food:	Food preservation; traditional techniques.
	How to improve the quality of drinking water.
Plants:	Their need for light and water.
	Plant cover and soil and water conservation.
Soil:	Organic and mineral composition. Participation of organisms.
	Types of soil.
	Texture, structure, stratification, depth, effects of slope.
	Erosion. How it occurs.
	Soil-water-plant relationship.

Climate:	Light, temperature, water. Influence of the climate on agriculture, vegetation and human life.
Farming activity:	Irrigation. Traditional methods. Innovations: drip irrigation, sprinkler irrigation. Tilling. Methods of tilling and soil conservation. The seed. Germination power. Feasibility. Seed collection and preparation of cuttings.
Forestry activity:	Tree production and propagation techniques. Seed collection, preparation of cuttings. Planting. Tree and bush care: pruning and thinning, pest control. Usefulness of trees and bushes for land and crop protection.
Livestock activity	Animal health care. Livestock hygiene. Feeding. Forage production. Usefulness of livestock.

GUIDED TRIP

Community environment:	Items forming the geographical environment: hills, rivers, valleys, plains.
	The catchment area in which the community is located.
	Agri-ecological levels in relation to altitude. Characteristics.
	The village. Village elements (districts, main square, streets).
	Lands belonging to the locality: agricultural, grazing, forest land.
Plants:	Community's plants: herbs, grasses, bushes, trees.
	Uses for plants. Their scarcity or abundance. Their ecological importance.
Animals:	The community's animals. Domestic animals and their environmental impact.
	Wild animals: the environment they need and the ecological function they play (seed dispersion, pollination).
Water:	Water sources in the community: springs, rivers, wells, canals.
	The problem of pollution. Causes of pollution. Solutions.
	Water management (bank protection, tree planting, torrent correction).

Soil:	Types of soil. Relationship between slope and type of soil.
	Depth, structure, texture, stratification.
	Eroded areas. Erosion control.
	The soil-water-plant relationship.
Farming activity:	Farms. Farmwork.
	Irrigation. Importance and types.
	Tilling. Tilling methods.
	The community's agricultural production.
	Soil management and conservation (fallow land, tilling, crop rotation, fertilizing, mulching).
Forestry activity:	Uses of trees and bushes.
	Trees and bushes and agriculture: windbreaks, boundaries, live hedges and clumps.
	Places where trees and bushes should be planted. Species suited to the region.
	Ecological importance to agriculture, livestock and villages.
Livestock activity:	Livestock species bred in the community: large and small livestock.
	Type of land earmarked for this activity.
	Management of vegetation for producing forage.

VISIT

Community organization:	Rural organizations: communities, cooperatives, unions. The importance of the organization for managing natural resources and performing community projects.
Farming activity:	Examples of work existing in the community.
Forestry activity:	Ditto.
Livestock activity:	Ditto.
Craftwork activity:	Different craft trades. Materials used. Their origin. Old and innovative techniques. The craftworker's tools.

PANORAMIC LANDSCAPE OBSERVATION

Community environment:	Elements forming the geographical environment: hills, rivers, valleys, plains.
	The catchment area in which the community is located.
	Natural environmental elements: earth, water, sun, temperature.
	Climate. Its variations according to altitude and seasons.
	Influence of the climate on vegetation and animal life.
	Agri-ecological levels in relation to altitude. Characteristics.
	Man-made environment. The village and its components: districts, main square, streets.
	Lands in the region: agricultural, grazing, forest land.
Plants:	Community plants: herbs, grasses, bushes, trees. Identification and usefulness.
Water:	Water sources: springs, rivers, lakes, wells. Rainwater.
	Man's work with respect to water sources (canals, intakes, ponds, dykes, bank planting).
	Rivers, lakes and creeks.

Farming activity:	Farms. Farmwork. Crop diversity. Crop protection work.
Forestry activity:	Trees and agriculture. Tree and bush management. Places where trees have been planted. Where they grow well, where they are needed.
Livestock activity:	Grazing areas in the community. Management of vegetation for forage. Livestock production.

GUIDED DRAWING

The family:	The rural family. Kinship.
	Tasks performed by men, women and children.
Food:	Usual food in the community.
Community environment:	Elements in the environment.
	The catchment basin in which the community is located.
	Agri-ecological levels in relation to altitude. Characteristics.
	The village. Elements of the village: districts, square, streets.
	Land communications.
	Lands in the community.
	Village festivals.
Plants:	Parts of the plant.
	Plants in the community.
Animals:	Animals in the community.
Water:	Water sources in the community.
	Rivers. River courses.
Farming activity:	Farming seasons.
	The seed. Types of seed.
	Agricultural tools.

	Agricultural production in the community.
Forestry activity:	Forestry activity in the area. Location of stands. Where it is suitable to plant trees and bushes.
Livestock activity:	Livestock species the child knows. Products obtained from livestock.

GUIDED WORK

All topics.

WORK WITH MODELS

Community environment:	Elements forming the environment. The catchment basin in which the community is located. Agri-ecological levels in relation to altitude. The village. Neighbouring villages. Land communications. Village elements. Land in the community.
Water:	Rivers, lakes and canals.
Soil:	Soil erosion. Ways of preventing it.

