NEPAL

IMPROVING THE EFFICIENCY OF PRIMARY EDUCATION

A National Seminar jointly organized
by
Ministry of Education and Culture, HMG
and
Improving the Efficiency of Educational Systems/USAID

January 22 – 26, 1990

IEES
1984 - 1994
IMPROVING THE EFFICIENCY OF EDUCATIONAL SYSTEMS

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United States Agency for International Development
Bureau for Science and Technology
Office of Education
Contract No. DPE-5823-C-00-4013-00

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A National Seminar jointly organized by Ministry of Education and Culture, HMG and Improving the Efficiency of Educational Systems, USAID

Seminar Title: Improving the Efficiency of Primary Education

Purposes:

1. To review the major conclusions and recommendations of the IEES-sponsored Nepal Education and Human Resources Sector Assessment (1988) and the Report on the Education Management Information System in Nepal (New ERA, 1989).
2. To discuss the reports' recommendations in light of HMG's current policy initiatives in primary education.
3. To specify appropriate efficiency indicators for achieving primary education goals, as well as a policy-research agenda to support the HMG's planning process.
4. To establish training, research and other assistance priorities for future IEES involvement.

Participants: Senior level planners and policy-makers from:

Ministry of Education and Culture
National Education Committee
National Planning Commission
Faculty of Education, Tribhuvan University
Ministry of Finance
Seti Project
Primary Education Project
USAID and other agencies

Location: Hotel Himalaya, Patan

Schedule: Five afternoon (2-5 p.m.) sessions,
Magh 9-13, 2046
(January 22-26, 1990)

Format: Half-hour presentations followed by questions and roundtable discussions.

Session Topics and Speakers:

1:00 - 2:00 p.m.	**Opening Ceremony**
Session 1	
Chairman: T.N. Upreti	"Efficiency Issues within Nepal's Primary Education System" (Speaker: Ishwar Prasad Upadhyaya) "Current Perspectives on Educational Efficiency" (Speaker: David Chapman, IEES)
Session 2	
Chairman: C.L. Gajurel	"Increasing the Efficiency of Primary Education: Planning and Research Priorities Arising from the Sector Assessment" (Speakers: Tirth Bahadur Manandhar)
Session 3	
Chairman: L.N. Belbase	"Improving the Quality of Teaching and Learning in Nepal's Primary Schools" (Speaker: Gajendra Man Shresthsa)
Session 4	
Chairman: K.N. Shrestha	"Enhancing the MOEC's Education Information Management System for Policy Analysis and Planning" (Speakers: Madhup Dhungana and Jerry Messec, IEES)
Session 5	
Chairman: I.P. Upadhyaya	"Future Steps Toward the Improvement of Efficiency in Basic and Primary Education" (Rapporteurs: Tirtha Bahadur Manandhar and John K. Mayo, IEES)
4:00 - 5:00 p.m.	**Closing Session**

Background Materials:

IEES, *Nepal Education and Human Resources Sector Assessment* (1988)

Manpower and Statistics Section, Planning Division, MOEC, "EMIS: A Proposal for the MOEC" (1989)

New ERA, *Report on the Education Management System in Nepal* (1989)

LIST OF PARTICIPANTS
IMPROVING THE EFFICIENCY OF PRIMARY EDUCATION
(22-26 JANUARY, 1990)

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Mr. Ram Sharan Kharel
Mr. Kiran Mali

A National Seminar on Improving the Efficiency of Primary Education
Hotel Himalaya
Lalitpur, Nepal

Inauguration Programme

Monday, 22 January 1990

1:00 - 2:00 p.m.

- Chief guest: Honorable Mr. Kshetra Pratap Adhikari, Assistant Minister for Education and Culture
- Chairperson: Dr. Trailokya Nath Upreti, Educationist
- Introduction to the seminar and welcome by Dr. Ishwar Prashad Upadhyaya, Additional Secretary, MOEC
- Address by Dr. John K. Mayo, Director, Center for International Studies, Learning Systems Institute, Florida State University, U.S.A.
- Address by Mr. Michael M. Calavan, Chief, Program and Project Development, USAID, Nepal
- Address by Mr. Kelly Kammerer, Director, USAID, Nepal
- Inauguration of seminar by the Chief Guest
- Inauguration Speech by the Honorable Assistant Minister of Education and Culture, Mr. Kshetra Pratap Adhikari
- Remarks from the Chair, Dr. Trailokya Nath Upreti
- Vote of thanks by Mr. Sachchidananda Shrivastav, Additional Secretary, MOEC

Efficiency Issues in the Primary Education System in Nepal

I. P. Upadhyay

1. Introduction

Acquisition of numeracy and literacy skills enhances the prospect of increasing productivity and production. This is borne out by several studies undertaken worldwide including Nepal. Studies have also established that the elementary education has a relatively high social rate of return (about 28 percent)
vis-à-vis the rate of return (about 13 percent) to investment in physical capital particularly for the developing countries. Across the different levels of education, the elementary level or primary level of education has the highest rate of return with primary level 28 percent, secondary 17 percent higher 14%. The countries with overwhelmingly illiterate labour force and relatively low rates of increase in investment in physical capital have very low rates of per capita growth. All these findings undertaken world wide stress the importance of the role of primary education in the overall development process of a country.

Development in fact has a human face and is therefore predicated on the underlying principle development of the people, by the people, and for the people. This is perhaps against these contexts that education is considered the basic right of the people.

2. Nepal's Efforts at Expanding Access to Primary Education

Since the dawn of the democracy, Nepal has been consistently pursuing its efforts to expand access to primary education. Since the implementation of the National Education System Plan in 1971 the effort has been given a further push by committing the government to the payment of all teacher salary costs and by prescribing a uniform curriculum and text books in all primary schools within the kingdom. A subsequent declaration made on the eve of the coronation of His Majesty the King for exempting primary children from paying any tuition provided further impetus to the access of

primary education. Later, in 1979, the decision to distribute textbooks free of charge to the children of primary education grades 1-3 went a long way to boost the growth in enrollment. As a result of these gradual steps towards making primary education accessible to all children, enrollments grew up from 42 percent in 1972/73 to over 85 percent in 1988. Commensurate expansion is recorded in the number of teachers and schools. Currently over 62,000 teachers are serving in some 13,000 primary schools throughout the kingdom. As a result of the expansion of the primary education system and the commitment of the government, its share in the education budget has increased from 26.3 percent in 1977/78 to 36.3 percent in 1986/87 [1].

Though the overall enrollment at the primary level has increased tremendously over the last decade and a half, equity issues still persist with the system. From the regional point of view, the far-western region still lags far behind the other regions (western region 112 percent) with gross enrollment of only 75 percent. Similarly, from amongst the districts, a disparity in the enrollment is glaring, with Siraha, one of the most populous districts in Terai having only a ratio of about 45% compared with Syangja, a hill district, which has a ratio of over 100%. When we analyze the enrollment data genderwise, we have examples of glaring disparity. Of the total enrollment of the primary level less than a third are accounted for girls. All this demonstrates the fact that while educational efforts have produced some positive results in terms of widening access of primary education but at the same time the disparities in access have continued to plague our system.

Inequitable distribution of educational opportunities is not the only issue that the burgeoning system of education has given rise to. An equally important issue that has surfaced and has caught the attention of the planners and policymakers is the issue of efficiency of the system. The Seventh Plan document, and also the forthcoming Eight Plan have identified this as an issue of overriding concern. Several studies were mounted to address this issue, such as the one on Education and Human Resource Sector Assessment undertaken jointly by MOEC and USAID, a drop-out study by CERID, and a mimeograph on educational wastage produced by the Manpower and Statistics Division of MOEC. It is worthwhile to mention some of the findings of these studies.

3. Drop-out and Repetition Rates

In 1985/86 the Manpower and Statistics Division of MOEC undertook a study of drop-outs and repeaters at the primary level. The sample study consisted of 1567 primary schools in 46 districts. The sample accounted for 15 percent of all primary schools in Nepal. The following is a summary of the findings of the study.

Table 3.1

Completion	Efficiency in %	Graduates %	Dropouts Gr.1 %	Dropouts Total %	Repeaters Gr.1 %	Time
Total	53	48	22	52	39	6.6
Terai	56	53	20	47	37	6.4
Hills	47	42	23	58	42	6.8
Mountains	41	30	33	70	36	6.6
Boys	53	48	22	52	39	6.6
Girls	53	45	25	55	37	6.6
East Hills	55	51	22	49	42	6.8
West Hills	41	34	22	66	42	6.8
East Terai	59	56	19	44	37	6.5
West Terai	50	45	22	55	37	6.7

The largest number of students is lost between the first two grades. For the sample as a whole, about 22 percent of the pupils leave before the completion of the first grade. The dropout rates across the other grades are relatively uniform and usually within 20 percent.

There are, however, some general patterns emerging from the above table. Efficiency scenario across Terai, Hills, and Mountains reveals that Terai has a slight edge over other regions with an efficiency rate at 56 percent. Further, in Terai dropout rates are the lowest and graduation rates the highest. The Terai districts are followed by the Hill and then the Mountain districts in terms of efficiency. When the Hill and the Terai regions are broken down into eastern, central, and western (midwestern and far western inclusive) development regions, the following is the general order of efficiency: eastern Terai, eastern Hill, western Terai, western Hill, and Mountain districts. All the transition rates reflect trends which match progression.

The behavior of girls in the system is generally similar to that of boys, although their repetition and dropout rates are slightly, although not always, higher. The difference in dropout rates in Grade 1 essentially accounts for the difference in the total number of dropouts between boys and girls. The difference in the number of boys and girls in the system is due primarily to the initial differences in enrollment rates and not due to the differential behavior when in the system.

From the above table it is evident that a major source of dropouts and repeaters or inefficiency lies in the first grade.

From the above, the following questions arise:

- What are the reasons for such a high wastage?
- What measure might reduce the number of dropouts and repeaters, particularly in Grade 1?
- What policy decisions might improve the efficiency in the system?
- What would be the academic effects of these policies?
- What would be the effect of further expansion of the system on the efficiency?
- How could you expand the system without allowing further inefficiency?

3.1 Further Manpower and Statistics Division had studied a cohort of 1,000 pupils in 1986 and 1987 in order to estimate the internal efficiency of the system. The findings of the two studies are summarized in the following tables.

Internal efficiency model (based on 1986 study)

Parameters (rates)

Table 3.1.1

	Gr.1	Gr.2	Gr.3	Gr.4	Gr.5
Repetition	0.29	0.15	0.12	0.11	0.11
Dropouts	0.26	0.16	0.15	0.16	0.28
Graduates					0.61

School Flow Model

Table 3.1.2

Year	Gr.1	Gr.2	Gr.3	Gr.4	Gr.5	Graduates
1	1000	0	0	0	0	0
2	290	450	0	0	0	0
3	84	198	311	0	0	0
4	24	68	174	227	0	0
5	7	21	67	152	165	101
6	2	6	23	66	129	79
7	1	2	7	24	62	38
8	0	1	2	8	24	15
9	0	0	1	2	8	5
10	0	0	0	1	3	2
11	0	0	0	0	1	1
12	0	0	0	0	0	0
13	0	0	0	0	0	0
14	0	0	0	0	0	0
15	0	0	0	0	0	0
SUM	1408	746	585	480	393	240

Total Pupil Years = 3612
Per Graduate = 15.05
Average Study Years
per entrant = 3.61

Ideal student year for number of graduates = 1200
Efficiency = 0.3322

Pupil years wasted

Repeaters	Dropouts	Total
686	1725	2412

3.2 Again in 1987, drop-out repetition and promotion rates based on a 95% sample of all primary schools were undertaken. After the analysis of data the following pattern as regard to drop-out, repetition, and promotion rates emerged.

