



MULTIGRADE TEACHING IN PRIMARY SCHOOLS

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for Development**



UNESCO PRINCIPAL REGIONAL OFFICE
FOR ASIA AND THE PACIFIC
Bangkok, 1995

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Published by the
UNESCO Principal Regional Office for Asia and the Pacific
P.O. Box 967, Prakanong Post Office
Bangkok 10110, Thailand

Printed in Thailand

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CONTENTS

PREFACE	i
Chapter One : Theoretical Perspectives on Multigrade Teaching . . .	1
Chapter Two : Organizing the Curriculum	17
Chapter Three : Teaching-Learning Strategies	25
Chapter Four : Materials Development	34
Chapter Five : Educational Politics and Multigrade Teaching	42
Chapter Six : The Function and Role of the Multigrade Teacher	51
Chapter Seven : Teacher Training	59
Chapter Eight : Future Orientations for Multigrade Teaching	67
Chapter Nine : Alternative Scenarios	70
CONCLUSION :	89
BIBLIOGRAPHY :	90

PREFACE

Multigrade Teaching is emerging as a form of schooling which best fits the needs of many countries in the Asia and Pacific region as they strive to meet their commitment to provide education for all. This monograph identifies the theoretical infrastructure to and the practical implementation of Multigrade Teaching in the region. It draws on a wide literature from the area especially UNESCO publications.

For the more practical examples cited in the monograph special thanks are due to the following specialists who attended attended a Workshop organized by the authors, which was funded by the Asia and Pacific Centre of Educational Innovation for Development (ACEID):

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Chapter One

THEORETICAL PERSPECTIVES ON MULTIGRADE TEACHING

Definition

Multigrade Teaching is a term used to describe the teaching in primary education of children from a number of grades usually in one class. But it is capable of different definition in different countries as the following examples demonstrate. It is also not necessarily the best term to use when translated into other languages and cultures.

Multigrade Teaching in Nepal has been described as the situation in which a teacher teaches more than one class at the same time either in the same classroom or in a different classroom. In Malaysia, Multigrade Teaching involves the teaching of children from two or more grade levels in one classroom. The combination is usually of grades close to each other; for example, one and two, five and six. In Pakistan and Australia, however, as many as five or six grades may combine in the one class. Such contexts requires the employment of particular teaching methodologies and classroom administration which are the subject of more detailed discussion in later chapters.

In the case of China, Multigrade-class or multiple-group teaching is the preferred definitional approach as these terms highlight more ability level and age-based groupings. Of particular concern in China is the question of language grouping. In remote areas in the south-west of China, some ethnic minority groups speak a language other than Chinese. As a result, teachers involved in Multigrade Teaching sometimes have to solve the problem of how to teach pupils with different language backgrounds in their own language in the same class at the same time.

Multigrade Teaching in Indonesia is commonly found in small to large sized schools in which a teacher teaches more than one grade or class at the same time, either in different classrooms or in the same room divided by a partition. Only in the Learning Posts of Visiting Teachers Model are all grades taught by a single teacher and/or team of tutors in the same small classroom.

One preference in the Philippines is to talk of multi-class teaching where a teacher teaches two or more grade levels in one classroom. It may also connote teaching a class of pupils with differing levels of ability and pupils of different ethnic groups who are to be taught in their native languages.

Multigrade teaching in primary schools

There is a common thread running through the above definitions of Multigrade Teaching. The fact that there are variations is symptomatic of the theme of flexibility which is essential in any discussion or practice of Multigrade Teaching.

The Multigrade Context

"Multigrade Teaching is not a temporary measure ... It is concerned with the policy of education for all and the cultural and scientific promotion of the whole nation - a long term task."

"Primary schools with the practice of Multigrade Teaching ... are to be the source to serve the suffering mankind, as the centres for causing social conscientization, economic amelioration and educational reform. In their development lies the realization of the Universal Right to Education."

These statements by Multigrade Teaching experts from two of the most populated countries in the world – China and India respectively – adopt a positive approach to Multigrade Teaching. They are also highly indicative of its potential role in realizing the demand of Education for All. Although almost all countries in the region engage in Multigrade Teaching as a technique, not all share this same optimism.

Multigrade Teaching is known” to almost all member countries of Asia-Pacific Centre of Educational Innovation for Development (APEID), the exception being Afghanistan where it is not presently utilized in formal education but is under consideration for introduction. Its incidence is varied across the region and ranges from about two-thirds of the number of primary schools in India to about two percent of schools in the Republic of Korea. In numerical terms, the range is from hundreds of thousands of teaching classes in China to about one hundred in the Maldives reflecting somewhat the populations of those two countries. Trends in the provision of Multigrade Teaching schools vary from a reduction in their number in countries such as Japan to an increase in number in some other countries.

One example of the latter is Viet Nam which has seen considerable resources being devoted to the development of Multigrade Teaching. The government of Viet Nam has formally recognized the role of Multigrade Teaching as a pedagogy in its own right and one to be widely promoted. The following review of Multigrade Teaching comes from this country.

In the mountainous areas of Viet Nam and especially in the remote areas populated largely by minority peoples, the particular characteristics of local economies, cultures and environments all require special consideration where the planning of the provision of education is concerned. Among these characteristics are the following:

terrain and climatic conditions that render travel in this area difficult if not dangerous;

generally a very dispersed population, with many small settlements in relatively inaccessible locations;

little economic development as a significant number of people are still largely nomadic;

the family functioning as an autonomous and completely self-sufficient economic unit. Children are therefore viewed more as an important source of labour than as future citizens who must receive some basic public education.

These characteristics make the provision and development of educational services very difficult, and explain both the low proportion of school age children who actually attend school, and the high failure (that is, drop-out or repeat) rate among those registered as attending school. Multigrade schooling offers the potential for considerable improvement, for the following reasons:

1. Since Multigrade classes are smaller and can be established more cheaply than complete schools, they can be more numerous, therefore more dispersed and thus located closer to the settlements where the children live. This means both that younger children can attend and that the time children spend traveling between school and home can be reduced to an acceptable level. This in turn means that there is sufficient time outside school hours for the children to continue to contribute to the family's economic activity. Attending school is therefore likely to be more acceptable to the families concerned, and thus both increase the number of children receiving education and reduce the failure rate,
2. Multigrade schooling would in many communities constitute the only alternative to what is called locally white (meaning nonexistent) education. Since the adequate staffing of discrete-grade schools can only be justified to the educational authorities concerned by the regular attendance of a relatively large number of pupils (which the dispersal of settlements, the difficult terrain and climatic characteristics preclude), relatively few teachers are allocated to mountainous areas. Such constraints would not apply to the much smaller-scale Multigrade Teaching approach and would, therefore, allow many more of the typically small-communities to apply successfully to the educational authorities concerned for teaching staff.

Multigrade teaching in primary schools

Moreover, Multigrade schooling represents a more efficient use of teaching staff and for this reason, too, it would help to resolve the teacher shortage problem. Therefore, a Multigrade approach ought both to increase the number of teachers working in these remote areas and to ensure that they would be employed more efficiently.

3. Multigrade schools, being smaller and more dispersed, would enjoy much closer links with the smaller communities that they would be set up to serve. This would have a very positive effect on local attitudes and access to education.

Ideological Characteristics

A number of what might be called ideological characteristics are reflected in Multigrade Teaching practices in countries in the region. It is important to acknowledge that their frequency and intensity will vary between countries. However, all of these characteristics will be found to some extent in each country.

Historical Factors

Multigrade Teaching is no recent innovation to any country in the region. In some, particularly Islamic, countries it has been the medium of instruction in religious schools for centuries. In other countries it has almost a century old tradition either prior to the advent of compulsory primary education as in the case of Nepal and China, for example, or with it in the case of those several countries which were under colonial domination. In still other countries, such as Indonesia and the Philippines, very positive thrusts have been made in recent times in research on small schools and Multigrade Teaching, which have led to a new era in the history of Multigrade Teaching in those countries.

Although Multigrade Teaching may have been displaced from its historical pre-eminence in the education system, in theory if not in practice, advocates for its retention can point to a history of service considerably more extensive than its single-grade counterpart. The critical issue, of course, is not the history but the effectiveness of the practice adopted. While there is a need for more research studies on the effectiveness to be made, the evidence from studies such as that by Bruce A Miller ("A Review of the Quantitative Research on Multigrade Instruction" in *Research in Rural Education*, Fall 1990, Vol. 7, No. 1 pp. 1-8) is encouraging in pursuing this medium of instruction.

Political Factors

A number of political factors impinge on the offering of Multigrade Teaching. These are discussed in detail in Chapter Five.

Philosophical Factors

All education is inevitably underpinned by educational philosophies whether acknowledged or not. Multigrade Teaching too has particular philosophical bases which emerge from the literature. These are somewhat diffuse so as not to be able to attribute views to particular countries.

Educational philosophies range over a spectrum at one end of which is found a strict adherence to developmental stages and readiness theories so that schooling is tied to age and grade levels. At the other end of the spectrum is the notion that the capacity to learn is open so that there is, in principle, a capacity to teach anyone anything. Multigrade Teaching spans this continuum with some of its teaching acknowledging the former position as when teaching is undertaken at and for a specific grade level. Other teaching involves the whole class with teaching occurring across several grades or a combination of grades. These practices recognize both that there is an overlap of abilities amongst children but also that levels of difficulty have to be taken into account.

The philosophy of teaching is an important consideration in Multigrade Teaching. Aspects of this considerable topic are discussed below. One to be mentioned here is the significantly different role ascribed to teachers in the Multigrade Teaching context as compared with much of the teaching cited as being traditional in single-grade schools in all countries in the region. In addition, as important as the professional teacher is, other **teaching** needs to be recognized. The notions of peer teaching and para-professional teachers are also expanded on below.

The professional teacher is a key resource person in the Multigrade context. The view that any teacher trained in single-grade level teaching could be automatically expected to be a Multigrade teacher is discounted. Indeed, Multigrade teaching is of its **own kind** and must be recognized as such. In countries where local content is a significant part of the curriculum, it is particularly important to resolve the issue of appointing well-trained and locally-oriented teachers.

Apart from the professional teacher, several other teachers for Multigrade Teaching can be identified. These include:

Multigrade teaching in primary schools

para-professional teachers such as monitors to assist the teacher, particularly when the former are drawn from the local community, peer teachers where in the Multigrade context the capacity of children to teach each other is possible and is a rich resource to be used; and community members and parents who can also be utilized positively in the teaching process, which also incidentally binds the community and school more closely.

In the field of learning, two aspects have emerged as the particular concern in Multigrade Teaching. The first of these is the acknowledgement that learning is not merely formal but also informal and incidental. This needs to be recognized by teachers and utilized in the Multigrade situation.

The second factor is the recognition of the competitive-co-operative continuum in which learning takes place. It is not possible to establish a fixed position for Multigrade Teaching on this continuum. But there is seen to be the need for Multigrade Teaching to recognize its existence.

A position reinforced in the literature on Multigrade Teaching is the notion of the whole child as being of particular importance for Multigrade Teaching. In developing contexts, Multigrade Teaching provides an excellent opportunity for the needs of the whole child and the child in his or her community to be recognized and addressed. In this context, Multigrade Teaching is not merely about 'academic' education but addresses the health, education and welfare needs of children – in the social and community context in which they live.

It is important to recognize the different knowledge contexts in which Multigrade Teaching occurs, particularly in multi-ethnic societies. These have different language groups, and culturally and socially different populations. Since Multigrade Teaching is most often provided for communities in remote geographical or difficult context areas, there is more likely to be a need to pay special attention to the thought-world, language and social environment of the people to be served.

Finally, the concern for equity should be mentioned with the preference being for equity and not equality in the Multigrade context. In terms of equity, Multigrade Teaching deserves to be treated as a special form of education requiring more resources, particularly in teacher training, separate curriculum provisions and particular governmental and community support. If Multigrade schools are treated equally with other schools, they cannot be expected to achieve their educational goals.

Physical Characteristics

Demographic Factors

The evidence from all countries in the region indicates that demographic factors impinge significantly on Multigrade Teaching. The very growth in the population to be schooled has led to Multigrade Teaching being regarded as a means to meeting the pressures for education for all. There is little doubt that Multigrade Teaching provides many children in the region with their only likelihood for obtaining formal schooling. Even in countries with declining child populations, other exigencies such as formal limitations on class size or the limited supply of teachers leads to the necessity of operating Multigrade Teaching classes and schools. Here again is exemplified the observation that Multigrade Teaching is utilized most often to meet the demands of the number of children or where there is a deficit in the supply of teachers.

Particular populations are served by Multigrade Teaching. It has been used in different ways with mobile populations in Pakistan and India, for example. In the former, the teacher travels with the community; in the latter the teacher is residentially stable and serves communities as they pass. In Afghanistan, the two approaches have been combined with the more stable nomads and the more mobile having resident and itinerant teachers respectively.

Mobile populations can pose more difficult problems as is the case with those whose residence varies between countries such as the nomads who people Pakistan and Afghanistan for extensive periods. This situation highlights the fact again that Multigrade Teaching is often found in association with other forms of social and economic deprivation. The needs of such persons embrace a range of services including health and welfare, as well as education. A multi-sectoral approach is required in such contexts, if the real needs are to be met.

Minority populations are also often targeted with Multigrade Teaching as the appropriate form of schooling, particularly when their situation is compounded by other factors. One example is that of Viet Nam where Multigrade Teaching is being utilized in providing for children of minority peoples, where the situation is aggravated by poverty, topography and language. Vietnamese is not the mother-tongue of the population in some regions. Such an example indicates the often very poor circumstances in which Multigrade Teaching is being pursued. It also emphasizes the need to re-echo the point already made to the effect that Multigrade Teaching teachers need additional and specific resource support.

In the context of demographic considerations, mention should be made of the dominance of centres of population over less populous and more isolated areas which is where Multigrade Teaching tends to be found. This view can be pointedly made in respect of India in that, although Multigrade Teaching and small schools predominate in terms of

Multigrade teaching in primary schools

number in the primary sector of education in that country, their voice is drowned out by the more powerful and dominant interests at the centres of population. Although not often expressed so openly, this criticism is evident in reading between the lines of many country reports. It is not difficult to conclude that where power is exercised at the centre to the detriment of local communities, Multigrade Teaching will also be affected for the worse.

Topographical Factors

In all countries in the region Multigrade Teaching is pursued, at least in part, in disadvantaged situations due to topographical factors. This results in the distancing of Multigrade Teaching from the centre with all the disadvantage pertaining thereto, as discussed above.

The topographical intervention may be water as in the case of island countries such as Indonesia, Maldives, the Philippines or Pacific Island countries; it may be mountainous terrain as, for example, in Pakistan, Bhutan, Lao PDR or Nepal; it may be distance in terms of jungle conditions in Viet Nam or Papua New Guinea, or desert regions in Australia. Several of these attributes are often combined in the one country – China and India, for example.

Of all the factors going to the heart of topographically-induced disadvantage, communication is among the most significant. Lack of communication or poor communication only serves to emphasize isolation. With regard to Multigrade Teaching, particular examples of such isolation – apart from that of community powerlessness – are delays in receiving messages from ‘headquarters’, the unwillingness of teachers to accept such hardship appointments, and their inability to exchange ideas, share problems and participate in in-service courses, if available.

Lack of communication has other benefits and burdens. One benefit as expressed by some is the protection against interference and adulteration from outside sources and influences. One burden is that suffered by the centre which is unable, even if willing, to promote Multigrade Teaching by way of in-service courses, school inspection, and the provision of resources and curriculum materials. Overall, however, the lack of the capacity for communication is generally accepted as being a significant impediment to Multigrade Teaching for which developments in modern technology may, at best, provide only a partial solution.

Poverty

The discussion of poverty is included in this context rather than under ‘*economic considerations*’ since it has attributes such as hunger, inadequate shelter, or little or no health care. There is also powerlessness in social, cultural and political terms all of which are very physical and reflect the poverty of humankind rather than poverty in rich-poor terms.

Multigrade Teaching is most commonly found alongside poverty in the Asia and Pacific region and is itself impoverished. Even in countries such as Australia and Japan, where Multigrade Teaching seems to be well provided for in terms of international comparisons with single-grade schools, its participants would assert that Multigrade Teaching is treated poorly to the disadvantage of children, teachers and parents. Such claims pale in comparison with Multigrade Teaching schools in many countries in the region where there is only token provision for Multigrade Teaching by way of structures, materials and anyone to teach far less trained teachers.

The poverty described above can barely be treated piecemeal. Yet a holistic solution is beyond the reach of most governments either in political terms or in actual resource terms. But, if poverty is to be addressed even minimally, Multigrade Teaching provides one such means through the training and appointment of multi-skilled persons with competencies in health, education and appropriate technical fields. These can use Multigrade Teaching strategies to address the issue of poverty in local communities. As tall an order as this would appear to be, there are stirrings of interest in this direction in the region as, for example, in India and Pakistan in addressing the total needs of nomadic persons.

Economic Characteristics

Educationalists have long paid homage at the shrine of the school of human capital theory, given its persuasive models and compelling conclusions as to the importance of increasing educational opportunity for all citizens to the benefit of the nation as a whole. This approach has also had appeal since it does serve to guarantee a respectable future for education in general and its professional practitioners in particular. Unfortunately, the theory is often embraced too uncritically with one consequence – amongst many – being the assumption that almost any education will do.

Labour market theories have also been in vogue in underpinning some educational systems. In this instance, educational content and direction is very much intended to serve labour market demands, in the context of the dominant philosophy of government in the country concerned. This theory too has wide appeal and has also been subject to criticism particularly in its incapacity to provide a means for predicting labour market demand and to match the educational product with market needs. But again this theory has served to bolster the status of education in countries adopting this economic approach to national development.

All member countries of APEID find themselves oriented to one or other of these basic economic positions, with many if not most oscillating between the two, as they respond to the dynamic forces emanating from the international economic community. Without suggesting that a hybrid is the most appropriate solution nor even attempting a treatise on a subject which is beyond the scope of this monograph, these points are raised in order to heighten awareness amongst educators and particularly those involved in

Multigrade teaching in primary schools

Multigrade Teaching of the economic theoretical underpinning to all schooling. The noble art of teaching is inevitably intertwined with local, national and even international political economics. This is usually lost to the educator since both the social and cultural purposes of schooling tend to dominate teacher education courses – and these are, of course, important and significant. But as Paolo Freire once observed in conversation with one author – “the most important course in teacher education is the Politics of Education”, within which he assumed studies of the political economy and its impact on classroom teaching.

Multigrade Teaching teachers are most likely to be working in situations involving local communities. As such there may be conflict between the political or economic views they import - either of themselves or as agents of their employers (usually governments) - and the communities they are to serve. Although the claim is still made that education is or should be apolitical - and this may apply in a party political sense – it is now too late to argue that education does not exist in and interact with a political environment. Without entering too far into this minefield, any examination of teaching materials will vindicate the claim that education flows from, occurs within and has outcomes for the political economy in place at any given time. If Multigrade Teaching teachers, just because of their particular teaching contexts, fail to take cognizance of this, they may wonder at the opposition they encounter or the apparent lack of success attending their efforts. Whilst teachers in Multigrade Teaching schools have enough demands made on them and the persistent plea in the literature is for more materials to be made available to them along with more practical training, it is ultimately a disservice to such teachers not to raise these issues and to suggest they need to be addressed.

Consider one example affecting all member countries – the language used as the medium of instruction. In several countries one language is designated as the language of instruction. This inevitably raises problems for those for whom that language is not a mother tongue. In some countries such as Australia and New Zealand where the dominant colonial population has carried English with it, both previous inhabitants and subsequent immigrant populations have been disadvantaged economically and politically. Only in comparatively recent times has the situation begun to be addressed with New Zealand, at least, moving to a recognition of a bilingual national base.