TALK OR DEMONSTRATION BY MEMBERS OF THE COMMUNITY

Health:	Frequent diseases in the area. Care of the sick. Traditional medicines. Medicinal plants used. Tasks performed by men, women and children. Emigration: temporary and permanent. Problems of emigration.
Food:	Usual food in the community. Dietary balance with community food. Food preservation.
Organization:	Principles of rural organization: communities, cooperatives, unions. Importance of organization for natural resource management and for carrying out projects.
Community:	Community organization. Village festivals. Description and meaning.
Farming activity:	Farmwork. Community's agricultural production. Production destination.

Forestry activity:	Tree and bush propagation. Tree and bush uses: fruit, forage, firewood, windbreaks, hillside protection, live hedges, mulch, fertilizing, shade. Tree and bush management. Places where planting is needed.
Livestock activity:	Livestock species bred in the area. Animal food. Pasture production and management. Community's livestock production. Animal health care. Activities for improving livestock.

RELATING PERSONAL EXPERIENCES AND ACTING OUT SITUATIONS EXPERIENCED

Health:
- Care of the sick.
- Frequent illnesses in the countryside.

The family:
- The rural family.
- Kinship.
- Importance of relations.
- Rural help and reciprocity.
- Tasks performed by men, women and children.
- The family as an economic unit.
- Temporary and permanent emigration.
- Problems of emigration.

LISTENING TO STORIES
STUDYING A SIGNIFICANT EVENT
INVESTIGATION WITH ADULTS

- All topics

FAO TECHNICAL PAPERS

FAO FORESTRY PAPERS

1	Forest utilization contracts on public land, 1977 (E F S)
2	Planning forest roads and harvesting systems, 1977 (E F S)
3	World list of forestry schools, 1977 (E/F/S)
3 Rev.1	World list of forestry schools, 1981 (E/F/S)
3 Rev.2	World list of forestry schools, 1986 (E/F/S)
4/1	World pulp and paper demand, supply and trade 1– Vol. 1, 1977 (E F S)
4/2	World pulp and paper demand, supply and trade – Vol. 2, 1977 (E F S)
5	The marketing of tropical wood in South America, 1976 (E S)
6	National parks planning, 1976 (E F S**)
7	Forestry for local community development, 1978 (Ar E F S)
8	Establishment techniques for forest plantations, 1978 (Ar C E* F S)
9	Wood chips – production, handling, transport, 1976 (C E S)
10/1	Assessment of logging costs from forest inventories in the tropics – 1. Principles and methodology, 1978 (E F S)
10/2	Assessment of logging costs from forest inventories in the tropics – 2. Data collection and calculations, 1978 (E F S)
11	Savanna afforestation in Africa, 1977 (E F)
12	China: forestry support for agriculture, 1978 (E)
13	Forest products prices 1960-1977, 1979 (E/F/S)
14	Mountain forest roads and harvesting, 1979 (E)
14 Rev.1	Logging and transport in steep terrain, 1985 (E)
15	AGRIS forestry – world catalogue of information and documentation services, 1979 (E/F/S)
16	China: integrated wood processing industries, 1979 (E F S)
17	Economic analysis of forestry projects, 1979 (E F S)
17 Sup.1	Economic analysis of forestry projects: case studies, 1979 (E S)
17 Sup.2	Economic analysis of forestry projects: readings, 1980 (C E)
18	Forest products prices 1960-1978, 1980 (E/F/S)
19/1	Pulping and paper-making properties of fast-growing plantation wood species – Vol. 1, 1980 (E)
19/2	Pulping and paper-making properties of fast-growing plantation wood species – Vol. 2, 1980 (E)
20	Forest tree improvement, 1985 (C E F S)
20/2	A guide to forest seed handling, 1985 (E S)
21	Impact on soils of fast-growing species in lowland humid tropics, 1980 (E F S)
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22/2	Forest volume estimation and yield prediction – Vol. 2. Yield prediction, 1980 (C E F S)
23	Forest products prices 1961-1980, 1981 (E/F/S)
24	Cable logging systems, 1981 (C E)
25	Public forestry administrations in Latin America, 1981 (E)
26	Forestry and rural development, 1981 (E F S)
27	Manual of forest inventory, 1981 (E F)

28 Small and medium sawmills in developing countries, 1981 (E S)
29 World forest products, demand and supply 1990 and 2000, 1982 (E F S)
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32 Classification and definitions of forest products, 1982 (Ar/E/F/S)
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35 Forestry in China, 1982 (C E)
36 Basic technology in forest operations, 1982 (E F S)
37 Conservation and development of tropical forest resources, 1982 (E F S)
38 Forest products prices 1962-1981, 1982 (E/F/S)
39 Frame saw manual, 1982 (E)
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59 The ecological effects of eucalyptus, 1985 (C E F S)
60 Monitoring and evaluation of participatory forestry projects, 1985 (E F S)
61 Forest products prices 1965-1984, 1985 (E/F/S)
62 World list of institutions engaged in forestry and forest products research, 1985 (E/F/S)
63 Industrial charcoal making, 1985 (E)
64 Tree growing by rural people, 1985 (Ar E F S)