

# **School Effectiveness in Nepal: A Synthesis of Indicators**



Tribhuvan University  
**Research Centre for Educational Innovation and Development (CERID)**  
Formative Research Project  
July 2002

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## Acknowledgement

Archive on school effectiveness is full of research literature yet we have extremely limited empirical evidence on this subject in Nepal. Research on school effectiveness has drawn a considerable attention among education planners and policy makers. It is partly because school effectiveness research focuses assessing school's strength and weaknesses and suggests appropriate strategy to improve educational achievements by reducing wastage in schools. Findings of this study may have limited application to generalize a larger population however the present research has laid the foundation for future research on school effectiveness in Nepal. Yet, some of the findings might serve as guiding framework for researchers in this field.

I would like to express my sincere gratitude to the Norwegian Government for giving us the resources, and Department of Education and CERID for giving me this invaluable opportunity to conduct the research. My sincere gratitude is also due to Kristin Tornes and Dr. Bijaya Kumar Thapa for their continued support on both technical and administrative inputs throughout the research period.

Dr. Tirtha Khaniya's review and feedback were instrumental in making this report meaningful and a worthy presentation. I would like to extend my sincere gratitude to him for his valuable time and feedback.

I am grateful to the members of this research team: Tulashi Thapaliya, Raju Manandhar, Ram Raj Khakurel, Dilli Neupane and Yogendra Lekhak. Without the commitment and hard work of the team it would have been impossible visiting schools and collecting information during the state of emergency in the country. Friends and colleagues at the MOE and CERID also deserve our gratitude for their regular support and feedback.

Finally, but not the least, our thanks go to schoolteachers, SMC members, parents and the DEO staff for their hospitality and support during the data collection.

Vishnu Karki

July 2002

## **Executive Summary**

### **Research Background**

1. The purpose of this research is to assess school effectiveness with reference to the following dependant and independent variables: enrollment and retention, student achievement (test scores), and educational resources available in schools. In essence, it is aimed to shed some light on the factors associated with the variation that exists in schools with regard to some key efficiency indicators mentioned above.
2. Samples for this research are drawn from recently conducted National Achievement of Grade 3 Students (2001). Ten schools performing best and ten schools performing lowest in the average score in Math, Nepali and Social Studies were selected.
3. There are altogether 20 schools in the sample, which are spread in 7 districts: Dhankuta, Morang, Chitwan, Rupandehi, Dhading, Kathmandu, and Kavre.
4. Of the 20 sample schools, 7 are exclusively primary schools; 3 are lower secondary schools with primary section; 7 are secondary schools with primary section; and finally 3 are higher secondary schools with primary section.
5. Data collection method includes both observation of school condition/facility and interviews with the schoolteachers, parents and SMC members. Much of student data is obtained from school register. A focus group discussion in each district was also organised to assess their perspectives on school's performance.
6. Student information is collected from all students in grades 1, 3, and 5 for three years: 1999, 2000 and 2001.
7. Information from a total of 8,990 primary students, 161 primary schoolteachers, and 20 schools have been analysed in this study.

### **General Observation**

#### School Characteristics

8. In general, school's overall physical condition in public schools is poor. Using 13 basic indicators of school's physical condition it was found that only about 25 percent of public schools had somewhat better conditions.
9. Per-student-cost was found substantially different among schools ranging from below Rs. 800 to over Rs. 4,500 per student per year. Of the total public schools surveyed, 45 percent of schools had per student spending below Rs. 2,000 and 30 percent of schools had spending above Rs. 3,000 per student per year.
10. School's physical conditions were found, although statistically insignificant, having some positive impact on student promotion and girl's enrolment. Girl's enrolment in schools with better physical condition was higher.
11. A negative correlation between class-size and girl's enrolment also confirms that girl's enrolment is higher in schools with smaller class-size.

12. The overall test score, on average, was also significantly positively related to school's physical condition. Schools with better physical conditions had a higher average score in Math, Social Studies, and Nepali altogether.
13. School's physical condition and cost-per-student together explained over 50 percent (unadjusted) of the total variance in the proportion of promotees across the school. Similarly, the same independent variables explained over 20 percent (unadjusted) of the variance in the proportion of repeaters across school. Thus, school's physical condition and cost-per-student are important predictor of student's promotion and repetition rates in schools.

#### Student Characteristics

14. Over the past three years: 1999, 200 and 2001, not only the number of new entrants in grade 1 has increased substantially but also the repeaters. These repeaters are not those who have failed in grade 1 but rather those who have passed from Section A to Section B or vice-versa. What an irony to consider these young people a repeater in their first year ever in school and despite the fact that they learn almost same thing or nothing extra basically. Some of the lucky ones, however, do get the chance to skip another level between grade one and two.
15. The proportion of these 'so-called' repeaters in grade 1 has been on the rise over the past three years. While this phenomenon – sending children relatively in their early ages to schools – is a good gesture from the parents towards improving quality in education, failing to address them with appropriate policy together with necessary minimum basic resources and infrastructure from the government would only jeopardize the education system.
16. Students enrolled in the primary section are found mostly heterogeneous with regard to their ethnicity and the girl's enrolment was encouraging in these public schools. Students belonging to rather poor and working class families were in abundance in the public schools. The common explanation to this phenomenon is that children of affordable family go to nearby private schools. This may, for some reason, be a problem but is also an opportunity to address public schools with concerted effort than before. Because, student population in public schools that come from deprived family, special focus group and girls have been on the rise and that they are the groups mostly treated as the target group for many I/NGO and government intervention. For the affordable ones, there are numerous opportunities and access to education. The trend among public schools is such that they are mostly catering to the needs of the non-affordable families. Apparently, they are the children of the families mostly at risk.
17. Student's internal test score in all three subjects –Math, Nepali, and Social Studies, are though on a gradual improvement but not to the satisfactory levels yet. A majority of students have scored below or in between 30 to 50 percent of the full marks in each subject.
18. A positive correlation between regular attendance and per-student-cost reveals that the proportion of regular students is high in schools that has high per-student cost. A negative correlation between irregular student and cost-per-student suggests that the proportion of irregular students are higher in schools that has low per student cost. Thus, the cost-per-student stands out as the best predictor of

student status: attendance and enrollment, and the higher the cost per student the better is the attendance and enrolment status.

19. The multivariate model with two independent variables, i.e., school's physical condition and the cost-per-student was not only statistically significant across all categories but also predicted substantially large difference among each category. The model predicted almost or over 80 percent (unadjusted) of the variance in score in each subject. Indicating that the mean score difference across the school is attributable to the independent variables: cost-per-student and school's physical condition.
20. Another analysis has also revealed positive correlation between cost-per-student and the mean score. With these analyses, thus, it can be stated confidently that the cost-per-student is significantly associated with student's achievement score and that increasing per-student-cost would also increase student's achievement in all three core-subjects.

#### Teacher Characteristics

21. Although the overall status of primary school teachers is pitiable, the status of female teachers looks somewhat promising in terms of qualification and training. Female teachers are more qualified and trained than male teachers.
22. Both in terms of teaching experience and years in the same school, female teachers outnumber their male counterparts.
23. In terms of teacher's mother language, male teachers have come from wide language backgrounds whereas female teachers are confined mainly to two language backgrounds- Nepali and Newari.
24. Teacher's daily attendance in schools and their instructional time both were found rather unsatisfactory among quite a large number of primary school teachers. Out of 25 workdays in the month of 'Mangsir', nearly 40 percent of the primary school teachers were absent (on leave) for 5 or more workdays. Female teachers in primary schools were more regular than their male counterparts, however female teachers were found to have lesser classes per week compared to males.

#### **Synthesis of General Observation**

25. Making two sections in primary, especially in grade 1, is becoming widespread among public schools, and mostly under-age population are enrolled in one of the sections. Early enrolments in school have mostly found to have positive impact on student learning achievements. However, failing to provide the necessary resources and infrastructures in schools would only increase frustration, distraction and deviant characteristics among students in their early ages. Hence, it is quite urgent and timely to make appropriate government intervention to regulate under-age (pre-school) enrolments in schools by establishing a separate tier of school and teachers to deal primarily the pre-school children.
26. Students enrolled in primary schools are found mostly heterogeneous with regard to their ethnicity. Students from almost all ethnic backgrounds have been found increasing in numbers in public schools over the past three years. Apparently, regardless of their ethnicity, students from family backgrounds such as working,

deprived and focus group are in the majority in public schools. Unfortunately, children of the same family background are mostly at risk. Retaining these children throughout the primary cycle and increasing their daily attendance is the challenge for many public schools. It seems quite difficult, if not impossible, to face this new challenge by public schools at the current levels of resources and infrastructure available. Hence, increased spending on public schools is more than justified on grounds not only improving educational quality and reducing wastage but also on the grounds of basic human needs and equitable access.

27. The Education Act (7<sup>th</sup> amendment) has stipulated a normal class size for the Mountains, Hills and for Terai and Valley districts as 35, 45, and 50 respectively. By including this ratio in the Education Act, the government has indeed shown its concern in regulating class size in schools. Ironically, the student-teacher ratio (or the minimum class-size) seems more influenced by the availability of students in these regions rather than optimizing student's learning achievement. Nevertheless, like many other research, here and abroad, class-size has been found as significant determinant of student achievement across the school. Hence, the need for a critical research on appropriate class size for Nepal is clearly demonstrated. The class size or the student teacher ratios also needs to be justified on the grounds of student achievement.
28. While it is believed that most of the out-of-school children in Nepal belong to the hard-core population – i.e., associated with economic and/or social hardships, there is no information as to how many of them have never attended schools. Considering the extremely high gross enrollment and high dropout rates especially in grade 1, it can be assumed that many of the out-of school population might have attend school at one point of time and that they could have dropped out for some reason. If this is the case, we might need to look at the factors associated school dropout more critically.
29. Among various analyses conducted in this study, cost-per-student and school's physical facilities stand out as the most significant variable determining not only the girl's enrolment, promotion and repetition rates but also student's achievement scores in all three major subjects: Math, Social Studies, and Nepali. However, school's physical condition and cost-per-student in public schools are both of sub-standard and very low. Increasing cost-per-student is thus important not only to increase student enrolment and achievement but also to reduce educational wastage like repetition by increasing the proportion of promotees in schools.
30. Although the overall status of primary schoolteachers is not very encouraging, the high rates of attendance, and education and training among female teachers in primary schools suggest taking advantage of these characteristics by increasing their participation both in school management and teaching.
31. With the current levels of data analysis it is found that schools with better physical facilities and higher cost-per-student are effective in terms of the key indicators used such as, girl's enrolment, promotion and repetition rate, and student achievement.
32. Most of the parents and guardians interviewed in this study expressed both lack of interest and awareness about education. Information received from the parents could not be used in the current analysis. This is partly because the present study

at this stage is confined mainly to statistical analysis. Hence, content analysis of what parents, guardians and the SMC members have said would be done more thoroughly at the second stage.

33. Finally, although the observation and analysis of this study has shed some light on several confounding issues in the primary education in Nepal, a longitudinal study with nationally representing sample would be appropriate to argue these findings more confidently.
34. Responding categorically to the research questions, this study has found that school's physical condition and cost-per student contributes most to school's effectiveness.
35. Community participation and contribution in public schools is lacking. It appears that it is because the parents are mostly illiterate and unaware of the benefits of education, and hence they are ignorant and lack interest.

## Main Research Findings and Recommendations for Implementation

### Findings 1: Enrolment in the community schools is increasing particularly in case of Dalits.

**Table 1: Student Enrolment**

	10 High enrolment schools	10 Low enrolment schools
Enrolment per school	282	202
Girl enrolment per school	136	100
Retention (regular attendance)	0.29	0.43
Cost per student	2,520	2,625
Student per class	47.8	36.8
Student per teacher	42.7	31.6
Math score	40.5	45.67
Social Studies score	39.7	48.8
Nepali score	43.0	53.5

- Dalits and Disadvantaged<sup>1</sup> group's enrolment increased from 31% in 1999 to 31.7% in 2000, and 37.3% in 2001. Whereas Non-Dalit's enrolment was 33.1% in 1999, 32.8% in 2000 and 34.1% in 2001.

#### 1a: Underage enrolment in grade 1 has increased drastically in 2001.

- Underage enrolment in grade 1 has increased from 0.6 percent in 1999 to 3.1% in 2000, and 17.2% in 2001.

#### 1b: As a result of high proportion of underage children repetition in grade 1 has increased substantially.

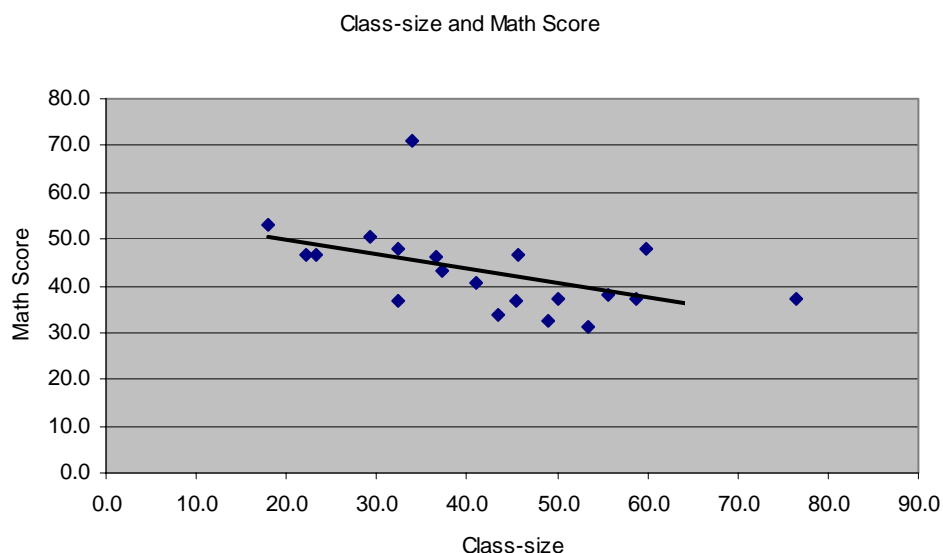
<sup>1</sup> Dalit and Disadvantaged group, in this sample study, includes Mushar, Chepang, Sunar, Kami, Pode, Gadariya, Chamar, Bhuj, Loniya, Bhar, Dhimal, Damai, Kumal, and self reported Dalits.