Other countries have undergone different trauma resulting from single-language dominance. In the Maldives, for example, the decision has been taken that the indigenous language should give way to an imported medium of instruction – to the likely, Divehi, detriment of the national culture. In other predominantly single-language countries such as Thailand, concern has had to be had for significant minorities such as the Thai-Muslim population, but not to the detriment of the dominance of the Thai language.

Mention also needs to be made of countries which have attempted to allow a range of languages of instruction including the provision of materials, such as educating in more than six languages in China and five in Afghanistan. Economic impacts can flow also in

Theoretical perspectives on multigrade teaching

such situations as in the case of India where the evidence reported on is that benefits accrue to those who are educated in English-medium schools. Although the language of instruction is only one factor it is an important one.

Having at least opened up a macro-economic discussion of characteristics impinging on Multigrade Teaching, it is proposed in what follows to concentrate on the four most-featured economic factors mentioned in the various studies, namely the resourcing of Multigrade Teaching, manpower aspects of Multigrade Teaching, the economic disadvantage of the Multigrade Teaching teacher, and Multigrade Teaching and the family economic unit.

Resourcing Multigrade Teaching

The criticisms made below of the resourcing of Multigrade Teaching may be applicable to education at large. As true as this is, it is important to emphasize that the provision of resources for Multigrade Teaching is a quantum leap worse, when compared with the normal resourcing of schooling.

The lack of provision of appropriate physical structures for Multigrade Teaching classes has been alluded to already. While there have been bold moves to correct this position in several countries, with Operation Blackboard in India being an oft-quoted example, the situation remains critical. Not only is there a need for appropriate resources for housing Multigrade Teaching classes (in this context it is important to note that importing what is deemed satisfactory for a single grade class is not necessarily suitable for Multigrade Teaching and is unlikely to be – fixed seating, for example, if seating is provided at all) there is also the need to provide basic health facilities such as toilets. One positive future direction has been the attempt in several countries to engage the local community such that it provides the facilities while the centre provides the other infrastructure of Multigrade Teaching. As important as it is to involve the local community in this way, the outcome will always be one in which the facilities can only reflect the wealth of such communities. In unequal situations equity will only be served with some form of equalization policy which must come from the centre.

The dearth of curricula, curriculum resources and teaching materials for Multigrade Teaching is a matter of frequent mention in the literature of the region. This lack is compounded by other enemies of Multigrade Teaching such as distance and communication problems which have already been touched upon. This lack is also aggravated by the fact that, even in countries which may be regarded as reasonably well resourced for single-grade teaching, too little attention has been given to providing Multigrade Teaching teachers with appropriate resources. This may be result of the entirely mistaken view that what is available can be readily adapted. Adapted it may but at cost to the Multigrade Teaching teacher. Such teachers are already under stress in terms of the additional demands from the teaching situation and they are expected to find the time and the resources for this additional task.

Multigrade teaching in primary schools

A third feature of the reported inadequate provision for Multigrade Teaching is that of teacher education. The most severe **criticism** is directed to the lack of any such education. Other criticism is concerned with the poverty of the education, when it has been provided, particularly in terms of its failure to address the needs of the Multigrade Teaching teacher. Perhaps Multigrade Teaching commands attention in different terms in teacher education in that it requires a different approach to the concept of 'teacher'.

In-service teacher education is also the subject of adverse comment in the literature. It is certainly not unknown for in-service courses to have been provided. These enable teachers to share their common concerns and materials as they meet for what are often short periods of time, given the lack of replacement support during their absence.

Working against such innovations in teacher education for Multigrade Teaching are problems such as isolation, distance and communications. Particularly when untrained teachers are employed or where teachers trained for single-grade teaching are concerned, there is a crying need for more a sustained effort at in-servicing such teachers.

Manpower Issues

Human Resources or, rather, the lack of them is a critical factor in the continued existence of Multigrade Teaching. In some countries, formulae exist which determine the staffing complement to be assigned to schools: in others it is simply a matter of appointing a given number of teachers and in the event that the number is inadequate to cover the number of grades required Multigrade Teaching results: in still others one teacher is appointed to cope with the children who attend in whatever way is possible with a Multigrade Teaching approach being inevitable.

Such approaches are not necessarily reactive in the sense that the above description suggests merely a cheap approach by governments to the problem of education, although sometimes it is that. But Multigrade Teaching can also be a pro-active attempt by governments confronted with limited resources to attempt to fulfill their goals with regard to Universal Primary Education. By this means they at least provide a basic human resource supply which will provide as many children as can be accommodated with an initial opportunity for schooling.

The human resources question is inevitably tied to a number of factors including:

1. the resources made available by government to education vis-à-vis the demand placed upon it by way of numbers of children,
2. the resources available for training given the outcome of the first equation,
3. the capacity of systems to require teachers to serve in Multigrade Teaching situations which are often remote in almost all senses of the word,

4. the status of teaching in the government service such that teachers seek to transfer either to other service within government or to the private sector where there is one, and
5. the incentives, if any, for teachers to take up 'hardship' appointments.

Such factors or a combination of them may serve to defeat the best intentions of governments to meet the demand for schooling. Were they not an obstacle, the conclusion is likely to be drawn that Multigrade Teaching could be dispensed with in all cases except where there are only a few pupils. In these situations the one teacher school is the only efficient means of dealing with the educational requirements. This assumption is open to challenge, however, and goes to the heart of the question whether Multigrade Teaching is not an appropriate form of schooling even where problems such as manpower are not at issue. One of the most populous states in Australia, Victoria, has made a policy decision that all teaching in the first three grades of primary schooling will be undertaken on a Multigrade Teaching basis just because Multigrade Teaching was believed to be the best form of education for children.

Multigrade Teaching and Teacher Deprivation

There is almost unanimous agreement that teachers in Multigrade Teaching situations, particularly in isolated placements, are subject to particular deprivation in terms of personal and professional status. Amongst the matters most frequently reported upon are:

- salaries** : there is usually no financial incentive for teachers to take positions in isolated Multigrade Teaching situations as compared with similarly trained teachers offered appointments in more centrally established schools;
- housing** : inadequate provision is made for housing especially, but not only, when there is a family involved;
- dependence** : Multigrade Teaching situations mitigate against the needs of families especially if the spouse is employed and when the children require an education or vocation other than that immediately available;
- promotion** : no promotional incentives are tied to Multigrade Teaching positions and, indeed, such appointments may be detrimental to promotional opportunities;
- professional isolation** : as mentioned before, in-service opportunities for Multigrade Teaching teachers tend to be limited as are the opportunities to join in professional association activities;

Multigrade teaching in primary schools

supervision : many national systems have inadequate provision for the supervision of Multigrade Teaching teachers and their inspection to the disadvantage of the system in terms of improving the quality of its education and to the teacher in terms of promotion and the like.

Community Economic Factors

Shifting the emphasis to the communities in which Multigrade Teaching is to be found, a single recurring factor in the literature is the importance of the extent to which the advent of Multigrade Teaching may fail to take seriously the impact of its demand on the economy of the families of its children and, therefore, of their communities. It is one thing to advance the argument already discussed of the national economic advantage to be had from the expansion of that education of which Multigrade Teaching is a part, it is another to take account of the micro-economic effect which Multigrade Teaching may have on the local community. The most common form of this effect results from the imposition of the national school system in all its detail, without regard to local needs. Not only may this impact negatively upon the social and cultural life of the community, it will surely disrupt its economic life and that of its families, if school attendance requirements, for example, are universally enforced without regard to the demands of the agriculture, industry or other activities upon which livelihoods depend. Positive examples of the readiness to respond to this factor are evident in several countries in the region. These suggest the possibility that Multigrade Teaching and other community-type schools may well be better able to effect a school-community liaison than the larger school systems, to the likely advantage of all parties and certainly not to their disadvantage,

Educational Characteristics

Bridging the gap between the general and somewhat more theoretical factors discussed thus far and the more practical Multigrade Teaching considerations to follow is this discussion of significant educational characteristics affecting Multigrade Teaching. The range of educational factors to be discussed includes the need for a paradigm shift in educational thinking, teacher education, the role of pupils, parents and the community in Multigrade Teaching and issues relating to quality, evaluation and the like .

Paradigm Shift

Multigrade Teaching which has been in practice in the schooling system of most countries since time immemorial still remains to be fully accepted into the national education system as a reliable alternative strategy to single grade class teaching.

Theoretical perspectives on multigrade teaching

Despite the sentiments expressed in the literature on the contribution Multigrade Teaching can make both to communities and nationally, such as are reflected in the quotations with which this monograph begins, it is impossible not to miss the general note of pessimism in the discussions to date of the acceptance of Multigrade Teaching (as is exemplified in the above quotation). This observation is not based on the obvious concern for the overall lack of support for Multigrade Teaching but more the expectation that were all the necessary resources in place Multigrade Teaching would still be regarded as the exceptional form of schooling and not the acceptable. It would appear that the philosophical-pedagogical advocacy of the virtues of single-grade teaching has besotted the minds of educationalists at large, as well as of parents and communities. Multigrade Teaching has had attributed to it an “inferior status” classification of which it is somewhat difficult to disabuse educators far less politicians.

Reiterating the facts:

1. Multigrade Teaching has a long tradition in most countries in the region;
2. There is research evidence to support the contention that Multigrade teaching produces results equal to and in some situations superior to the traditional schooling paradigm; and
3. Multigrade Teaching offers the most likely opportunity available to member countries – and others – if the range of national, regional and international objectives for universal primary education and the like is to be covered.

The reasons for Multigrade Teaching’s continued disfavour have to be attributed to the dominance of the present paradigm of schooling as encapsulated in the single-grade approach. Nothing less than a paradigm change is required if Multigrade Teaching is to escape the bonds of the present system and be allowed rein as an authentic pedagogy in its own right. If this is not to happen, Multigrade Teaching will always be hamstrung by the inappropriate restraints of the present dominant paradigm. Amongst other things, it will be evaluated on traditional criteria so as to be continually held to be the exception, if not the inferior, pedagogically. This in turn, given its frequent association with the disadvantaged and the poor, will only aggravate their condition.

A paradigm shift of the kind required would embrace minimally the following:

1. a substantive change in the philosophical, sociological, psychological and pedagogical base to education which would recognize that there is theory other than that reflected in the developmental approach to schooling with its *stages*, readiness and concrete-abstract notions;
2. the recognition of the heterogeneity of schools and classes more akin to family and community groupings than the forced and disruptive artificiality of homogeneous groupings on the basis of age;

Multigrade teaching in primary schools

3. the recognition of the whole context of the child such that concerns other than the cognitive are taken into account;
4. the acknowledgement that teaching on a subject basis is an artifact which, while the dominant educational culture remains, will provide considerable difficulty for Multigrade Teaching teachers but which they will be able to accommodate in a more holistic approach to teaching, if given appropriate support; and
5. the changing style of the teacher from that typified in the instructor to one of resource person, confidante and adviser.

If basic assumptions and attitudes are not addressed and the concentration remains only on the practical applications of Multigrade Teaching, it will continue to be poorly served.

Chapter Two

ORGANIZING THE CURRICULUM

Introduction

The organization of the curriculum for Multigrade Teaching can be discussed on two planes. The first is the creation of an ideal model curriculum, the second is the refinement of the real model or models which presently exist in several countries. The discussion in this chapter relates to both these aspects. In addition, discussion will centre specifically on the issue of an integrated curriculum.

The Ideal Model

The key word in any discussion of an ideal model is **flexibility**. The curriculum has to be very flexible given the nature of Multigrade Teaching. One of the greatest difficulties in promoting Multigrade Teaching is the inflexibility of grade-based curriculum. In some small Multigrade Teaching classes or schools in some countries, the teachers are required to cover all the material for any one year for all the students enrolled for that year. In other countries the requirement is more that the primary or elementary school syllabus be covered over the total years of primary schooling leaving the teachers the option as to when certain material will be covered. Provided all aspects of the curriculum are eventually covered, the order is not regarded as important. This is a desirable move in the direction of a flexible curriculum.

However, flexibility should go much further than this in an ideal model. Indeed, the model itself should be so flexible that prescription is kept to a minimum. This is why in this chapter and the remainder of this document the discussion is about principles for guiding flexible action. Examples of these principles are sometimes given and some country examples are summarized. However, these are offered to encourage creative action rather than as fixed and proven techniques. in order to allow for creative teaching in culturally different contexts.

A second and related concept is that of integration. This concept is discussed more fully below. But it is introduced here to set the stage for a broad view of integration. Integration in Multigrade Teaching will most often involve an integration of pupils from different grade levels and competencies. It also involves integration of the curriculum either with subjects such as science and mathematics, or subjects in the social sciences or a range of subjects being integrated under, say, the Language umbrella.

Multigrade teaching in primary schools

The third form of integration in a desired future model is that the designers of the curriculum should be an integrated group. The very important contribution of curriculum experts should be integrated with the contribution of the practitioners in and the administrators of schools (the teachers and principals). Furthermore, parents and community representatives should form part of any truly integrated curriculum design panel, especially where local content is required. Senior students might also be included.

A fourth aspect to an integrated Multigrade Teaching curriculum is the way in which it is operationalized. A future model for teaching a Multigrade Teaching curriculum should consider for inclusion in the teachers' functions the use of students as peer teachers and/or as monitors. In addition, skilled community persons should be considered as para-professional teachers (artists, writers and scientists, for example).

Thus, the concept of an integrated curriculum is a critical one in the future development of curricula especially for Multigrade Teaching which, by definition, is founded in a context of integrated learning.

The Real Model

Even in the real world aspects of the ideal model are identifiable in a number of countries. Some of these are reported on below. Also outlined are some of the administrative and implementation difficulties associated with moving to an integrated model. The difficulties discussed are representative of the problems found in many countries and are not peculiar to the countries identified here.

Although the present reality is that the curriculum, text-books and evaluation requirements are often fixed in a system, it is important in Multigrade Teaching that teachers approach these problems imaginatively and creatively. Imagination and creativity are particularly important in dealing with aspects of present curricula which are open to teacher input. One example of this is Indonesia where, despite much of the curriculum being predetermined, there is provision for twenty per cent of the curriculum to comprise local content, a notion towards which Thailand has also moved. The carrying out of this requirement provides the Multigrade Teaching teacher, in particular, with an opportunity to be creative when designing curricula for integrated classes.

Integration

The concept of integration has been identified above. An analysis of the application of this principle indicates that there are general and specific problems to be addressed which are discussed below. This is followed by a discussion of the processes of adaptation which may be required. The experiences of some countries are recounted with a longer case study of the situation in Pakistan being featured. This section concludes with discussion about the organization of the curriculum and the use of integrated text books.

General Problems of Integration

Given that Multigrade Teaching occurs in the context of mixed grades, teaching is normally required across grades although not in every circumstance. In some countries, however, Indonesia provides one example, Multigrade Teaching in large classes means that the teacher or teachers are managing a number of different grade classes in different rooms at the same time. In this type of situation integration across grades remains a problem to be tackled.

Integration across content has already received mention as a desirable feature of Multigrade Teaching, Teachers in this context face a considerable hurdle in managing such integration given the need to know much more of the content of primary education across two or more grades and in every subject area. Although some subject areas are more easily integrated than others, the problem remains a large one since some subjects are not best taught in a whole class situation.

One specific example of the difficulties associated with the issue of cross-content and cross-grade curriculum has arisen in Vietnam. An overriding factor in this case is the need to match the amount of time spent in teaching different grades in the Multigrade Teaching content with the national targets which determine how much time will be spent on any one subject in any one year. A teacher has to account for the amount of teaching done in every subject and at each grade level. This requires considerable preparation and much in excess of that of a teacher in the single grade teaching situation. Depending on the quality of teachers' workbooks and worksheets, a teacher may be with grade one for ten minutes, away with grade three for fifteen minutes and then absent from that class for thirty minutes. Such teaching requires very sound preparation especially considering the time spent by students in independent study. It also requires astute preparation and reporting in demonstrating that the national requirements for teaching in the different subject areas have been met.

National Curricula and Multigrade Teaching

A considerable number of countries require all teaching to follow national curricula. The balance would normally expect teaching to follow provincial or other similar level of governmental authority's requirement. There is now a wide expectation that such curricula can only be implemented adequately where teachers' guidebooks and students' workbooks are provided. Such publications would best be activities-based and be linked as between the requirements in the former and the instructions in the latter. Such guides should also address the question of assessment.

However, not all such guidance should be national. Teachers and local administrators also have a responsibility to prepare and utilize materials which are oriented to the local context and are environmentally based This requirement raises the issue of the

Multigrade teaching in primary schools

time available to teachers to design such curricula and to re-design national requirements to fit local contexts (where that flexibility is permitted).

The Practice: Some Examples

In the Philippines there is a spiral curriculum format. This is something of a restraint on a mixed-mode Multigrade Teaching approach. Teachers have to consider the skills capability of their students in teaching and adapting the national curriculum.

In the case of China, the grouping of subjects is knowledge and activities based. The former group comprises six subjects, namely: Chinese language, mathematics, morals and society, life and science, and art and music. The national character of the curriculum remains but different guidebooks and textbooks are provided for different grades. In some schools, only two knowledge based subjects are taught – Language and mathematics, but physical education has to be taught in all schools.

A national curriculum is in place in Nepal. The minimum number of teachers in a school varies according to the number of grades. Schools having equal or more teachers than the number of classrooms usually adopt a single-grade teaching style in the lower grades and a subject based approach in the upper grades. Schools having less teachers than the number of classes adopt either the Multigrade Teaching style, if the number of classrooms is not sufficient, or Multigrade Teaching based on subject teaching, if the number of classrooms is sufficient.

In Indonesia, there have been changes in the degree of freedom allowed to teachers to take a flexible approach to the curriculum with more flexibility being allowed now than previously.

A difficulty found in Australia occurs when children transfer from between Multigrade Teaching and single grade teaching schools. In that country teachers are not restricted to covering the syllabus year by year since the basic requirement is for it to be covered over the period of primary schooling. This may result in pupils repeating studies in some areas and missing out altogether in others, if their transfer between systems does not coincide with what is being offered in the curriculum in any particular year.

In Malaysia the curriculum for Multigrade Teaching schools is similar to that for single grade teaching schools. In this situation, the Multigrade Teaching teacher needs to adapt the curriculum for use in his or her situation. Teaching is based on the skills level of the class and the teacher needs to be varying the content to meet those variations. Where there is commonality, whole class teaching may be employed: where not, group methods will likely be used.

There is a need in the Philippines for a re-organization or re-structuring of the nationally-prescribed curriculum by adapting it to suit local contexts. Cognate and related

skills can be clustered across grade levels to guide teachers in their lesson preparation and execution.

The Multigrade Teaching Syllabus

The application of a single grade teaching national syllabus in the Multigrade Teaching situation creates problems for Multigrade Teaching teachers as has already been emphasized. Such a syllabus generally:

1. is not structured for Multigrade Teaching classes,
2. places a heavier work-load on Multigrade Teaching teachers compared with their single grade teaching counterparts,
3. impedes the capacity of the Multigrade Teaching teachers, given the lack of facilities and problems of management at the local level, and
4. does not allow for the time constraints placed on Multigrade Teaching teachers given the preparation time required and the need to address a wider range of students' needs.

Syllabi need to be prepared specifically for the Multigrade Teaching context or be able to be adapted to it.

Re-organizing the Curriculum for the Multigrade Teaching Context

In most countries of Asia and the Pacific, the primary curriculum prescribed is the same for both urban and rural areas. This curriculum usually consists of a list of minimum learning competencies stated in terms of behavioral objectives which the teacher is expected to achieve with each grade level within a particular time limit. Since the minimum learning competencies are normally specifically designed for regular school situations, the Multigrade Teaching teacher finds it difficult to make the content of his or her teaching meaningful for the children. Most often, the designed curriculum lacks relevance and is dysfunctional when applied to the socio-economic needs and cultural lifestyles of Multigrade Teaching learners and their communities. Moreover, the conceptual and skill requirements of the prescribed curriculum are too great for the teacher to cope with, given the pressing problems and concerns which have to be addressed in the Multigrade Teaching situation.