Table 3.2.1

Grade		1	2	3	4	5
Total	Dropout	0.27	0.17	0.15	0.17	0.14
	Repetition	0.30	0.16	0.12	0.12	0.11
	Promotion	0.43	0.67	0.73	0.71	0.75
Boys	Dropout	0.26	0.16	0.15	0.16	0.13
	Repetition	0.29	0.15	0.12	0.11	0.11
	Promotion	0.45	0.69	0.73	0.73	0.76
Girls	Dropout	0.29	0.18	0.17	0.17	0.13
	Repetition	0.31	0.17	0.15	0.16	0.14
	Promotion	0.40	0.65	0.68	0.67	0.73

	Total	Girls
Number of years needed to produce one graduate	12.84	14.18
Average study years per entrant	3.55	3.45
Efficiency of the primary cycle	39%	35%
Graduation per 100 entrants	28	24
Wastage due to drop-outs	67%	66%
Wastage due to repeaters	33%	34%

In the above two tables, there seems to have occurred some discrepancy in the results. For example, in the 1986 table, the overall duration for completing the cycle is about 15 years, while in the 1987 table it is estimated to be around 13 years.

3.3 However, the Education and Human Resource Sector Assessment Report (pages 2-12) has prepared the following table to study the internal efficiency at the primary level through the following school flow model.

Table 3.3.1

Parameters (rates) Grade	1	2	3	4	5
Repetition	0.39	0.23	0.18	0.19	0.17
Dropouts	2.22	0.05	0.02	0.08	0.07
Graduates					0.76
Continuers to Grade 6					0.84

Table 3.3.2

School Flow Model

Year	Gr.1	Gr.2	Gr.3	Gr.4	Gr.5	Graduates
1	1000	0	0	0	0	0
2	390	390	0	0	0	0
3	152	242	281	0	0	0
4	59	115	225	225	0	0
5	23	50	123	222	164	125
6	9	20	58	141	190	145
7	4	8	25	73	135	103
8	1	3	10	34	76	58
9	1	1	4	15	38	29
10	0	1	2	6	17	13
11	0	0	1	3	7	6
12	0	0	0	1	3	2
13	0	0	0	0	1	1
14	0	0	0	0	1	0
15	0	0	0	0	0	0
SUM	1639	830	729	720	633	481

Total Pupil Years = 4552
Per Graduate = 9.46
Average Study Years
Per entrant = 4.55

Ideal student years for number of graduates = 2406
Efficiency = 0.5286
5 times grades/total pupil years
Pupil years wasted

Repeaters	Dropouts	Total
1206	939	2145

3.4 **High cycle cost:** Sector assessment report has estimated that government expenditure on primary education including overhead would be Rs 2618 per graduate (that is the cycle cost). If we include the school and student expenditures, the cycle cost goes up to Rs 4087 per graduate. If the internal efficiency were one hundred percent, the cycle cost to the government would be (Rs 276 x 5) Rs 1380 and the cycle cost in terms of school and student expenditures would be (Rs 432 x 5 =) Rs 2160. The inefficiency of the primary education system measured in 1985/86 prices costs the government Rs 1234 per graduate and costs the schools and students Rs 1927 per graduate. This, if calculated for total number of primary graduates will swell to millions of Rs per year.

Of the three models presented earlier, three different scenarios have emerged which are not very consistent. However, one inescapable conclusions that can be safely drawn supports the view that internal efficiency of the Nepalese primary schools is one of the serious issues faced by the system. The investment on primary education has not been optimally utilized and therefore needs analytic review of the politics, plans, and programmes to improve the situation. In order to allow for such a critical review it is important that we analyze the causes that are associated with this high degree of inefficiency of the system. The causes that follow are mostly those identified in several studies undertaken by various organizations. The factors contributing to this phenomenon have broadly but arbitrarily been put into three categories – Environmental, Quality, and Support System.

4.0

4.1 Environmental Factors

i) Physical facilities and equipment

School education in Nepal has been an enterprise jointly undertaken by the community, the Government, and the family. Provision of physical facilities has been the responsibility of the local community. Government comes in with the support of teacher salary only when the community has put up a school building of a design and a cost of the community choice and resources. No standard design is provided either for the school building or for furniture for classroom use of office. One can therefore imagine the status of school building facilities in terms of its suitability to the classroom instruction and children's health and hygiene. Education for Rural development project in Seti Zone had started as early as 1980 to construct new school building in Doti district with community support and a project subsidy of 40% of the cost of the building but not exceeding 22000 Rs. The project had to reconstruct most of the school buildings either because they were no longer in use as class space for instruction. This situation was by and large the same in all four hill districts of the Seti Zone. This also gives one an indication of the quality of the school buildings in most of the hill and mountain districts. A baseline survey of 260 participating schools of 6 PEP districts had revealed that most of

the facilities in the school buildings such as roof and walls, floors, windows, furniture, blackboard and chalk were only slightly better than poor. The level of sanitation and drinking water facilities were also rated as poor.

The quality of primary school facilities is a concern to the Government. The present state of affairs is such that while the scarce resources of the local community are invested in the establishment of physical facilities of the school, the investment has not produced a desirable quality of school building. Poor ventilation and cramped space do interfere with learning. Where facilities are inadequate, classes are held outdoors, which situation often results in less-than-stipulated number of working days for school. The following paragraph explains appropriately the role and use of the physical facilities for teaching learning activities. [1]

"Studies in other countries have not related the quality of school facilities to learning. However, over-emphasis on improving school facilities beyond providing a minimum of light and space may take funds away from more productive uses, such as inputs to education that are widely recognized as being directly related to instructional purposes."

ii) Parental awareness and participation

It is quite often observed that parents, once they put their children in school, cease to take any interest either in the school activities or in the performance of their own children. They do not show any concern about school activities until they come upon the situation when their children have failed to obtain a promotion to the next higher grade. This parental apathy to school operations often results in the neglect of the duties of school to the children. The Parent-Teacher Association which is a practice in many countries is not yet provided for in Nepal. Maybe formation of such an association would improve the performance of school by bringing together the teachers and parents through meetings organized periodically. Interaction between these groups of people will help create a climate favorable for more enhanced support to schools and consequently better teaching/learning activities.

iii) Socioeconomic environment

Children in many rural families have also to take care of their younger siblings. This results in underage children accompanying older ones to schools. Such underage children forming a significant portion of the first graders tend to repeat the grade. Because of poverty, many children from rural areas drop out from school because of labor demands on them at home and/or on the farm. Such socioeconomic factors contribute to the internal inefficiency of the school system.

4.2 Quality Factors:

i) Poor teaching/learning activities:

About two-thirds of primary teachers in Nepal are without any formal training in teaching/learning methods and techniques. Most of them join the teaching job either because of domestic compulsions or as a result of last choice when all attempts to find other jobs are exhausted. This situation has some adverse effect on improving or even maintaining efficiency in the primary education system. Moreover, since a great majority of them first enter the teaching job at a relatively young age of 18 or 19, as fresh SLC graduates, one can imagine the quality level of their teaching.

ii) Inadequate preparation of teachers

Since the introduction of National System Plan, teacher training has undergone several changes. It started with a mandatory requirement of training of one academic year for all primary teachers. Several campuses within the University were set up for this purpose. But subsequently training programmes came under a critical review and underwent a radical change, cutting down its duration by half, and focusing more on practical aspects rather than on theoretical ones. Some studies even questioned the effectiveness of the long-term training programmes. As a result of these experiences and observations, Seti and PEP projects followed a different strategy of training. They designed intensive practical training packages of a shorter duration and implemented them. Though no formal systematic studies have been undertaken to assess the effectiveness of these short-term practical oriented training programmes, their impact on teaching/learn-

ing activities has been perceptible in many instances. One could see the several instructional materials in the classes prepared bv the teachers for use while teaching. As a result of these experiences, HMG then decided to provide a short-term competency-based training programme of 150 hours under the basic needs programme.

Another issue regarding the training programme relates to its nature of having treated as a one-shot, straitjacket affair. Nepal, because of its scattered population in mountain and hills, cannot afford to have gradewise teachers, irrespective of the number of pupils. Training packages need to respond to the needs and realities situation of the teachers, schools, and the community. This issue has not yet received due attention in the Ministry's training packages. However, it is a different case with the project training programmes which try to meet the diversified needs of the teachers, schools, and the community.

iii) Curriculum and text books

To my knowledge, since the very beginning of its history, curriculum development in Nepal has largely been an academic exercise confined within the four walls. The contents that were developed have hardly been field tested and refined. In other words, the curriculum development process can hardly claim to be complete, systematic, and scientific. There have been some missing links in the whole chain of development process. This has sometimes resulted in irrelevant or ambiguous statements. The following paragraphs reveal some caveats in our curriculum development process. [1]

"There are several features of these curricula worth noting. First, many of the objectives are too general to guide and control the content of textbooks. For example, first graders are expected to 'read words and sentences with understanding'. Nowhere, however, is the level of vocabulary or the complexity of the sentence structure specified. Similarly, there is a lack of specificity as to what 'reading correctly' means or what 'writing clearly with understanding' entails. The curriculum, while it does define general skills and the information to be covered, does not define the specific skills and information to be taught at each grade level ... "

Second, the content of the curriculum in some areas appears too limited and in other areas too complex for the student audiences. For example, the content for the Grade 1 language arts, social studies is limited to family relations, school topics, animals and girds, and games. In contrast, the content for the Grade 1 arithmetic curriculum includes multiplication and division concepts. A 1908 study of children's cognitive development in Nepal compared curriculum content in Grade 4 through 6 with students capacities to understand selected mathematical concepts. The study concluded that in a number of areas, the curriculum made demands beyond the cognitive capabilities of the students and therefore was not appropriate."

The textbook development process faces the same problem as that of curriculum development in the sense that textbooks, to my knowledge, have never been field tested before giving it a final shape. This, perhaps, has happened as a result of rapid change of curriculum and textbooks without allowing sufficient time required for their development. Moreover, textbook writing has been relatively a new experience in Nepal and therefore it may require some time before a fair amount of expertise is built up within the country. These handicaps have resulted in the following findings of a workshop on Textbook and Reading Materials at the primary level in 1985 [2]. The workshop identified the following problems with the textbooks:

a) though new editions are published each year, facts and figures are seldom corrected,

b) there is no process for pre-testing textbooks in terms of their quality and usefulness,

c) uniformity and balance in the content of textbooks is lacking, and

d) the time allocated for writing a textbook is too short.

In general, the analysis done by the workshop participants found the textbooks lacking in "originality or novelty." Participants remarked most stories are uninteresting, the illustrations ineffective, and information provided conflicting or incorrect.

The other issue regarding the textbook pertains to its distribution. Textbooks are distributed to all first graders about 22 percent of whom drop out during the year and about 39 percent of whom repeat grade 1. This represents a huge wastage on textbook produc-

tion and distribution. However, in an attempt to recycle the textbooks, pilot scale efforts in some schools of PEP districts have been initiated since this academic year.