- Repetition in grade 1 has increased from 15.3% in 1999 to 14.3% in 2000, and 25% in 2001.

**Findings 2: Average class size is inversely related with achievement level, i.e., the smaller the class size the higher is the achievement level.**

- In the sample schools average achievement<sup>2</sup> in Math, Social Studies, and Nepali is 40.5%, 43.3%, and 47.0% respectively.



**Findings 3: High achieving schools have small class-size and high spending per student.**

- Student achievement in Math is generally low with average scores below 50 in schools. The scores ranges from 31.1 to 70.9 from lowest to the highest scoring school.

**Table 2: Achievement (Math Score)**

	10 High achieving schools	10 Low achieving schools
Enrolment per school	185	299
Girl enrolment per school	94	142
Retention (regular attendance)	0.37	0.34
Cost per student	3,031	2,278
Student per class	34.3	49.8
Student per teacher	30.8	42.7
Math score	50.0	36.2
Social Studies score	49.0	39.6
Nepali score	54.3	42.3

**Findings 4: Schools with high student retention (regular attendance in schools) also have high spending per student.**

<sup>2</sup> School administered test scores in three major subjects: Math, Social Studies, and Nepali are taken as a measure of student achievement – measured in terms of percentage in each subject.

- Student retention in general is also low with average retention below 35 percent. The retention rate ranges from 0.25 to 0.43.

**Table 3: Student Retention**

	10 High retention schools	10 Low retention schools
Enrolment per school	277	202
Girl enrolment per school	139	97
Retention (regular attendance)	0.43	0.25
Cost per student	2,704	2,436
Student per class	40.9	37.7
Student per teacher	39.0	35.1
Math score	42.3	43.3
Social Studies score	44.7	43.8%
Nepali score	50.3	46.3

**Findings 5: Schools with higher spending per student have high retention rate, small class size, and high achievements.**

**Table 4: Spending per student**

	9 High spending schools	9 Low spending schools
Enrolment per school	199	239
Girl enrolment per school	99	112
Retention (regular attendance)	0.42	0.26
Cost per student	3,787	2,048
Student per class	36.5	41.1
Student per teacher	28.9	42.2
Math score	46.0	40.2
Social Studies score	48.2	40.4
Nepali score	53.3	43.2

Note: Cost data for two schools was not available.

**Findings 6: School's physical condition have been found to have positive impact on student enrolment, retention, and achievement**

- School's physical conditions have been determined using 13 basic indicators such as separate toilet for girls, furniture in the classroom, classroom condition, and classroom condition.
- Only about 25 percent of sample schools have the necessary physical facilities.

### **Discussion and Possible Suggestions for implementation**

#### *School's physical condition and the cost per student*

- School's physical condition and cost per student both seem to have positive impact on some of the key efficiency indicators, such as the enrolment, achievement and promotion rates.

- Improving school conditions would be, without any doubt, a costly venture. However, in the long run it would turn out to be cost-effective, as it will eventually reduce the wastage and improve learning achievements.
- To reduce the immediate financial pressure the following can be adopted:
  - Making inventory of the minimum basic facility that any primary schools must have.
  - Prioritising these facilities according to their necessity and outcomes so that it can be provided with an incremental basic.
  - Seeking private-public partnerships as well as community support to fulfil these facilities in schools.

#### *School enrolment*

- Increasing enrolments in the community schools particularly that of Dalits and the Disadvantaged groups is highly commendable. However, their retention and cycle completion is the next challenge.
- Making effective allocation of existing resources, such as girl and Dalit's scholarships, and incentive programs would possibly reduce the extra financial burden as well as help retain these population in schools.
- Sharing resource allocation between formal and non-formal programs and focusing on only those programs that are particularly relevant and productive could be more cost effective.
- Increase in both underage enrolment and repetition are mostly intentional schools would continue to retain their student population, whether underage or over, to maintain the current inflow of resources.
- Since ECD centers, as per the Education Act (7<sup>th</sup> amendment), can only enroll those who are below the age of 4 and since the underage in grade 1 are mostly between 4+ and under 6, these centers can't legally solve the underage problem that exist in grade 1.
- Pre-primary section is thus inevitable and perhaps the only solution to cater the underage population of grade 1.
- Opening pre-primary section in the community schools is more likely to produce the desired benefits.
- Facilitating community schools by providing some incentives and flexible policies such as waiving registration fees, teacher quota and educational materials are desirable. This might instantaneously seem as an additional financial burden but in the long run these costs would be recovered through reduced wastage and increased internal efficiency.

#### *Class-size*

- Literature suggests that small class-size especially in the lower grades produce significant results in student's cognitive developments and learning achievements. Studies in Nepal including this one have also indicated the same findings.

- In 1987 a norm of 20, 30, and 40 was set to achieve by the year 2000. But, in the Education Act (7th amendment) in 2001 has set a norm of 40, 45, and 50 students per teacher.
- In an estimate strict enforcement to the new ratios 40, 45, and 50 would yield a surplus of roughly over 20,000 primary school teachers. This would be unfortunate, as it is generally believed that there aren't enough teachers in schools.
- Instead, proper management of underage and overage students in the primary schools and reducing the higher repetition rates would substantially reduce the current ratios to reasonable levels.
- However, liberal promotion policy has been found to be ineffective with regard to reducing wastage in grade 1. In one of the CAS district, due to the liberal promotion policy students who would have been repeaters in grade 1 have been reported as dropout and enrolled back again as new entrants.
- This phenomenon is seen as a strategy to continue receiving inflow of the government support in schools.

*Overall suggestion*

- To make community schools effective, additional physical and financial support, improving school management to reduce the wastage, and opening pre-schools as a separate tier with the community schools have been observed as both viable as well as desirable.
- To reduce the immediate financial and management crises an incremental strategy can be adopted by prioritising the necessary and productive measures to be implemented first.
- Public-private joint venture in areas of school improvement and management can be cost saving as well as more effective.

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# Chapter I

## Introduction

### Introduction

Despite rugged terrain and scattered settlements, Nepal has indeed made remarkable progress in achieving access to education within a short period of time. Primary school facilities in the last couple of years have been expanded to almost every village of the country. Study has shown that the commuting a distance between home to schools even in remote areas has become comfortable for the primary students as well. The National Living Standard Survey (HMG/N, NPC, 1997) found that 97 percent of urban and 88 percent of rural households have schools within a commuting distance of 30 minutes. The exhilaration of successful expansion of the past has in fact obscured both its manifestations – dropout and retention, and its root – poorly developed infrastructure and meager resources in the public schools, from being recognized by the policy makers.

One thing we can't disagree is that public schools in Nepal are meagerly resourced and that within the current level of resources there exist a marked difference in the public schools in terms of enrolment, promotion, and student achievement. Delivery of educational resources or inputs to public schools is centrally controlled and the bulk of support goes through the government. Community support to public schools is very limited. Therefore the quest is to reveal why some schools are doing relatively well and why not the others? What makes public school better?

There is no denying that scholastic achievement is the ultimate objective of an education system. However, as a matter of fact, enrollment and retention (keeping them to come to school regularly) of student are the preconditions for quality improvement. If no student comes to school regularly, all the inputs such as school infrastructure, teachers, and curriculum and textbooks become redundant. Therefore, the measures for school/educational effectiveness in Nepal could be more worthwhile if measured in terms of enrolment, retention and achievements including effective use of educational resources.

### Problem Statement

BPEP I has already made huge investments to improve access, quality and management in basic education in Nepal. BPEP II is more or less a continuation of the experiences of BPEP I. From the very beginning, however, questions have been raised on the supply driven government policy. While addressing educational issues, more schools, more teachers, and more educational resources have been seen as one of the most viable strategies from the government.

Government's intervention in improving access to education has been mostly successful in almost all developing countries. The experience of expanding access, is however, also eclipsed by the deteriorating quality in these countries. A trade-off between expansion and quality is thus apparent in education in these worlds. Improving quality in education is the catchphrase in many developing countries. However, government intervention in this endeavor is often less successful in many countries - both in the developed and developing world. This is partly because quality is so much abstract that it is defined and

perceived differently from one school to another, one community to another and from one country to another. Achieving quality in education is difficult also because a multiplicity of factors is associated with it and that they are so susceptible to change in the context – social and economic development – that quality in education becomes a moving target.

In the case of Nepal, it can be argued that the problem is not only with the long held supply driven policy of the government but also the blanket approach adopted for resource allocation. The two fundamental correlates of local economy – needs and demand – have never been fully assessed for educational development. Both government and the public have meager resources and that the supply driven policy has proved both unsuccessful as well as unsustainable. Therefore, there is a clear and demonstrated need to assess schools effectiveness and to make more cost effective allocation of resources for educational development. To make more cost-effective allocation of resources and to address quality issues in education it requires a thorough understanding of the context, contributing factors and their relevance, and an incremental strategy.

Achievement studies done recently in Nepal were instrumental in determining the level of performance among students and also in setting-up the Minimum Learning Level (MLL) for primary graders. However, there is a need to comprehend as to what factors account most in school or student performance or achievement. This research aims to shed some light on these issues.

### **Rationale and focus of the study**

Government intervention in the development of basic and primary education in Nepal has escalated since last two decades. The form of government intervention has largely been ascribed as supply driven. Supply of more schools, more teachers, and more educational resources to public schools have been the government strategy of educational development. As a consequence, tremendous increase in student enrolment, number of teacher and school has been recorded.

Current net enrolment ratio of 80.4 percent is indeed a remarkable achievement. However, 119.8 percent of gross enrolment, at the same time, suggests otherwise – a huge wastage in education. Supplementing to these wastage, recently conducted National Assessment of Student Achievement in Grade III have also indicated rather poor performance of students in the classroom. Thus the quest is to assess school effectiveness in terms of low wastage of educational resources and student achievement in the classroom.

Nepal has yet to bring over 1 million primary school going age (PSGA) populations in schools in the first place. And second, out of the total current enrollment in grade 1 (which is roughly 3.5 million, including overage and underage) 61 percent of them (over 2 million) is being wasted annually through grade repetition and school dropouts. This causes humungous wastage in Nepal's education system. If this dropout and repetition phenomenon in schools is resolved, there would be a surplus of over two million student year or two million unit of educational costs each year. These savings then could be used for other qualitative measures such as increasing the number of primary school teachers, providing more textbooks and improving school facilities. Improvements in the proportions of dropout and repetition rates not only minimize per student cost but also improve student access to more educational resources and thus improve students' achievement.



Following the infamous Coleman Report of 1966, more recent school effectiveness research (SER) has drawn from numerous research literatures. The focus of SER is mostly divided into two schools of thought – family factor vs. school factor. However, both schools agree that there is a threshold of minimum educational resources to which educational quality is contingent on school's resource and infrastructures. The context of schools in Nepal thus also needs to be analysed in the light of educational resources available in schools.

### **Purpose of the study**

The confounding issues in primary education in Nepal today are associated with its high dropout and high repetition rates in grade 1 and that this phenomenon has existed since last couple of decades. Ironically, the figures on school dropout and grade repetition have remained as invincible despite millions of dollars have been already invest in the name of primary education development. The main focus of this study is to assess school effectiveness in terms of educational wastage and achievement.

The need for concerted efforts to reduce dropout and repetition rates and to improve cycle completion rates in the primary education have already been identified. This research on school effectiveness will not only reveal characteristics of the factors associated with student performance but also help in determining priority for government intervention in quality measures by identifying areas with specific needs.

This study thus focuses on more than one outcome measures to analyse school effectiveness and also incorporates different perceptions to the findings.

### **Objectives**

Basic and primary education in Nepal is in the public domain and community support and private sector involvement is insignificant, implicating the government to take the lion's share in this investment. With the launching of the Basic and Primary Education Project in 1984, the government has provided a tremendous amount of resources to improve access and quality in the basic and primary education. The Ministry of Education has recently carried out series of research and their follow-ups on student achievement in all primary grades and has also worked-out minimum learning level (MLL) for primary grades. Similarly, targets for improving MLL have been also set under BPEP-II. However, what is not known to many of us is how much and what type of educational input has been attributable to students' achievement? Assessment of the quality of educational input in public schools is another murky area that also needs a thorough research to properly address school effectiveness.

Therefore, the objectives of this study is:

- to assess school effectiveness with reference to enrollment and retention, achievement test scores, and educational resources available in schools;
- to assess whether economic and socio-cultural backgrounds of student contribute or hinder schools' effectiveness; and
- to assess community/parents' perception of schools.