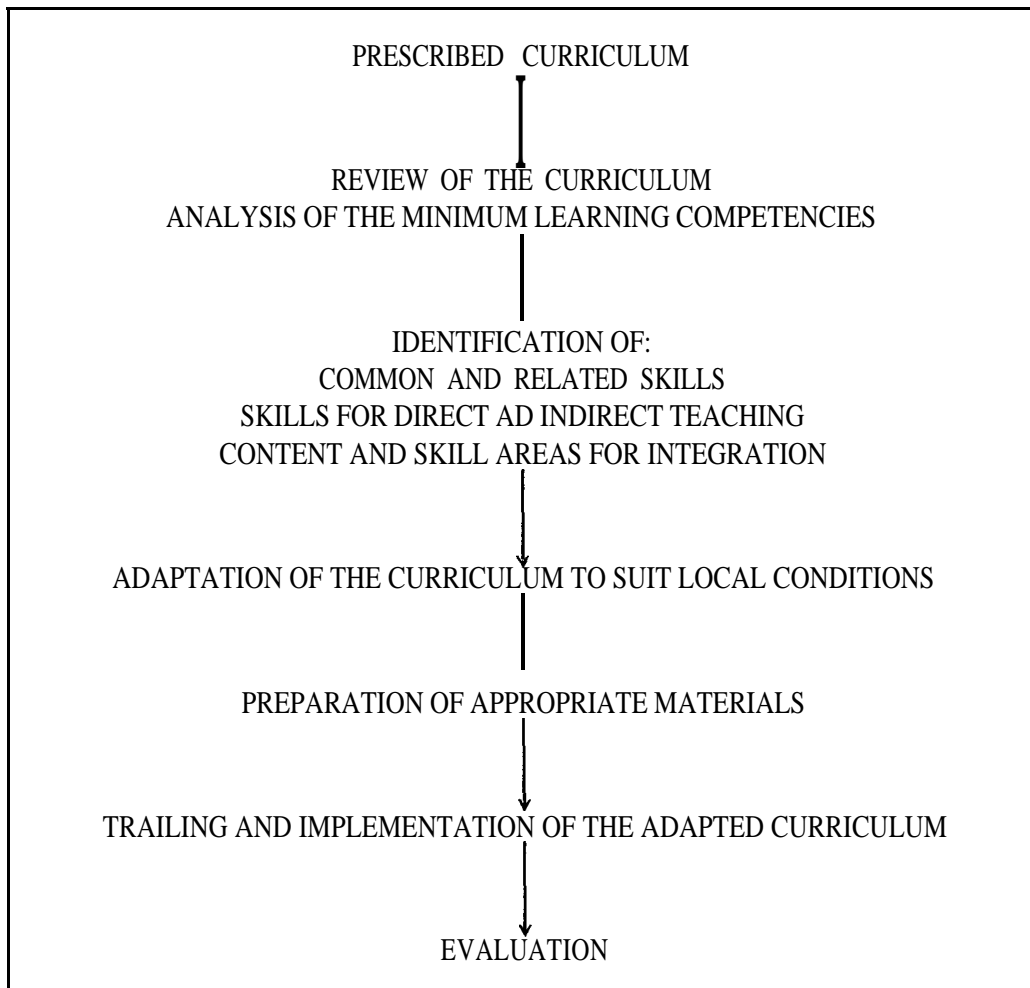
For these reasons there is a need to re-organize and improve the curriculum for Multigrade Teaching by way of:

1. improving the curriculum content by developing subject matter in a way which makes it relevant to the social conditions of the communities and the needs of the target clientele,

Multigrade teaching in primary schools

2. involving parents, teachers and community leaders in the re-organization and improvement of the curriculum,
3. preparing instructional plans for teachers where various activities are proposed for use with an emphasis on problem solving, and acquiring skills for character and community development,
4. preparing supportive instructional materials that are congruent with the plan of instruction, and
5. analyzing the minimum competency requirements so as to identify skills which should be taught directly and those that may evolve from self-instruction.

A Framework for Improving the Curriculum



Pakistan: A Case Study

In Pakistan, in order to reduce the number of subjects being taught in classes I to III, a concept-based approach has been evolved in curriculum development. Science, social science and Islamic studies have come under particular attention. These subjects have been concentrated in and integrated within the teaching of language – URDU. The Federal Ministry of Education modified the curriculum for these three classes. It had prepared and developed revised integrated text-books for use in federal schools in Islamabad on a trial basis, for replication throughout the country.

The rational for and the methodology developed for this curriculum were premised on the following:

1. Research had indicated that knowledge stems from one root which is later classified into various branches of learning,
2. The child's early learning is oriented to the immediate environment initially through oral and later through written language,
3. The teaching of the four basic disciplines (language, Islamic studies, social studies and science) could and should be integrated,
4. Over-loading, repetition and over-lapping of subject content could be reduced, and
5. Language studies provided a competent vehicle for the teaching of the other three subjects in this case. (Not all subjects were deemed to be so amenable – mathematics, for example).

The integration of these subjects resulted in only two text books needing to be prepared, one for the integrated subject and one for mathematics.

There were difficulties associated with this radical departure from previous practice. The first resulted from the fact that the social studies curriculum was district-based and the content varied therefore from district to district. Secondly, science in class 11 was relatively advanced and the concepts used did not fit readily into the language category of the children in the class. Finally the integration resulted in the language component becoming more abstract.

Despite the problems and after a successful trial, the integrated approach was introduced in all the provinces except the Punjab. The preparation of texts for the next two grades based on this integrated approach is now proceeding.

The Government of the Punjab developed a separate science book for grade III with the support of foreign finding. Trial editions of integrated text-books for classes I to

Multigrade teaching in primary schools

III have been prepared and are being pre-tested in selected areas. For each subject a text-book, work-book and teachers' guide have been prepared to assist the teachers in their teaching and students in their learning in difficult situations where Multigrade Teaching is found. Once the results of the tests are known, the integrated program for the five classes will be implemented throughout the Province.

This case study exemplifies the need in each country for steps to be taken which reflect the religious, moral, educational, social and political mores. No one plan of action will suit every jurisdiction. But every country needs its own plan for efficient Multigrade Teaching development.

Chapter Three

TEACHING-LEARNING STRATEGIES

Introduction

Teaching-learning strategies may best be described as the methods, techniques or devices used to enhance teaching and to facilitate learning. The strategies discussed in this chapter include the grouping of students, team teaching, peer-teaching, innovative teaching strategies and community involvement.

Grouping: Team Teaching and Peer Teaching

Views on the grouping of students vary as the following two vignettes indicate. Yet despite coming from different cultural sources, there is a considerable degree of unanimity in the principle of grouping and the practice.

Vignette 1

Grouping is one of the strategies in Multigrade Teaching situation which can play an important role in the teaching-learning situation. In Multigrade Teaching, a teacher teaches more than one class in the same time or period. There are various strategies of Multigrade Teaching including the following:

1. Multigrade Teaching Technique based on Grade Teaching

Based on this technique, a single teacher handles more than one class and teaches all the subjects throughout the whole day. If the number of classrooms is less than the number of classes the teacher should combine more than one class in a single room. To make teaching and learning effective and easy the teacher may group the pupils either on the basis of classes, age, sex, or on the basis of ability. Sometimes the teacher can create mixed groups also. For example, if some of the girls in a class hesitate to sit with the boys, the teacher can make a group of boys and girls, so that their hesitation will be gradually reduced and, after a period of time, they will not hesitate to sit together. Thus mixed grouping is useful to remove shame and hesitation. Mixed grouping is also useful in the classes for singing, dancing, art, indoor playing and other types of activities. This grade grouping based on Multigrade Teaching has almost all of the merits found in single grade teaching.

Multigrade teaching in primary schools

If the number of classrooms is sufficient, but the number of teachers is less than the number of classes and if the number of students is more, in such a situation the teacher need not necessarily combine more than two classes in one classroom. He or she can put different classes in separate classrooms. However, one teacher will have to teach all the subjects in two different classes in separate rooms at the same time.

This is no easy task! In such a situation, a monitor or group leader can be used and exercise-based activities encouraged. The problem-posing approach or self-directed approach should be followed and the teacher should be an observer or facilitator, with a role of mobilizing the classes. If the number of students is very large, the teacher can make groupings, as described above, in the same class. If there is no shortage of teachers (in comparison to the number of classes), but some of the teachers are less efficient in teaching, peer group teaching techniques can be adopted. This technique can also be adopted even in the case of two or more classes in one classroom. In grade-teaching based Multigrade Teaching it is assumed that a teacher can teach all the subjects. However, this may not be the case in all schools. In those situations, it is suggested that grade-teaching based Multigrade Teaching should not be followed.

2. Multigrade Teaching based on Subject Teaching

As indicated above, teachers may not be expert in all subjects. They may have better knowledge of a specific subject. Subject teaching based on the Multigrade Teaching technique can serve much better than the technique discussed above in such a situation. Using this technique, more than one class is kept together and the pupils are taught by different subject teachers. The groupings can also be arranged in this situation as was discussed earlier.

Vignette 2

Within any classroom situation, grouping techniques should be applied. To do otherwise implies that all children are the same, like peas in a pod. Yet everything we know about children from our family experiences, from our own learning experiences, from our teaching experience and from a modest review of research tells us that children learn in different ways, each one relying more or less on their own application of their five senses, either specifically y or in various combinations. We must be conscious also that, although each child should be developing intellectually, physically, emotionally, socially and aesthetically, each one again has different developmental needs in these five categories. For these needs to be satisfied by schooling, a school class can be divided into various sized groups according to ability in those subject areas which are open to measurement techniques: mathematics, reading, spelling and the like. Social or friendship groupings are

quite appropriate for subject areas such as social studies. Within these groups, avenues occur for peer teaching or learning.

Yet even as we advocate the necessity for grouping, we do not underestimate the importance of the face-to-face contact of individual students, groups and classes with the teacher.

In Multigrade Teaching two distinct organizational and teaching strategies arise which lead to grouping. Firstly, a class with two or three grade levels can be organized and taught as though these grades are discrete. Within these discrete grades there should be social or ability groupings. Of course there are occasions when the class can be conducted as a whole; perhaps for cultural subjects, or story reading. Curricular content and time-tabling strategies are arranged by the teacher to ensure that all students cover the curriculum requirements, obtain a fair measure of the teacher's time and have ample opportunity for self-directed, independent learning

The second organizational/teaching strategy involves two or three grades being viewed as one class for much of the curriculum. Thus, ability groupings in mathematics, reading and spelling for example would be multi-aged with brighter younger pupils being grouped according to their ability with older students. Some caution is relevant here in that slower older students may regress if the situation undermines their self-concept and confidence.

Thus, a grouping pattern can be orchestrated by a skillful teacher who, at appropriate intervals, re-arranges the groups according to regular progress tests, or completion of topics. The teacher never relinquishes his or her total responsibility for the five basic developmental areas of a child's education mentioned at the outset.

Team Teaching: One Approach

Another form of grouping within which the above small or sub-grouping strategies can be implemented is one of a macro nature. Instead of thinking about a normal sized class having two or more grade levels in it, could we not think of three normal grade-classes being brought together with their three teachers to form one large group. After such a combination, the ability and social grouping techniques are applied with the three teachers acting as a team, with each one possibly taking responsibility for more of the work in his or her favoured subject areas. Students then have the chance to be influenced by three teachers, rather than one. Teachers in turn have the chance to learn from each other; the weak to be supported and in-serviced by the strong, the experienced to demonstrate to the inexperienced and the neophyte to bring new ideas from recent Teachers College training to the benefit of the experienced, but possibly out-of-date, senior teacher.

Multigrade teaching in primary schools

Physical Responses

Grouping strategies, whether they be of the kind which are undertaken in a regular sized class, or under a team teaching arrangement require attention to be given to the physical attributes of the classrooms – perhaps a wall must be removed; certainly the furniture should be moved around. Grouping techniques demand that the teacher “come down off the platform” and conduct whole class or group teaching from any part of the room. Teaching aids, available equipment, text and library books should all be used to support the teaching-learning process by teachers who are prepared to give their time reflecting on the discharge of their responsibilities.

Peer teaching – “each one teach one” – is one form of teaching often neglected by teachers. But it is a strategy which, well handled, has many advantages. The first of these is that students may well learn better from their peers than from formal teaching. Secondly, peer teaching enables older students to reinforce their own learning. Thirdly, teachers can be very much assisted by senior students in marking work and supervising classes. Multigrade Teaching provides a very normal setting for this type of teaching to flourish. This technique encourages students to compete and surpass one another in learning.

Situations exist in which peer teaching can flourish. One such country is China where the teaching situation among some communities is that classrooms are plentiful but there is only one teacher. In this situation an older student is used to supervise work in one classroom while the one teacher teaches in another.

Innovative Teaching: Case Studies

A number of innovative approaches to teaching has and is being developed (Technical and Technological innovation is discussed in Chapter 9). A “Teacher Visitation Model” has been developed in Kalimantan in Indonesia. This model is premised on the notion that the teacher should go to the pupil rather than the traditional approach of students coming to where the teacher is located. This strategy involves teachers visiting groups of students living at a distance from the school where they usually conduct classes and supervise learning. This approach utilizes the benefits of formal and non-formal education. It has a very positive future role in being able to be used in supplying Multigrade Teaching to itinerant fishermen.

The nomadic ways of some of Pakistan’s population have been met in a similar way for some years. Itinerant teachers take on the task of following these people and providing a form of Multigrade Teaching for them.

The School of the Air is a form of schooling utilized in Australia to ensure that schooling is provided to isolated or itinerant families who have no possibility of having their children attend school. Whilst schools of the air follow along traditional single grade teaching lines, this means of delivering schooling has Multigrade Teaching potential.

School on Horseback is a counterpart strategy to the above in China. It is used in Inner Mongolia as a means by which schooling is brought to an itinerant people whose livelihood is raising horses and sheep. The principle is that teachers live and teach with these nomadic people as they follow their accustomed routine.

The Philippines also produces mobile schools for the children of parents who do not settle permanently in one area of the country. Teachers follow those students whose belonging to such a disadvantaged group already harms their future prospects.

There are other innovative classroom practices in the Multigrade Teaching setting. In such classes the teacher may divide a group so that while he or she is working with one, the other is working at self-directed activities or assignments. In some skill subjects such as language and mathematics, pupils are grouped by ability levels. This enables students to develop at their own pace and to use materials within their level of comprehension. Malaysia's recent innovation has been in the area of curriculum within the new Primary School Curriculum. Language skills have been integrated with other subjects as has the teaching of morals and values,

Multigrade Teaching as a method has placed responsibility on teachers for innovative approaches to meeting the needs of special classes of students, especially those with learning problems. Multi-cultural and multi-lingual issues are also special cases, In Vietnam, for example, teachers going to schools where the pupils are not native-speaking Vietnamese are required to learn the language of the people where they are appointed. Parents have also been used innovatively as para-professionals. They have been used to assist the teacher in activities in the classroom including listening, reading and assisting in physical education activities. The Philippines, for example, has a parent learning support system to enhance the quality of education using parents to assist in doing so.

Innovation in Indonesian Schooling: A Case Study

In the attempt to eradicate illiteracy, to reduce the drop-out rate and to accomplish the goal of compulsory education, Indonesia developed three different stages of Multigrade Teaching approaches for primary education, The first stage aimed to overcome the shortage of teachers in populous areas; the second stage was to overcome the shortage of teachers in remote areas and difficult contexts. The last stage attempted to give education to a small number of pupils in those remote places where establishing a school, even a small one, was not viable.

For the first stage, the PAMONG approach or model was developed. This first approach organized normal to large schools using modularized instructional materials, combined with community participation in the teaching, tutoring, monitoring and organizing of learning activities and materials. Approximately 70 per cent of school age children were enrolled in formal and non-formal primary educational institutions, although there was the problem of areas which lacked teachers and literate adults, and particularly

Multigrade teaching in primary schools

in non-remote but sparsely populated areas. The PAMONG approach was then adjusted to the small-school-model to tackle this problem. Two types of remote schools, normal to large size (61 to 200 pupils) and small size (10-60 pupils), with 1 to 3 teachers were targeted.

The small schools are of two types, in terms of learning materials and teaching-learning strategies: the small schools with PAMONG style modularized self-learning approaches and materials; and the small school with the traditional teaching approach. When the enrolment level reached 97 per cent, there still remained the disadvantaged small groups of people living in pocket areas on the small islands, in the mountains, along the river banks, the nomadic tribes, as well as the homeless people in the cities. To solve this problem Indonesia developed a GURU-KUNJUNG or visiting-teacher-model.

In all of these three Multigrade Teaching approaches, the local community was invited to participate as tutors, local school-management coordinators, contributors of finds, materials and facilities and para-professional teaching staff (such as local experts in arts, culture, handicraft, language, history, religions etc.).

The first Visiting Teacher model (VT) is used for visiting the stationary (non-mobile) teaching-learning places or learning posts in the mainland remote places in Central Kalimantan. The VT model is now being developed for small communities in the small islands. It is still in the conceptual stage for the nomadic minorities in Sumatra, Kalimantan, Mollucan Island and Irian Jaya.

The characteristics of the three Multigrade Teaching models are described below:

a. "PAMONG" primary School Model

PAMONG is the acronym of "Pendidikan Anak oleh Masyarakat Orangtua dan Guru".

P	→	Education of
A	→	Children by
M	→	Community
O	→	Parents
N	→	and
G	→	Teachers

1. Teachers teach two classes (in one room or two rooms) with the help of:

- Modularized self-learning material
- Para-professional teachers
- Peer Tutors (Tutor Sebaya): the bright tutoring the slower learners
- Old Brother Tutorial (Tutor Kakak) : six grade pupils tutoring lower grade pupils, and

- ☉ In the first grade traditional face-to-face (direct) teaching and non-modularized materials are used.
2. Community Outreach (Learning Posts). The SD-PKB or mother school organizes learning groups in the surrounding neighbourhood. These comprise 10 to 20 drop-outs and/or illiterate youth and use modularized materials. Communities assist in the organization of the learning posts in the form of para-professional teachers, tutors, learning places (private homes, villages public buildings, mosques, etc), local planning and funding. They also campaign for motivating parents to send their children to regular schooling or learning posts.
 3. Evaluation:
 - ☉ Formative: per module, per group of modules, self-evaluation, including remedial steps; and
 - ☉ Summative: school based for some subjects, national exam for five subjects, following the non-PAMONG schools.
 4. Classroom Management.

The seating was rearranged to provide for small group discussion at the same grade level as well as the classical type of teaching (the active learning approach).
 5. School Management and Supervision.

The PAMONG schools differ from non-PAMONG schools only in the rearrangement of activities, classroom management and community relationships. All other administrative and supervisory regulations are the same, nationally and locally. More peer-in-service training of teachers is happening under the H'MONG Multi-class Teaching Model rather than in the regular schooling system.

b. The Small School Model

The small schools in Indonesia are of two kinds. First, there is the small school (SD Kecil) which uses the non-modularized learning materials ("traditional small school"). The second type is the Small School using the PAMONG Primary School System.

The only differences between other models and the small school are the following:

1. The number of students is small (10 to 60 according to national regulation).
2. They have one to three classrooms.
3. They have one to three teachers, including the Headmaster.
4. They do not have PATJAR (Learning Posts).

Multigrade teaching in primary schools

5. Two grade levels in one classroom are divided by an easy to move partition.
6. They are found mostly in remote or difficult-to-reach areas, or thinly populated areas.

C. "GURU KUNJUNG" or The Visiting Teacher Models

This model is similar to the PAMONG Learning Post model where the specially trained teacher from the nearest **"mother school"** visits the learning posts regularly according to a well-planned schedule.