The weaknesses of curriculum and textbooks also contribute to the inefficiency of the system in the form of either dropouts or repeaters, or both, apart from the wastage on textbook distribution. The absence of teacher guides has further aggravated the problems of the use of textbooks as a teaching resource.

iv) Management of first grade pupils

We have seen that heavy wastage has occurred in the first grade of the primary education system. More than 50 percent of pupils either drop out or repeat the grade. This has a chain effect in multiplying wastage in textbook and teacher distribution. Some efforts have been initiated in the PEP Project to address this problem in the form of grade teaching training. No formal evaluation has taken place so far of its effect on retention rates, but observations of teachers and supervisory personnel support the view that it has a positive impact. One school of thought pleads for the introduction of pre-primary schooling to alleviate this problem of first grade dropout and repetition. Whatever be the reasons for wastage in the first grade, careful strategy needs to be worked out to improve the situation. The strategy may not involve just one solution, instead several aspects must be considered, such as training, managing, and even improving the content and style of textbooks.

4.3 Factors Relating to Support System:

i) Weak supervision system

Support to schools is provided through a supervision system which has been rather weak up until now. The quality and frequency of supervision leave much to be desired. First of all, there are 5 to 7 supervisors in a district even for a school population of over 300 pupils. This makes it physically impossible for them to reach every school in a district. Secondly, the supervisors have little or no motivation and incentives to move around and visit the school. Thirdly, very few supervisors are equipped with the competence they need to fulfill their roles and functions effectively. This has a bearing on

the efficiency of the school system both in term of monitoring the school performance and providing support services in the areas they are in need of.

ii) Inadequate competencies in collating, analyzing the data

Data and several other information are collected every year from the schools through district offices. These data relate to student number. Very little information on the quality of the physical facility, teacher performance, school overall performance are reported and collected at any level of organization, let alone the time dimension of this information. Proper streamlining of data collection has yet to be ensured in the sense of what kind and the amount of data and information, at which organizational level with what frequency it should be collected and disseminated has yet to be worked out. However, since the last few years, under the IEES Project, some improvements have been made in the collection, analysis, and dissemination of information at the central level. Same efficiency at levels down the line has yet to be achieved.

The second problem is with the use of data and information by the educational planners and policymakers.

Sometimes huge masses of data remain either unutilized or underutilized for policy decisions while intuition and observation seem to influence the decisions. It does not, however, mean that intuition have no value for the decision-making process, but what is emphasized is that if these are collated against hard facts, then the margin of error of judgment may be narrowed down.

The third problem with the data is its quality which could be ensured only when there is a mechanism of testing, verifying, and comparing them. This aspect of the data issue needs careful consideration.

iii) Inadequate professionalism of management structure

Educational management is as much a technical job as any other specialty. It is complex and delicate. Preparing students for future challenges through inculcating in them proper values, knowledge, skills, and attitudes is a stupendous task. It there is something amiss along the way, then it may endanger the entire generation. Handling such a deli-

cate, complex, and technical task requires specialized skills and competencies of different categories and levels right from the supervisory personnel to the policy level. However, the orientation and training of these different categories of personnel has not received due attention. This is one major issue. Related to this is the issue of institutionalization of several categories of training programs both of long- and short-term nature and on a recurrent basis. The third issue is the decentralization of the decision-making process across the different tiers of organizations and even within them. Delays in or postponement of decisions may incur heavy losses both in time and money. From this point of view several rules and procedures need to be reviewed and revised in order to allow for expediting the decision-making process and for speedy implementation of decisions taken.

iv) Provision of incentive mechanism at several levels

Different kinds of inputs are essential to raise the quality of instruction in schools or for that matter in different tiers of school administration. Motivation and sense of competition are equally important factors for individuals to make them work hard for emulation and better performance on a continued and sustainable basis. For this well-designed incentive mechanisms have to be evolved for schools, teachers, students, supervisors, community, and so on. These incentives need not always be monetary ones. If the system is supported by such a mechanism together with essential inputs it will motivate the system to strive hard for excellence.

5. Some Comparative Features of Wastage of Private Schools

The paper does not attempt to undertake a detailed study of wastage in private schools. Nonetheless, the following table gives us a glimpse of the level of wastage in terms of drop-out and repetition vis-à-vis the public schools.

Table 5.1

Gradewise distribution of students (in percentages)

	Gr.1	Gr.2	Gr.3	Gr.4	Gr.5
Public Schools	43	18	15	13	11
Private Schools	30.6	23.2	19.3	15.4	11.4

It is interesting to note from the above pattern of distribution that in public schools over 2/5 of all pupils are concentrated in the first grade while the private schools have only less than a third. In public schools, the distribution pattern becomes more or less consistent after the first grade while the private schools have this pattern even including the first grade. This feature in private schools may be attributed to several factors, such as the introduction of KG classes in most of them, relatively small class size, teachers and students time on task, etc. So far teacher qualification and experiences are concerned, this may not greatly differ from those of public schools. However, the situation begs further detailed investigation.

6. External Efficiency

The paper has in the foregoing pages tried to present, analyze, and discuss the several issues and their causes relating to what we call internal efficiency of the primary education system. Apart from this, the issue of external efficiency is equally important and an analysis of it reveals many interesting features. While talking of external efficiency, we must have on our mind two categories of students, those who leave the school after competing the primary cycle and those who continue into six grade of secondary cycle. As the basic objective of primary education particularly of the first three grades is to impart literacy and numeracy skills to pupils in the first place one has to assess as a measure of external efficiency whether completers of the primary level have acquired these skills at a desired level or not. Secondly, those who have done Grade 4 and 5 as well, have they in addition to acquiring basic skills achieved sufficient competencies in subjects like English, math, and science which may enable them to continue without much difficulty on to the grade of secondary level education? The author has not so far come across any

such study. However, the following paragraph from the sector assessment is worth taking note of.

> "... the curriculum addresses basic literacy but lacks the detail needed to develop an effective program. This problem is reflected in the textbooks. The language arts textbooks offer practice in reading but provide no direction as to what skills are to be taught. In the arithmetic textbooks, students are expected to master abstract concepts before developing a foundation based on concrete experience. The difficulty of teaching basic literacy is compounded by an absence of guides for teachers to explain to them how to teach these basic skills. In terms of actual achievement levels, the few studies that have been done suggest that the level of literacy achieved does not meet expected standards. Students do not have sufficient skills to perform at a functionally literate level."

7. Concluding Remarks

Nepal's commitment to the fulfillment of basic needs of the population by the year 2000 has imposed upon it twofold challenges – expanding access of primary education and raising its quality. Priorities have been set, policies have been laid down, and programs are in place since last year. Several inputs have been devised, planned, and are being implemented. Resources have been mobilized and allocated as planned. To analyze outputs in terms of its cost is a task that is of utmost importance and needs to be continually pursued. This assumes even greater significance in view of the fact that scarce resources have been taken away from other productive uses and invested in the basic education. Education is a huge complex sector with largely a human face. Planning and managing of human resource development as elsewhere is therefore an enormous task. Nepal has taken a bold decision to the goal of education for all by the year 2000. This in itself is indeed commendable. But the ability to monitor and keep track of policies and strategies and explore new initiatives that help achieve the goals of Basic needs programs will very much determine our future expectations and achievements. In this regard efficiency is an issue which needs careful and constant monitoring and evaluation in order to justify the investment of scarce resources. Issues above, to an extent have been identified and highlighted. But precise parameters of solutions are

often difficult to pinpoint. However, studies, deliberations, and interaction do help us to arrive at the best possible solutions. One can reasonably expect such an outcome during the course of deliberation over the week.

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CURRENT PERSPECTIVES ON EDUCATIONAL EFFICIENCY

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In this session, I want to talk about educational efficiency—what we mean by it and some of the problems we encounter in trying to plan for an efficient educational system. While the notion of efficiency may sound simple, it is often the source of considerable confusion.

Educational efficiency is concerned with getting the most for our money. It has become one of the central issues in educational development, largely because financial support of education is becoming more limited even as enrollments are growing. These financial reflect a mixed blessing: The financial constraints faced by the education system in Nepal are partly due to your success over the last twenty years in rapidly increasing education enrollments in this country. The available monies have to serve more students.

These financial pressures are similar to financial constraints now faced by many countries. Across many countries, there are more competing demands for the available monies from other sectors—health, agriculture, community development. For whatever the reason that money is tighter, the issues remains the same:

- How can Nepal increase student learning and the number of students served without large increases in cost?
- How can Nepal reduce the costs of education without reducing the amount students learn?

These are the issues of educational efficiency.

But people get confused about what is meant by educational quality, effectiveness, and efficiency—and how those things are related to each other. Let me start by clarifying the relationship of effectiveness and efficiency:

An activity is effective when it leads to the output (or mix of outputs) that we want to achieve. The desired outputs of an education system are things like academic achievement, positive attitude, and the development of job skills. Cost refers to the level of input needed to get the output. A program is efficient when the desired mix of outputs (effectiveness) is maximized for a given level of inputs (cost), OR, where inputs are minimized for the desired mix of outputs. Simply put, efficiency is concerned with getting more for our money.

This definition has several implications in practice.

First: Efficiency compares effectiveness to cost. The concept of efficiency already includes the concept of effectiveness. Hence, it is not necessary to talk about the effectiveness and efficiency of a program because, if we say a program is efficient, we are already asserting that it is effective.

Second: A program cannot be efficient unless it is effective. One implication is that to improve efficiency, we cannot only consider the cost of a activity, we must also consider the quality and effectiveness of the activity.

Third: It is a rather prevalent misunderstanding to confuse efficiency for lower cost. It is a mistake to believe that a lower cost activity is necessarily more efficient. Similarly, it is a mistake to believe that just lowering the cost of education improves efficiency, without considering the quality of the activity.

An example illustrates the point: In Somalia (East Africa) offers an example, because the cost of secondary education was more expensive in rural areas (than in urban areas), some Ministry officials believed that rural education was less efficient. The higher rural costs was because of the low student:teacher ratios, due to the small catchment areas and need to have enough teachers in each school to cover all required content areas. Some Ministry officials wanted to cut the number of teachers to reduce costs, thinking they would make the education system more efficient. Actually, cutting costs would have the opposite effect. Cutting the number of teachers would have meant that some academic subjects could not be taught in the rural schools. That would have lowered quality. Even though rural education in rural areas of Somalia cost more, the extra cost was necessary for rural education to be efficient.

Sometimes lower costs leads to higher efficiency, but not always. Where there are excessive expenditures and waste exists, greater efficiency and lower costs can happen at the same time. However, where more costly inputs lead to proportionally even higher productivity, efficiency may involve higher costs. The key points here is that the efficiency of an activity can only be determined by considering the quality of the output, not just the cost of the input.

Two Types of Efficiency

In educational planning, it is useful to think about two types of efficiency: Internal Efficiency and External Efficiency.

An education system is internally efficient to the extent that it uses available resources for improving the quality and increasing the quantity of education in the best possible ways. Indicators of internal inefficiency would include low student achievement, high levels of attrition and grade repetition, weak teacher preparation, low quality instruction, inappropriate content, and lack of adequate instructional materials. In short, internal efficiency is concerned with whether the components of the education system fit together in the most cost-effective way. For example, in Liberia, of every 100 students who start grade 1, only two will complete secondary school in twelve years (Government of Liberia, 1988). There is high wastage, which drive up educational costs dramatically. The Liberian system has low internal efficiency.

External efficiency is concerned with the extent that the education students receive contributes to sustained economic and social development of the country. Key indicators of external efficiency include whether students have the skills that employers require (e.g., Can they get a job?) or, alternatively, whether students have adequate preparation to enter the next level of schooling. For example, the country of Liberia has low external efficiency in it secondary schooling. Only about 30 percent of the graduates from secondary school can pass the University entrance examination (Government of Liberia, 1988); the other 70 percent do not have the skills to continue their education. The major issues of external efficiency for primary education concern (1) whether primary school leavers have appropriate skills to allow them to enter the work force and,

(2) whether they have the knowledge and skills to continue successfully in lower secondary school.