### **Research questions**

- What are factors that contribute or hinder school effectiveness in Nepal? Is it different in different geographic/socio-cultural traits?
- Is there any difference in the quality of input (educational resources) from one school to another? Does it have any significant impact on educational output?
- How can schools contribute to improving community participation in school management?

*Note: In the first phase of this study research is focused mainly to the first research questions. The remaining will be dealt in its next phase.*

## Chapter II

### Literature Review

What works in education has long been an overarching issue in school effectiveness research (SER). The early research beginning with the Coleman Report (Coleman et al., 1966) claimed that teacher, school, and the fiscal resources had minimal, if any, effect on student achievement (Cynthia et. al. 1998). Subsequent studies however emphasized 'school factors' as predominant in student's learning achievement (Hyneman and Loxley, 1983; Fuller, 1986; Cynthia et al., Oct. 1998; Fuller and Clarke 1994). Hanushek (1998) did not emphasize school characteristics as predominant in student achievement. Fuller (1986), on the other hand, argues that within industrialized countries the effect of school quality is eclipsed by the child's family background, whereas in the developing countries school quality can be a major determinant of educational achievement. Because majority of families are below the poverty line they are mostly illiterate. Hence, the familial support to children's learning at home is minimal, which forces students to rely on school factors – classroom, teacher, and textbooks – for learning achievements. In developing countries because learning outside schools, at least the pedagogical learning, is not fully developed therefore students have to rely on school and teachers. Thus, school effectiveness is mostly represented in two underlying dimensions - school factor and SES (socio-economic status).

Following this controversial yet mostly referenced Coleman Report (1966), researcher began using additional school inputs, such as enrollment, ethnic composition and staff characteristics in school effectiveness research. More specific school attributes, such as school's goal, instructional leadership, opportunities to learn, school climate, teacher interaction were also brought into the research (Cynthia et. al., 1998). Similarly, more attributes related to student's home background – such as parents' education, single or both parent, neighborhoods, family size and so forth (Jencks et al., 1972); and student behavior and learning abilities (Heyneman & Loxley, 1983; Haddad, 1979) were also brought into the analysis.

During the 1970s and 1980s, studies by Edmonds (1979) and Godald (1984) found that all children can learn, regardless of their background and that some schools are more effective, or 'satisfying', than others (Bolender, 1997). This gave extra impetus to SER making it more comprehensive. Thus, recent studies on school effectiveness research have attempted to predict educational outcomes by using a host of input variables and have consistently contrasted with various educational inputs. However, despite of severe criticism, the indicators of outcome measure have remained invariably the same - student performance in the classroom. The shortcomings remain due to the fact that students are consistently assessed using standardized tests in school to reveal their achievement. Many researchers have strongly criticized standardized tests when they are used to measure student's learning achievements. Over many decades, assessment results have been frequently used to define not only teaching but also to determine student's opportunity to learn (Darling-Hammond, 1994). "As a tool for tracking students into different courses, levels, and kinds of instructional programs, testing has been a primary means for limiting or expanding student's life choices and their avenues for demonstrating competence (Darling-Hammond, 1994).

Our interest is clearly not to obstruct students from learning opportunity but to improve their educational quality, and therefore we cannot regard these tools to determine their future options. Rather bluntly, Samuelson (1998) says:

People don't learn only at school. If they did, we'd be doomed. In isolation, test scores hardly count. What counts-for the economy at least-is what people do at work. Do they fully use their skills? Do they develop new ones? Are they engaged?

Learning is an ongoing process. People learn from different sources, contacts, events, and from their surroundings. What and how they have learned, and where and how they are going to use their skills often goes unpredicted and that achievement tests don't measure these factors. Howard Gardner (1998) of the Harvard School of Education dismissed the tests because they measure only the "lowest common denominator of facts and skills and not whether students can think scientifically or mathematically." The RAND study has also concluded that the "comparisons of simple unadjusted test scores from one year to the next or across different schools or school districts do not provide a valid indicator of the performance of the teachers, schools, or school districts..."

It is true that teachers, students, parents and even the community in Nepal are accustomed to the long held practices of examination and test scores and that the test scores have remained as the sole criterion for student promotion from one grade to the other. A substantial body of research, however, has demonstrated that the effects of this kind of test-based decision making are much more negative than positive (Darling-Hammond, 1994). One of the major bottlenecks in education system in Nepal is in fact associated with its high repetition rates and that this sole criterion of student score has more adversely affected in student's achievement. As Shephard and Smith (1986) have put it, "Contrary to popular beliefs, repeating a grade does not help students gain ground academically and has a negative impact on social adjustment and self-esteem" (in Darling-Hammond, 1994).

Even when school factors are treated as major determinants of educational quality, effectiveness is measured only on the basis of sole outcome variable, i.e. student test scores. The obvious ineffectiveness variables, such as high retention and dropout rates are seldom considered. Often the factors associated with dropout and repetitions are poor school quality, school test (examination), and student's background. The dropout and repetition together with the promotion are an important outcome or an efficiency indicator of the educational system. Considering the extremely high dropout and repetition "the kind of effectiveness that is desirable... might simply be to keep them coming to school"(Darling-Hammond, 1994) and their retention throughout the primary cycle. In fact, research indicates that neither employability nor earnings are significantly affected by students' test score on basic skills, while chances of employment and welfare dependency are tightly linked to graduation (Ekland, 1980; Gordon & Sum, 1988; Jaeger, 1991 in Darling-Hammond, 1994).

Factors, such as class-size, per-pupil expenditure and teacher quality, hold a common-sense appeal in many school effectiveness researches. Such notion is even more deeply rooted in researchers in the developing countries as they mostly lack resources in those domains. The researchers do not explicitly support that these inputs will have themselves resulted in greater academic gains. More importantly what kind of measures were pursued remains critical in almost all of the research in education. It is partly because of the fact that educational researches have virtually failed to establish explicit relationships between input and outcomes. Educational inputs and outcomes are so vivid and contextual that it is

extremely complicated, if not impossible, to establish causal relationships. Therefore, whatever the findings we might get from these studies, they are all predisposed to a particular context, to a particular ambiance, and to a particular time.

Teacher inputs also have same mixed results as with the other input variables. There are arguments that affluent schools get better teacher and hence secure better achievement. However, what is often forgotten when these assertions are made is that affluent schools also get student from affluent families, they live in a better neighborhoods, come from educated parents and so forth. It may be possible to control teacher input to some extent but it is impossible to control SES and other external influence on student behavior. Therefore, it is really hard to know whether it was the teacher input or the SES that made a difference in student's achievement.

From government perspectives it is rational to look at the overall achievement of schools and districts rather than the differences among student's individual scores. The case for governmental involvement in education, as opposed to purely private decision making on schooling, requires more than just the high rates of return commonly observed for individual schooling (Hanushek, 1998). The government involvement in education is also seen as an investment in the social sector ensuring equitable equal access to these basic services regardless of the rate of return.

According to the MOE statistical report (MOE, 2000), about 19 percent of the enrolment in grade 1 drop before or immediately after the end of the first year, and over 41 percent of them repeat the same grade next year. Thus, only about 40 percent of the total enrolments in grade1 go to the next grade and 60 percent of them either repeat or drop in as early as grade 1. However sophisticated, comprehensive and scientific measures we may apply to testing students' achievement, it is useful only when students are in the school throughout the year and throughout the primary cycle. Thus, the first and obvious concern in primary education in Nepal is not evaluation of students' test scores but to keep them coming to school and to reduce repetition. Research suggests that, "being retained (holding in the same grade) increases the odds of dropping out by 40 to 50 percent. A second retention doubles the risk" (Mann, 1987 in Darling-Hammond, 1994). Thus, the policy of automatically holding students based on their test-score performance may have actually produced low achievement for these students, lower self-esteem, and higher dropout rates for them and for the nation (Darling-Hammond, 1994).

With above deliberation and synthesis of literature, the following conceptual basis is formed:

- 1) that the most commonly held sole outcome measure – student test scores – is particularly irrelevant in Nepal. Since, student participation rate is less than 40 percent (after deducting dropout and repetition) assessment of school achievement based on test scores is inappropriate.
- 2) that school effectiveness is a much more complicated construct to define. It is more contextual and subjective to prevailing values. Therefore, the meaning of effectiveness is different to different people from one system to another, from one context to another. The staggeringly high dropout and repetition rates in primary schools in Nepal stress the need to assess effectiveness in terms of internal efficiency (low dropout and low repetition rates) and not just the student's test scores.

## **Methodological issues**

Compared to the classic input-output model, multi-level analysis is more advanced and is mostly used in school effectiveness research. Its application in educational research, school effectiveness research in particular, is increasingly popular. The advantage of this multi-level analysis is that it allows researchers to predict the amount of variation in the outcome explained both through the main effect as well as through the interaction across levels. Many researchers believe that a multiplicity of inputs and outcomes are associated with the educational achievements and that the student performance differs across the levels – among peer group, classroom, school, district and so forth. The classical input and output analysis has failed to incorporate two things – first, it didn't consider the interaction through mediating variables between the input and output, such as classroom activities and second, it did not analyze the variance across the layer- classroom, school, districts. Although such sophisticated designs like structural equation modeling are frequently used in studies in OECD countries, these are less common among studies in developing countries (Scheerens, 1999).

Although multi-level analysis allows researcher to predict the size of both exogenous and endogenous effects on the outcome, it is mostly a test of the theoretical construct of the model rather than the causality. As with the other models, multi-level analysis does not either predict anywhere near 100 percent of the variance. Nevertheless, there is no denying that the variance in student achievement can be best predicted when it is applied to each levels rather than on school aggregate.

## **Definition and meanings of the terms**

### *School Effectiveness*

The concept of school effectiveness has been defined variously. One of the definitions of school effectiveness derived from an extensive review and synthesis of the school research (NWREL, 1984) is that “effective schools are those in which all students master priority objectives”. The difficulty with this so-called “extensively synthesized” definition is that who is going to set the priority and objectives for students. How and who is going to determine that the student’s objectives and the priorities have been fulfilled at the end of schooling? There is also a conflict between the national and individual educational interest in this definition, which is often the case with the private and public schools. The construct of school effectiveness, for Nepal in this study is construed on the basis of lower repetition, lower drop out, and higher promotion rates with increased girl’s enrolment. In essence, indicators of internal efficiency are taken as the determinants of school effectiveness for Nepal.

### *Dropout Rate*

Some have made a distinction between the “dropping-out” and “stopping-out” as in the later case some may have found the opportunity costs of attending school outweigh the benefits elsewhere – during the harvest seasons (Bedi and Marshall, 1999) and therefore they stop going to school. However, in this study, those who are enrolled in the primary school and leave schools without completing the grade or primary cycle whether due to failing the grades or any other reasons are defined as dropout. The dropout rate is thus the proportion of dropout population against the total enrollment at the beginning of the school year.

### *Repetition Rate*

Students that are retained in the same grade based on their failing examination score are treated as repetition. The repetition rate is thus the proportion of failing or repeating students against the total enrollment at the beginning of the school year.

### Promotion Rate.

Those students they pass based on their annual examination scores are the promotees and hence the promotion rate is the proportions of the promotees against the total enrollment at the beginning of the school year.

## **Chapter III**

### **Methodology**

#### **Research design**

School effectiveness research is much more complicated due to the fact that there has been a numerous and wide range of factors that have some association with or impact on school effectiveness. Coupled with this is the diversity that exists in its definition and the contextual relevance. School effectiveness researches as outlined earlier mostly whirl between the two schools of thought– learning outcomes vs. school’s goals and objectives; school factors vs. family factors. Moreover, the stakeholders e.g., schoolteacher, student, parents, community leader, public authority all of them come from a different socio-economic backgrounds and possess a different cognitive quality which ultimately impinge upon school effectiveness and many of which is often difficult, if not impossible, to measure. Therefore, the aim of this research is not to get into this debate but rather it would be an attempt to explicit factors that are contributing the most to present disparity of educational achievements across the school.

The construct of this study is to assess school’s effectiveness in terms of the following dependant and independent variables: enrolment and promotion rates, student achievement, and schools physical condition. A two-stage research process is devised for this study. In the first stage, the research has focused on the assessment of input variable such as school resources that are associated with school’s effectiveness. Due to the time constraints, this initial research is based on a limited sample of schools.

Once, the factors most accountable for student achievement are identified they will be further verified in a more systematic research in its second stage. Schools will be randomly selected representing different social, economic and cultural/geographic traits. Moreover, process variables will be included in the second phase of school effectiveness study. Schools selected for this analysis will also work as a point of reference/information for regular monitoring of student’s status and of the impact of both internal as well as external inputs on student achievement. The expectation is that this research will also provide a foundation for longitudinal studies on student achievement. However, to give a longitudinal test student’s data have been collected for three consecutive years – 1999 through 2001. Similarly, grade 1, 3, and 5 students are assessed to examine across grade variation.

A mix of both qualitative and quantitative design would be the most appropriate method for this kind of studies. The current analysis, due to small sample-size, is mostly limited to a descriptive analysis. More rigorous analysis will be done in its second phase.