The special characteristics of this model of Multigrade Teaching areas follows:

1. The size of the group is between five and twenty. The pupils are listed as the "mother" school pupils.
2. The community stays in a pocket area.
3. The group is mixed-sex.
4. The teacher makes a visit to teach the group with the help of one or two local para-professional adults (tutors) for whom an annuity is available, He or she stays in the community for two to three days.
5. When the visiting teacher is not in the learning post, the teaching-learning processes are organized by the local tutors. If there is more than one person available, the tutors work together or alternate every week so that they can do their own full time work. The activities carried out by the tutors follow a step-by-step and day-to-day pre-planned set of activities. A log is maintained by the tutors in which they record all the activities, results and problems encountered during the week.
6. When the visiting teacher revisits the learning post, he or she first checks the tutors' logs, checks the learning attainment and gives face-to-face teaching, either individually or with the tutor present on that occasion.

During the visit, the teaching responsibility of the visiting teachers is assigned to his or her colleague. If there is more than one visiting teacher in the **"mother"** school they arrange for a rotation of their visits and teaching. Formative evaluations are organized by the visiting teachers and tutors. The final examination (sixth grade) is integrated with the **"mother"** school.

7. Learning materials comprise one or a combination of the following:
 - * Modularized small school learning materials.
 - * Standard textbooks for the ordinary school.
 - * Package-A materials for non-formal learning (Package A 1 to A 100).

- ✳ Supplementary learning materials developed in the local areas by groups of visiting teachers who are trained by the district Task Force as visiting teachers.
 - ✳ Local content brought into the school by local resource persons.
8. The responsibility of maintaining the learning post is given to the local community. Local government staff organize learning posts and help pay the tutors a small honorarium (of Rp. 10,000 to 30,000 a month). The students' education is free of charge.
 9. The student has an identity card which can be used to enter primary school in other places within the district when the family stay for a week or more in another village or town.
 10. The conditions of the learning posts vary from the simple two square metre coconut leaf mat to a cottage or a semi-permanent one-room building.

Indonesia is continuing to develop the visiting teacher model for the pocket areas of the islands community and the mobile school model for nomadic populations.

The regular primary school, the PAMONG Primary School, the Small School, the Visiting Teacher and the Package-A Learning Groups are alternative models which are used in Indonesia to solve the needs of universalizing Primary Education. The PAMONG, Small Schools and Visiting Teachers models are specifically designed to solve the needs of Multigrade Teaching approaches. The Package-A Learning Groups model is specially designed for illiterate adults using integrated subjects in the 100 volumes of Package A-Learning Materials. (Package A 1- A20 is for the literacy programme, Package A21 – A 100 is for the post-literacy and primary school programme.) In the Visiting Teachers Learning Post model, either the standard regular primary school text books, the Small School modules, or Package A can be used.

These alternative models could also now be used in the Junior High School level because similar conditions will be encountered in accomplishing the Indonesian target to enroll 100 per cent of the Primary School graduates in junior high school institutions by the end of sixth REPELITA (Five Year Plan), 1998.

Chapter Four

MATERIALS DEVELOPMENT

Introduction

Materials for the provision of Multigrade Teaching in the classroom are an essential aspect of any discussion of Multigrade Teaching. On the one hand, there is not a considerable amount of materials support for Multigrade Teaching – as opposed to single grade teaching – in any country of the region. On the other hand, Multigrade Teaching is often associated with schools in remote and difficult contexts dealing with rural and other disadvantaged persons, with the result that there are few resources available, given the poverty of the region in which this type of teaching is found. Multigrade Teaching teachers have, therefore, to work in a considerably negative context in terms of materials support.

It is often the case that newly appointed teachers must develop their own curriculum materials using locally found materials. However, the majority of countries of the region do not see materials development as a component part of teacher training programmes. Indeed, a recent UNESCO meeting which attempted to develop new teaching competencies (UNESCO, 1992) made no reference to the need for teachers to develop their own curriculum materials. This meeting saw teacher competencies changing as a result of various trends in curriculum reforms across countries of the region and identified materials development as being in the domain of central educational authorities. As a result materials development was seen as a separate issue from teacher competencies. This is probably a useful strategy for single grade teaching: However, it presents special difficulties for the teacher who will be undertaking Multigrade Teaching in rural or disadvantaged areas.

Despite the gloom, several countries have been wrestling with this problem. The outcome has been an increase in the extent to which governments acting alone or with the support of international agencies and teachers acting creatively have been producing high- and low-cost materials for Multigrade Teaching.

There are examples of good Multigrade Teaching materials to be found in a number of countries of the region. A number of these examples were reported on at the UNESCO workshop on Multigrade Teaching which was held in Indonesia in December, 1993 and the bibliography provides more sources of information. Often within a single country there is no mechanism to coordinate the efforts of individual teachers and other curriculum developers. As a result, the potential use of much of this material is not being realized. This difficulty of lack of co-ordination and dissemination is even greater when

inter-country collaboration is considered. The problem of gaining a wider use of these curriculum materials is made greater by the multiplicity of cultural groups which are served by Multigrade Teaching schools. This multiplicity also occurs within a single country since many ethnic minority groups are serviced by this type of educational delivery; for example, ethnic groups in Viet Nam, China, Thailand and Indonesia.

Thus, it is not a simple matter to transfer these Multigrade Teaching curriculum materials since they may offend or be inappropriate pedagogically and/or culturally. At the same time, not being able to make such a transfer results in a loss of economies of scale. The poverty of many of the regions where Multigrade Teaching is to be found is such that collaborative development and sharing of materials is necessary if the teaching is to improve in quality.

What is attempted in this chapter is to provide a range of country ideas and experiences without going into specifics. A somewhat more extended view of provisions in two countries, China and Malaysia, follows.

In general terms, it is accepted by educators that multi-media materials need to be developed. To some extent this suggestion may be one that suggests a high-cost technological approach. However, the discussion of open learning techniques which is discussed in Chapter 8 of this monograph indicates that quite sophisticated technology can be utilized at comparatively low cost. At the same time, genuinely low-cost materials have been so creatively produced by teachers and Ministries of Education that the future for Multigrade Teaching materials is positive. Many poorer countries may not obtain the considerable benefits that Viet Nam has received from its extensive involvement of UNICEF in Multigrade Teaching. Nevertheless, the flow-on effect from UNICEF's support for Multigrade Teaching materials development could be considerable in terms of developing specifically Multigrade Teaching materials. This would be a significant improvement for Multigrade Teaching since it would mean that specific development could occur rather than the need to convert single grade teaching materials for Multigrade Teaching use. This latter strategy is problematic since the teaching strategies used in Multigrade Teaching are different from those employed in single grade teaching classrooms.

Materials and Their Uses: A Summary of Experiences

As indicated above, Viet Nam has benefited from considerable UNICEF support in pursuing developments in Multigrade Teaching. The outcomes of this concentration have been considerable to the extent that the Vietnamese government has now resolved to support Multigrade Teaching as a legitimate form of education by committing government funds to Multigrade Teaching. The Vietnamese experience suggests minimally that were governments able to commit appropriate funding, Multigrade Teaching would become a recognized pedagogy and be implemented as such.

Multigrade teaching in primary schools

In Viet Nam, teacher training modules for Multigrade Teaching have been developed for use in teacher education institutions. Textbooks for children have also been prepared and published. These have been based on normal school materials and are provided free to children in Multigrade Teaching schools. Assessment materials for the use of teachers in evaluating students have also been designed and in common with all prepared materials, Multigrade Teaching materials are quite distinguishable from single grade teaching designed material. Examples of this are seen in the provision of teaching and learning aides for children studying mathematics. The kits provided are very much supportive of non-directive, independent learning.

The provision of materials necessarily involves their use. It is not unknown in countries, of which Pakistan is but one example, that teachers may have materials made available to them which they are afraid to use because they are worried that items may be lost or broken. In addition, it is important to ensure that material aids are supported by adequate information and advice as to their proper use. Pakistan has also addressed the problem of parents having to pay for materials in the Province of Baluchistan by providing a stipend to poor remote students to encourage their attendance at school.

Community involvement is an aspect of materials preparation in Indonesia. Teachers in Multigrade Teaching and community persons are utilized in the preparation of locally made materials. Teachers in Indonesia are asked to produce worksheets for students to suit local needs. These teachers and communities have increased responsibilities and involvement in designing student worksheets and additional materials because of the requirement in Indonesia that twenty per cent of the curriculum comprises local content. Indonesian teachers do not enjoy the luxury of their Vietnamese colleagues who are paid an additional US\$5 per month to develop their own materials. In both instances, however, the inexperience of teachers may be a factor in the quality of locally-produced materials.

In the Philippines, the number of texts and amount of materials for teachers and students is inadequate given the number of students in schools. Some materials are prepared at the national, provincial, or local levels but again the adequacy of the quantity remains in question. While experts have the time to prepare materials there are never enough copies of materials to support the teaching which is carried out.

Textbooks and teacher manuals for primary education in the Philippines are developed and produced by the Instructional Materials Corporation, an organization under the Department of Education, Culture and Sports. It also takes charge of distributing them to the fourteen regions of the country. The pupil-textbook ratio target is one textbook per pupil. For the task of developing textbooks and teacher manuals, the IMC invites the participation of writers and publishers from the private sector. This is done through a tender call for production of textbook and the corresponding teacher manuals. Writers and publishers are provided with the prescribed Learning Competencies or Minimum Learning Competencies for each learning area in preparing their guides,

Materials development

As far as other support instructional materials in the Philippines are concerned, they are developed and produced either at the national or local level and distributed to the schools where they are used. In the development and production of these materials, consultation with curriculum experts and the involvement of school administrators and teachers is carried out to ensure that the materials are suitable and appropriate for the pupils for whom they are intended.

In some instances, financial support from such organizations as UNICEF, UNESCO, UCIA and others are solicited for the development and production of these curriculum materials. But much of this instructional material is prepared by the teachers themselves using low-cost resources available in the community. This is where the ingenuity and creativity of the teachers are manifested.

A Curriculum Development Centre (CDC) in Nepal develops the curriculum and the text books which are provided free to students up to grade five. The Centre also has an audio-visual section. It is the case that teachers must also produce their own materials. The CDC gives training to teachers on materials development. The Basic and Primary Education Project Primary Materials Unit (BPEP CPMU) also develops supplementary reference materials as well as low-cost teaching aids. It has distributed these free of charge in those districts (25 out of 75) where the project has been implemented. The BPEP Primary Training Unit provides twelve-day workshops for teachers on materials development. The Primary Education Development Project (PEDP) conducts in-service and teacher-training workshops which include the use of Multigrade Teacher training materials.

In Indonesia a national textbook centre exists for the distribution of materials. There is difficulty in their distribution, particularly in transportation because of the many islands which make up Indonesia. Some schools do not have enough copies of materials but some texts are available in each school. Recently, decentralization of textbook development to regions has occurred and greater encouragement of private sector provision of additional materials has been evident. There is a problem with the quality of private sector materials because some examples used are not appropriate to the syllabus level required. There is also an evaluation function carried out by a central body of books and other materials produced by the private sector.

Case Studies

Case studies from China and Malaysia on the provision of Multigrade Teaching materials provide interesting comparisons and contrasts.

Multigrade teaching in primary schools

Needs and Problems in China

China's curriculum programme for basic education is developed by the central educational authorities. Before 1988, China had only one set of textbooks compiled and published by the People's Education Press in Chinese. As for the Mongolian, Tibetan, Uighur, Kazak and Korean minority pupils, textbooks were translated from the Chinese, except in the case of textbooks of their native languages, and Chinese was taught as a second language.

In 1988, the State Education Commission of China developed a curriculum programme for nine-year compulsory education (primary and lower secondary) and began to organize the development of nine sets of new textbooks in Chinese on the basis of the new curriculum for Han people (the majority ethnic group), Chinese-speaking minority nationalities and minority ethnic groups without writing systems or whose writing systems are not widely used. One of these nine sets is specially developed for use in Multigrade Teaching. After four years' use in some pilot schools, these new textbooks replaced the old textbooks in September 1993 in grade one. New textbooks for Mongolian, Tibetan, Uighur, Kazak, Korean and Lolo (Yi) pupils in their native languages were prepared and introduced in 1994 for grade one classes. The new textbooks consist of student books, teachers' guides and workbooks. Self-test sheets and learning aids have also been developed at provincial, prefectural and county levels. The Multigrade Teaching textbooks are now being used by 100,000 pupils in North China's Hebei province. Multigrade Teaching classes in other parts of China usually use other textbooks as for single classes.

Multigrade Teaching is a special type of classroom teaching. Teachers of Multigrade Teaching need appropriate instructional and learning materials to keep their pupils' learning time to the maximum. However, Multigrade Teaching in China, like in most other countries of Asian and the Pacific, has the following problems with specially developed instructional and learning materials:

1. There is no supervision from the educational authorities to encourage teachers involved in Multigrade Teaching to use these materials properly. China's Multigrade Teaching is operating in remote areas where there are many non-government teachers whose salary is usually about one half of the government teachers. These people, in some of the south-west provinces, actually are farmers intent on making money for buying cigarettes through teaching. They spend more time in their fields than in preparing for teaching. Supervision to get them to use materials properly is needed.
2. It is difficult to assess materials which are available. Sets of Multigrade Teaching textbooks have been published in a black and white edition (instead of the coloured one) for parents who are not able to afford to pay for them.

3. There is little money to develop and produce Multigrade Teaching materials to meet all needs. Pupils, who are disadvantaged geographically, linguistically, culturally, economically or/and socially and are involved in Multigrade Teaching usually have a different set of special problems and needs for each group. Different sets of Multigrade Teaching textbooks should be developed to meet the special needs of different areas and different language, cultural and ethnic groups. But without money little can be achieved.
4. Multigrade Teaching needs more materials than single class teaching, but pupils involved in Multigrade Teaching are much poorer and cannot afford to buy more materials. The government is also not able to provide the materials free of charge for them.

Low-cost Teaching Learning Materials in Malaysia

The provision of teaching-learning materials especially in developing countries, is constrained by limited financial resources. As such, in many countries including Malaysia, teachers are encouraged to use teaching-learning materials.

To overcome these problem associated with Multigrade Teaching school, the Malaysian Ministry of Education has Organized a “Multigrade Teaching-Learning Strategies Course”, as an in-service course, in two teacher training colleges: Maktab Perguruan Tengku Ampuan Afzan, Kuantan, Pahang; and Maktab Perguruan Gaya in Sabah.

Through these courses, the teachers are exposed to teaching-learning methodologies and techniques of the Multigrade Teaching process. In addition, one aspect which is given focus and emphasis in this course is the making of Low-cost Teaching Learning Materials which are appropriate to the situation and ability of students in these Multigrade Teaching schools. Other than that, similar courses are conducted at the state resource centres.

Low-cost teaching learning materials are materials which have the following characteristics/qualities:

1. The materials can be made by teachers, pupils or members of community.
2. The materials supplied can be put to effective use by the teachers and pupils in the classroom and do not incur extra cost.
3. The processes in the production of the materials are simple and inexpensive.
4. The production of the materials is not time consuming.
5. The raw materials are freely and easily available from the local environment.

Multigrade teaching in Primary schools

These raw materials can be:

1. Natural resources; for example, plants (bamboo, leaves, rubber seeds, coconut leaf stick, coconut, etc.), animal (shell, skin, bones, etc.) and mineral (limestone, charcoal, etc.).
2. Industrial waste; for example, fuses, electric bulbs, used batteries, etc.
3. Domestic waste; for example, tin cans, milk boxes, bicycle parts, etc.

The characteristics/qualities of low-cost teaching learning materials may need to be redefined as the situation differs from one country to another; that is: according to the social-economic situation and cultural contexts. Because of this, the main consideration is not the low-cost factor of the materials, but factors like ease of availability, ease of production and the like.

Examples of Low-cost Teaching-Learning Material:

1. Name of the material : Educational TV (ETV)
Subject : Mathematics Year : 5
Topic : Fraction
Aim : To enable pupils to:

- i) recognize different fraction forms,
- ii) name fractions and
- iii) write fractions

Cost of the materials used:

Biscuit tins	→ RM 4.00
Mahjong paper	→ RM 2.00
Paint	→ RM 1.00
Building tape	→ RM 2.00
Welding charges	→ RM 5.00
Recording tape fees	→ RM 5.00
Total	→ RM 19.00

Procedure:

- a. The centre part of the biscuit tin is cut off and pieces of glass are fixed to act as a TV screen.
- b. Nails are fixed to both ends of the tin to hold in place of the lever.
- c. A series of pictures is rolled on to the lever.
- d. When the lever is turned the picture comes out on the TV screen.
- e. The holder and an aerial is fixed to the top part of the biscuit tin.

Educational Uses:

- a. The TV is placed in front of the pupils and the teacher stands by the side of the N
 - b. The teacher turns the lever slowly so that the picture is projected onto the TV screen
 - c. The teacher uses the cassette player to provide the sound according to the content or gives an explanation based on the content.
 - d. The material can be used for other topics or subjects.
2. Name of the material : Magic Tree
- | | |
|----------|--|
| Subject | Bahasa Melayu and English |
| Year | 1 |
| Material | tree branch, pot, string and coloured bulb |

Procedure:

- a. Firstly, the branches are cemented into the pot and then painted green.
- b. Certain syllables according to the topic taught are written on the bulbs.
- c. Each bulb is hung on the branches by using string.

Educational Uses:

- a. Teacher mentions a word and chooses the right syllable to form the correct word.
- b. The process continues and the teacher involve pupils using more lengthy words.

The lower cost teaching learning materials are very suited to the Multigrade school which is financially constrained compared with the normal school. Because of this, the teacher in the Multigrade schools should be exposed to material building skills in teacher education or in-service programmes.

Chapter Five

EDUCATIONAL POLITICS AND MULTIGRADE TEACHING

Introduction

Multigrade Teaching is as much a political consideration as other forms of education. It is discussed in this chapter in terms of the general framework of power and control in which Multigrade Teaching is placed, the administration of Multigrade Teaching in broad terms and the particular issues of classroom management.

Political Factors

There is a formal political base to the provision of education in general and, therefore, Multigrade Teaching, either by way of a constitutional provision or laws made passed by the government in all member countries of APEID. In addition, many countries are party to some if not all of the many declarations or conventions of the United Nations, UNESCO, the International Labour Organization or other international bodies. These documents have affirmed the rights of the child in general, the right of the child to be educated and, most particularly, the right to free primary education (as, for example, in the International Covenant on Economic, Social and Political Rights). There are operating, therefore, both internal and external political forces on member countries from such binding statements. There are also less formal pressures inherent in participating in or subscribing to programs such as Universal Primary Education and APPEAL. Multigrade Teaching has come somewhat to the fore in countries in the region where large populations of children are to be educated as a means for meeting political obligations, whether self-imposed or adopted by virtue of membership of the “**global village**”.

While there are concerns for the individual in the promotion of such programs, the national interest is also being served. All countries are aware that education provides a means to increasing prosperity and economic development. Although education is seen by some to be politically neutral, more and more it is being used to achieve the political aims of the national and international community.

Multigrade Teaching is also of importance in the political dimension in providing people with the opportunity of participating more usefully in the communities and countries in which they live. It may be a liberating force in terms of enabling communities and individuals to escape from poverty and illiteracy; it may be an empowering force in

Educational politics and multigrade teaching

enabling them to identify their needs and' goals, and in making them aware of how to achieve their objectives.

Multigrade Teaching, along with other educational systems, exists in a context in which individual rights and national expectations meet. There is again a continuum of which these two concerns are at opposite ends with education playing a key role in respecting the former but being the agency for implementing the latter. In Multigrade Teaching, the government appointed teacher has a key role in representing the national interest to communities which may not always respect that interest, and to parents and children whose own needs dominate their existence. This has to be recognized in the political context.