Both internal and external efficiency are important. Among the internal efficiency issues that Nepal faces at the primary level are: a large percent of unqualified (27%) and untrained (68%) teachers, high dropout and repetition (particularly at the end of Grade 1), and high student and teacher absenteeism. A CERID report found these factors combine to cause low quality of instruction and low student achievement (CERID, 1984). These things, in turn, influence the external efficiency of education. If student achievement is low, then school graduates will not be prepared to enter the work force. They will lack the literacy, numeracy, and other skills that employers need them to have. The first and most important efficiency issue needs to be the internal efficiency of primary education. If primary education does not have internal efficiency, it will not have external efficiency.

Identifying the efficiency problems within the education system is relatively easy. Developing effective solutions is difficult. Agreement on the problems and the priority among efficiency problems is an important step but, by itself, does not solve the problems. Serious improvement in education efficiency will only come as policy makers identify interventions to address the most serious problems, anticipate the impact of these solutions on the larger system, and develop an implementation plan that introduces the changes in a manner that does not create worse problems.

In any attempt to improve educational efficiency, four issues need to be anticipated.

First: PROBLEMS ARE LINKED. Many of the problems cannot be fixed one-at-a-time. For example, training teachers may not be much help if those teacher, once trained do not have instructional materials, adequate instructional space, or adequate incentives to teach.

The apparent solution to one problem may only create other problems, some more serious than the original one. For example, raising educational quality by insisting that all teachers have a secondary leaving certificate (SLC) may backfire and result in a decline in quality if there are not enough SLC holders who wish to be teachers and a teacher shortage ensues.

If linkages among issues are not anticipated, attempts to solve individual problems will be self-defeating. Attempts to change any particular policy without regard for linkages give the appearance that a desired change is impossible until other prerequisites conditions are altered, each of which will appear to be constrained by other factors locking it into place. In such a situation, meaningful change appears impossible. On the other hand, if too many improvements are undertaken at once, the capacity of the Ministry is overtaxed and the reforms falter for lack of follow-through. Meaningful change becomes overwhelming.

Effective interventions to improve the quality and availability of Nepali education will result only by carefully anticipating the ways that problems are linked—and using that information to plan a strategy for improving educational quality during a time that additional resources are scarce. One purpose of this seminar is to continue discussions about the most effective strategy to implement the goals which the Ministry has already stated. In the move from goals to strategy, a major concern is one of efficiency of the strategy chosen.

Second: Of all the changes you make to improve educational quality, the most important are those changes in what occurs in the classroom between the teacher and the student. All the other changes—in data systems, in textbook distribution, in teacher training—are all in support of the teaching/learning process in the classroom. Too often, educational reform gets so involved in changing systems and structures that we forget where the real education is occurring.

Research from many countries suggests that the most important ways to improve educational efficiency is to ensure that students are receiving high quality instruction from the teacher and that students have the textbooks and instructional materials they need. These are the heart of improving educational quality, [which is a major part of improving educational efficiency].

Third: The key to improving educational efficiency is allocating the resources that are available to the schools with the greatest need and to the activities with the greatest educational payoff. That requires that you know which schools have the greatest need and that you know which activities are most important to support. This requires that

you, as decision makers, have accurate, timely, and appropriate information about what is happening in the schools [and at other levels of the education system]. The education system in Nepal is too large and changing too fast for anyone to rely only on their own personal experience to guide their decisions. Only with a good information system can you make good resource allocation decisions.

It is important to remember that improving educational information does not, by itself, improve the quality or efficiency of education. Only as you use that information to plan, formulate policy, and allocate resources will accurate information about your education system help you improve its efficiency.

The research conducted by New ERA last year suggests that [at least some of] the educational data in Nepal is better than many Ministry officials believe. Nonetheless, basing decisions on accurate information is not always easy. As you know, potentially useful information sometimes gets lost in the bureaucracy and does not reach the decision makers that need it. There are often strong political pressures that influence decisions. These are pressures that work against efficiency.

One of the challenges for Nepal is to now take the next step to make greater use of the educational information that is already collected.

Another pressure that works against efficient operation of the education system is when decision makers disagree about what educational activities and priorities they should support. When this occurs, people work at cross-purposes. Often, this happens when decision makers disagree about the most appropriate indicators of educational efficiency.

There are four types of efficiency indicators – those concerned with inputs, those concerned with process, and those concerned with outputs, and those concerned with outcomes of the educational system. The number of trained teaches, the number of classrooms, the number of textbooks are examples of educational inputs. An educational process refers to the means by which educational inputs are transformed into educational outputs. Process is what we do with out inputs that leads to the outputs. Examples of educational processes are classroom lecture/discussion, small group instruction, self study with traditional textbooks, the use of programmed instruction, and the use of radio

instruction. Educational outputs are such things as students' academic achievement, attitude change, behavior changes and job skills. Outcomes are the long-term impacts of the education process, such as increased quality of life and higher income.

The interaction of inputs and processes determine cost. When there is not enough money, we look for ways to reduced inputs. We ask: Can we get by with fewer teachers, fewer instructional materials, less teacher training? Is ten weeks of teacher training the same as ten months?

We also look for educational processes that are less expensive. We ask: Is radio instruction less expensive than classroom lecture by teachers? Are classroom lectures better than programmed instruction?

The answer to these types of questions determines how much education will cost. The combination of educational inputs and educational processes we choose will determine cost. Cost in relation to outputs determines internal efficiency.

When money is limited, it is sometimes tempting to change inputs to fit the budget without carefully evaluating what impact that change will have on student learning. If that happens, it is possible that instead of saving money, we are actually losing efficiency; the long-term consequences may cost us more.

An example from Botswana illustrates the point. Community sponsored lower secondary schools in Botswana had a lower cost than government sponsored lower secondary schools. Due to the low quality of the community schools, student dropout was very high. Indeed, relatively few students ever graduated. Due to the dropout, it took more "student-years" of education to produce one graduate. Consequently, the cost relative to the number of graduates was high. While unit cost appeared to favor community schools, examination of the cycle cost indicated that they were actually more expensive.

While we can agree that there are many indicators that tell us about how well the teaching and learning activities are going on in the schools, it is important that those most responsible for resource allocation share some basic understandings about which educational inputs, processes, and outcomes are most important to encourage. These understandings will guide resource allocation. Once resources are allocated, these become

the indicators most important to monitor—they tell us whether our interventions to improve education are working.

One of the purposes of this seminar this week is to talk about these kinds of issues. Efficiency will be an important issue as you develop the strategy that will move you closer to achieving the goals of basic education in Nepal. However, Nepal is in an excellent position to face the challenge of improving educational efficiency, for three reasons:

1. The country has a strong commitment to basic education.
2. The Ministry has a data system that it can use to address the questions of efficiency, and
3. The country has dedicated leadership—as represented by the people in this room—to meet this challenge.

[This presentation draws heavily from material presented in: Windham, D. M. (1988). Effectiveness indicators in the economic analysis of educational activities, *International Journal of Educational Research*, 12, 575-666; Windham, D.M. and Chapman, D.W. (1990). The Evaluation of Educational Efficiency: Constraints, Issues, and Policies. Volume 1 in the *Advances in Educational Productivity Series*, Greenwich, Conn: JAI Press; and Government of Nepal (1988). *Nepal Education and Human Resources Sector Assessment*, Kathmandu: Ministry of Education and IEES Project, Tallahassee, Florida: Florida State University.]

IMPROVING THE QUALITY OF TEACHING AND LEARNING IN PRIMARY SCHOOLS

Dr. Gajendra Man Shrestha

I. INTRODUCTION

Expanding access to education is a necessary, but not a sufficient condition to attain the objectives of universal primary education. Improvements in educational quality and relevance support greater equity and higher efficiency level. It may not be an exaggeration to state that in current educational thinking about primary education in Nepal, too much attention is given to increasing equitable access to primary education. Important matters like goals of primary education and appropriate instructional measures in attaining them have received less attention. Improvement in learning atmosphere and learners' active participation in the education process have received less emphasis. Consequently, achievement levels of primary students have remained below satisfactory levels (CERID, 1985).

Improvement in the quality of teaching and learning in primary schools is crucial if the efficiency and effectiveness of primary education is to be enhanced. Factors that affect instructional quality may be classified into the following categories:

a. adequacy and appropriateness of material inputs;

b. quality and performance of instructional and supervisory personnel;

c. instructional practices, particularly time spent on teaching and learning, and teachers' expectation of pupil performance; and

d. school management.

Brief description of each of these factors based on the findings of the MOEC/IEES Sector Assessment is given in the following section.

II. CURRENT STATUS

a. School Building and Facilities

As the local community is responsible for constructing school buildings, there is no control over the type and quality of primary schools that are built. Although some facilities are well built, more are generally known to be inadequate. Most classrooms are small and dark, with earth floors and few windows.

A baseline survey of 260 participating schools in the Primary Education Project revealed that most schools had no latrine or compound walls, and a third had no drinking water facilities. The level of cleanliness was found to be poor. Another study conducted by CERID in 1985 indicated that, on the average, facility furniture (desks or benches) was available only for 50% of the primary school students. The availability of instructional materials, other than a blackboard and chalk, was found to be quite insufficient. Inadequate instructional facilities have adversely affected the morale of teachers working in the school.

b. School Size and Class Size

The average primary school size varies from 252 students per school in the Terai districts of the Eastern Development Region to 36 per school in the mountain districts of the Western Development Region. Average class size varies from 45 in the Terai, to 26 and 16 in the Hills and Mountain, respectively. The large class size in urban schools and smaller class size in the mountain schools demand different management skills and use of different instructional techniques on the part of teachers.

c. Curriculum and Textbooks

The curriculum sets standards and defines the scope and sequence of teaching-learning activities. The development of a systematic curriculum based on the cognitive status of children, parental expectations and aspirations of the nation, has remained unrealized in Nepal. Teachers are rarely involved in the formulation of the primary school curriculum.

The process of curriculum development and revision is based on a consensus aided by expertise and judgment. Missing in this process is a component for field testing the curriculum involving teachers, headmasters and other specialists. Consequently, many of the objectives are too general and do not define the specific skills and information to be taught at each grade level. The content of curriculum in some areas appears too limited and in other areas too complex for the primary school students.

Lack of clarity and specificity in curriculum had its effects on the quality of textbook. An analysis done by participants in a CTSDC workshop on Textbook and Reading Materials found that textbooks lacked both originality and novelty. The textbooks do not provide any directions to the teacher about what objectives are to be achieved with each lesson. Lack of a process for the pretesting of textbooks has adversely affected that quality and usefulness of textbooks.

Considering the research evidence that the influence of textbook appears to be stronger within rural schools and among students from lower income families (Fuller, 1987), and that the MOEC has allocated significant resources for the free distribution of textbooks, it is important to direct concerted efforts in improving textbooks and in developing supplementary materials.

d. Teachers and Supervisors

The quality of primary schooling depends on teacher ability and dedication since these teachers and the government-provided textbooks are the only resources available to many schools. The quality of the stock of primary teachers is low. Out of 55,207 teachers in 1987, only 36% are trained and 10% are women.

According to an IEES study, 50% of teachers are permanent and 50% are temporary, indicating a significant problem of job insecurity among primary teachers. The average number of years of teaching experience is 10.5 for permanent teachers and 3.1 for temporary teachers. Thus, the attrition rate among temporary teachers may be as high as 20%.