#### **Sampling**

Sampling frame for this study constitutes those nationally representing 161 schools selected randomly for recently conducted National Achievement of Grade 3 Students (2001). Out of the 161 schools, ten performing best and ten performing lowest in the average score in Math, Nepali and social Studies were selected for this research. Thus, the sampling procedure is basically purposive with the priority given to selecting extreme cases. There are altogether 20 schools in the sample which are spread in 7 districts: Dhankuta, Morang, Chitwan, Rupandehi, Dhading, Kathmandu, and Kavre. Of the 20



schools, 7 schools are primary schools, 3 are lower secondary schools with primary section, 7 schools are secondary school with primary section, and finally 3 schools are higher secondary school with primary section. A detail description of sample district and schools are provided in appendix A.

### **Data collection**

Data have been collect from 20 schools from 7 districts: Dhankuta, Morang, Chitwan, Rupandehi, Dhading, Kathmandu, and Kavre (a detail description of sample district and school are annexed). Both observation and interview methods were used for data collection. While most of the information related to student characteristics and school financing were gathered from school registers, teacher and parents were also interviewed to get their perspective on school's performance. Similarly focus group discussion including parents, community and school management members, and teachers were also conducted. Three separate tools were developed to collect required information from these sources. The tools used in this study are annexed in appendix C.

### **Data analysis**

As mentioned earlier, this is a two-step research. In its first step, variables such as school's physical condition, and teacher and student characteristics such as teacher education and training, gender, ethnicity, and age of students and daily attendance are selected as predictor variable. Student achievement, daily attendance, girls enrolment are taken as criterion variable. Process indicators are not included at this time. Data analysis at this stage is mostly descriptive, and cross-section analysis of some variables is also conducted. Wherever appropriate, correlation and multiple regression analysis are also conducted.

In this study data from 8,990 students, 161 primary school teachers and 20 schools have been processed.

In the second stage a more thorough analysis of school effectiveness would be conducted. The possibility of using more rigorous analysis, such as the multi-level analysis, will be explored.

## Chapter IV

### Data Analysis

#### General Description

##### School and classroom

All the sampled schools were found to have permanent (Pakka) buildings. In most of the cases, classrooms were built either by the earthquake project, BPEP/PEDP, municipality, or by the I/NGOs. School physical conditions ten years ago were entirely different with classes in many schools, especially in the Terai region, running under the tree and in a temporarily roofed structure. Now many schools in Nepal have at least permanent structure the next attempt should be to equip these schools with necessary educational resources. This is indeed a remarkable achievement that the government has made in the past couple of years. However, physical condition in almost all public schools in Nepal is such that they all consist of bare bones lacking its vital lifeblood – educational resources. Classes in which primary grade students are taught were found mostly of sub-standard in its quality compared to other classes in the same school. Classrooms for primary grades in almost all schools were found barely equipped with any educational materials or displays of any kind. Even in the Kathmandu city, public schools were found consisting of bare walls and poor lights.

Many researchers, including those having rather strong indifference to ‘school factors’ in student’s achievement, have agreed to a minimum threshold of educational resources in schools that matter in student achievement (Hanushek 1998; Hyneman and Loxley 1986; Fuller 1986; Cynthia et al. Oct. 1998; Fuller and Clarke 1994). Public schools in Nepal aren’t even near minimum threshold in terms of physical and educational resources available. Obviously, all public schools in Nepal need resources with minimum basic supplies of educational resources and only thereafter assessment of student achievement would make sense. In other words, any SER in conditions like this would be ignoring school effect on student achievement because school condition is itself sick and vulnerable struggling to survive. Assessment of student achievement in these conditions would only yield strengths of family factors. Research findings would thus mislead to a wrong conclusion.

We cannot disagree, and this research has also found, that public schools today are catering for children mostly of the working and deprived families. And many of these families also need helping hands to sustain their family lives. Thus, children of these families are more susceptible to become irregular in attending schools leading to grade repetition and eventually dropout. What we also know is that family ‘push’ for children’s education in these families is negligible if there’s any. Hence, the role of schools becomes even greater in this situation. Schools should be able to exert strong ‘pull’, also supplementing the lack of family ‘push’, to attract and retain students in schools throughout the primary cycle. Ironically, even schools are not any better than the families who send their children to these schools in terms of resources available.

Classroom environment was mostly grubby and less cared by the school management. When asked one of the senior teachers ‘why these classes are not clean?’ He said “We only have two peons in the school (hired from government resources) and they are busy taking care of higher secondary and secondary classes. The third one that we hired from

our own funds is a school guard.” He also added regarding primary classes that, “Once a month we ask students to clean their classroom.” This is a common practice in almost all public schools. Evidently, there is not enough resource in schools to hire helper and cleaners so that certain cleanliness is maintained. A female teacher rather sadly expressed her concern about student’s own cleanliness. She said, ‘I repeatedly ask students to wash their hands and face and to wear clean clothes, but look at them’. She further added, ‘I have also remind parents several times of their children’s cleanliness, but no one cares. What can we do’?

While these concerns have their meanings in its place, there is also one thing that is not explicitly discussed in the policy debate, and that is the role of teachers in school – should it be limited to teaching only? Should they also reach to the parents to discuss their children’s status? Most public schools lack communication and interaction with the parents. It is partly attributable to schools own inability and lack of resource and partly to the parent’s apathy and lack of awareness. One of the parents was particularly selected for interview in Morang. His son was found fairly neat and tidy in appearance, regular in the class and had done remarkably well in all schoolwork. It was thought that his parents must be relatively educated and that they must have been helping him to learn at home. Ironically, both the parents had no formal education. The mother was able to just read and write. Father had no job at the time of interview. Though he was professionally a carpenter, he also had several other skills such as brick works, welding, and repairing works. They had four children altogether and all of them were living in a rented room of about 120 square feet. With one bed, a small table, and some space left for cooking there was hardly any space to walk in the room. Father did not have jobs at the time and therefore he was there to take care of the two younger siblings. ‘When he had jobs, things would be even worse’, the next-door distant relative whispered.

This was the case of a better-looking student among all other enrolled in that particular school. We can easily imagine family conditions of other students. It was not that the parents were not willing to respond to our question about how to improve school’s condition but they did not have any idea what to say - showing extreme lack of knowledge, awareness, and faith, in some cases, towards education. Most of the parents interviewed were found to have visited school several times but to pick up their children in most of the times. Even if some of the parents happen to participate through the SMC or any other ways to school’s development planning one cannot expect much contribution unless the parents value education and understand their roles and responsibility for their children’s education.

In one of the schools, of the two classrooms built by the Primary Education Development Project (PEDP) one was being used for school library and even the library was not for the junior students but only for the higher secondary students. When peeped through the open window, the library seemed not in use for long time as the furniture and bookshelves in the room were mostly dust covered. Ironically, this school was also the resource centre school with a resource person to monitor.

Classrooms in all schools consisted of bare walls, a chalkboard, and some furniture. There were no displays of any kind and nothing that would attract children in the classroom for the entire day. The concept of joyful learning in these schools is found limited within the policy guidelines. Virtually nothing is there in the classrooms in the public schools that exhibit or motivate these young kids to come and be at school all the day and everyday.

Almost all schools grade 1 were split into two sections. One of the sections included under age children most of who were supposedly going to repeat the same grade in the next section next year.

## **Enrolment**

The number of students enrolled in the primary grades was encouraging in all public schools surveyed. In spite of poor educational resources and infrastructure in these schools, girl's enrolment and students of deprived families were noteworthy. Over the last three years, students from almost all categories of the caste groups have been increasing in school enrolments.

Students registered in primary grades (1, 3 and 5) were verified in their respective classrooms. Except in one or two cases, most of the registered students were genuine. Fake listings were rarely found in schools. However, schools do not list student as dropout even though they are irregular for long time and even when one hasn't showed-up in the final examination. Students who have supposedly dropped out are, in some schools, automatically registered as repeater next year in the same grade. This strategy in public schools seems very much influenced by the government policy that requires certain student/teacher ratio to be maintained in order to retain desired number of teachers in school.

In the case of grade 1, however, student enrolment is indeed influenced by the government policy. In many public schools students in grade 1 are enrolled in two sections: section A and B. Students enrolled in section A (section B in some schools) are normally under age and those with poor learning ability. Students in section B (section A in some schools) are mostly promotees from section A/B and only a few are newcomers.

For the school management, making two sections in grade 1 serves two purposes. Firstly, it helps relieve community/parent's pressure to enrol under age children and to filter students with different cognitive levels into two sections. And secondly, they count on students in both sections to maintain the desired student/teacher ratio so that they can retain certain number of teachers in school.

In the DOE's record, dropout rates still stand as high as 19 percent in grade 1. The dropout status of student as observed in schools is entirely different. The preliminary analysis of this study indicates a real dropout rate of below 10 percent. The NMIS study conducted in 1995/97 has also indicated rather low dropout rates in primary grades compared to the MOES's record. MOES records on school dropouts in grade 1 have remained virtually unchanged since last two decades. Only in this year –2001, that the DOE has reported dropout under 20 percent. It used to be somewhere in between 21-23 percent before.

The huge difference that exists in the estimate of dropout between research findings and MOES/DOE's reporting is caused mainly because of the methods involved. Research estimates are mostly based on head-count of those who stopped coming to have school, whereas the MOE/DOE's estimates are usually derived using two years enrolment and one year's repeater. It seems that the methods used by the MOES/DOE are continuously over reporting the proportion of school dropouts. This study hence suggests testing and verifying the method being used by the MOES/DOE since last two decades.

Students enrolled in the primary section are found mostly heterogeneous with regard to their ethnicity, and the girl's enrolment was astounding in all schools. Students belonging

to rather poor and working class families were in abundance in the public schools. The common explanation to this phenomenon is that children of the affordable family go to nearby private schools. This may, for some reason, be a problem but is also an opportunity to address public schools with more concerted effort than before. Because student population in public schools that come from deprived family, special focus group and girls have been on the rise, and they are the target groups for government intervention. Many of the government and I/NGO programs aimed at deprived; special focus group; and girl's education adopt non-formal mode of education. The current influx of children from the same background in public schools, however, suggest shifting the strategy to include formal mode of education as well. The support that exists in public schools for deprived and focus group children is far less compared to their enrolments.

### School Teachers

Though the schoolteacher they were qualified were mostly untrained. It is found that teachers have received different forms of teacher training of which many forms are not considered as a complete training.

### Descriptive analysis

#### School characteristics

Out of 20 sample schools, 55 percent are from urban areas and 45 percent from the rural (Table 1). Of the 20 schools 7 (35%) were primary schools, 3 schools had up to 8<sup>th</sup> grade, 7 had up to 10<sup>th</sup> grade, and finally 3 schools had even higher secondary grades in it (Table 1). Thus, the sample represents schools from all existing structures. Of course, primary grades are attached to all these structures.

TABLE 1: SAMPLE SCHOOL CHARACTERISTICS

#### School Location

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Urban	11	55.0	55.0	55.0
Rural	9	45.0	45.0	100.0
Total	20	100.0	100.0	

#### Grades in School

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1 - 5	7	35.0	35.0	35.0
1 - 8	3	15.0	15.0	50.0
1 - 10	7	35.0	35.0	85.0
1 - 12	3	15.0	15.0	100.0
Total	20	100.0	100.0	

The average primary enrolment in the sample is about 241 students per school with girl's enrolment slightly over 114 per school (Table 2). The girl's enrolment is thus close to that of boys. Generally speaking, average primary school enrolment in the Terai districts is higher than in the Hills. The findings of this study also confirm that schools in the Terai are crowded. Chitwan had over 500 and Rupandehi had over 300 students in its primary section whereas in the Hills - in Dhankuta and Kavre the average enrolment was only 169 and 190 students respectively (Table 2). Per class student pressure is also highest in

Chitwan with over 76 students on average followed by Dhading with over 52 students and Morang and Rupandehi with over 51 students per class in each (Table 2).

Mega-schools with enrolments over 500 may seem effective in terms of immediate cost for countries like ours, it has been however widely discredited in many researches in the west. Large schools are not only difficult to manage and control student population but also fail to render individual attention needy students. Many studies in the west have found the remarkable progress in achievement among students in smaller classes.

Using the results from 77 empirical studies, Smith and Glass (1978) published a meta-analysis in 1978 and did a second follow-up analyzing the relationship between class size and other outcomes. They found that the major benefits of reducing class size occurred where the number of students in the class was fewer than 20. In their second study, they concluded that small classes were superior in terms of student's reaction, teacher morale, and the quality of the instructional environment.

In 1986, Robinson and Wittebols published a review of more than 100 relevant research studies using related cluster analysis approach. They have documented the positive effects of small classes especially in the primary grades. But, they have also cautioned that the positive effects were less likely if the teachers did not change their instructional methods and classroom procedures in smaller classes.

Using data from more than 800 districts containing more than 2.4 million students, Ferguson (1991) found significant relationships among teacher quality, class size, and student achievement. For first through seventh grades, using student/teacher ratio as a measure of class size, Ferguson found that district student achievement fell as the student/teacher ratio increased for every student above an 18 to 1 ratio.

Based on an analysis of data on fourth-graders in 203 districts and eighth-graders in 182 school districts from across the United States, Wenglinsky found that class size served as an important link between school education spending and student mathematics achievement at both the fourth and the eighth-grade levels.

The Tennessee's project STAR, one of the intensive as well as extensive researches, has showed that the students in smaller classes outperformed students in the larger classes. The Project STAR found that:

- Smaller class students substantially out-performed larger class students on both standardized and curriculum based tests. The study also found that the positive achievement effect of smaller classes on minority students was double than that for the majority of students.
- Small classes represent a preventive, rather than a remedial approach. Time on task, individualized instruction, well behaved class, and teacher satisfaction, discipline- classes are less disruptive, and grade retention- passed the grades with wider range of scores.
- The common assumption is that smaller classes allow teachers to increase the time devoted to each student, either individually or in smaller groups, and thereby improve quality of the student's education.