The context of schools also has a political dimension. Control over Multigrade Education may be exercised by national or provincial governments acting separately or together according to their constitutional powers, the local authority and the immediate community of parents. The Multigrade school may be the responsibility of all or any of these administrative power bases. Such responsibility would be co-extensive and include:

- ◆ the formal control of Multigrade schools,
- ◆ the responsibility for resourcing Multigrade schools, and
- ◆ the responsibility for the curriculum in Multigrade schools.

The general tendency is for the administrative power to be controlled if not exercised from the most central form of government in any one system, noting the particular case of federal forms of government. It should be noted that where countries require local content in the curriculum, it is, in part, a local responsibility. But however countries manage their school systems the political dimension can not be ignored.

A critical political future of Multigrade Teaching is its resourcing which is widely regarded as inadequate. The plea for adequate resources for Multigrade Teaching must finally be heard by politicians, if this aspect of need is to be addressed. It does so happen that in most countries the Multigrade Teaching school is found in the context of poverty. This means that the question of adequate educational resources quickly broadens to one of addressing poverty at large.

To summarize, the political pressure on Multigrade Teaching schools is considerable. On the one hand they are one mechanism expected to realize national political and social goals; on the other hand they are often inadequately resourced to meet those goals. Seemingly, however, despite this dichotomy, these schools are going some way to meeting the task expected of them.

Multigrade teaching in primary schools

Administrative Considerations

A first line of administrative concern is the manner in which laws, regulations and policies usually at the national level, relate to Multigrade Teaching. Whilst the traditional approach has been not to differentiate between Multigrade Teaching and single grade teaching, initiatives by legislatures and governments in recent years have shown a trend to identifying Multigrade Teaching as a different and legitimate form of primary education requiring legislative, regulative and policy support.

In Viet Nam, for example, a 1993 law legitimized the existence of Multigrade Teaching schools. Further, teacher training of minority people was mandated by law and teachers salaries for Multigrade Teaching were determined as double those of single grade teachers. Teaching and learning materials for Multigrade Teaching schools were also to be provided free of charge. Multigrade Teaching schools were required to accept all children who sought to enter school, and the repeating and dropping-out of students was not permitted.

Indonesia has adopted a policy giving the same status to Multigrade Teaching schools as to single grade schools. Compatibility between Multigrade Teaching and regular schools in terms of evaluation is also required. Further the community is required to contribute to Multigrade Teaching.

The national government in Pakistan sets general educational targets and these are given to provincial governments. Educational policy, general guidelines and funding phases are determined by the national government and the remainder is resolved by the provincial level.

The Philippines government has spelt out a policy for organizing more Multigrade Teaching schools where incomplete schools exist. (An incomplete school is one where not all grades are taught).

In China, ten per cent of primary classes are Multigrade Teaching classes in 11 of 30 provinces. In Shanxi province in North China, the percentage of Multigrade Teaching classes has reached 36.2 per cent and in eleven provinces the Multigrade Teaching classes comprise 12.2 per cent of all classes. An Association concerned with research in Multigrade Teaching has also been established, which has organized some ten workshops on Multigrade Teaching.

A number of countries have adopted policies with respect to Multigrade Teaching schools which are mentioned here only by way of example. The substance of these policies is dealt with more fully elsewhere in this document.

Policy on funding, for example, is marked by incentive payments in some countries. Additional monies are given in Indonesia by local governments to encourage community participation in Multigrade Teaching schools. A proposal to give an incentive

Educational politics and multigrade teaching

to Multigrade Teaching teachers in the Philippines by way of a hardship allowance is being discussed and in Viet Nam such payment is already part of government policy.

The provision of free textbooks and materials to Multigrade Teaching schools is a policy in several countries such as Indonesia and Viet Nam where otherwise fees might be charged. In Pakistan, free-of-cost textbooks have been provided in some instances to enhance the participation rate of children at primary level.

There are several examples of special policy treatment being made by authorities with regard to the employment of teachers.

Indonesia and Nepal make provision for the faster promotion of Multigrade Teaching teachers, although only in combination with other factors in the latter case. Pakistan has a nomadic teachers program in which block money is provided for by the national government, while provincial governments determine how the money is spent.

In Nepal, there is a special teacher training for Multigrade Teaching teachers. This program which began as a pilot project with forty teachers will have 1500 teachers in training in 1994. There is no discrimination between Multigrade Teaching and regular teachers in terms of the content of the courses, except when dealing with teaching technique.

Community contribution is the subject of policy in Indonesia which has a provision whereby the village headman and council are required to motivate children and their parents to ensure enrolment and attendance at school. In China, special policies relate to minority groups. There are examples of provinces where 33 per cent of the population belongs to minority groups and 50 per cent of these have their own language. One such province wants to train minority people as teachers to overcome language barriers in schools. If trained teachers are not available, local persons will be hired for the first two years of schooling provided they speak Chinese which is the language of education.

Government policy on evaluation has its place in Indonesia where the law on evaluation requires non-formal education to be compatible with traditional schooling. In China, the evaluation of Multigrade Teaching classes and teacher planning has been published in some provinces. In other provinces, researchers are analyzing Multigrade Teaching.

Administrative re-arrangement has also been undertaken in some countries to provide better for educational provisions. In Indonesia, there is presently a dual system for the administration of primary education. The appointment of teachers is made by the Ministry of Education but the payment of salaries, promotions, transfers and placements are delegated to the Department of Interior and Local Government. The formulation of educational policies, curriculum, rules and regulations is done by the Ministry of Education. There is now a move to place all the foregoing functions in the Ministry of

Multigrade teaching in primary schools

Education and to make the Department of Interior responsible only for the construction of physical facilities for schooling.

At the general administrative level of government, therefore, there are examples of laws and policies directed specifically at the provision of Multigrade Teaching.

Classroom Management

Teachers in Multigrade Teaching schools need to be very flexible in their management of classrooms to fit particular teaching situations, the physical environment and the composition of the class. The comments and diagrams set out below are offered in assisting creative thinking for classroom management.

Viet Nam has different arrangements of furniture depending upon the activities to be undertaken. To secure discipline, pupils are given guides/standards to follow. In classroom instruction, pupils are grouped so that a group works with the teacher at one time while the rest of the students are involved in self-directed study. Pupils' work is displayed on the walls of the classroom as are teachers' teaching aids, a practice only recently encouraged. Most classrooms have small libraries.

In China, classroom provision is not a problem because there are enough classrooms. Classrooms usually have one blackboard each. The grouping of pupils is similar to that in Viet Nam and the Philippines.

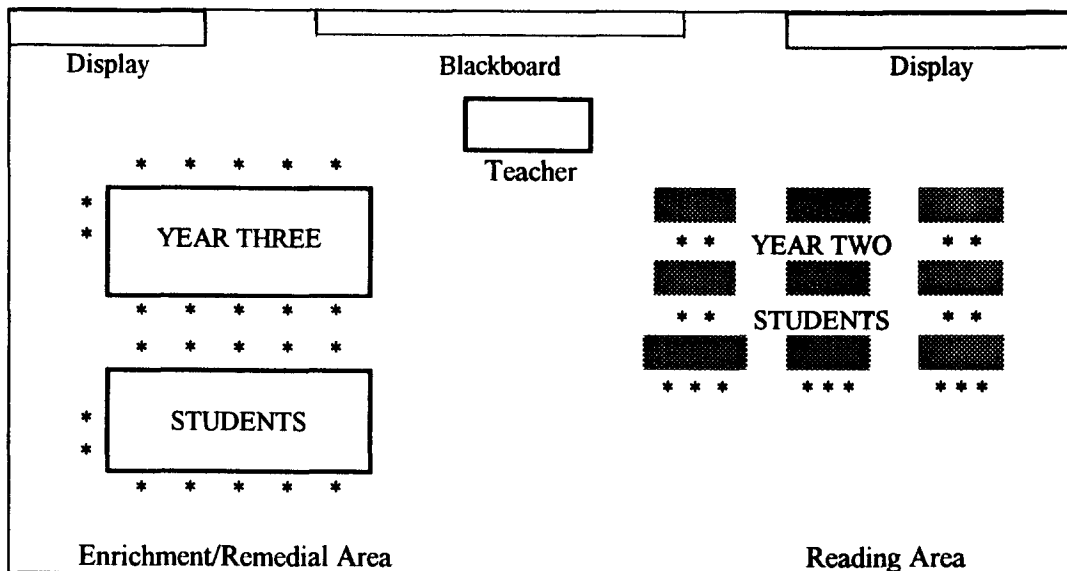
Classroom management in the Philippines is a very important consideration in Multigrade Teaching. While skills and knowledge are highly regarded, equally valuable are the strategies and methods that the teacher uses because through them, pupils learn and acquire desirable values. The arrangement of classroom furniture and the grouping of pupils in the Philippines depends on the activities to be undertaken. In skill subjects such as reading, language and mathematics, pupils are grouped by ability across grade levels. While the teacher works with one grade level, the two other groups have self-directed activities or seat-work. In other subjects more informal arrangements are utilized.

Classroom arrangement in Malaysia is similar to the Philippines. There are enough classrooms for the number of children attending as the enrolment in Multigrade classes is quite small. The arrangement of classroom facilities is adapted to the method of grouping used.

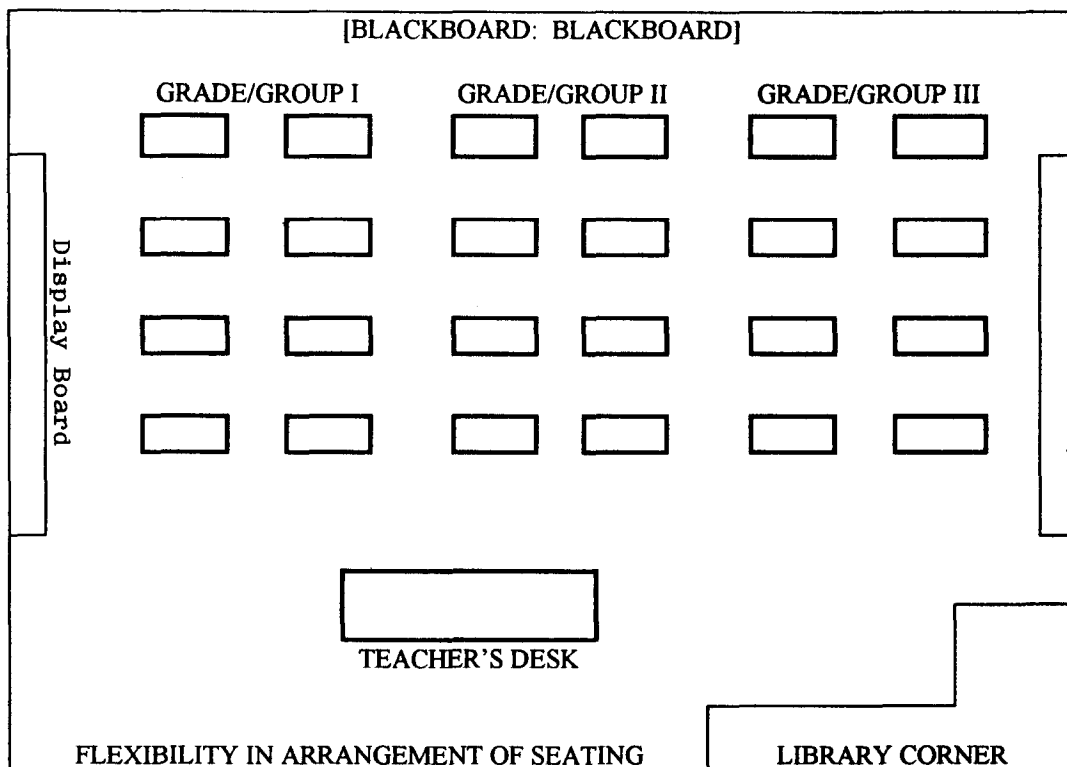
Furniture is available for re-arrangement in Indonesia. The arrangement of classrooms and pupils is flexible depending upon the objectives of the lessons and activities. Pakistan also has flexible classroom arrangement to maximize learning. Nepal has no hard and fast rules in terms of classroom arrangement. It, too, encourages flexibility.

Examples of seating arrangements have been presented below to indicate the flexible approaches that can be adopted.

MALAYSIAN EXAMPLE



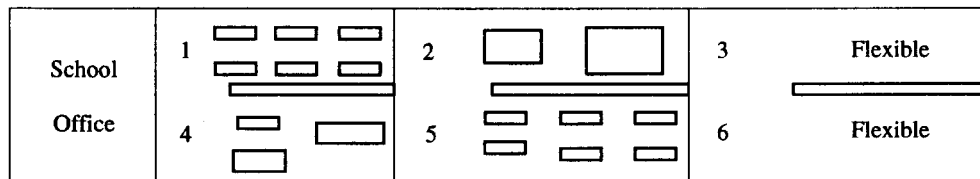
PHILIPPINES EXAMPLE



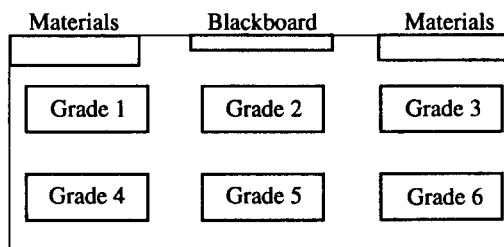
Multigrade teaching in primary schools

INDONESIAN EXAMPLE

Small School

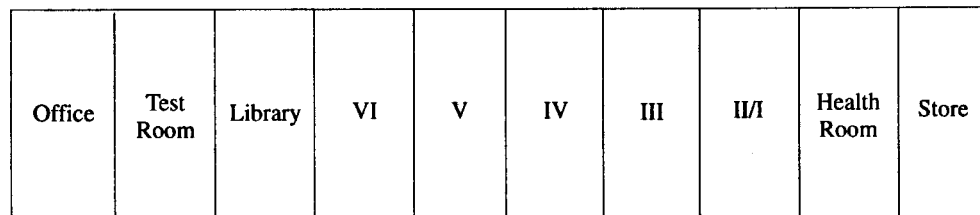


Learning Post

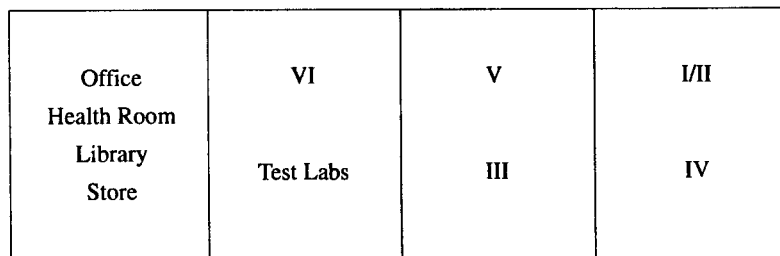


Pamong Schools

Ten-room School

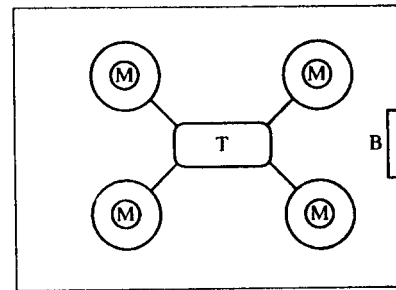
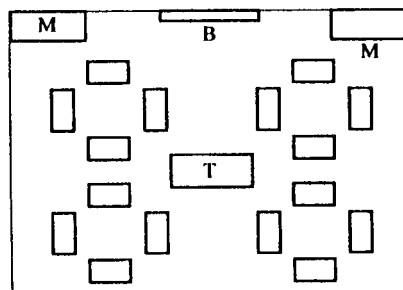
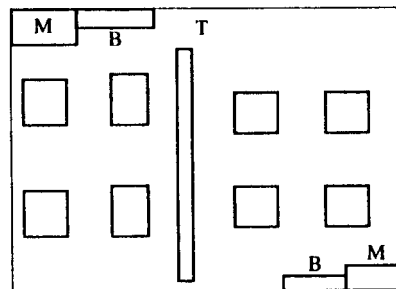
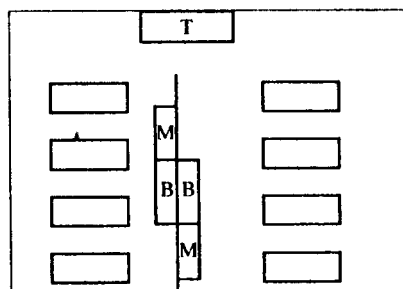
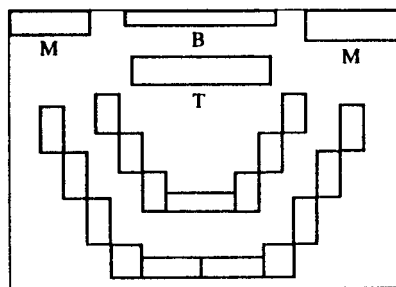
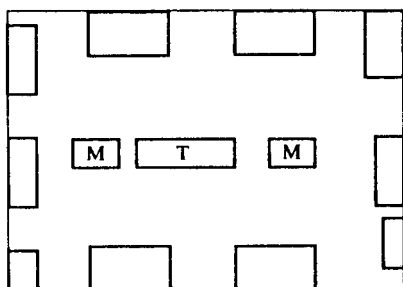
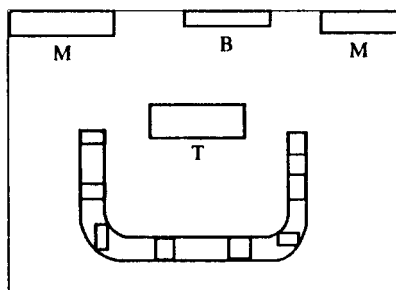
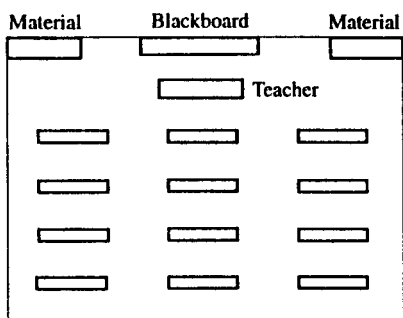


Four-room School



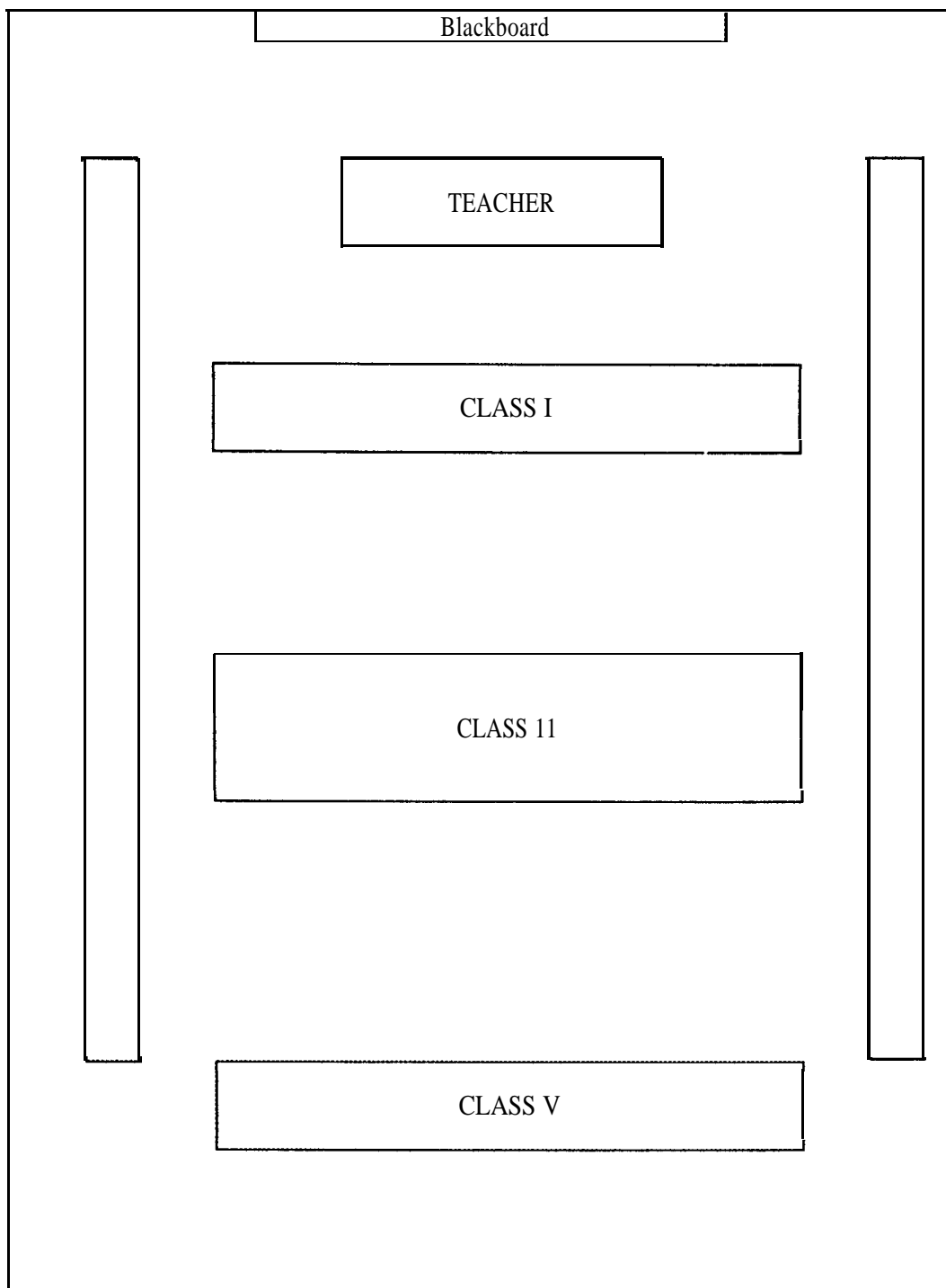
Seating arrangements must remain flexible according to the method used.