Teaching in primary school is a low status profession in Nepal. Primary teachers feel that their salaries are inadequate and opportunities for advancement insufficient. Teach-

ing conditions are difficult, and parental concern and community support are minimal. Professional support to the teachers in improving classroom instruction in negligible. Improving teachers' skills and commitment is a major challenging task.

Recently, the MOEC has raised the minimum qualification of primary teachers and implemented the plan of providing basic training to all untrained teachers. Other important matters, such as synchronization of training with improvements in curriculum and textbooks, and provision of support system to teachers, need to be given adequate consideration. In particular, the primary supervision system should be made more functional and effective.

e. Time on Task

A crude measure of the quality of instruction is time on task – the amount of time teachers and students are engaged in teaching and learning activities. According to data collected in the IEES study, the number of teaching days was found to vary from 156 to 232 days. Information on actual instructional hours per school day and efficient use of instructional time are not available. In general, it is estimated that less than the expected six hours per day envisaged time for teaching is utilized in teaching and learning activities.

Student and teacher absenteeism further reduces time on task. In a study of students' absenteeism in the Doti district, the rate of absenteeism increased from 20% during the slack agricultural season to about 55% in the peak agricultural season. The MOEC/IEES Sector Assessment survey indicates that students with best attendance records attend less than 75% of the time.

In 1985, there were about 56,000 primary school grades with 51,266 teachers, thus leaving 4,734 grades not covered by a teacher. Students in these grades unattended by teachers will spend less time in learning activities, as primary teachers are not trained in conducting multi-grade classes.

Teachers' time on task is reduced by their absenteeism. In some cases, cessation of teaching as protest reduces teachers' time on teaching activities. In general, it may be concluded that actual time spent on teaching and learning is well below what it might be.

f. Teaching Style

The traditional style of teaching and learning has persisted. A glimpse of teaching style as described in the MOEC/IEES Sector Assessment is reproduced below.

"Teachers tend to teach by subject across grades. The dominant activity in the classroom is teacher lecture punctuated by very brief questions regarding choral 'Yes' or 'No' answers from the students. Learning is basically rote memorization of the alphabet, arithmetic tables, or material from the textbooks. Written work tends to involve solving arithmetic problems or copying from the textbook. Textbooks are virtually the only instructional materials available. They provide whatever information students are to learn and whatever guidance teachers receive. It is no surprise that chanting from the textbooks is a significant daily activity. Schools can often be heard before they are seen."

Teachers' efforts to promote active student participation are minimal. Teacher's low expectation of pupil performance is reciprocated by students' passivity.

g. School Management

Major factors (such as the length of the school day, time spent on particular curriculum areas, and the efficient use of instructional time within the classroom) that affect instructional quality are more strongly determined by management practices than by material inputs. Most primary schools in Nepal are devoid of a management structure and system.

There exists neither a hierarchical nor a participatory management structure in primary schools. Although there is a provision of the School Management Committee, the committee members do not take keen interest and supervise instructional activities in their school. The power of the headmaster is restricted administratively and financially by the DEO and the SMC. The headmasters receive little remuneration and no training for their position. Thus, the expectation that the headmaster will play a leadership role in the instructional improvement of the school has remained unrealized. The headmasters do not hold effective authority over teachers' behavior and instructional practices in primary schools.

III. LESSONS FROM PROJECTS

a. IIPS

The Instructional Improvement in Primary Schools (IIPS) Project, conducted by CERID in 1983-1985, has adopted a multi-pronged approach of upgrading primary teachers' instructional skills, encouraging active student participation, increasing parental concern and involvement, and stimulating school administration to take an active interest in the qualitative aspects of primary education. The IIPS Project has amply demonstrated that the provision of essential instructional materials and basic preparation of teachers exerts a considerable influence over instructional processes and outcomes (CERID, 1989).

A combination of intensive and recurrent teacher preparation schemes adopted by the IIPS Project has proved to be effective in enhancing teachers' skills and participation. Teachers' involvement in the design and development of instructional materials led to the effective use of these materials in classroom teaching. After the implementation of the IIPS Project, fellow teachers, members of the school management committee, and some guardians have started to observe the project school teachers' classroom teaching. This helped in creating a proper learning environment in the rural schools. The achievement levels of project school students were significantly better than these in the control schools. The drop-out rate of the project schools also showed a declining pattern.

b. SERD

Seti Education for Rural Development (SERD) Project, implemented in 1981 in the Seti Zone, seeks to make the basic educational system more efficient and effective, to make teachers a resource for rural development, and to introduce changes into the basic education system to enhance the solving of major problems confronting rural people. Training of teachers and the provision of supplementary materials are an integral part of the project.

A 1986 evaluation study by CERID revealed that the school cluster system had a positive impact on the quality of education in rural areas. The project has been notably

successful with the physical improvement of school facilities, the provision of supplementary readers, and the development of a support system to the teachers. The evaluation study, however, stressed that more attention needs to be given to helping teachers improve their teaching practices and to helping the Resource Centre schools provide support that leads to teachers' professional development.

c. PEP

The Primary Education Project (PEP), implemented in 1984, was designed to bring about low-cost, qualitative improvement in primary education. The strategies adopted by PEP are the school cluster system, recurrent 12-day training for primary teachers followed by continuous supervision by a resource person (RP), and a provision of teaching aids and supplementary reading materials. Training is also provided to headmasters and SMC members. School rehabilitation is an integral part of the project, aimed at improving the instructional atmosphere in primary schools. The PEP has made significant progress in the development of materials and the training of RP's and participating teachers.

It is reported that the PEP teachers have increasingly used demonstration, discussion, story-telling and role playing in their classrooms where lecture was previously predominant. A serendipitous achievement of the PEP was grade teaching. Grade teaching has improved student attendance and interest as well as the physical appearance and cleanliness of the classrooms. It is also reported that students in grade teaching have learned to read and write in a shorter period (3 months) than in the regular class. Many teachers, initially skeptical, now feel positive about grade teaching.

IV. POSSIBLE STRATEGIES

The process of quality improvement demands a multi-faceted approach which includes teacher training and continued support, provision of essential instructional materials along with physical facilities, and parental and community support to instructional programs. On the basis of the findings of the MOEC/IEES Sector Assessment and

implications of different projects, the following strategies are suggested for bringing about sustained improvement in the quality of teaching and learning in primary schools.

1. Develop a set of detailed, sequential objectives related to skills, knowledge and attitudes to be learned by primary school children along with acceptable levels of performance at the end of each grade and at the termination of the primary cycle. This would provide a clear direction to teachers about what they are expected to teach.
2. Make teachers accountable for attending classes regularly. Teacher regularity will increase the amount of learning taking place in primary schools.
3. Provide practice based training to teachers in the use of methods and materials. This will reduce, in part, the boredom associated with teaching and will increase students' participation in learning tasks.
4. Involve teachers in the design and development of instructional materials. This is important to acquaint teachers with steps in learning a concept or a skill. Moreover, it ensures their use in classrooms.
5. Implement a support system, such as in the PEP, to the teachers in refining their skills and in strengthening the sense of their professional capabilities.
6. Recognize and reward teachers for teaching well. Provide additional incentives for grade teaching and/or for better performance in grade 1.
7. Focus on relevant content and skills so that students will be more interested in and committed to learning.
8. Develop appropriate instructional materials for grade 1 so that initial learning in primary school will be meaningful to students.
9. Train teachers to expect better performance of their students. High teacher expectation will result in increased learning.
10. Make continuous assessment of students' progress in primary grades. This might reduce student absenteeism and quicken the pace of their learning.
11. Increase parental concern and cooperation in promoting students' learning by making them aware of their roles and responsibilities in the education of their children.
12. Adopt policies to encourage and reward schools that utilize their resources in enhancing the quality of the learning atmosphere and in raising the achievement levels of their students.

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INCREASING THE EFFICIENCY OF PRIMARY EDUCATION: RESEARCH AND PLANNING PRIORITIES

Tirtha Bahadur Manandhar

Introduction

Universalization of primary education with emphasis on enrollment, retention and achievement has been one of the main policy thrusts of the government in recent years. The aim is to provide the children with a basic set of knowledge, skills, and an attitude and make them fully literate. Much progress has been made in expanding enrollments, and in extending primary education facilities in the rural areas. However, the primary education system is confronted with several problems relating to enrollment, quality and efficiency.

It is generally observed that the efficiency of the system is low, as shown by the extensive pattern of dropout and repetition. Similarly, the quality of education in schools is felt to be low as demonstrated by low achievement levels of the completing students. The dropout and repetition tendencies are felt to have led to wastage of resources spent on the students who drop out or repeat the grades. Some observers feel that if dropouts have an opportunity to continue their learning in nonformal settings, the expenditure involved in their formal school education, however incomplete, would have served a useful purpose.

The dropout and repetition rates now prevailing pose a critical problem in the realization of the government's goal of providing primary education to all 6 to 10-year-old children by the end of the century. The efficiency of the system needs significant improvement to facilitate the achievement of this goal. This, to a large extent, depends on improvement of the quality of instruction in the schools.

Estimates of Dropout/Repetition and Factors

The MOEC/IEES Sector Assessment, quoting the MOEC Report on Dropout and Repeaters (1986), points out that (i) only 22% of the children enrolled in Grade 1 com-

plete Grade 5, (ii) 70% of all dropouts at the primary level occur at Grade 1, and (iii) 53% of all repetitions occur in this grade. The crux of the problem thus is seen to be how to tackle the dropout and repetition problems at Grade 1. Any measure designed to grapple with the wastage issue must address the particular causes of the problem at this grade.

There are a number of factors that are presumed to cause the dropout/repetition. Some of these are:

- A large number of underaged children are admitted in Grade 1; the underaged are prone to dropping out or repeating the grade.
- Children come to school without knowing the alphabet and numbers; considerable time is required to teach these before the children can start with the primary textbooks.
- Some children join schools just to receive the free textbooks.
- Poverty compels many children to work at home or in the fields.
- Students are not impressed with the school facilities and surroundings.
- Instruction is felt to be of low quality.
- Class sizes are too large at Grade 1.
- Parents do not show concern for the education of the children.

The Primary Education Section of the MOEC/IEES Sector Asseeement singles out low instructional quality as the prime causal factor of educational wastage. This is partly due to high rates of teacher absenteeism. The study is emphatic in stating that regular teacher attendance could improve instruction, regardless of instructional styles and materials used. The study also recognizes the potential positive benefits of improved materials and teacher qualifications.

The CTSDC Report on "Training of Primary Education Personnel" (1985) contains an analysis of the educational wastage situation. One of the main contentions of the report is that the teachers, school management committees, and educational authorities have not been fully aware of the magnitude of the situation, and have not shown much concern for reducing the education wastage.

Cost Aspects of Efficiency

The IEES Study presents estimates of unit costs and cycle costs under ideal conditions (no wastage), and under present dropout/repetition conditions. The study estimates that 9.5 pupil years are needed to produce a primary school completer. Thus, actual cycle costs are almost double that of the 5-year cycle costs under ideal conditions. School expenditures (borne by government) per student are estimated at Rs. 277 and cycle costs at Rs. 2618 in 1985/86. If efficiency levels were nearer the ideal condition, cycle costs would have been much lower.

MOEC/IEES Sector Assessment Recommendations

General Policy recommendations:

a. Planning and management capacity: Strengthening of planning and management capacity is needed throughout the sector to enable the MOEC Staff to develop appropriate and realistic strategies to meet the sector goals.

b. Instruction: More attention should be paid to the instructional process to improve its quality and efficiency.

c. Data collection and analysis: The availability of more reliable and current data, and the increased capacity to perform timely analysis would improve data-based planning and decisionmaking.

d. Decentralization: While there is extensive decentralization in the formal education system, there is a pressing need to clarify roles and procedures surrounding decentralization.

e. Quality control of educational activities: Mechanisms to control quality of education at all levels should be developed.