However, class size reduction require not only considerable amount of funds but also its implementation sizable impact on the availability of qualified teachers. Whether or not governments can afford to reduce class size, it has been mostly agreed that small classes produce a considerable impact on student performance in schools.

The Education Act (7<sup>th</sup> amendment) has stipulated a normal class size for the Mountains, Hills, and Terai districts as 35, 45, and 50 respectively. By including this ratio in the

education Act, government has indeed shown its concern for regulating class size in schools. Ironically, the ratio is more influenced by the availability of students in these regions rather than optimizing their learning achievements. Lowering class size in the mountains is triggered by the fact that settlements are much scattered, and the region is sparsely populated. Increasing class size in the mountains would end up closing numerous schools that are running with only few students. In the Terai and in the Valley the case is entirely different. Quite a number of schools in this region exceed the ratio of 50 per class. In all three Terai districts in our sample class size exceeds 50 students mark. Even with the current ratio there is already a need of more schools or classes. Lowering the class size in this region would require lot more than what is already needed.

The current policy of the government on class size is merely guided by the strategies for accommodating as many students in the case of Terai districts and just barely running schools in the mountains. Nevertheless, the need of critical research on appropriate class size for Nepal is clearly demonstrated. The class size or the student teacher ratios also needs to be justified on the grounds of student achievement. As we have learned from the literature that student achievement is contingent upon not just one thing but many thing and that class size could be the predominant one.

TABLE 2: SUMMARY OF SAMPLE DISTRICTS  
Case Summaries

Mean									
District Name	Primary Teachers	Primary Female Teachers	Primary Enrollment	Primary Girls Enrollment	Administrative Expenditure per Student	Non Administrative Expenditure per Student	Primary Student per Class	Primary Student per Teacher	Space (Sq feet) per Student
Dhankuta	6.50	4.83	169.33	86.17	3031.29	326.97	32.20	26.37	9.41
Morang	6.50	3.50	288.00	103.00	951.27	20.00	51.62	44.14	4.33
Chitwan	9.00	2.00	536.00	276.00	776.97	.00	76.57	59.56	3.80
Rupandehi	8.50	7.00	329.50	152.50	2453.28	262.08	51.20	38.67	5.07
Dhading	4.00	3.00	260.50	115.50	1779.21	199.74	52.10	81.25	3.90
Kathmandu	9.50	7.50	291.50	144.00	3761.34	79.00	43.95	30.23	4.64
Kavre	5.00	1.60	189.60	91.00	1706.47	112.05	35.26	40.03	6.06
Total	6.50	4.05	241.95	114.47	2269.36	182.19	42.19	40.33	6.32

In Table 2, student/teacher ratio is found highest in Dhading with over 81 students per teacher followed by Chitwan with almost 60 students per teacher. It is lowest in Kathmandu with only 30 students per teacher followed by Dhankuta with slightly over 26 students per teacher. As per the 7<sup>th</sup> amendment act, student teacher ratio for hills, and in the valley and Terai district is 45 and 50 students respectively. Schools with higher ratio than the above can run another section with the permission of the SMC. In our sample, while teachers in Dhading and Chitwan are over burdened, teachers in other districts are relatively better with lesser students to be served.

Per student expenditure is also highest in Kathmandu with over Rs 3,800 per student per year followed by Dhankuta with over Rs 3,350 (Table 2). Most of this (over 90 percent) expenditure goes to the teacher's salaries. Apparently, the student teacher ratio is also the lowest in these two districts. On average, schools in the Terai have bagged more primary school teachers compared to the Hills. However, in terms of student/teacher ratios it is just the opposite. Thus the relationship between per student spending and student/teacher ratio is clearly demonstrated. The distribution of female teachers across the districts is fairly high except in Kavre and Chitwan. In Rupandehi, over 80 percent of primary school teachers were female.

## Across school

Data at the school level also confirms that primary school enrolment in Terai schools is higher than in the Hills. The ratio of girl's enrolment is almost same across the schools and corresponds with the district pattern.

Per student expenditure on average was about Rs. 2,270 per year. Out of which, over 90 percent is spent on administrative costs – mostly the teacher salary.

The 7<sup>th</sup> amendment has encouraged schools to spend more on non-administrative activities by including percentage of non-administrative spending as one of the criteria to qualify in 'A' category school. However, the current scenario is hopeless with over 90 percent being spent on administrative cost. Moreover, the current student-teacher ratio mostly in the Terai districts is high. The current level of spending on teacher salaries is inadequate – meaning more would have been spent on administrative costs, had there enough resource available.

Across schools, per student expenditure in Gokundeswor Secondary School in Dhankuta was found highest with Rs. 4580 spent per year. Schools were in Chitwan on the other hand found to be the lowest with only Rs. 777 (the financial data though seems to have been under reported) spent per year per student (Table 3). Excluding these two schools would yield a cost of about NRs 2500 per student per year.

TABLE 3: SUMMARY BY SCHOOLS

School Code	Primary Teachers	Primary Female Teachers	Primary Enrolment	Administrative Expenditure per Student	Non Administrative Expenditure per Student	Primary Student per Class	Primary Student per Teacher	Space (Sq feet) per Student
2001	9	7	170	4466.2	319.7	34.0	18.9	9.4
2003	5	4	183	2852.7	185.3	36.6	36.6	8.2
2004	10	7	300	1103.0	105.1	50.0	30.0	7.2
2006	4	4	111	2958.7	450.3	22.2	27.8	10.1
2009	5	4	90	3807.1	55.6	18.0	18.0	14.9
2010	6	3	162	3000.0	845.9	32.4	27.0	6.7
3001	5	3	217	1818.4	18.9	43.4	43.4	3.5
3003	8	4	359	84.2	21.1	59.8	44.9	5.2
6001	7	2	224	2617.2	255.7	37.3	32.0	4.1
6006	5	0	205	1004.1	163.6	41.0	41.0	3.2
6010	5	0	228	1480.9	65.8	45.6	45.6	4.4
6011	3	3	175	1869.9	32.9	29.2	58.3	4.8
6012	5	3	116	1560.3	42.2	23.2	23.2	13.8
9001	10	8	389	2879.3	115.3	55.6	38.9	2.8
9003	9	7	194	4643.4	42.7	32.3	21.6	6.4
11009	9	2	536	777.0	0.0	76.6	59.6	3.8
16002	7	6	267	2526.4	205.1	53.4	38.1	5.2
16010	10	8	392	2380.1	319.1	49.0	39.2	4.9
23006	6	4	294	1656.0	96.3	58.8	49.0	1.2
26014	2	2	227	1902.4	303.2	45.4	113.5	6.6
Total	7	4	242	2269.4	182.2	42.2	40.3	6.3

\* Income and expenditure data from schools 3003 and 11009 seems underreported.



## Student characteristics

Student's data includes those enrolled in grade 1, 3, and 5. From all 20 sampled schools three year's: 1999-2001, student data have been collected. The student data consists of student's ethnicity, age, gender, and achievement score in Math, Social Studies, and Nepali, and enrolment and attendance status. There are altogether 8099 students data studied for this analysis. Some of the students, however, appear repeatedly in the analysis of overall student characteristics.

## Caste group

Student enrolment in the public schools over the last three years has substantially increased. The participation of girls from deprived and poor income families has been tremendous. In the table below, different castes are divided into 7 groups: Brahmin, Chhetri, Tharu, Religious (Sherpa, Magar, Gurung, Limbu, Rai, etc.), professional (Newar, Kami, Damai, Sarki, etc.), Deprived (Pode, Chamar, Mushar, etc.), Muslim, and Others.

FIGURE 1: STUDENT CHARACTERISTICS – CASTE GROUP

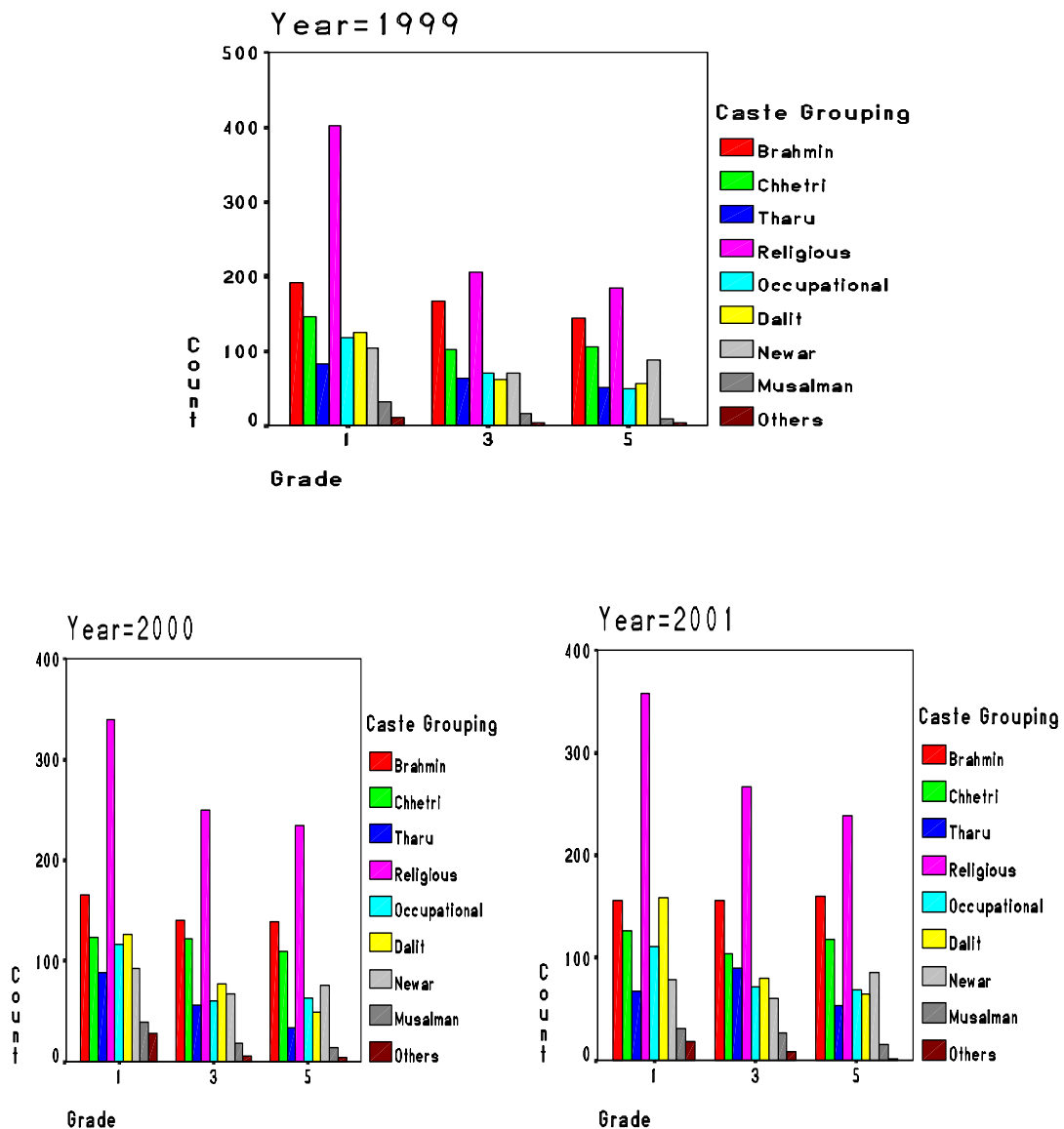


TABLE 4: STUDENT CHARACTERISTICS – CASTE GROUP

**Grade \* Caste Grouping \* Year Crosstabulation**

Year		Caste Grouping									Total	
		Brahmin	Chhetri	Tharu	Religious	Occupational	Dalit	Newar	Musalman	Others		
1999	Grade 1	Count	191	145	82	401	117	124	103	31	10	1204
		% within Grad	16%	12.0%	6.8%	33.3%	9.7%	10%	8.6%	3%	.8%	100.0%
	Grade 3	Count	167	102	64	205	70	62	71	15	4	760
		% within Grad	22%	13.4%	8.4%	27.0%	9.2%	8.2%	9.3%	2%	.5%	100.0%
	Grade 5	Count	143	106	51	185	50	57	88	9	3	692
	% within Grad	21%	15.3%	7.4%	26.7%	7.2%	8.2%	13%	1%	.4%	100.0%	
	Total	Count	501	353	197	791	237	243	262	55	17	2656
		% within Grad	19%	13.3%	7.4%	29.8%	8.9%	9.1%	9.9%	2%	.6%	100.0%
2000	Grade 1	Count	166	123	89	340	117	126	92	39	28	1120
		% within Grad	15%	11.0%	7.9%	30.4%	10%	11%	8.2%	3%	3%	100.0%
	Grade 3	Count	141	122	56	250	60	77	67	18	6	797
		% within Grad	18%	15.3%	7.0%	31.4%	7.5%	9.7%	8.4%	2%	.8%	100.0%
	Grade 5	Count	139	109	34	234	63	49	76	14	4	722
	% within Grad	19%	15.1%	4.7%	32.4%	8.7%	6.8%	11%	2%	.6%	100.0%	
	Total	Count	446	354	179	824	240	252	235	71	38	2639
		% within Grad	17%	13.4%	6.8%	31.2%	9.1%	9.5%	8.9%	3%	1%	100.0%
2001	Grade 1	Count	156	127	67	358	111	158	79	31	18	1105
		% within Grad	14%	11.5%	6.1%	32.4%	10%	14%	7.1%	3%	2%	100.0%
	Grade 3	Count	156	104	90	267	71	80	61	26	8	863
		% within Grad	18%	12.1%	10.4%	30.9%	8.2%	9.3%	7.1%	3%	.9%	100.0%
	Grade 5	Count	160	118	54	239	69	65	86	15	2	808
	% within Grad	20%	14.6%	6.7%	29.6%	8.5%	8.0%	11%	2%	.2%	100.0%	
	Total	Count	472	349	211	864	251	303	226	72	28	2776
		% within Grad	17%	12.6%	7.6%	31.1%	9.0%	11%	8.1%	3%	1%	100.0%

The table above (Table 4) indicates fairly uniform distribution of student across the grade, year and caste groups. Students from deprived, professional, religious, and the Dalit groups have been relatively high in almost all grades and in all three years. The ethnic groups (Tamang, Magar, Gurung, Rai, Limbu, Sherpa etc.) have outnumbered all other groups with over 31 percent of the total enrolment followed by Brahmin and the Dalits with over 17 and 11 percents respectively (Table 4).