EXAMPLES FROM NEPAL



Multigrade teaching in primary schools

PAKISTAN EXAMPLE



Note: Mats are provided for sitting on

Chapter Six

THE FUNCTION AND ROLE OF THE MULTIGRADE TEACHER

In the attempt to delineate the functions and roles of a Multigrade teacher it becomes apparent that much of the discussion related to this topic is not concerned with the roles and functions of the teacher within the classroom, school and community, but rather with the more global qualities which any person brings to the work situation.

The more global qualities include the following:

- ★ dedication, qualification and commitment
- ★ competency in the language of the community
- ★ highly developed skills as a communicator
- ★ efficient manager/administrator

A number of functions which Multigrade Teaching teachers must carry out have also been enunciated. These are as follows:

As Teacher

The main function of the Multigrade teacher is to teach students by imparting knowledge, developing skills and inculcating desirable values and attitudes among pupils. The teacher is expected to be versatile and utilize different strategies to make learning meaningful and effective for all students in his or her classroom, no matter what individual differences may exist among the students.

As Facilitator

The teacher should be able to understand differences between pupils, be able to motivate them to learn and guide them through their learning materials. The teacher should be able to do this for all grade levels in the classroom, no matter what curriculum subject is being studied. The teacher should not only be a provider of knowledge but should also be a facilitator of learning and enhance learning both at the group level and on a one-to-one basis.

Multigrade teaching in primary schools

As Community Liaison/Resource Person

In many situations, Multigrade Teaching teachers, because of their training and position, assume an important position in the local community. This is the case, not only in the eyes of the pupils, but also from the parents' perspective. Thus, the Multigrade teacher is the critical link between the school and its community.

The nature of many situations where a Multigrade Teaching school exists is such that the co-operation and assistance of the local community is needed to improve the quality of educational services that Multigrade Teaching schools provide. This **may** include community involvement in such diverse activities as building and maintaining classrooms, assisting in the preparation of curriculum teaching aids and acting as a para-professional teacher.

The teacher should seek to involve the community in the life of the school in the following ways:

the teacher can seek the help of local communities in providing a suitable site for the school location and the teacher should participate in all of the various local events and activities; celebrations, holidays and even funerals. In this way, the teacher will come to be seen as a genuine and committed member of the community

As Social Worker/Counselor

The Multigrade teacher is often the most broadly and well educated person in the community (in a formal sense as distinct from non-formal) and as such, plays an important role as an adviser to students and their families in a wide range of social matters. The teacher may be seen as a highly respected role model and one from whom advice is sought. Thus, the teacher may find that his or her activities are directed not only to students in the school but also to parents and other members of the community.

As Planner

Planning is a critical function for the Multigrade Teacher. Appropriate planning by the teacher will result in classes which are more productive for the students and easier for them to follow. The tasks that the Multigrade teachers must carry out are more complex than the corresponding activities of regular teachers in that they must plan for the activities of students across a number of grade levels. Thus, for each grade level for which the teacher is responsible, he or she must determine the answers to the questions:

- * whom do I teach?
- * what must I teach?
- * how do I teach it?
- * when do I teach it?
- * why do I teach this?

Once the teacher has determined the answers to these questions, he or she must then devise an implementation plan in order to achieve the objectives of the lesson. Such implementation strategies include lesson planning, selection of activities, time-tabling and the like. All of these must be carried out before the actual lesson is given.

As Evaluator

One of the roles which a Multigrade teacher must carry out is to monitor the progress of pupil's learning so as to ensure quality of education. Usually, this requires teachers to determine the educational levels of pupils when they first enter schooling, during the school year and at the end of each school year. Therefore, assessment should be considered a continuous and integral part of the teaching process.

Types of Assessment:

Entrance Tests

Entrance tests are usually conducted at the beginning of the schooling process, although they may also be given to pupils who have been absent from the school for lengthy periods of time. On the other hand, pupils will often enter the school during the school year. These children come from families who have moved. In some countries of the region, these types of itinerant movements are quite frequent and thus, many pupils arrive at a school during the year rather than at the beginning of the school year. These students also require an entrance test of some type.

The purpose of these entrance tests is to determine exactly the educational situation of each pupil is. It is as a result of these tests that each pupil can enter or resume his or her studies at the appropriate grade level. More importantly, test results will assist the teacher to identify the particular stage within each grade that individual pupils have attained and therefore help the teacher to provide appropriate individual instruction. Test results may also help to persuade the teacher that the initial allocation of students to grade groups should be altered.

Multigrade teaching in primary schools

Regular Assessment

Regular assessment is carried out for the same purposes as those described above but is administered routinely through the school year. Such assessment may be carried out daily, weekly or monthly. The frequency of such testing will be determined by the purpose for which it was designed.

Periodic Assessment

Periodic assessment is often used for specific purposes, such as determining if students have understood a particular topic which has just been completed. Means of assessment include: short tests, topic tests and the use of homework.

Self-assessment and Peer-assessment

It is often possible to ask pupils to assess their own work or the work of their peer group. Alternatively, older students may help the teacher to assess the work of younger pupils. It is often the case the student workbooks are designed for these types of assessment.

As Materials Designer

Although various curriculum materials are usually prepared by central and/or provincial authorities of education, Multigrade teachers still need to develop their own additional materials. These additional materials serve the purpose of meeting actual and concrete needs of Multigrade Teaching within the local context. They also assist in making a national curriculum more relevant to the local needs of the community.

Examples of such curriculum materials include the following:

- ◆ designing and making small boards, flash cards, etc. to save time in the classroom and to maximize the time which pupils spend on learning tasks,
- ◆ using local materials to develop instructional materials and to encourage students to make their own,
- ◆ designing workbooks which are suitable for student use within the local context and conditions, and
- ◆ including within these locally designed materials and workbooks activities and knowledge which are relevant to the local culture.

As Para-professional Trainer

The teacher has a critical role in the training of parents and other local community members to act as facilitators for the learning of students. This type of activity is different

The function and role of the multigrade teacher

from the teaching of pupils and, therefore, will require drive and creativity on the part of the teacher in order to make this relationship between teacher and teacher-aid a successful one.

One example of such training is for the teacher to spend some time training and giving guidance to parents on how they can help with their children's homework. The teacher may also train parents to test their children on the day's lessons at home.

A further example is where the opportunity exists for the Multigrade teacher to be assisted in the classroom by parents or other local community members. The Multigrade teacher needs to train such a person so that the maximum benefit can be achieved from such a valuable resource.

As Government Extension Worker

Many Multigrade Teaching schools are situated in isolated and remote regions and the schools often form the centres of such communities. As a result of the teachers' education and social status, they are usually seen as having a high prestige and so are sought out by community members for information on various matters. Thus, community members will often seek out the teacher, either at school or at his or her home to discuss both educational and non-educational matters. In this way, many policies of the government, such as family planning and health, can be better put into practice with the help of teachers. In addition, such communication between teacher and community can be useful in providing communication from isolated local community members to government officials.

As Action Researcher

Teachers are not usually trained to be educational researchers, since their main task is to teach. However, it is through research that improvements in teaching take place. In schools where access to other resources is easily available, it is not as critical that individual teachers be researchers since they can easily seek the advice of more experienced educators. However, in Multigrade Teaching schools this advice and resource is not as easily and readily available. Therefore, the Multigrade teacher must also be a researcher, that is, a person who asks questions in order to understand better certain phenomenon. Such research questions include:

- ◆ what makes instructional materials and aids useful in teaching and learning in the local context?
- ◆ how can the enrolment rate be increased and the drop-out rate reduced?
- ◆ what types of games and sports should be played in the school?
- ◆ what useful extra-curricular activities can be arranged and when?

Multigrade teaching in primary schools

- ◆ why certain students are not learning as well as might be expected?
- ◆ how to use local resources, including students and monitors, efficiently and effectively? and
- ◆ what classroom strategies and management enhance learning for different activities?

It is not an expectation that the Multigrade Teaching teacher become an expert in research methods but, rather, is able to formulate appropriate questions in the classroom setting, seek and obtain the information necessary to answer these questions and be able to put into action those changes which are necessary – all of which is caught up in the term “Action Research”. In summary, the teacher must always have an enquiring and evaluating mind.

As Quality Controller

A major national concern has been to provide education for as many people as possible. The attainment of this objective has been difficult for many countries, particularly where, for example, some of the population lived in remote and isolated regions, minority groups used different languages, people lived a nomadic lifestyle and the like. As this objective of education for all has increasingly being achieved, concern is being directed to the quality of education being provided to students.

Therefore, it is no longer sufficient for a Multigrade Teaching teacher merely to provide education. Rather the teacher must now ensure that the teaching and learning that takes place is of high quality. As a result, one of the major functions of teachers is to monitor both the quality of their teaching and the learning outcomes among their students. This monitoring for quality will include the teaching process, the materials being used and the assessment procedures being employed.

As Surrogate Parent

In remote and isolated communities, particularly where the teacher speaks the local language and is well accepted by the local community, the Multigrade Teaching often forms a closer relationship with his or her pupils than is found in city schools and single grade schools. Furthermore, the atmosphere in a Multigrade Teaching school classroom is more like that of a home since students are not separated by grade levels. As a result of these factors, the Multigrade Teaching teacher is often seen as a surrogate parent to various students. Thus, the teacher often interacts with students on the basis of this relationship rather than on the basis of the more formal teacher-student relationship. For example, the teacher may help the students to be neat and clean, to purchase books and materials from the market, to help them with their homework and to persuade students to attend school regularly.

As Financial Manager

The Multigrade Teaching teacher may also be required to be the manager of the finances of the school in some contexts. In remote and small communities, the school may be the largest individual business in the community. The Multigrade Teaching teacher, because of his or her education, may also be the most qualified person in the community for financial administration.

Financial activities which may become the responsibility of the Multigrade Teaching teacher include:

- ◆ collection of money from the community for minor repairs and maintenance of school buildings and grounds,
- ◆ collection of money from students for the purchase of sports and games materials,
- ◆ distribution of money for organization and arrangement of study tours, games competitions and the like,
- ◆ acting as treasurer for the finances of the school and perhaps also the community and
- ◆ maintaining the accounts for funds accrued to the school by selling produce to the market.

As the Representative of Cultural, Religious or Political Values

The Multigrade Teaching teacher as an educated person plays an important role in the life of the community. The activities which the Multigrade Teaching teacher carries out will vary from one country to another. In addition, within one country, the activities of the Multigrade Teaching teacher may vary from one region to another depending upon the individual situations.

The duties of the Multigrade Teaching teacher may include some of the following, although it should be noted that in some countries, certain of the activities mentioned below are clearly not the function of the teacher:

- ◆ organizing activities such as fairs, festivals, national and religious days,
- ◆ arranging singing, dancing and other community activities,
- ◆ acting as a religious preacher,
- ◆ acting as the Imam,
- ◆ leading funeral prayers,
- ◆ helping government officials to conduct elections, population census,

Multigrade teaching in primary school

- ◆ acting as a postman,
- ◆ acting as an interpreter of government policies,
- ◆ assisting in the maintenance of law and order, peace harmony and security within the local community and
- ◆ acting as a revenue collector for the government.

The function and role of the Multigrade Teaching teacher maybe considerable and appropriate training and support are essential, if the tasks are to be carried out appropriately.

Chapter Seven

TEACHER TRAINING

Introduction

Multigrade Teaching has emerged in most member states of APEID as an educationally and economically viable means of addressing both national aspirations with regard to schooling and the demand for it, particularly in remote, minority-populated or disadvantaged areas. National, sub-regional and regional workshops have assessed the strengths and weaknesses of Multigrade Teaching. In a sentence, it is seen to have considerable strengths in providing an educational delivery medium for meeting national needs, with its two principal weaknesses being its under-resourced character and, more critically, its failure to be serviced as a distinctive pedagogy such that inappropriate modalities in terms of teacher education, curriculum development, classroom management and evaluation are applied to it.

There is a universal problem of attracting people with appropriate backgrounds and interests into the teaching profession. This is generally the case but is exacerbated for Multigrade Teaching schools because of the geographical and social locations of such schools. In some countries, a financial or social incentive is provided to attract better quality people into Multigrade Teaching schools. For example, Viet Nam provides additional salary for teachers in Multigrade Teaching schools. Although it is not the case for Multigrade Teaching primary schools, in China a potential change in personal status makes secondary teacher training an attractive vocation for rural students. However, in all countries the problem exists of providing appropriate and sufficient incentives for high quality students to want to train as Multigrade teachers.

The training of Multigrade Teaching teachers is complicated by the fact that not all teacher graduates will experience such teaching. In some countries, the percentage of teacher graduates who will experience Multigrade teaching is relatively low. Thus, the question is raised as to the need for pre-service training and practical experience in Multigrade Teaching techniques for all trainee teachers. This problem is heightened in those countries where significant numbers of teachers are either trained by the private sector or are non-government teachers with little formal training.

Existing Pre-service Training Provisions

In the majority of countries of the region, there is no separate training for Multigrade Teaching. Rather, teacher trainees are provided with the same pre-service courses as those which are used to prepare regular teachers. In China, the existing course includes a thirty-six hour course which serves as an introduction to Multigrade Teaching.

Multigrade teaching in primary schools

Nepal also includes material relevant to Multigrade Teaching with two to three lectures (in a two year programme) being devoted to the meaning of Multigrade Teaching and the advantages and disadvantages of Multigrade Teaching.

In Pakistan there is no concept of Multigrade teaching and no special professional preparation. Teacher Training courses are provided based on the special needs of the primary school teachers who teach five classes from I - V in remote and inaccessible areas. Generally those teachers who possess the Primary Teacher Certificate (PTC) courses are appointed for teaching at Multigrade learning schools. They acquire the strategies and techniques of teaching in Multigrade schools through experience and experimentation.

The existing courses for teachers is the Primary Teacher Certificate (PTC) which has the following content:

- * Urdu Language
- * Mathematics
- * Social Studies
- * Islamiyat (Islamic Studies)
- * Arts & Crafts
- * Physical Education
- * Child Psychology
- * School Administration
- * Class Management
- * Teaching Practice

The content of an ideal course for Multigrade Teaching pre-service training in Pakistan would include:

- * Urdu Language (National)
- * Local Language
- * Social Studies
- * Islamiyat (Islamic Studies)
- * Physical Education
- * Arts & Crafts
- * Child Psychology
- * Community Development

- * Multigrade Teaching Theory
- * Multigrade Strategies and Techniques
- * Development of Instructional Materials (Low-cost and locally available)
- * School Administration
- * Class Management
- * Teaching Methodology
- * Teaching Practices based on Multigrade Teaching Schools

In Viet Nam, there are specific courses for students who will become Multigrade teachers. These courses are provided over a three month period by Teacher Training Colleges and consist of the following content:

Educational Psychology (theory and practice):

1. Multigrade class
2. Teaching principles for process of teaching Multigrade Teaching classes
3. Organization of instruction for teaching Multigrade Teaching classes
4. Teaching in the Multigrade Teaching class

Teaching Methodology:

1. Vietnamese language
2. Mathematics
3. Nature and society
4. Technical manual work
5. Aesthetics subjects
6. Singing
7. Physical Education and Hygiene

Teaching practicum (one month).

Required Curriculum for Pre-service Education

The following components for Multigrade Teaching education have been identified:

Multigrade teaching in primary schools

- * Essentials of Multigrade Teaching – teaching theory, strategies and techniques,
- * Specific curriculum studies aspects of Multigrade Teaching,
- * Development of instructional aids using locally available low-cost materials,
- * Specific techniques of classroom management,
- * Administration tasks for Multigrade Teaching schools,
- * Local language and culture,
- * Introduction to cultural anthropology,
- * Project relevant to Multigrade Teaching,
- * Practicum in a Multigrade Teaching school.

Existing In-service Training Provisions

Different models of in-service training currently exist in different countries. Some of these models are more formalized than others. In some countries, teachers are largely responsible for the organization of their own in-servicing needs. In these cases, clusters of teachers (and schools) organize their own needs and request provincial-level officials for appropriate experts. Alternative approaches include month long special training in Multigrade Teaching techniques: the use of an apprenticeship model, where an inexperienced Multigrade teacher spends a probationary period working alongside an experienced (or master teacher) Multigrade teacher.

The content of in-service courses will obviously differ between countries. However, the topics below represent what seem to be the common concerns of the majority of countries in the region.

- * Introduction to the theory and practice of Multigrade Teaching
- * Lesson planning for the Multigrade Teaching school
- * Techniques of Multigrade Teaching
- * Curriculum resources for Multigrade Teaching
- * Classroom management for Multigrade Teaching
- * Assessment and evaluation in Multigrade Teaching classes
- * Administrative strategies in the Multigrade Teaching school
- * Morality and values for the teacher in the Multigrade Teaching school
- * Community-school relationships

A Framework for Teacher Training

The curriculum framework appearing below is intended to provide a teacher education course for teachers in Multigrade Teaching schools. It is open for adaptation for use in teacher education institutions as a model course in Multigrade Teaching for pre-service purposes and also as a model for in-servicing supervisors, principals and teachers charged with the responsibility of Multigrade Teaching schools.

The assumption underlying this framework is that teachers are competent in terms of subject matter to teach to the required level of competence required of the pupils in the school. If this is not the case, it is a matter of separate concern to upgrade these competencies of teachers. The fact that a teacher has had little or no teacher education is not a matter of concern: it may even be an advantage.

The objectives for this Framework for Multigrade Teaching teachers are:

- * to provide a Multigrade Teaching teaching force apprised of and committed to the goals of Multigrade Teaching;
- * to ensure a teaching force capable in terms of Multigrade Teaching curriculum design, classroom teaching and management, materials preparation and evaluation and able, therefore, to provide children in Multigrade Teaching classes and schools with an optimal learning experience; and
- * to ensure a cohort of such persons cognizant of Multigrade Teaching pedagogy and able to advise, support, inspect and administer their Multigrade Teaching responsibilities on the basis of Multigrade Teaching criteria.