These recommendations, meant for the entire system, are quite relevant to designing measures to deal with problems of efficiency. Better management capabilities at the centre, in the districts, and in the institutions, improved instructional practices, and quality control measures (primarily through district level educational administration), would enhance the efficiency of the primary education system. Similarly, improved data collection, analysis and management would help in developing specific action programs.

Specific Recommendations

Various sections of the IEES study contain measures aimed at promoting efficiency. These are as follows:

a. There is the need to improve the quality of instruction through measures such as improvement of instructional materials, training of teachers, development of a professional support network for teachers, and enhanced community support for schools.

b. Attention should be given to improvement of Grade 1 instructional materials for facilitating learning of reading, which is essential to reduce repetition rates.

c. There should be improvement in teacher performance in schools, accompanied by more regular attendance.

d. Grants-in-aid to the schools should be based on average daily attendance (ADA) in place of the number of teachers. This may help teachers in being careful about retaining the students. State aid should be altered to make a matching grant to supplement local resources based on property. A floor rate per student to be met by the state may be worked out.

e. Cost saving possibilities in textbook production and distribution should be explored.

f. The supervision system (to be made into inspectorate system) should be implemented as planned, while also making opportunities available to the teachers and headmaster to learn how to do a better job and to have access to resources to support their efforts.

g. Local schools should be encouraged to form clusters on their own initiative. The government could provide incentives to cluster schools in the form of access to training programs, supplementary materials, and in the form of contributions towards construction costs.

Recent Government Policy Intentions and Measures

The Educational Policy Measures in the Education Sector Plan of the Seventh Plan (1985/90) contain the specific measures aimed at improving efficiency and quality. The plan calls for introducing preprimary classes in schools with a view to better prepare the children for primary classes. Next, the Plan calls for an initiative by Town Panchayats to introduce compulsory primary education. These measures were not, however, carried out in earnest. Preprimary education is not financed by the government as a matter of policy. It is left to the schools' initiative. Several private schools provide preprimary

education in urban areas, but this is meant mainly for the richer families. And the Town Panchayats, hard pressed with other functions and also short of funds, took no notice of the policy measures regarding compulsory education.

The "Programme for Meeting the Basic Needs" (National Planning Commission, 1987) calls for expansion of enrollment with an aim of enrolling all 6 to 10-year-old children in primary schools by the year 2000 A.D. A number of the measures mentioned in the education section have relevance to increasing efficiency in the primary education system. These are:

- Emphasis will be placed on improving physical facilities in schools,
- Provision will be made for training of teachers and regulation for career development of teachers will be established,
- There will be compulsory inspection of schools,
- Textbooks will be rendered interesting and simple in order to reduce the dropout rate of children,
- Establishment of preprimary schools on the basis of local participation will be encouraged,
- Distances to schools from settlements will be reduced,
- Provision will be made for adopting flexible school hours to suit the needs of working children, and
- Provision will be made for encouraging extracurricular activities in schools.

These policy measures, it is hoped, would help in enhancing efficiency and quality of primary education. These steps touch on the motivational aspects of teacher behavior, their pedagogical training, instructional materials, quality control of instruction, school environment, and access to schools. The government has already taken action for implementing these measures, besides continuing various innovative activities under the Primary Education Project and the education for Rural Development Project (Seti Zone). These two projects lay stress on assisting rural schools in improving instruction through Resource Centre mechanism and on providing training to headmasters and teachers.

Planning and Research Priorities

Planning: The following priorities may be considered in the area of planning of educational activities with reference to efficiency promotion at the primary level.

a. Greater investment in quality improvement programs: Most of the budgetary resources are currently devoted to paying teachers' salaries. There is a need to devote more resources to improvement of the instructional process (training, curriculum development, supervision, formation of school clusters, and instructional materials).

b. Formal status of preprimary classes: Early childhood education financed by local resource, with technical support of the government should be promoted. Preprimary classes (often operating as part of Grade 1), need to be formalized as distinct from Grade 1. Such preprimary classes in the rural areas need not emulate the urban models.

c. Compulsory Primary Education: Feasibility of implementing compulsory primary education supported by central and local resources should be studied. In such studies, attention needs to be given to administrative, financial, and management implication.

d. Subsidization of direct costs of school attendance: In view of the fact that poverty and deprivation of families are among the main causes of the dropout situation, the government might consider subsidizing some of the costs of school attendance borne by families in the absolute poor category. Uniforms, stationary expenses and school meals come under this category of costs. Since subsidization competes for the limited budgetary funds, the implications for financing and management need to be scrutinized before taking up such measures.

e. School mapping: Easier access to school is helpful in promoting enrollment and attendance. School Mapping, with the participation of District Education Office staff, should be undertaken to grade location of new schools and consolidation of existing ones.

f. Teacher training: The school headmasters and teachers need to be made more aware of the dropout/repetition situation; and teacher training contents need to highlight the problem.

g. Effective monitoring and supervision: Mechanisms for more effective supervision of schools (District Education Office, Resource Center, School Management Committee, Headmasters) should be developed.

h. Data analysis: Definitive information on dropout and repetition trends are still not available. Data generation from schools is the crucial aspect of the problem. Data collection systems at the district level needs supervision. Case studies of schools in different regions would be helpful.

Research

Research activities should be such that they provide guides for policy making and action. Some indicative areas could be the following:

a. Demographic, social, economic, and school factors influencing dropout/ repetition trends in the primary school system.

b. Preprimary education: its setup, operation, and potentials for reducing dropout/repetition.

c. Parental costs and opportunity costs of school attendance.

d. Differentials in enrollment and attendance rates.

e. Educational technologies for enhancing efficiency and quality of education.

f. Pupil evaluation systems at primary level.

g. Comparative costs (Unit Costs) of the private and public schools.

h. Students records and reporting systems in schools.

i. Data collection and analysis capabilities in the District Education Office.

j. School Budgets: Micro-studies of instructions.

k. Extracurricular activities in schools.

l. Resource centers as supervision mechanisms.

m. Characteristics of dropout/repeaters by gender, geographic areas, socioeconomic status.

n. Complementary educational programs (adult education, nonformal education for out-of-school children, and educational programs of Integrated Rural Development Projects).

o. Financing of primary education in the 1990s.

Conclusion

The programme for meeting the basic needs (1985-2000 A.D.) calls for increasing primary school enrollment from 1.8 million in 1984/85 to 2.9 million in the year 2000, implying the need of increasing enrollment by 61% over the 15-year period. The linear growth trend is still continuing. In order to attain the goal of 100% enrollment of all primary age children, efforts are needed to reduce dropout and repetition, to increase girls enrollment, and to increase participation of children from the poorer socioeconomic groups and geographical areas. Fear has sometimes been expressed that quality of education will be compromised in the course of mounting a rapid expansion of

primary education. The government is making efforts to see that this does not happen. The government's concern is reflected in introducing a compulsory supervision system, raising the minimum academic qualification of primary school teachers to SLC, launching a countrywide teacher training programme, and undertaking several measures to improve instructional materials. For seeing that all these programmes are effectively implemented, educational management practices especially at district and local levels need improvement.

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REPORT ON THE EDUCATION MANAGEMENT INFORMATION SYSTEMS IN NEPAL

Madhup Dhungana

This is a summary of the report submitted earlier to the Ministry of Education and Culture (MOEC). The main purpose of that study is to describe in detail the present sources of data for the MOEC and how data are collected and used. The ultimate objective of the study is to assure that the future information needs of MOEC are met.

With the development of an Education Management Information System (EMIS), planners and policy makers benefit highly from using this system in making their decisions. Nepal now has an EMIS, but it is in an early stage of development. This report will describe the current status of that system.

A comprehensive EMIS is an elaborate and technically complex system. Frequent communication among all parts of the system is essential if the system is to meet the needs of the decision makers. The above figure describes aspects of an ideal system. Nepal is working to improve its EMIS. As more accurate and timely information becomes available, users will be able to base their policies and plans on increasingly better representations of what is actually happening in schools and districts. Better plans and policy decisions will result in the improved allocation of resources and in more successful programmes to improve the achievement of children in Nepal.

A. Findings

The collection of educational data was not a priority before 1962 when a division for research, planning and statistics was established in the MOEC. This unit later assumed the denomination "Manpower and Statistics Section" (M&S) with the advent of the New Education System Plan (NESP). The first Educational Statistics Report, which provided only quantitative information, was published in 1964/65 and reported the number of students, teachers, and schools by districts. This report became the primary source for all basic education data. In early 1980, teachers were granted status equivalent to civil

service and a policy was formulated by MOEC to award cash prizes to the schools considered best as judged by various criteria. This award policy required the collection of detailed evaluation information from each school; and this responsibility was handed over to the School Administration (SA) section. Subsequently, the SA section developed a 52-page data collection form. The M&S section also reintroduced a four-page form for collecting data.

B. Data Collection

In the process of data collection, all schools receive the M&S and SA data collection forms, but the timing of the distribution of these forms to DEO and arrival back to MOEC vary from year to year. In 1986, the M&S forms were dispatched in May, while in the following two years they were dispatched in June and February-March, respectively. The M&S forms are sent to District Education Office (DEO) by post which may take between 3-weeks to 3-months to arrive at DEO. Again, though the DEO starts distributing forms immediately, they may not reach the schools in time. The transfer of the forms to and from the schools depends on teachers going to the DEO. Their visit, depending on the distance between the school and DEO, may not be frequent. For 1987, according to the study, the average time that the M&S forms were held at DEO before being distributed to schools was 81 days.

The SA section in general applied the same process as M&S for sending the forms (by post) to DEO. But, in 1988 it has started sending cables to Regional Education Offices (REOs) to pick-up the forms from Kathmandu. REOs have no problem in distributing the form to DEOs; but the distribution and collection mechanism from DEO to school and back to DEO is the same as for the M&S section. The average time these forms were held at DEO was 82 days. It has been reported that the SA form is much more complicated to understand and fill out correctly; and since the form is so long and seeks data from prior years, it demands a comparatively longer time to complete than the M&S form.

The M&S section asks the DEO to report the school level data on a district summary form supplied by the M&S section. To assist in the preparation of the district summary,

the M&S section also supplies a form for tabulating the school data. The completed summary forms by DEOs are being used to build the data base at the M&S section. The SA section sends its forms to the National Computer Centre which takes about 12-18 months for processing the forms. Such a long delay in processing does not allow the collected data to be used in selecting schools for national award. The SA section therefore must always rely on an alternate method to process their data in order to announce the national award in time.

Waiting for all the forms to be returned and the lack of skilled manpower at the office to tabulate data were some of the reasons reported for the long delay at the DEO.

Apart from these, each school is asked to submit a monthly or quarterly report to DEO. These data collection efforts are at the discretion of individual DEOs and actual practice and types of data collected vary considerably by district. However, these reports are important for DEO because he controls the salary budget of all government and semi-government schools in the district.

Another problem seen in the data collection is posed by private schools. Of the total private schools, about 20% do not send back the forms to the DEO. They pay little attention in this regard, and a few schools even reported that they did not receive the data collection forms.