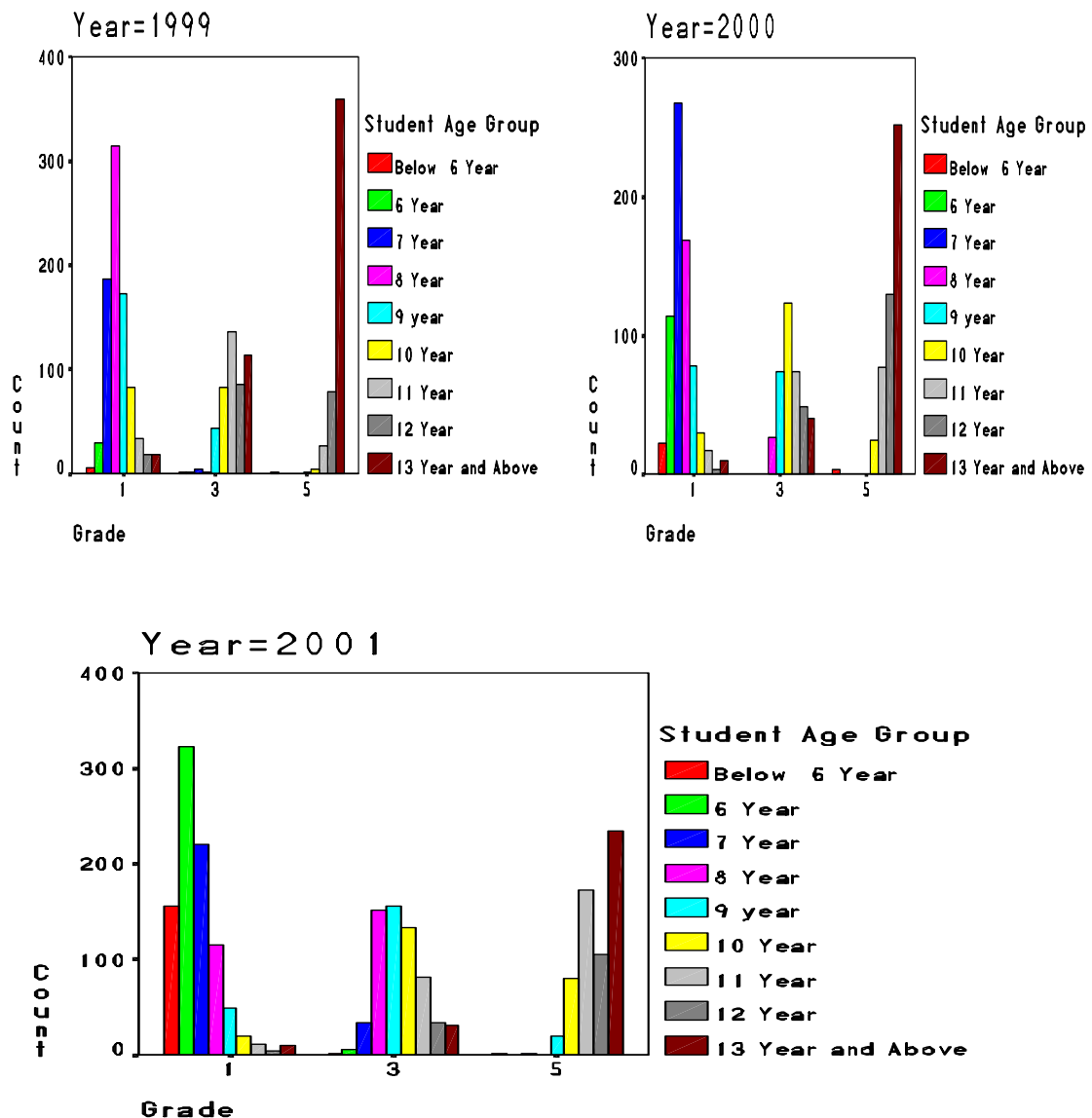
Male and female student across the caste group is also uniform and that girl's enrolment is either equal or higher than male students in each caste groups in all three years.

This suggests that students from the deprived and lower caste groups are on the rise in the public schools.

## Age group

Student's age group varies from below 5 to over 12 years even in grade 1 (Figure 2). As mentioned earlier, in most of the schools students in grade 1 are divided into two sections but in this analysis we have considered all of them as grade 1 students regardless in which section they are.

FIGURE 2: STUDENT CHARACTERISTICS – AGE GROUP



Students enrolled in year 1999 were mostly mature with relatively higher ages in all grades including in grade 1. In the year 2001, however, there is a remarkable increase in student enrollment that is below the age of 6 especially in grade 1 (Figure 2). It is true that correct age (age 6) student in grade 1 has also increased significantly in the year 2001. This may be because of the government policy of minimum age to enroll in grade 1. It seems that school did not pay much attention to student's age before. Similarly, the influx of under age children in grade 1 will eventually repeat the same grade next year.

There has been a satisfactory increase of student enrolment with appropriate ages in each grade over the past three years. This may also be a sign of increasing number of promotees and declining repeaters. The table and charts below (Table 5 and Figure 3) indicate a considerable increase in the proportion of new entrants over the past three years. Similarly, quite a significant change is observed in promotion rates in grades 3 and 5 over the same period. The promotion rate in grade 1 is also in progress but is rather slow.

TABLE 5: STUDENT CHARACTERISTICS: ENROLLMENT STATUS

**Grade \* Enrolment Status \* Year Crosstabulation**

Year	Grade		Enrolment Status				Total
			New Entrant	Repeater	Transferred	Promoted	
1999	1	Count	310	62	2	32	406
		% within Grade	76.4%	15.3%	.5%	7.9%	100.0%
	3	Count	9	20	17	316	362
		% within Grade	2.5%	5.5%	4.7%	87.3%	100.0%
	5	Count	13	18	8	300	339
% within Grade		3.8%	5.3%	2.4%	88.5%	100.0%	
Total	Count	332	100	27	648	1107	
% within Grade		30.0%	9.0%	2.4%	58.5%	100.0%	
2000	1	Count	379	71		45	495
		% within Grade	76.6%	14.3%		9.1%	100.0%
	3	Count	13	20	8	377	418
		% within Grade	3.1%	4.8%	1.9%	90.2%	100.0%
	5	Count	3	27	10	403	443
% within Grade		.7%	6.1%	2.3%	91.0%	100.0%	
Total	Count	395	118	18	825	1356	
% within Grade		29.1%	8.7%	1.3%	60.8%	100.0%	
2001	1	Count	460	194	7	104	765
		% within Grade	60.1%	25.4%	.9%	13.6%	100.0%
	3	Count	53	53	27	592	725
		% within Grade	7.3%	7.3%	3.7%	81.7%	100.0%
	5	Count	55	40	9	597	701
% within Grade		7.8%	5.7%	1.3%	85.2%	100.0%	
Total	Count	568	287	43	1293	2191	
% within Grade		25.9%	13.1%	2.0%	59.0%	100.0%	

FIGURE 3: STUDENT CHARACTERISTICS – ENROLMENT AND ATTENDANCE STATUS

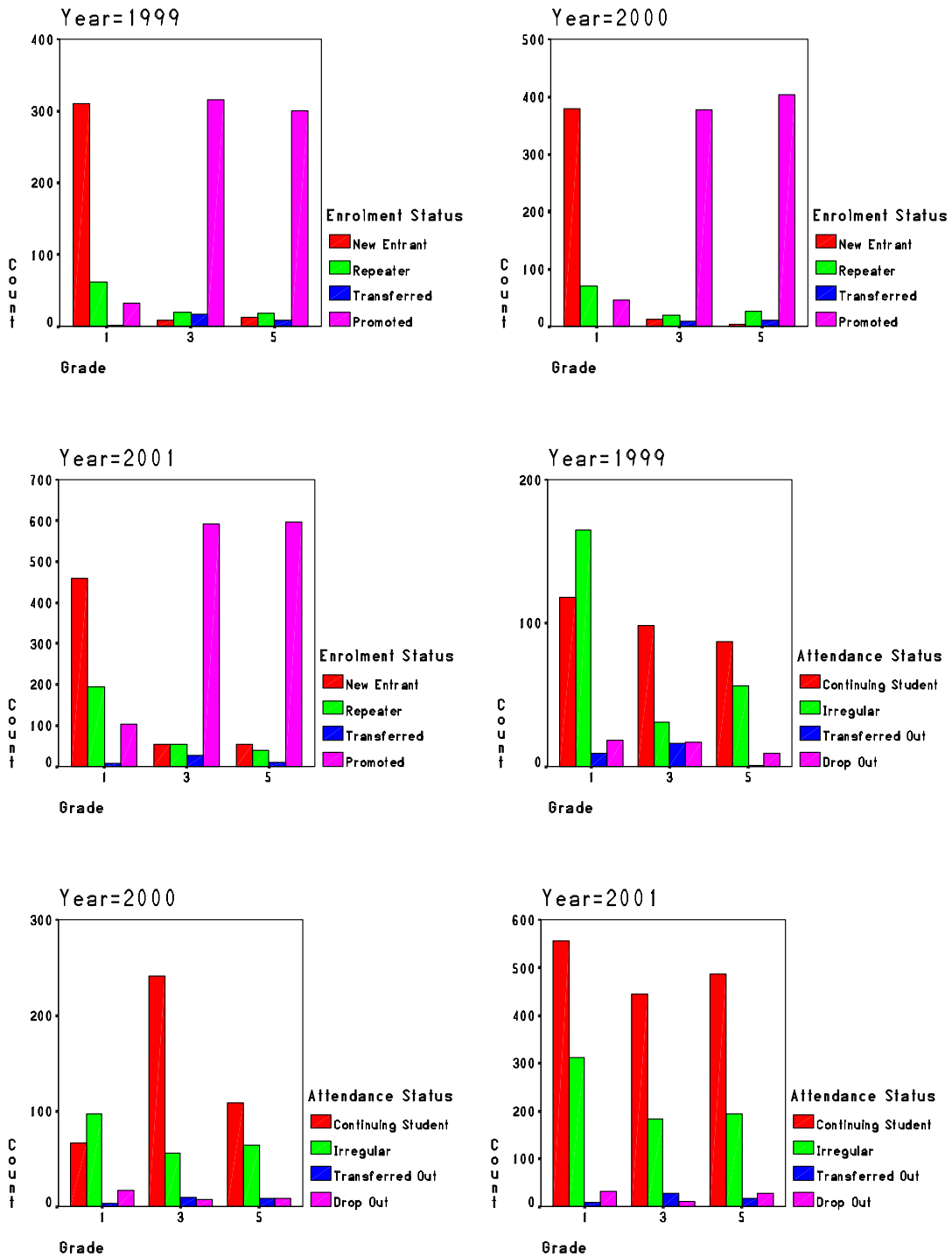


TABLE 6: STUDENT CHARACTERISTICS – ATTENDANCE

**Grade \* Attendance Status \* Year Crosstabulation**

				Attendance Status				Total
				Continuing Student	Irregular	Transferred Out	Drop Out	
1999	Grade 1	Count	118	165	9	18	310	
		% within Grade	38.1%	53.2%	2.9%	5.8%	100.0%	
	3	Count	98	31	16	17	162	
		% within Grade	60.5%	19.1%	9.9%	10.5%	100.0%	
	5	Count	87	56	1	9	153	
		% within Grade	56.9%	36.6%	.7%	5.9%	100.0%	
	Total	Count	303	252	26	44	625	
		% within Grade	48.5%	40.3%	4.2%	7.0%	100.0%	
	2000	Grade 1	Count	66	97	3	17	183
			% within Grade	36.1%	53.0%	1.6%	9.3%	100.0%
3		Count	241	56	10	7	314	
		% within Grade	76.8%	17.8%	3.2%	2.2%	100.0%	
5		Count	108	64	8	8	188	
		% within Grade	57.4%	34.0%	4.3%	4.3%	100.0%	
Total		Count	415	217	21	32	685	
		% within Grade	60.6%	31.7%	3.1%	4.7%	100.0%	
2001		Grade 1	Count	555	312	8	32	907
			% within Grade	61.2%	34.4%	.9%	3.5%	100.0%
	3	Count	445	184	27	10	666	
		% within Grade	66.8%	27.6%	4.1%	1.5%	100.0%	
	5	Count	486	194	16	27	723	
		% within Grade	67.2%	26.8%	2.2%	3.7%	100.0%	
	Total	Count	1486	690	51	69	2296	
		% within Grade	64.7%	30.1%	2.2%	3.0%	100.0%	

As the numbers of new entrant have increased over the years so is the number of repeaters in grade 1 (Figure 3). These repeaters are not those who have failed in grade 1 but rather those who have passed section A or B of the same grade last year. Since schools did not have the mandate to formally enroll as preschool they had to maintain certain student teacher ratios in order to retain the desired number of schoolteachers. These preschool (underage kids) were also counted as primary enrolment, and most of them had to repeat because of their underage. The proportion of these 'so called' repeaters in grade 1 has been on the rise over the last three years. In grades 3 and 5, the proportion of the same is only marginal, and it also corresponds with the MOES/DOE's publications.