The framework provides for modules on:

1. The Psychological and Philosophical Bases to Multigrade Teaching

- a review of the psychological bases to Multigrade Teaching
- a review of the philosophical bases to Multigrade Teaching
- Multigrade Teaching and single grade teaching: similarities and differences
- thinking Multigrade Teaching

2. The School Context

- profiling students
- the social context of the school
- the Multigrade Teaching school as a social organization
- the community as a teaching resource

Multigrade teaching in primary schools

3. Curriculum Development

- . principles of curriculum design
 - national curriculum requirements
 - integrated curriculum design
- . designing a Multigrade Teaching curriculum

4. Teaching Strategies

- lesson preparation
- . teaching modalities
 - remedial and enhancing strategies
 - implementing strategies

5. Classroom Management

- . **the learning environment**
- . the physical environment
- . time
- . discipline

6. Resource Development

- identifying and utilizing resources – human and physical
- developing multi-media teaching materials

7. Evaluation

- setting performance indicators
- methods of evaluation
- . teacher evaluation and self-evaluation
- . Multigrade Teaching evaluation

8. Coping Strategies

- coping with administrators/administration
- coping with the Multigrade Teaching setting e.g. isolation, family demands

- coping with stress
 - . professional development
9. Continuing Multigrade Teaching Education
- . Follow-up professional development is critical in maintaining a framework such as this.

Difficulties in Training Multigrade Teachers

Perhaps the major problem facing the training of Multigrade teachers is the inherent contradiction involved in seeking teachers who have highly specialized skills and knowledge concerning Multigrade Teaching, but at the same time, having highly specific local knowledge. The contradiction comes from the fact that the large majority of Multigrade Teaching schools are to be found in remote regions, often where a minority culture lives. Thus, the teacher who is to teach at the Multigrade school needs to be specially trained in Multigrade Teaching techniques, usually in a training institution removed from this local culture. But at the same time the teacher must be someone who is familiar with the local language and area, and also sensitive to and knowledgeable about the minority culture.

This problem is further compounded when there is a difference in the value system held by differing cultures. This issue becomes complicated when the teacher who is from one culture is sent to teach in a region where a different culture predominates.

One striking example of this problem can be found in Viet Nam. There is a difficulty in attracting majority culture Vietnamese teachers to go to Multigrade Teaching schools because they are located in remote and difficult conditions. On the other hand, the nature of the geographical dispersion of minority people's villages makes it difficult to train them as teachers. Thus, minority people usually need to attend boarding schools in order to be trained as teachers. However, the situation of a boarding school is difficult for these minority people since they are separated for lengthy periods of time from their own culture and language.

Therefore, there is a problem of balancing these two priorities namely, appropriate training and knowledge of local language and culture. It is obvious that the result of balancing these two concerning will have a direct impact on the quality of teaching available in Multigrade Teaching schools.

There are also problems related to the gender of teachers. It is often difficult to locate and appoint sufficient numbers of male teachers. This is particularly an issue in those countries where for religious and/or cultural reason, separate schools for boys and girls are required.

Multigrade teaching in primary schools

A practicum component of teacher-training programmes is generally found in most countries of the region. This practical experience is considered to be a vital part of teacher preparation. However, the provision of Multigrade Teaching practical experience is not always easy. It is the case that not all teachers will need to teach in such situations, therefore making such a practicum a compulsory component for all trainee teachers is not appropriate. Furthermore, Multigrade Teaching schools are often found in remote regions of countries and usual appointment and supervision of trainee teachers on such a practicum is not simple.

Team teaching is a useful technique in terms of a teaching strategy, particularly for newer, inexperienced teachers beginning their careers in a school where a more experienced teacher is available. However, the use of such a strategy would require teachers to be trained in its use. Thus, specific in-service training would be required to maximize the potential benefit of such a strategy for use by experienced teachers.

Peer teaching is also a potentially useful technique for use in Multigrade Teaching schools. Again, the benefits of the use of such a technique will only occur if appropriate pre- and in-service training is provided to teachers. Quite specific training on the techniques of peer teaching would be required.

There is an increasing need for Multigrade Teaching teachers to be able to assess (both on the basis of ability and social factors) the needs of individual students. The requirement for Multigrade teachers to be able to do this is probably more important than for teachers in regular schools because of the wider range of students with whom Multigrade teachers need to deal.

Chapter Eight

FUTURE ORIENTATIONS FOR MULTIGRADE TEACHING

In order to continue the programme of innovation for Multigrade Teaching education, discussions have been held with several country representatives concerning future directions in Multigrade Teaching. The aim of the discussions was to identify future areas of concern and priorities for improving the quality of Multigrade Teaching between now and the year 2000.

Major Themes

The following major themes were identified as being of priority for the period up to the year 2000 in terms of the development of Multigrade Teaching. For Vietnam critical factors are the training of teachers, developments in in-service training, an increase in the quality of learning and increasing the exchange of information between countries in the region on Multigrade Teaching. The importance of the Multigrade Teaching system, official recognition of Multigrade Teaching as a delivery mechanism, effectiveness and efficiency of teaching with Multigrade Teaching and the improved status of Multigrade teachers relative to single-grade teachers are important issues for Pakistan. For Indonesia, local content curriculum development in Multigrade Teaching, the expansion of Learning Posts and small schools, community participation in Multigrade Teaching and visiting teacher models are criteria for future evaluation

Curriculum development, youth empowerment through Multigrade Teaching, the Training of at least one teacher in every school in the use of Multigrade Teaching techniques, the development of a monitoring system for Multigrade Teaching teachers, co-ordination amongst the providers of Multigrade Teaching, research into Multigrade Teaching and issues related to evaluation are significant considerations for other countries in the region.

Teacher Education

In the Philippines, the priorities which have been suggested include the training of national and regional trainers, the training of Multigrade Teaching teachers and the incorporation of Multigrade Teaching teaching into the curricula of teacher training institutions.

Multigrade teaching in primary schools

The issues identified in the case of Nepal were that teacher education programmes in Multigrade Teaching needed to be encouraged and expanded, the quota of Multigrade Teaching teachers in training needed to be increased and teacher training colleges should be required to incorporate Multigrade Teaching courses in their programmes.

In the case of China priorities have been identified for the improvement of Multigrade Teaching in Guizhou province. The training of teachers was given high priority as more than 12,000 teachers, including the current 6,000 unqualified teachers, need to be trained in Multigrade Teaching. Such training needs to occur at different levels. Pre-service training will occur in normal schools at the prefectural level and in-service training will be organized at provincial, prefectural and county levels.

In Indonesia, Multigrade Teaching education needs to cover not only the large schools but also the small schools. Different training needs to be undertaken for the two types of schooling using a school-based approach and comprising:

- ✘ training for the headmasters,
- ✘ training for the Multigrade Teaching teachers,
- ✘ training for the school supervisors, and
- ✘ training for the tutors and para-professional teachers.

Priorities for pre-service training in the next few' years include, in the case of Vietnam, a need for increases in the training of teachers and trainee teachers for teaching in Multigrade Teaching classes in hamlets in ethnic minority areas. The goal for Vietnam is to train a further 2,000 teachers during this period. Several countries had similar goals for expansion with an Indonesian expectation being that training should be developed in the use of multi-method and multi-media learning/teaching in a single-grade school as a skill transferable to the Multigrade Teaching situation.

Suggestions for in-service training needs included the organization of training courses based on group learning, self-directed and peer teaching in the case of Vietnam and special Multigrade Teaching in-service training organized at the school cluster Teachers' Centre (PKG/KKG) or subdistrict level for Indonesia. A learning-by-doing type of training could be arranged in this latter case. It was noted that for Pakistan lecturers in teacher training colleges needed to get special training in Multigrade Teaching.

Expansion

The question of the expansion of Multigrade Teaching has already been mentioned and is generally agreed upon by countries in the region. The specific proposal for expansion on the instance of the Philippines is for the 'establishment of 5,174 new elementary schools in villages with the use of Multigrade Teaching classes with two

Future orientations for multigrade teaching

teachers per school. Currently, not all elementary schools are complete with respect to the grade levels provided.

There will also be encouragement of the combination of Multigrade Teaching and other classes with existing teachers being trained in Multigrade Teaching. In addition, in Nepal it is proposed that the universalization of primary education, and education for adults and out-of-school children through non-formal education incorporating Multigrade Teaching should be examined.

Quality

Suggestions for improving the quality of Multigrade Teaching education are only beginning to emerge as this type of teaching begins to be recognized as being of worth. In several countries there is a need for strategies to be developed in order to convince governments of the potential of Multigrade Teaching. As this occurs authorities at all levels of administration will need to provide for the specific supervision of Multigrade Teaching and to develop appropriate policies and funding for it.

Facilities

Similarities and differences appear in suggestions from country representatives about the provision of facilities for Multigrade Teaching. The completion of materials for teacher training courses, a review of classroom equipment and furniture to allow for Multigrade Teaching textbooks and an increase in the number of classrooms and the provision of appropriate furniture for Multigrade Teaching have been cited as requirements. The need to develop written and audio-visual materials and teaching and learning kits for Multigrade Teaching along with an increase in the level of community support for the preparation of low-cost teaching materials have also received mention. Physical facilities, including housing for teachers and hostels for students are required.

The above summary of future perspectives on Multigrade Teaching flows from an extension of existing techniques and strategies. It is also worthwhile to relate Multigrade Teaching with other educational delivery methodologies which is taken up in the next chapter.

Chapter Nine

ALTERNATIVE SCENARIOS

The purpose of this discussion is to analyze the potential benefits of new information technologies including facsimile machines, computers, interactive video, electronic mail, audio-conferencing and video-conferencing for open learning teaching methods as they may improve the quality of education being provided in Multigrade school situations. At the same time, guidelines and recommendations need to be made in the context of difficult physical situations and limited resources for education.

The discussion also attempts to describe in brief the characteristics of Multigrade Teaching and open learning. It analyses the processes necessary for successful open learning and examines the commonality between open learning as it is practiced in the tertiary sector and Multigrade Teaching as it is carried out in the primary sector. Following on this, an analysis of likely problems of implementation of open learning techniques in countries of differing cultural contexts is provided. The final comments examine the impact of the new information technologies on Multigrade Teaching, both in theory and by example.

Nature of Multigrade Teaching

Multigrade schools can be found in almost all countries of the region, although the underlying reasons for their existence may well vary. As a result of these and other factors, the situation exists within Multigrade schools where one teacher is providing education across a number of grades within a single primary school.

Problems in Multigrade Teaching

A number of problems associated with Multigrade schools have been identified by Birch (1989).

Traditional Open Learning Delivery Techniques

Typically, what constitutes open learning or distance education is really a form of correspondence education. Correspondence education is usually teaching which is carried out by writing. Such teaching utilizes self-instructional texts and is supplemented by communication in writing between student and teacher. These are usually seen as two

separate but intertwined processes, the teaching exposition itself via self-instructional texts and the supportive communication via written communication.

Other terms which are often used to describe this form of education are “home study” and “independent study”. More recent descriptions of this type of study include the word “open”. This descriptor has more to do with the access of students to education rather than the mode of delivery. As Folks (1987) indicates:

Open learning is not synonymous with distance education; nor is distance education a subset of open learning. Distance education is a mode of learning with certain characteristics which distinguish it from the campus(school)-based mode of learning.

(Folks: 1987, p. 74)

One characteristic which is becoming associated with the notion of open learning as distinct from “normal” distance education relates to the degree of self-managed learning. However, it is more likely that student self-managed learning will become a reality when new information technologies are utilized, rather than the more traditional print-based materials.

A commonly accepted definition of distance education would seem to be that offered by Holmberg(1977):

The various forms of study at all levels which are not under the continuous, immediate supervision of teachers present with their students in lecture rooms or on the same premises but which, nevertheless, benefit from the planning, guidance and teaching of a supporting organization.

(Holmberg: 1977, p. 11)

Teaching Methodology

There are two components to the teaching methodology (three if the associated administrative function is included under this heading). The two components are the teaching exposition itself and the supportive communication processes that are provided as an adjunct.

The Teaching Exposition

Distance education uses pre-produced courses which are usually print-based and sometimes augmented by recorded audio tapes. In some cases, video tapes and radio/television programmes are also used to supplement written materials. These courses may be completely self-contained or they may serve as a guide to a set of readings and/or

Multigrade teaching in primary schools

other materials. These courses usually contain activities which students must complete, problems to solve, short questions to answer, essays to write and the like. Some of these activities require that students submit their work to their teachers, usually by mail; other activities have answers provided within the course materials. Work submitted to teachers usually constitutes the assessed component of the course.

The Supportive Communication Process

The second component of distance education, the supportive communication process, varies considerably in form across different teaching institutions. In some cases, students may never see or hear their teacher since all communication takes place via the written mode. In other cases, teachers may be in frequent contact with their students by telephone. Some institutions require students to spend a period of time (usually a small component of the overall period) in face-to-face contact with their teacher and their student peer group.

Baath (1980) has suggested the following as critical functions of this communication process:

1. Support students' motivation and interest by contact with an encouraging teacher and counselor.
2. Support and facilitate student learning by students' applying knowledge and skills acquired to tasks to be checked by and discussed with teachers as well as by feedback via teachers' comments, explanations and suggestions.
3. Give to students opportunities to develop their thinking while benefiting from teachers' criticisms.
4. Assess students' progress in order to provide them with an instrument by means of which they can judge their educational situation and needs, and by means of which marks can be awarded. This applies to assignments set for submission and then corrected and commented on, as well as to unstructured communication between teacher and student.

Structural Organization

The delivery of distance education can take place on different scales. On the one hand, it can be used for mass education where courses are developed for tens of thousands of students and many teachers are used to assess student work and comment on material submitted by students. In this scenario, the teachers may never come into contact with the original developers of the curriculum content. At the other end of the scale, a similar ratio of teacher to students may be used as that for on-campus or school teaching. In this scenario, the course teacher is usually the same person who developed and wrote the curriculum. Whereas the former model employs economies of scale the latter model sees

itself as fitting within the mainstream educational community. The balance between the two ends of the spectrum is obviously related to the size of the target population and the amount of resourcing available.

In either case, a systematic approach to the delivery of distance education is necessary. Holmberg (1989) has reviewed a number of organizational structures for distance education and has suggested the following essential components:

1. Planning
2. Developing curriculum materials
3. Catering for instructive communication
4. Counseling students
5. Administering curriculum development, curriculum distribution, instructive communication, counseling, etc.
6. Creating a suitable organizational structure for distance education
7. Evaluating the functioning of the overall system.

Administration of Distance Education

A number of services are required if a distance education delivery model is to be established. These services are obviously costly, although the return is in the larger number of students who can be educated compared to more traditional approaches.

Holmberg (1986) has outlined the services as follows:

1. The development and technical production (or, possibly, the selection and purchase) of courses for distance study and supplementary media; the development work requires special facilities for editing, visualizing, audio recording and for the work of project leaders, etc.
2. Warehousing facilities (not inconsiderable when large numbers of students are involved).
3. The distribution of course materials
4. Non-contiguous, tutorial, two-way communication between students and teachers.
5. Information and publicity about study opportunities offered.
6. Counseling.
7. Course evaluation.

These functions require a complex structure whereby the entire organization can operate efficiently. Among others, Singh (1975) has suggested that any organization

Multigrade teaching in primary schools

offering this mode of study have two wings, an academic staff wing and an administrative wing.

The above represents the structure of a relatively large organization. However, in many situations, a smaller organization would be more appropriate for delivery to Multigrade schools. For smaller organizations, Keegan (1986) has described two key features of the structure:

- 1. A course development subsystem*
This subsystem includes the planning, designing, crystallizing and recording of the teaching (together with the proposed methodologies and structures for presenting the teaching at a future date) in mechanical or electronic form.
 - 2. A student support subsystem*
This subsystem includes the activities designed by the institution to focus on the student's home (or remote school) that will provide a private and individualized presentation of the pre-recorded course content together with the stimulation of teacher and peer group clarification, analysis, motivation and nonverbal atmosphere that normally accompany the presentation of the lesson in oral, group-based educational provision.
- (Keegan 1986: p. 197)*

Holmberg (1989) has argued that the administrative wing of a distance education organization has the following roles in respect of provision of services:

- 1. Enable educators to offer high-quality teaching and supporting services to students.*
- 2. Provide reasonable and equitable availability of equipment and media.*
- 3. Provide correct, competent and courteous treatment of all letters, correct delivery of instructional material, information circulars, etc. and the proper reception of students calling in person or on the telephone.*
- 4. Provide a short turn-around time for assignments submitted in writing, on audio-tape and other media, and for letters applying for information and advice, containing questions, requests, complaints, or suggestions, etc.*

5. *Provide practical provision for the educational use of the telephone, the computer and other aids included in the working methods.*
6. *Provide accurate, easily available registration of data.*
7. *Provide careful checking of students' achievements and learning processes with a view to giving extra support spontaneously when someone seems in danger of dropping out or, if such intervention clashes with overall policy, at students' request.*
8. *Provide useful facilities, when required and possible, for supplementary service (oral refresher courses, group discussions, face-to-face consultations, laboratory or workshop activities, broadcasts, etc.).*
9. *Provide general efficiency in all of the above activities at reasonable cost.*

(Holmberg: 1989, p 134)

Comparison of Traditional Distance Education and Multigrade Teaching

It is of interest to compare the characteristics of effective distance education delivery to guidelines for effective teaching in Multigrade settings. In a sense, there are many commonalities between the two forms of education since in both cases the student or learner does not have immediate access to a “dedicated” (in the sense of a specialist grade/curriculum) teacher. The case for distance education has been stated above. A revisiting of the Multigrade Teaching situation would suggest that a grade one student does not have “immediate” access to a grade one teacher but rather, this student must “share” a teacher who has been trained as a grade one to seven teacher. Likewise, a grade five student does not have “immediate” access to a grade five teacher but rather, this student must also “share” the same teacher who has been trained as a grade one to seven teacher and so on. Both Multigrade Teaching and distance education have in common the distant relationship between the student and the teacher who would in “normal” circumstances be the appropriate teacher.

As a result of this commonality, it is useful to further investigate the knowledge which has been accumulated concerning effective distance education for possible application to Multigrade school education.

Guidelines for Effective Open Learning Education

Wedemeyer (1981) has outlined a number of guidelines for effective distance education. As broad principles, a considerable overlap with those arising from an analysis of effective Multigrade Teaching, will be seen.

These are as follows:

1. Instruction should be available any place where there are students – or even only one student - whether or not there are teachers at the same place at the same time.
2. Instruction should place greater responsibility for learning on the student.
3. The instructional plan or system should free teaching staff from custodial duties so that more of the teacher’s time and learner’s time can be given to truly educational tasks.
4. The instructional system should offer learners wider choices (more opportunities in subjects, formats, methodologies).
5. The instructional system should use, as appropriate, all the teaching media and methods that have been proven to be effective.
6. The instructional system should mix and combine media and methods so that each subject or unit within a subject is taught in the most effective way,
7. The media and technology employed should be “articulated” in design and use, that is, the different media or technologies should reinforce each other and the structure of the subject matter and teaching plan.
8. The instructional system should preserve and enhance opportunities for adaptation to differences among individual learners as well as among teachers.
9. The instructional system should evaluate student achievement not by raising barriers concerning the place where the student studies, the rate at which he/she studies, the method by which he/she studies, but instead by evaluating as directly as possible the achievement of learning goals.
10. The system should permit students to start, stop and learn at their own pace, consistent with learner short- and long-range goals, situations and characteristics.

These guidelines provide a useful framework for examining the application of technology and distance education methodologies to Multigrade Teaching situations as described below:

Curriculum Limitations of Distance Education

It is usually assumed that techniques of distance education are only applicable to certain areas of curriculum. Since the process is essentially both a non-interactive one and one-way (from teacher via written materials to student), distance education is thought to be appropriate to that aspect of education concerned with what is usually termed “knowledge transmission”. This is in comparison to acquisition of “thinking processes” or “deep knowledge”.