The quality of the available data depends on the records kept by schools. Since these are the primary source of information, most schools keep records for the current year on the enrollment, teacher qualification, and attendance, but have difficulty maintaining records from previous years. A large number of schools, especially high schools, have income and expenditure records as well. Nonetheless, record keeping systems in many schools are very poor. At the district level, all the financial records are kept by the senior accountant, but there is no clearly assigned responsibility for data collection and processing within DEOs. Data management tasks often fall to low level, unskilled personnel. When DEOs are requested for information on individual schools, they consult their own register, prepared according to the monthly or quarterly reports, rather than individual M&S forms. But, upon the request for aggregate data for the district, they use the data used on the M&S summary form. The quality of the records kept at the district

level depends primarily on the initiative and interest of the individual DEOs. At REO, there appears no standard pattern for record keeping, though they receive both an M&S form and a district summary form. Very often, REOs request their own data from the DEO. And, as there are apparently no established positions in the REO for record keeping and data management, the quality of the records available at REO depends on the interest and commitment of the REO.

For the improvement of the EMIS in the MOEC (M&S), some computers have been acquired with the help of the IEES Project and on various occasions this computer facility has been successful in meeting requests of senior officials on time. However, at the REO level there is little identifiable need for a computer. Computers at this level would do nothing to change the inaccuracies in the data entered at the school level where the forms are completed or at the district level where they are tabulated.

Senior officials believed that, apart from a lack of timeliness, most of the problems lie at the school level. Ninety-eight percent of the interviewed officials made complaints about delay, and 97% perceived redundancy in data collection activities, pointing out the lack of understanding and cooperation between the M&S and SA section as the cause.

As for data dissemination, the DEO is the focal point for data collection and distribution. The success of the data management system appears to rest on DEO. Despite this heavy demand, not all the districts have a section especially designated to manage the data flow. In contrast, there appears to be no focal point in the MOEC through which data requests are funneled and organized. Only the M&S section formally distributes educational data through the publication of reports. There is no formal reporting of the data collected by the SA section.

M&S publications, however, are distributed on an *ad hoc* basis in response to personal requests. Not only are the requests for data made on a personal basis, they are often made at the last minute. As a result, data may not be available and mistakes may be made in the haste to produce. There is no regular and systematic process for reporting data to higher authorities, partly because it is difficult to anticipate when and what data will be needed. DEOs are confronted with many problems in trying to meet these

requests, such as demand for non-existent data, time constraints, and lack of skilled manpower. As a result, they are pressured to provide estimated data.

Senior officials often may consult different sources for the same data, this places an unnecessary burden on the data disseminators, especially DEOs, and undermines confidence in the quality of data available.

It was also found that 80% of documents reporting educational data were prepared as part of donor-sponsored studies and only 20% were prepared by the MOEC.

C. Data Quality

Data reported by the M&S section, the SA section, REOs and DEOs do not necessarily agree. This has led senior officials to question the reliability of data.

Generally, the magnitude of error in the data collection process of M&S is slightly higher at the primary than at the secondary level; 5% as compared with 4%. This may be because students are enrolled and leave, especially in lower grades, throughout the year. Comparing the school records with the SA form for the primary and secondary level enrollment, the average errors are 25% and 14% inflation of the enrollment figures, respectively. However, the evidence suggests that, in general, with the exception of a small percentage of sampled schools, the errors in reporting data on the M&S form are minor and are not due to deliberate efforts by schools to inflate their enrollment.

Another source of error is the data tabulation process at the DEO; the magnitude of error resulting from the incorrect tallies was considerably less than 1% of the total student enrollment. However, some error is introduced when the DEO does not have a complete set of school forms but must provide district level summary data. At this point missing data is either estimated or omitted. The magnitude of this error ranges from 0 to 25%.

Though the M&S section appears to have developed a system for correcting errors occurring during the data entry process, numerous errors are made while data are transferred from the originals to the printer's setup for publication. However, as much of the data are disseminated through informal channels using reports generated directly by the computer, the publication errors may have little impact.

When the data provided by the DEO to the MOEC over a five-year period were compared, it was found that the data reported by many districts are not consistent. The most obvious explanation is that there is little commitment at the district and regional level to careful collecting and reporting of data.

REOs do not use data reported on the M&S district summary form but rather do their own data collecting. All REOs complain of not receiving the completed M&S summary form from all districts in their regions. As a result, they ask for all basic aggregate data from the district themselves. Therefore, results reported may not be exactly the same as the MOEC reports.

The comparative study of data reported by DEO, REO, and MOEC documents shows little or no systematic overinflation or deletion of figures reported. This is not to say that the figures are consistent. Rather, the sources of error appear to be fairly random. Errors arise out of carelessness and the lack of a systematic approach rather than from deliberate manipulation.

Many senior officials believe that, on the average, there is 17% error in the national enrollment data, and they consider an average of 10% error as an acceptable level of error. The finding of the aggregate of only 5% error suggests that the quality of the data reported by schools is considerably better than the senior officials perceive it to be. Because of the concern for consistency, the senior officials perceive the data discrepancies to be more significant than they really are. However, no data collecting and reporting system will produce results that are perfectly consistent.

D. Data Use

Most senior officials are using data reported by the M&S section, DEOs, and REOs because data collected by the SA Section are only partially processed and not formally reported. These officials are frequent users of data on student enrollment, teachers, educational costs, physical facilities, and educational materials for planning and implementing programmes. It was also reported that data are used in policy formation. There appears to be some confusion as to the difference between using data for policy making and using data for planning. However, using data for policy making requires that

data be made available before policies are made, not after they are announced. They also feel that data are very important sources of information for policy making.

Senior officials have identified certain kinds of data which they believe are needed, but which are not currently available. Many of the data needs identified by these officials are either beyond the scope of the MOEC to provide or have already been collected or, if necessary, can be collected.

However, the problem appears to be that more senior officials are not aware of what data are available and that data that are available are not in usable form. They also report having difficulties in using data. Lack of timeliness, lack of skilled manpower, and perceptions of data accuracy are felt to be the main constraints in using data.

E. Conclusion and Recommendations

Based on the findings of the study, the following conclusions were drawn:

1. The Basic features of an EMIS are in place in the MOEC. There is a process for collecting, processing, storing and disseminating data and information.
2. While the basic features of an EMIS in place, the system is not working efficiently enough to meet the needs of data users in the MOEC.
3. The existing elements of the EMIS are not institutionalized in MOEC policies and staff job descriptions.
4. Duplication of effort in data collection within the MOEC, as well as overcollection of data is both inefficient and undermines the credibility of the EMIS and confidence in the quality of the data.
5. The data collection and processing steps as checked in this study appear to produce data with relatively little error. The validity of this data, however, needs to be questioned.
6. There is no systematic process for disseminating data to users.
7. The data available in the MOEC are quite comprehensive.
8. Official concern for consistency forces the EMIS to be defensive about and overly concerned with small discrepancies in the data.
9. The primary purpose of an EMIS is to improve the quality of education through the more appropriate and efficient use of financial and education resources. Yet the EMIS in the MOEC is not well integrated with the policy-decision making process.

On the basis of our conclusion, the following recommendations are made:

1. The MOEC should develop and implement a plan for institutionalization of an EMIS for specifying processes of data collection, data dissemination, and keeping of records at every level. Specifications of job responsibility, deadlines for the collection and processing of data, and consequences for proving the data late and inaccurate, and recognition for reporting high quality and timely data are necessary. Establishment of a statistics section in all DEOs, is important.

2. The MOEC should establish an EMIS policy board to determine the type of data to be collected by the M&S section and data bases to be maintained by the section, monitor the quality and usefulness of data, assure implementation of the EMIS plan and all policies related to the EMIS, revise the EMIS plan as needed, promote the use of data in planning and policy making, and to initiate dialogue with other governmental agencies with respect to data needs beyond the scope of the MOEC to collect.

3. The MOEC should revise the school evaluation process so that only data that can be used in a reasonable and timely fashion are collected, and data collection and use are coordinated.

4. The M&S section should be responsible for all data collection related to the primary and secondary schools. A month should be fixed for data collection and the M&S section should decide which data should be collected annually and which data need updating.

5. The M&S section should be responsible for dissemination of all data selected to schools, students and teachers for assuring data quality, consistency and reducing duplication of effort. The M&S section should initiate dialogue with senior officials as to their needs, and publish an analysis of the data in addition to the annual Yearbook. The EMIS policy board should establish a distribution list for MOEC and also fix the publication data.

6. The MOEC should provide training to support the implementation of the EMIS plan.

7. To support the implementation of the EMIS plan, focused policy studies should be conducted under the direction of the MOEC: a study of annual enrollment patterns in each level of school, a study to determine the feasibility of using the postal system and a study on the discrepancies in student enrollment are necessary.

BUILDING AN INFORMATION SYSTEM FOR EFFICIENCY IMPROVEMENT

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Let me first express my appreciation – and the appreciation of IEES and USAID – to Madhup Dunghana and to the many Ministry of Education and Culture (MOEC) officials who have contributed to this research effort. The present and future impacts of the research findings – which have just been so well described – has been realized because of the support of many educators here today.

For my part, I would like to present an overview of IEES experience in assisting countries with the development of information systems and to discuss the next steps for strengthening the Education Management Information System (EMIS) in Nepal.

As you know, IEES has sponsored research studies in other countries similar to the one in Nepal in order to examine the availability and accuracy of educational information, its flow through the educational system, how it is (or is not) utilized, and how decisionmakers feel about their use of information. In addition to such research on information use, IEES continues to assist many countries in building information systems. As in Nepal, this is necessarily a slow process and one that requires the strong and sustained support of ministry decisionmakers.

To begin with, I would like to address a central question: Why does IEES assist in developing information systems and sponsor research in this area? Discussions in this seminar have focused on the need to affect change at the classroom level and those of us representing IEES/USAID here have stressed our concern of targeting project resources on such changes. We recognize the need to operate not only at ministry level, but also at the classroom/school/district level where the actual delivery of education and training services are concentrated. After all, if the investments of MOEC, IEES, and other

assistance agency resources resulted only in more efficient central level operations—but produced no significant changes in the classrooms of Nepal—then little would have been achieved. External assistance fails when it isolates itself from the reality of the education context in Nepal—or in any country—and focuses only on work with central officials at the national level. The IEES planning model is always built upon the idea of linking school level realities with central policy deliberations.

Simply put, the strategy for IEES assistance is based on the belief that information systems are a necessary—but not sufficient—condition for improving the efficiency of an educational system. That is, an information system will not bring about improved efficiency, but it is one in the set of conditions which is most likely to bring about efficiency improvements. IEES strategy argues that EMIS development must be the foundation for any long-term restructuring of policy emphases concerning human resource efficiency. We have continued to stress, however, when assisting in the building of information systems, that an EMIS will not, by itself, produce better analysis and decisionmaking. The EMIS research in Nepal which has been described today, along with the findings of the IEES-sponsored EMIS research in Somalia and Yemen Arab Republic, has now given us a better understanding of the linkages between information needs, data availability, hardware and software needs, technical training needs, and the development of an organizational culture within which data-based decisionmaking is not only accepted, but is required. The IEES monograph on *Indicators of Educational Effectiveness and Efficiency* provides an overview of how an efficiency-based EMIS could be built and we would be pleased to provide copies of this monograph to each of you.

Again, let me note how IEES operationalizes the efficiency concept. System efficiency is defined by its effectiveness (which subsumes concerns of quality, equity and access) when compared with the costs of achieving this effectiveness. Indicators of system effectiveness must, therefore, be collected in order to be compared with costs.

IEES experience in assisting education ministries plan and implement information systems has taught that there are three critical conditions which must be met before such systems can effect the efficiency of the education system. First, the quality of the data collected must be assured. That is, the accuracy, timeliness, and availability of data must

be at a level to justify the confidence of ministry decisionmakers. In some countries, we have found that decisionmakers lacked confidence in the data collected by ministry systems – the result of years of receiving out-of-date and inaccurate data. The absence of computers in some systems led to tabulation errors compounded at every level and long delays in even basic summaries of educational data.