Among students who have enrolled and are in school, a remarkable change over the past three years can be seen in their attendance status. A majority of students in grade 1 in 1999 were irregular with their daily attendance below 75 percent in the month of Poush/Magh. In the year 2001, the proportion of regular students with over 75 percent daily attendance has increased substantially from 38 percent in 1999, to over 61 percent in 2001. The trend of continuing students with higher attendance rates in all three grades

(1,3, and 5) is on the rise whereas the proportions of irregular students are declining gradually (Figure 3).

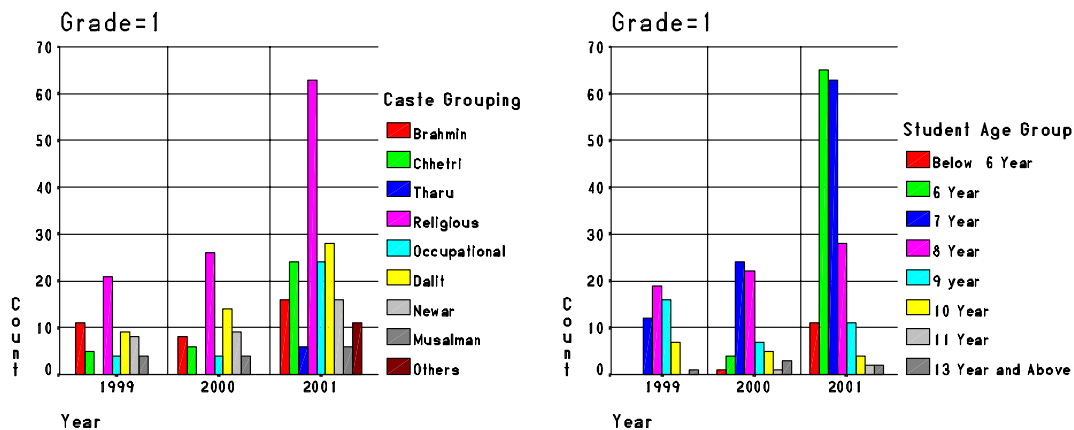
### **Student promotion, repetition and dropout**

The number of dropout students though existed some in 1999 became almost extinct with only a few in 2001 (Table 6). In the sample schools, estimate of primary school dropout in 1999 was 7 percent that fell sharply to 3 percent by the year 2001. However, MOES/DOE has been consistently reporting rather astounding rates of dropout in the primary and especially for grade 1. Until two years back dropout in grade 1 was as high as 22-24 percent. It is only lately (last year and year before) that the MOES/DOE has reported somewhat lower rates for primary dropout – about 19 percent in grade 1. The method being used by the MOES/DOE in estimating dropout is still the same old model that was developed some 20 years ago by UNESCO. In the model, dropout population is derived using two years enrolment and one year's repetition data. This method is quite effective when data collection from each school is difficult and the headcount is not possible. The disadvantage of this model is that it ignores new entrant in grades other than one. The fact is that students do enter as new entrants in almost every grade in public schools. This phenomenon in the primary is even more frequent. In this study, it has been found that only slightly over 25 percent of the total enrolments in grade 1 were new entrants. In grade 3 there were over 7 percent, and in grade 5 about 6 percent of the total enrolments were new entrants. But in the model, by default, all new entrants in grades two and above are counted as promotees. The model therefore should instead produce lower dropout and repetition rates.

The explanation for this situation possibly lies somewhere in the data quality – the enrolment data itself. Poor record keeping system in schools is mostly attributable for the inconsistency that is found in education data. The other aspect with regard to dropout data is that the MOES/DOE collect data on dropout, repetition and promotion from each school annually but at the time of publication they use the same old method to estimate dropout population. The dropout figures submitted by schools and compiled at the district education offices are rarely used or revealed. Therefore, there is enough room to believe that the data on promotion, repetition and dropout is not reliable or the method used produces unbelievable figures. When the number of new entrant exceeds the number of dropouts, the model will produce negative dropout rates. As is indicated earlier, on average about 6 – 7 percent of the total enrolments in primary grades (2 through 5) are new entrants.

The proportion of repeaters in grade 1, out of total enrolment in the same grade, was only 15 percent in 1999, which has increased to 25.4 percent by 2001. Repeaters in grade 3 and 5 during the same periods have remained almost unchanged with only 6 to 7 percent (Table 5). Promotion rate, on the other hand, was only 8 percent in 1999, which has increased to over 13 percent in 2001 in grade 1. Similarly, the proportion of the new entrants in grade 1 has dropped from 76.4 percent in 1999 to 60.1 percent in 2001 (Table 5). Thus, a fall in the proportion of new entrants, an increase in repeaters, and an increase in the proportion of promotees in grade 1 during the same periods indicate apparent anomalies in the data quality. Public schools do not have the government commitment to run pre-primary schools, though many have junior sections attached to grade 1. There are possible anomalies in education data in order to recoup resources from the government to run the additional section in the school. Hence, the data showing increase in the proportion of promotees and repeaters in grade 1 could be associated with it.

FIGURE 4: REPEATING STUDENTS IN GRADE 1



Among ethnic groups, there is almost uniform increase in the proportion of repeaters in grade 1 during 1999 – 2001 periods (Figure 4). However, there were no repeaters among Tharu ethnic group until year 2001. Among repeaters, students were more mature in grade 1 in the year 1999. Normally, repeating students lose their correct age status hence 1999 data seems quite reasonable. In the year 2001, however, the proportion of under age student repeating in grade 1 has increased substantially. Of the total repeaters in grade 1 in 2001, about 41 percent was underage (6 year and below). The proportion of promotees does not indicate any significant pattern across the ethnic groups and age categories.

Promotion, repetition and dropout (PRD) rates are the predominant indicators of internal efficiency of an education system. Lack of reliable data and use of inappropriate methods both attribute the inconsistency that exists in education statistics reported by the MOES/DOE especially on PRD data. It is not only this research that has revealed a low dropout rate but several other researchers have also indicated similarly low rates. For example, the NMIS report has revealed dropout rates as low as 2 percent in the primary level. Hence, it is high time to conduct serious study to figure out the real dropout population and to regulate the dropout statistics with due care. It has been observed among sample schools that they do not keep any records of dropout student. Information of dropout student depends mostly on class teacher’s recollection. In schools with small population this may work well but in larger schools this may not be helpful. Similarly, teacher’s frequent turnover might also influence significantly.

While it is believed that most of the out-of-school children in Nepal belong to the hard-core population – i.e., associated with economic and/or social hardships, there is no information as to how many of them have never attended schools. Considering the extremely high gross enrollment and high dropout rates especially in grade 1, it can be assumed that many of the out-of school population might have attended school at one point of time and that they could have dropped out for some reason. If this is the case, we might need to look at the factors associated with school dropouts more critically.

### Girl’s enrolment

Girl’s enrolment in public schools is also on the rise over the past three years in all three grades. In 2001 girl’s enrollment has outnumbered boys in grade1, while in 3 and 5 their numbers is close to that of boys. Girl’s enrolment is one of the indicators of school effectiveness taken for this study. Girls participation in education has been rather slow



compared to the boys in the past. Over the past three years, however, not only the numbers of students enrolled in primary have increased but also the gap that existed between girls' and boys enrolment has shrunk substantially. Most importantly, numbers of girls in higher grades have also increased substantially, which is an indicator of increasing promotion and declining drop out rates among girls in the primary section.

The charts and table below (Figure 5 and Table 7), indicate fairly uniform distribution of girl student in primary grades and that they have also come from wide range of ethnic backgrounds like boys. Population of the ethnic groups followed by the Brahmins has been dominating in all three years' enrolment. Chhetri's population on the other hand has remained lowest in all three grades during the same period. Age of girl students is also not much different from boys. A remarkable shift in the age structure of student in the primary can be seen over the past three years: under age students are increasing rapidly especially in grade 1. In the higher grades, on the other hand, students are more mature and apparently have repeated at least once in the primary grade. However, the ratio of girl student in all age groups is equal with that of boys.

FIGURE 5: ENROLMENT BY GENDER

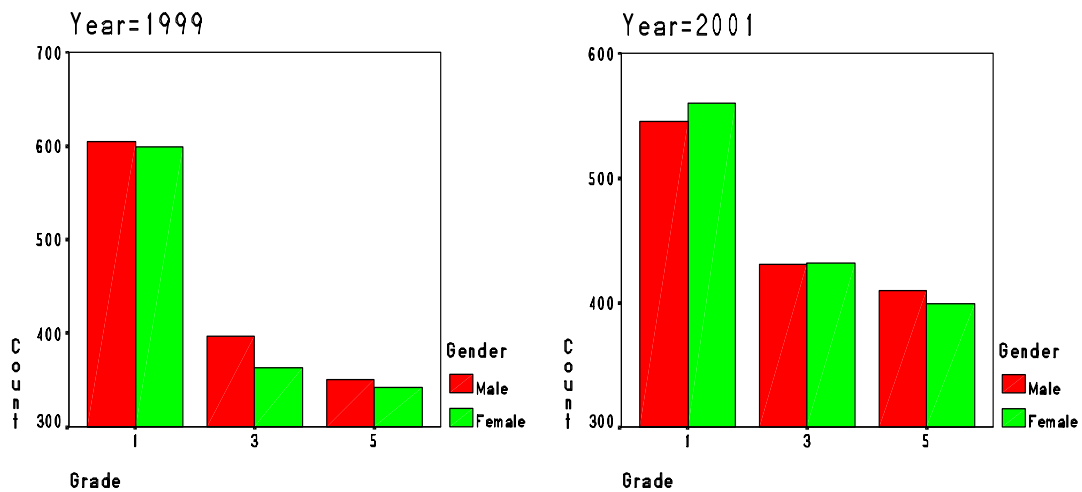


FIGURE 6: ENROLMENT BY GENDER AND CASTE

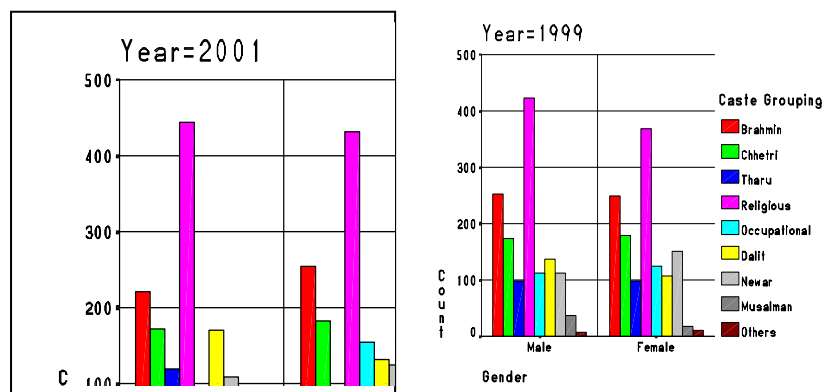
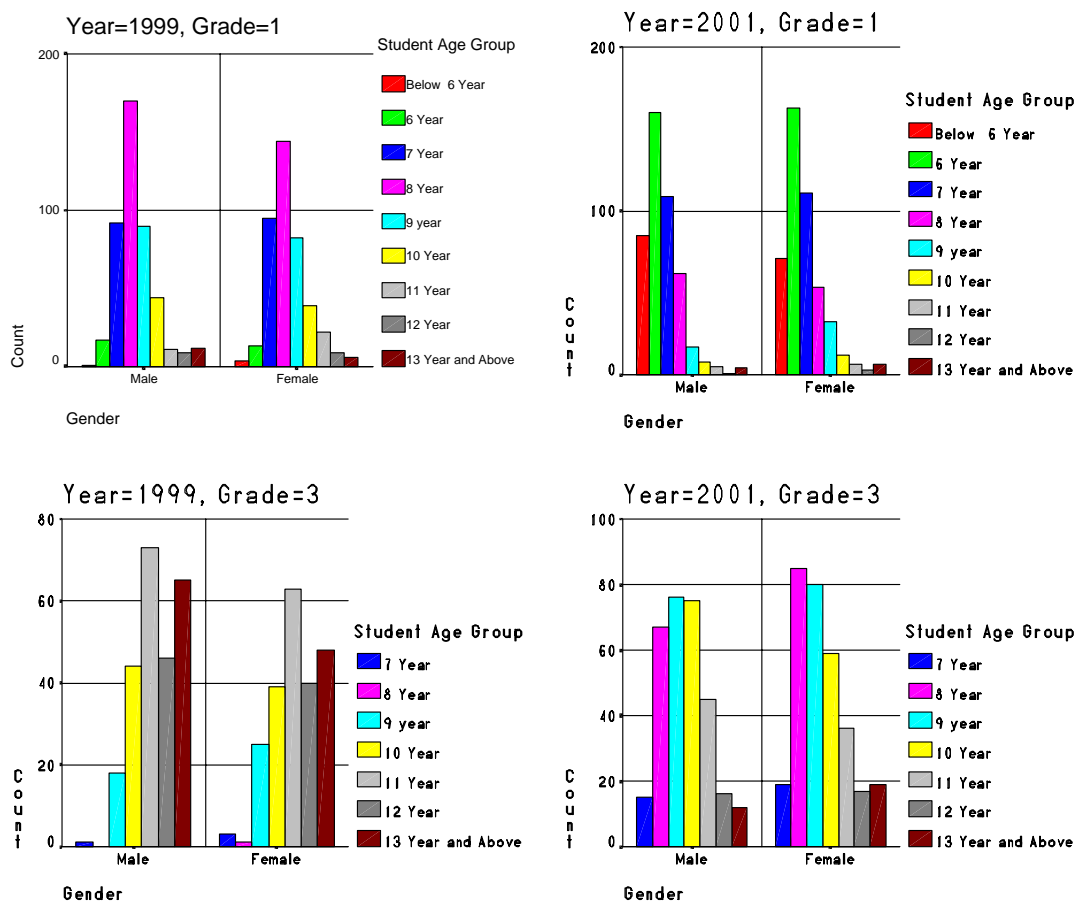