The use of non-print based materials makes this limitation less of an impediment to the wider use of distance education techniques. The application of the new information technologies within distance education will be described below, including several examples of work carried out in Australia and Viet Nam.

At the same time, there are certain dangers inherent in developing countries simply taking on-board a system of educational delivery which has been developed in western cultures.

As Meacham (1993) points out:

... the importation of models, concepts, expertise and technology from the developed world easily leads to an excessive degree of dependency, the emergence of a kind of post-industrial cargo cult and erosion of the local culture.

Thus, it is essential that educators from countries of the region take control of the technology and make their own decisions on how best to use its power in the service of education, whether it be for Multigrade Teaching, distance education, or any other application. Meacham goes on to argue that distance education may not necessarily result in better educational services for the rural poor but rather, it may simply result in yet another educational alternative for the urban middle classes. Thus, policy decisions relating to the use of open learning distance education methodologies applied to Multigrade schools need to be carefully developed by local educators.

Likely Problems of Implementation

There are many different factors which are likely to hinder the use of new information technologies in Multigrade schools. Economic factors are obviously a significant factor, although Roberts (1993) has argued that these are not likely to be the major hindrance. Roberts argues that distance education and technological processes in education are western concepts and as such are intimately related to western notions of education. Roberts uses his experience of education in the South Pacific to argue that western and non-western cultures are fundamentally different when it comes to education. His analysis of differences, based on the work of Shams-Abadi (1992), is outlined below:

Multigrade teaching in primary schools

Western Cultures	Other Cultures
Challenging, contradicting and questioning the teacher	Deferring to authority; one way flow of information
Being critical in one's reading, writing and verbal interaction	Receiving knowledge passively, unquestioningly
Writing essays and assignments on a regular basis	Writing short answers
Reading widely	Reading from one source/reading only the set text and notes given by the teacher
Raising one's voice/debating engaging in argument	Speaking quietly/avoiding disagreement
Looking a male in the eyes when both listening and speaking	Avoiding eye contact with a male (if one is a female), particularly if male is in a position of authority
No family/neighbours in the country; little contact with new neighbors	Living in an extended family, having close ties with family and neighbors
Living in a society which places strong emphasis on the individual	Respecting the group; consideration of others
Listening in a class and taking notes at the same time	Listening to the teacher and receiving written notes
Understanding examples drawn from Western culture	Understanding examples drawn from own culture
Having (and being expected to use) extensive library facilities	Possibly having limited library facilities
Using the written word as a tool	Seeing the written word as the truth
Taking exams that involve writing several essays/conveying one's own opinions	Sitting for predominantly multiple choice exams or exams that require students to regurgitate the facts
Comparing a range of (often conflicting) views	Accepting the viewpoint expressed by the teacher
Studying in one's own language	Studying in a foreign language
Continuous assessment	Exam as main mode of assessment (or only mode)
Skim reading many texts, articles reports	Reading one or few texts at great depth
Logical, linear cognitive style/pattern of thinking	Circular (and other) cognitive styles/patterns of thinking

This comparison again highlights the importance of not simply importing methodologies and curriculum content from Western cultures. Rather, in order to take advantage of the new information technologies for local education for appropriate use, it will be necessary for local educators to develop their own uses and applications.

Thus, it is necessary to carefully consider the situations in which distance education techniques can be usefully applied to Multigrade schooling. A useful application is where the quality of education is enhanced and at a cost which is reasonable.

Possible Future Technological Approaches

Relatively little application of distance education techniques to primary education has been carried out in developing countries. This is partly due to the emphasis on literacy programmed for large numbers of students with little formal education within the primary education sector. However, there are examples, mostly from Africa, where distance education has been used to train teachers still primary and Multigrade schools. These techniques have also been used for training of teachers in family planning and health education. Examples can be found in Holmberg (1985).

More sophisticated examples of distance education have also been used in developing countries. For example, broadcast radio and television have been used to deliver educational programmed. Examples can be found in Halliwell (1987) and in Young et al (1980). However, the real impediment to the use of these media in primary and in Multigrade schools is the one-way nature of the teacher-student interaction. That is, there is no way that the teacher can obtain feedback from students, as to whether they are physically there, whether they are listening and/or watching, and whether they understand or not. The advantage of using the new information technologies is that this one-way interaction can be replaced by two-way interaction.

Kirk (1993) describes a possible scenario for a state-of-the-art technologically-based educational delivery service which might operate across the entire Asia-Pacific region. He sees the potential for distributed classrooms where students communicate with their teachers who may even be in different countries. The basis for such an educational delivery system is a sophisticated and powerful computer system which links through regional satellites to other computer systems. Such computer systems would be capable of being used as individual desktop video-conferencing units. Language and cultural translations would occur through an artificial intelligence built into such computer systems.

In terms of the computer equipment necessary to provide the service described above, it is already possible. On the other hand, the economies of scale in education both within developed and developing countries are such that an implementation of the above is not yet feasible. However, it is useful to consider that the new information technologies provide us with models of educational delivery which are radically different from those

Multigrade teaching in primary schools

with which we have grown accustomed to dealing with. Thus, in considering alternative models of educational delivery, our conceptual understanding needs to take into account the potential of this brave new world.

If such radical delivery systems, or approximations to them, are to be achieved for education in our region, then a consideration of the role of international agencies needs to be discussed. Perhaps of greater importance is a discussion of a collective responsibility for education being taken by countries of the region. While the technology for rapidly and powerfully improving the quality of education now exists, no individual country of the region will be able to afford the cost of implementing it on a large scale. Such collaboration is of critical importance.

The application of the new information technologies which has been described in this section may seem to many educators to be futuristic, fanciful and unobtainable. However, while no one application of the above scenario exists in a real educational setting, approximations to it do exist and these are described in the next section.

Examples of Technology-based Distance Education in Multigrade Teaching

The above section provided a futuristic view of the use of the new information technologies in developing countries. It is based on the premise of funds becoming available for such innovations. The examples presented below provide an outline of actual uses of the new information technologies in education, specifically in cases where Multigrade Teaching is the norm and distance education techniques are necessary.

Wiet Nam: solar powered two-way radio

An example of low-cost technology being used to assist in the provision of educational services to Multigrade schools in difficult contexts is provided by work in Viet Nam. This project was jointly managed by the Centre for Rural Education Research Unit at The University of Western Australia and the Research Centre of Education for Ethnic Minority Peoples which is based in Hanoi, Viet Nam.

There is a serious difficulty in providing adequate education for minority people living in the isolated mountainous regions of Viet Nam. Difficulties include cultural and language differences, isolation, lack of electricity and in some cases, serious diseases such as malaria. In addition, the various hamlets of a village may be separated by mountains which mean a two to four hour walk from hamlet to school. At the same time, there is a strong desire by these minority people for an improved education service.

A pilot project has investigated the effectiveness of two-way radio-based education in these circumstances. Two sites were established to determine the educational and technical feasibility of this type of education. Solar powered, hand-held UHF radios were

used to link the different hamlets. Vietnamese researchers developed written materials which were to be used in conjunction with the radios. One site, Son Hai, consisted of hamlets located around the edge of a large dam. Son Hai is one of seven mountainous villages of Luc Ngan district. The main minority is Nung. As it is inhabited in the mountainous region, Son Hai Primary School is arranged into five zones. Among them, there is a school which is eight kilometres from the centre (Donh Man zone). It is very difficult to travel from one place to another. In the dry season, pupils have to traverse various mountains and valleys and in the rainy season, they must go to school by boat.

The second site, a small village some distance from Binh Gia in Lang Son province was in a more mountainous region and required the installation of a solar-powered, radio-repeater station on the highest mountain of the region. One of the schools was in a hamlet only some three kilometres from the Centre of the village. However, an intervening mountain resulted in a four hour walk between the two. Thus, students were unable to attend the school in the centre of the village.

Both sites proved to be very successful, both from a technical and educational perspective. Teachers and students were able to use and maintain the radio systems. Learning outcomes also improved during a six-week experimental period.

Since solar power is free, there was also the opportunity to use the radio link for other purposes. Informal evaluation indicated that the radios were used by teachers to maintain social contact with their peers; for example, by reading the newspaper and singing to each other.

Australia: use of facsimile machines

In many rural towns in Australia, there are insufficient numbers of older students to justify (in an economic sense) a secondary school. In these cases, students undertake secondary education at a primary school via correspondence education. Typically, students have access to a separate room at the school and are managed by a primary-trained teacher, often the school principal. In these cases, the teacher has little specialist content knowledge of the curriculum being studied by the students. Typically, the students will range from year eight to year ten.

Traditionally, lesson materials and sets of readings are sent by mail to students, with students completing assignments and tests and returning these by mail to their teacher. The turn-around time for mail in some remote towns can be ten to twelve days. Thus, if a student encounters a particular difficulty with a section of the curriculum, then he or she often experiences a considerable delay.

In many schools in rural Australia, facsimile machines have been made available to students who are studying under the conditions described above. Students are able to complete their assignments and have almost immediate contact with their teacher via the fax machine. This availability has significantly improved the feedback processes for

Multigrade teaching in primary schools

students learning at a distance. Students who are studying at different grades use the same fax machine but use it to contact different subject specialists.

Australia: solar powered telecommunications and satellites

The example of the fax machine described above would seem to assume that access to a physical telephone and power network is necessary. However, this is no longer the case as satellite communication and solar power become more widely available. In many areas of Australia, public and private telephone services are provided in locations where neither land-line networks nor power lines are available. Modem telecommunication devices such as telephones and fax machines are low-power devices and as such are able to be powered via solar cells, particularly if used in an environment where the number of daily hours of sunshine is high.

Remote Australian rural areas have long used a system of educational delivery known as "School of the Air". This system used long-range UHF two-way radios, often powered by diesel generators, to provide communication between students and teacher. The quality of communication reception using this system was variable and highly influenced by various climatic conditions, including solar flares. This system is still used today even though many of the students have access to solar-powered full-duplex telephones which communicate via the satellite network. There seems to be a reluctance for educators to give up the old technology for the new, even though the difference in quality of communication is vast.

Australia: portables computers using solar power

Recent technological developments now allow lap-top or portable computers to be continually used without the requirement of a 110V/220V power network being available. Portable computers are also now available with on-board fax/modems so that telecommunication is easily possible. For example, relatively cheap (US\$300) adapters are available for the Macintosh portable computer so that it can be powered by a generic 12V power source such as an EL- 1000 solar panel. This solar panel is used in conjunction with a high-density, maintenance-free external auxiliary power pack (Fosh, 1993).

These developments mean that personal computers can be used in remote locations to improve the quality of education available. Such usage may be close to the vision as described by Kirk (1993) above or it may be a simpler management use to assist in the administration of education. Examples of this latter use might see a single solar-powered microcomputer and telephone/fax connection being used on a small island or remote mountain district to communicate with a central administrative organization. Such a use may be seen as peripheral to the central business of teaching. However, as Erdos (1967, 1975) has argued, speed is a high priority concern for the administration of student-teacher contact. Where large numbers of students are involved, it is relatively easy for written

lessons and/or assignments to be lost. A computer-based administrative system is an easy way to overcome this potential problem.

Thus, the technology makes it possible to provide specialist teachers “at a distance”. This facility holds a great potential for improving the quality of education which is available to students who learn in locations, such as in Multigrade schools, where specialist teachers are unable to be provided.

Benefits

One of the benefits of the new information technologies is to provide a communications support facility, for both teachers and students. The use of the new information technologies (from simple to complex) suggests a means of enhancing this supportive function in the Multigrade schooling context.

An additional benefit of the use of the new information technologies provides concerns the administrative overloads of teachers in Multigrade schools. Valuable teaching time in single teacher schools is lost because of time-consuming but necessary administrative tasks. The use of proformas linked to computer databases can make this aspect of teaching more efficient in time and central authorities can be assured that the information which they require is being provided at the appropriate times.

Furthermore, greater use of the new information technologies for the sharing of curriculum resources and pedagogues can increase the range of appropriate educational experiences which are available to students in small and/or remote districts.

Specific benefits can be identified for each of the problems of Multigrade Teaching as identified by Birch (1989). The following section provides a brief outline of these:

1. The teacher is often treated as an outsider and an itinerant by the surrounding community. If teachers have difficulty in assimilating into the community, then they may find themselves socially isolated.

Potential benefits:

Communication links such as two-way radio and electronic mail can help to alleviate such feelings. The provision of good communication links may also assist the retention of teachers in such environments and thereby reduce the level of itinerancy among teachers.

2. The learning of teacher skills in Multigrade schools largely occurs in situ because of the lack of pre-training available. This can lead to a lack of confidence and tends to compound feelings of teacher stress and frustration.

Multigrade teaching in primary schools

Potential benefits:

A more global approach via distance education techniques can make the development of specific Multigrade Teaching skills more cost-effective. Interactive distance techniques will also facilitate the increased provision of in-servicing for sophisticated techniques, *in situ*. The facility to easily communicate with other teachers will also reduce the amount of teacher stress and frustration being experienced by isolated teachers.

3. Teachers may suffer from stress resulting from community and parental pressures and the myriad of tasks that need to be addressed.

Potential benefits:

Such pressures can be shared with other teachers and, therefore, be seen as not unique to individuals. Shared resources will assist in the number of tasks that need to be carried out by teachers. A management system provided by the new technologies can assist in much of the non-teaching activities which schools must provide.

4. Teachers may be disaffected by low student numbers, as they limit the types of whole-class activities.

Potential benefits:

The concept of a district global school will help to overcome this problem.

5. The lack of specific teacher resources available to a Multigrade school is a particularly disadvantage. Materials produced tended to concentrate on single grade classrooms or classes with two grade levels rather than on Multigrade classes.

Potential benefits:

A more global approach via distance education techniques can make the development of specific Multigrade Teaching resources more cost-effective. These resources can be developed over time and delivered to teachers on an on-going basis. The two-way communication system can be used to train teachers, *in situ*, to use these new resources.

6. Professional isolation, that is, lack of peer contact and interaction is a major disadvantage for teachers working in Multigrade schools.

Potential benefits:

The facility to easily communicate with other teachers in similar situations will increase and enhance the amount of peer interaction by isolated teachers. It will also assist those teachers who find themselves in isolated schools where the community is from a different cultural background to that of the teacher.

7. The administrative tasks in one-teacher schools appear to be enormous. Administrative tasks often impinge on time for effective lesson planning and implementation.

Potential benefits:

A management system provided by the new technologies can assist in much of the administrative activities which teachers must carry out in Multigrade schools. Such a system can also assist in the efficiency of such information being sent to central and/or regional authorities.

8. Lesson programming is complex and time consuming.

Potential benefits:

One of the major benefits of computer software is to carry out complex tasks such as lesson programming. It would not be necessary for each school to have continuous access to a computer for such assistance. A district-based computer may well be sufficient for the beginning-f-year planning fictions which teachers of Multigrade schools need to carry out.

9. It is difficult to provide sufficient time to all year levels which causes frustration and feeling of inadequacy.

Potential benefits:

The provision of independent distance education materials will allow teachers more time for individualized attention. Such materials, once developed, could be shared across many Multigrade schools.

10. The restrictions placed on the teacher's time in a Multigrade school generally reduces the variety of topics offered. Furthermore, low student numbers may inhibit the variety of learning experiences that can be made available.

Potential benefits:

As was described above, the new information technologies can be used in specialist curriculum areas. It is not necessarily a case of expensive technology being necessary. The Viet Nam example demonstrates the potential of relatively inexpensive solar-powered two-way radio.

Multigrade teaching in primary schools

11. There is the possibility for transient students either to miss topics or to repeat the same material twice, if topics for year levels are grouped together and taught on a rotating basis (a common strategy in Multigrade schools).

Potential benefits:

As was described earlier the use of the new information technologies can assist in monitoring the movements and educational achievements of itinerant students.

12. A lack of self confidence can occur when there is an absence of peers for comparison. Pupils may be comparing themselves with higher year levels, which may lead to a negative self concept.

Potential benefits:

The notion of a linked school which is multi-site can overcome the problem of an absence of peers. Communication links between a number of small, structurally distinct Multigrade schools can result in a functional school which has both many students at each grade level and many teachers.

13. A lack of material resources comparable to those offered in a larger school can be a disadvantage to pupils.

Potential benefits:

A more global approach via distance education techniques can make the development of specific Multigrade material resources more cost-effective. These resources can be developed over time and delivered to teachers on an on-going basis. The two-way communication system can be used to train teachers, *in situ*, to use these new resources.

14. There is the potential for some subjects not to be covered as thoroughly as for larger schools due to constraints on the teacher's time.

Potential benefits:

As was described earlier, the new information technologies can be used in provide adjunct material in specific curriculum areas. Thus, a subject area could be taught by both teacher-based and technology-based techniques.

15. There is less chance of a Multigrade school having the resources of a specialist teacher; for example, music, art, sport and dance.

Potential benefits:

The new information technologies can be used in specialist curriculum areas. It is not necessarily a case of expensive technology being necessary. The Viet Nam example demonstrates the potential of relatively inexpensive solar-powered two-way radio. The specialist teacher could reside at one site and teach to a number of different sites.

16. The cost effectiveness of small Multigrade schools is questionable.

Potential benefits:

There is an opportunity to utilize economies of scale in Multigrade Teaching schools .

17. Administrative tasks are seen to be very frustrating and short cuts are sometimes needed in order to concentrate on teaching, which may mean that central office requirements are not being met.

Potential benefits:

A management system provided by the new technologies can assist in much of the administrative tasks which teachers must carry out in Multigrade schools. This would reduce the temptation to take short cuts. Such a system can assist in the efficiency of such information being sent to central and/or regional authorities.

Conclusions

The utilization of the telecommunications function of the new technologies has the potential to change the fundamental structure of Multigrade schools. If these schools are interlined via some type of telecommunications network with additional supportive communication and curriculum resources, then they should be conceptualized not as individual schools but rather as multiple sites of a larger school. This larger school may not have a single physical site, but the pooled resources and communicative support make it a fictional single body. In the same way that various educators have conceptualized the notion of a global village, it may be possible to use the new technologies to form the global school, albeit on a district basis within a single country,

This notion is not necessarily based on the premise of the use of high-cost technologies. The example of solar-powered UHF two-way radio in the remote mountainous regions of Viet Nam demonstrates the power of relatively low-cost technology to bring together the various hamlets of a single village. The radio link did not simply provide an educational connection; In addition, it was used for administration, social interaction among teachers of the minority culture, non-formal education and,

Multigrade teaching in primary schools

probably, for other activities. Furthermore, the excess availability of power via the solar panel was harnessed to provide light during the evenings by connecting a car light to the battery!

Increased approximations to this concept of a “district school” can be achieved by use of increasing complexity of technology, from fax to basic computer to computer-based interactive video incorporating speech recognition, audio and colour video. The technology exists, although it is very expensive at this stage, so that a teacher in the form of a physical person would not necessarily be involved. Whether that is an appropriate form of education and how it relates to culture and wisdom is, however, a different and more difficult question.

CONCLUSION

Multigrade Teaching will remain a feature of schooling in the region well into the next century. As such it has the potential to expand the possibility of providing education to many children in a range of countries with considerable benefit to all concerned. Critical to such development will be the degree to which country experiences can be shared, materials developed and exchanged and teacher training programmed trialled and implemented.

There is emerging the need for research into the methods and techniques of Multigrade Teaching. The time is first approaching when all the endeavors of Multigrade education need to be tested so as determine what works. Given the generally limited resources which are available to countries for the development of this type of schooling, the researched and evaluated experiences of those countries which are in this field need to be publicized with a view to saving unnecessary re-creations of the wheel, without interfering with the criteria of flexibility and creativity which are essential to the Multigrade Teaching endeavour. As ancient as Multigrade Teaching is, it is also one of the most innovative of educational practices when genuinely understood and practised.

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