Conversely, The arrival of computer-based systems has sometimes lead to the overestimation of their power. The greatly increased speed and tabulation accuracy of computer-based systems may cause educators to ignore data quality issues due to systemic reporting and collection problems.

As the MOEC EMIS study in Nepal found, errors in tabulating and reporting data by the Manpower and Statistics Division are minor and decisionmaker confidence in the data collected is justified. The study reports, in fact, that the amount of error is even less than decisionmakers believe it to be.

The second critical condition for data systems leading to efficiency improvements is that data must become information. Let me emphasize this important distinction between data and information: data becomes information when it has meaning for those receiving it. Numbers on enrollments, repetitions, dropouts, etc. must be analyzed and interpreted to become useful information for guiding rational policymaking.

The availability of reliable and relatively cheap microcomputers since 1981 (the introduction of the IBM PC) has resulted in the production of volumes of data summaries and analyses from the jungles of Liberia to the deserts of Somalia and the valleys and mountain peaks of Nepal. All this data is useless unless it has meaning for those who must make resource allocation decisions at all levels of the system. Easily-learned, off-the-shelf software for statistical summary and analysis has also contributed to this explosion of data. The offices of the world are now being filled with daily printouts from Lotus, DB III, Enable, and other well-known software packages.

IEES continues to stress, however, that data analysis is not a mechanistic process. Machines do not produce information from data. The process in necessarily subjective in nature. The values important to those using data for preparing arguments for policy change must enter (explicitly or implicitly) into the process of changing data into

information. The important point here is that decisions will and must be made—with or without data-based information. The goal of an information system is simply to improve this process.

The third condition to be met in order to affect system efficiency improvements is that information must have regular channels to flow into institution decisionmaking processes. That is, the products of the information system must be clearly, concisely, and persuasively presented and regularly introduced into existing institutional channels. This condition is, of course, the most difficult of all the three to attain.

Many factors may combine to hinder the introduction of information into decisionmaking channels. Some of these which IEES has encountered are:

- Those persons or agencies accustomed to decisionmaking without the provision of data-based information may see no advantage in using the information.
- Decisionmakers may, in fact, perceive that their influence could be eroded through data-based arguments. Accurate and timely information may contradict their beliefs about the system.
- The decisionmaking process may not be overtly defined and thus may be unable to accept the information produced. This may be either because the processes within the ministry are not regularized or because the important decisions affecting the work of the ministry actually are made outside the ministry.
- Information produced within the ministry may be in conflict with other (government or external assistance agency) information sources and thus be discounted or devalued.

IEES experiences in assisting ministries to develop information systems have taught that information is most likely to flow into decisionmaking channels under these conditions:

1. The information provided by the new system becomes available at key decisionmaking or planning points. That is, the perceived value of the information being produced (and, by extension, the value of past and future investments in the system) is recognized because it can provide data-based arguments at the crucial points of debate. This has occurred in some countries when the new system provided useful information to feed into ministry internal reviews, government planning cycles, or important project planning stages of agencies assisting the ministry.

   Information produced by the new system becomes implicitly powerful when it feeds into such points of debate because it is able to move policy

debate from personal intuitions and beliefs towards more rational comparisons of both what is known (collected data) and what is yet unknown (projected data).

2. Secondly, IEES experience has been that information use in institutions which are unaccustomed to data-based debate requires strong advocates within that institution. Information use in organizations requires champions within the existing hierarchy to introduce relevant, useful, and persuasive information into policy debate.

The technical nature of building a computer-based information system presents a special problem for introducing information into policy debates. The danger is that the system will be seen by the institution only as a technical innovation. Its products will be admired, but not used and its advocates—unless highly placed—will be confined to the level of technicians. Information, even though of high quality and however well-presented, may have no effect on system efficiency.

IEES as one of its four central component activities (I refer you to the project description handout) assists ministries of education with the development of information systems because the opportunity for efficiency impacts are great. Our experiences have shown that even quite small investments in hardware and training can result in impacts on system efficiency far beyond what one might expect from comparable investments. Clearly, the opportunity for such impacts is now present in Nepal. The first of the critical conditions I have described is being met: The quality of data being collected is of sufficiently high quality to be acceptable for use by ministry decisionmakers. The remaining conditions to be met are:

- the regular and persuasive transformation of data into information, and
- the institutionalized use of that information in policy forums.

Creating the opportunity for these conditions will require both time and strong advocacy by those who strive to improve primary education in Nepal today.

Let me conclude with a brief overview of the next steps for developing an information system in Nepal. These have been put forth in the MOEC proposal for EMIS development (copies of which have been provided to you). These steps include:

- Reduction of the present redundancies in MOEC data collection systems;
- Further strengthening of the Manpower and Statistics system within the MOEC;

- Building the analysis capacity within the system for the timely dissemination of needed information; and
- The identification of appropriate effectiveness indicators for the system.

In the future, this system should be built upon the specification of effectiveness indicators which can, when compared to costs, provide needed information on the performance of subcomponents of the educational system in Nepal. In this important work, IEES and USAID remain committed to assisting the MOEC and all concerned educators in Nepal.

Summing up, let me say that today information use to achieve efficiency improvements is possible in Nepal and—in fact—important steps have been taken towards this goal. The continued work and the support of the educators who are here today is required. The present EMIS can be developed to meet the information needs of the Basic Needs Initiative and other programs in Nepal to which the MOEC is pledged. Strong advocacy for information dissemination and use is essential and—given the support shown in this seminar—will continue in coming years.

FUTURE STEPS TOWARD THE IMPROVEMENT OF EFFICIENCY IN BASIC AND PRIMARY EDUCATION

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Dr. Ishwor Upadhyaya and others have provided a frank and thoughtful review of efficiency issues during previous sessions of this seminar. Furthermore, there has been a high level of participation in discussion of these issues which has underlined their importance and the concern of seminar participants. Let me review some of the critical efficiency issues which have been discussed so far:

- The tremendous problems of student retention and dropout rates.
- The persistence of glaring disparities between regions, between boys and girls, and between urban and rural areas. To meet the IEES criteria of efficiency which David Chapman has set before us, Nepal will improve efficiency to the extent that it reduces or eliminates such disparities. It is of course true that these are anchored in socioeconomic conditions which the education sector alone cannot resolve.
- The picture is not all bleak. As some of the most experienced educators here have reminded us, our discussions have benefited greatly from the historical perspective provided by Dr. Upreti, Dr. Panna Lal Pradhan, Mr. Ananda Lal Pradhan, Dr. Chuda Nath Aryal, Dr. K. N. Shrestha, and many others.
- Government's commitment to education is also encouraging. Major initiatives are underway—in expanding of access, teacher training, radio distance education, cluster schools and more. The challenge is to manage such a broad array of innovations, as well as the different assistance agencies associated with these, and to apply broadly what has been learned. Each of these initiatives is likely to require close monitoring and mid-course corrections.

This is where I as a researcher must reveal my biases. Looking at reforms and innovative programs that have achieved success and improved educational efficiency across a variety of national contexts, I cannot cite one program that was, in fact, implemented

exactly as planned. There is a mythology associated with planning and I confess that IEES has occasionally been guilty of joining in that mythology.

Efficiency is not achieved simply by the collection of more and presumably better informationa—although this helps—but by more sensitive responses to local instructional environments, as well as to opportunities and constraints found there. Education remains a local activity and will continue to be so for the foreseeable future.

This brings me to two points made by various presenters and participants:

1. The need for more detailed knowledge about what is actually happening in Nepal's schools and teacher training programs. There is special need for micro-studies of the relationships between schools and community life. Such studies would directly support MOEC's desire to operationalize its Basic Needs Strategy.
2. The need for flexible response—in the sense that the rigidity of the school calendar, the school day, the school curriculum and examination system all combine to discourage students. Can something be done to open up these systems? SETI and PEP projects offer encouraging evidence that flexible school calendars and class schedules do help keep students in school. Thailand's Nonformal Education program and Colombia's New School movement offer similarly encouraging examples of how to help students achieve at their own pace.

I am a great believer in starting with what works and then refining and modifying it to meet new conditions or constraints. The first task is to understand how specific reforms are working and under what circumstances. Then we must identify what is required to adapt them to new situations. What, if any, efficiencies are SETI and PEP achieving? What elements are essential to replicate their success as elsewhere? This is not an easy task. It requires careful scrutiny, preferably over time, and a sensitivity to natural variation which may be associated with the program as implemented in different communities and clusters.

This brings me to the role of IEES—past, present, and future. Our mandate from USAID is to assist nations to achieve greater educational efficiency through improved resource allocation practices at all levels: national, regional, and local. This can only be done through the collection and updating of adequate baseline information and the development of strategies which hold the highest probability of achieving national educational goals for equity, access, and quality—at a cost government can afford.

The Sector Assessment activity in Nepal constituted the establishment of such a baseline. It provides an excellent "snapshot" of the nation's education and training sector. This now must become a process which engages a wider circle of people.

The EMIS now functioning within the MOEC also provides a mechanism for taking the system's pulse on a regular basis. The utilization of data is critical – data become information when they acquire utility. Yesterday's presentation by Madhup Dunghana of the recent EMIS research in Nepal illuminated the duplication in collection efforts and the tendency to collect data for its own sake – data with little relevance for program planning and resource allocation.

Some mechanism needs to be developed to advise MOEC on what kinds of data are needed from what sources with what frequency. Some data must be collected from all schools every year; other data could be more efficienctly collected on a different schedule from only a sample of schools. Such a mechanism might be a Policy Research Board which could examine data collection within the broader scope of national educational research needs. The potential for EMIS/research interfacing needs further exploration. This seminar has provided an excellent model of how a working group composed of educators from a wide range of agencies can articulate research needs and provide valuable input for formulating educational strategies. The momentum developed throughout this seminar should not be allowed to dissipate, but should be guided towards supporting those now searching for ways to meet the present and future challenges of Nepal's educational system.

CONCLUDING STATEMENT

SEMINAR ON IMPROVING THE EFFICIENCY OF PRIMARY EDUCATION

Jointly Sponsored by
MINISTRY OF EDUCATION AND CULTURE, HMG
and
IMPROVING THE EFFICIENCY OF EDUCATIONAL SYSTEMS, USAID
January 22 – 26, 1990

I. This seminar has called for Primary Education in Nepal which:

- provides minimum quality standards to all students (literacy & numeracy)
- educates children to value their communities and their own lives
- uses a variety of educational technologies to best fit the widely varying social and geographical differences across Nepal
- sustainable within recurrent government budgets

II. This seminar has called for Primary Teacher Training which is:

- directly relevant to school and community
- intensive and recurrent, supportive to teachers
- recognizing of the special need for increased female participation
- sustainable within recurrent government budgets

III. This seminar has called for an education information system which:

- provides quality data
- is able to transform data into useful information
- feeds information into regular policy debate
- provides for flow of information throughout the system
- is based on shared understanding of efficiency concepts at all levels
- builds directly upon the present MOEC capacity for data collection and analysis

IV. This seminar has called for research agendas which:

- are directly relevant to the critical choices now to be made for improving the quality of primary education
- contributes to the growing research base in Nepal created by many agencies
- utilizes to maximal advantage the research expertise and resources of IEES

and—most importantly—this seminar has called for all educators in Nepal and all assistance agencies concerned with the education sector to recognize and promote the fundamental importance of Primary Education for human development in order to realize the potential of every child.