TABLE 7: ENROLMENT BY GENDER AND CASTE GROUP

Year	Gender		Brahmin	Chhetri	Thakuri	Caste Religious	Occupation	Dali	New	Musalm	Others	Total
1999	Gender	Male										
		Female	249	179	98	369	124	107	150	18	10	1304
Total			501	353	197	791	237	243	262	55	17	2656
2000	Gender	Male	221	185	103	458	112	146	109	54	17	1405
		Female	225	169	76	366	128	106	126	17	21	1234
Total			446	354	179	824	240	252	235	71	38	2639
2001	Gender	Male	221	172	119	444	96	171	109	48	16	1396
		Female	254	182	93	432	155	132	124	24	12	1408
Total			475	354	212	876	251	303	233	72	28	2804

FIGURE 7: ENROLMENT BY AGE AND GENDER AND GRADE



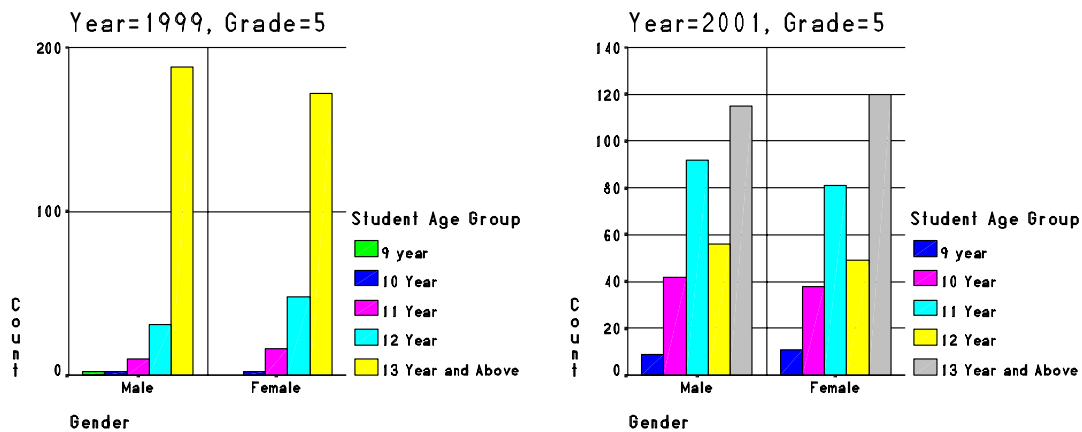
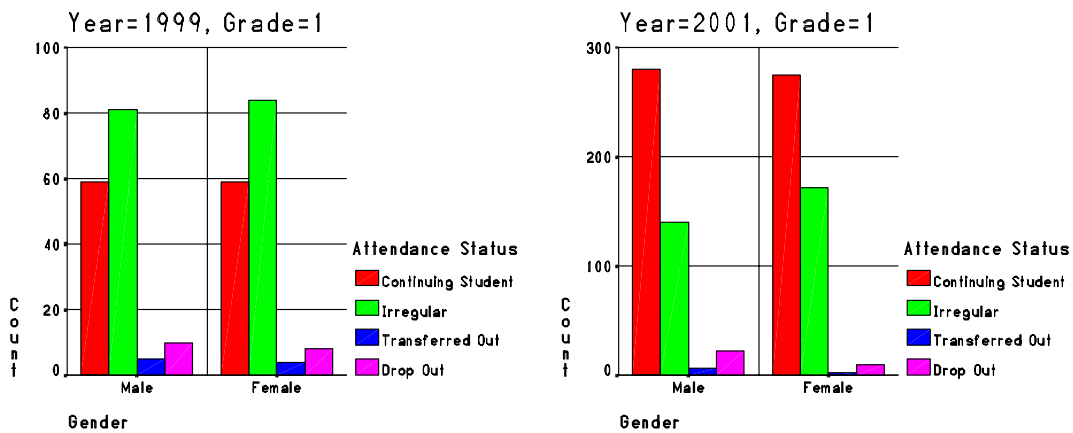


FIGURE 8: ATTENDANCE STATUS BY GENDER IN GRADE 1



A noticeable change in student attendance has been recorded in this study: a majority of students in 1999 were mostly irregular and by the year 2001 have mostly become regular especially in grade 1 (Figure 8). Girls' daily attendance in schools has largely remained lower compared to boys in the past three years. The lower attendance rate of girls in school can be attributed to existing culture that require girls time more at home than the boys'. Interestingly, however, girls' dropout rate, despite of their low daily attendance in school, has also remained lower than boys in all three years. Thus, girls are in better situation than boys in schools due to their increasing numbers as well as retention. This is indeed a positive sign for girl's educational development provided that their daily attendance in school is increased.

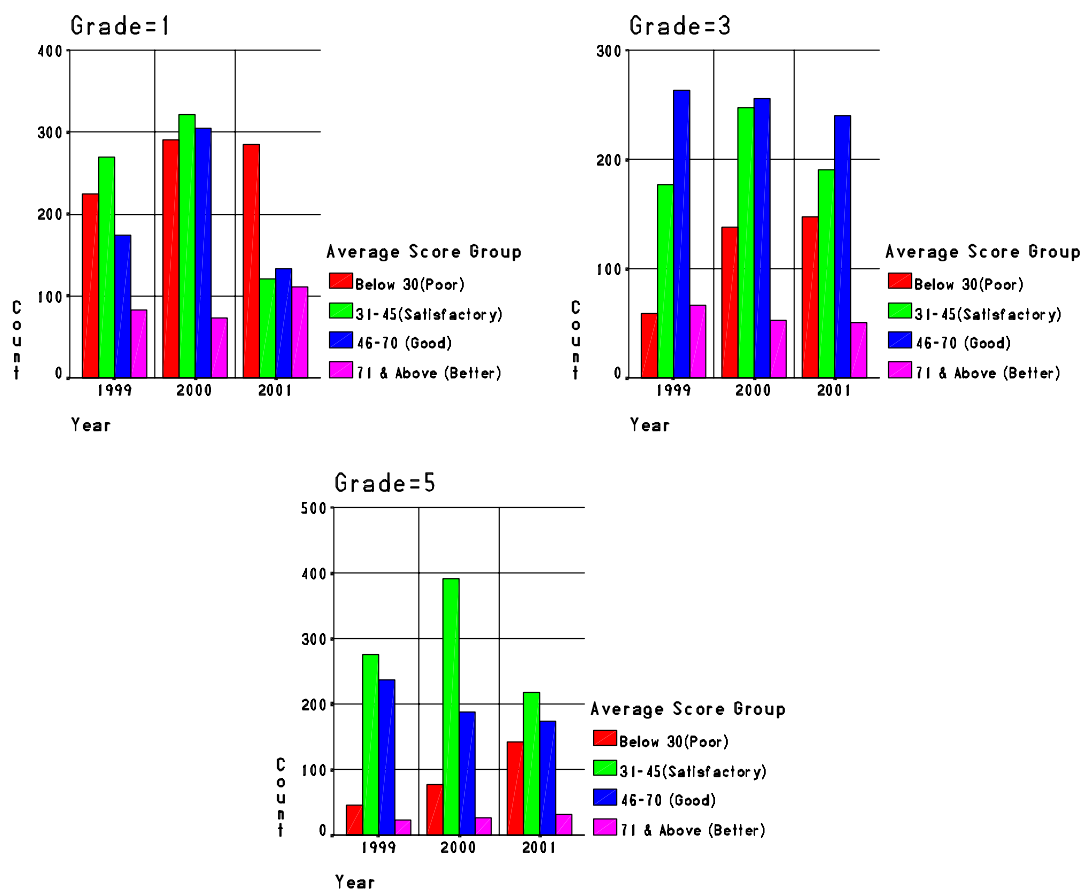
### Student achievement

Every school conducts internal test or 'examination' annually as well as half-yearly. Student in each grades are evaluated on each subject that is taught in the school annually and bi-annually. The annual examination scores of student also determine whether or not s/he is going to the next grade the following year. Scoring method varies from one teacher to another and from one school to another. A multiplicity of factors could be associated with student's achievement. However, since final score of the internal test determines student's overall success or failure in specific grades, this test scores have been taken as a measure of student achievement in this study.

## Average test scores

Student's average test score (in Math, Social Studies) is on a gradual improvement but not to the satisfactory levels yet. In grade 1, while the proportion of students receiving below 30 percent has remained almost unchanged over three years, the proportion of those scoring 30-50 percent has moved to higher score groups in the same period (Figure 9). The possible reason for this large number of students scoring low in grade 1 could be associated with the under age children. Importantly, the trend is moving towards better score groups over the past three years. In grades 3 and 5 however the trend is slightly more negative than positive. Numbers of student scoring poorly have been increasing and those scoring better are declining over the past three years.

FIGURE 9: AVERAGE TEST SCORE



An increase in the numbers of student is fairly distributed across the three achievement categories and regardless of their caste students have scored evenly. Thus, students' score by their cast group does not indicate any significant pattern suggesting that caste is not an important correlate of student achievement.

FIGURE 10: AVERAGE SCORE BELOW 30 PERCENT

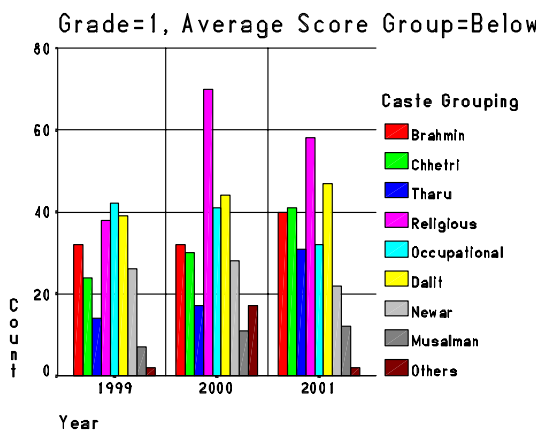
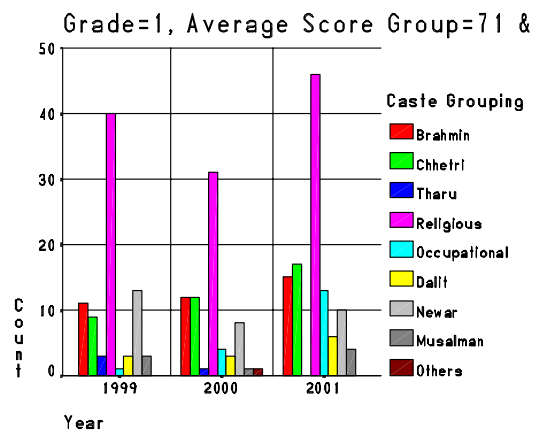


FIGURE 11: AVERAGE SCORE ABOVE 70 PERCENT



In grade 1, the number of students scoring below 30 percent on average in three subjects of Math, Nepali and Social Studies have increased consistently from 1999 to 2001 in all caste categories (Figure 10). Though marginally, the numbers of student scoring above 71 percent have also increased during the same period (Figure 11). A more noticeably change is seen among ethnic and Occupational caste categories with quite substantial increase in the proportion. Similarly, Dalit, Chhetri and Brahmin caste categories have also shown some progress. However, none of the Tharu caste population scored above 71 percent on average in the three subjects: Math, Nepali, and Social Studies.

The pattern of achievement scores in individual subjects, i.e., Math, Nepali, and Social Studies is not significant +at least in this study.

### Teacher characteristics

Most of primary school teachers were found both qualified and trained. For the primary grade required minimum qualification SLS pass or equivalent. In the sample schools (20 schools) there were altogether 161 primary teachers. Of which, only 4 (2.5%) teachers were under SLC. These under SLC teachers were mostly recruited as support staff to teach in one of the sections in grade 1 and sometimes to look after administrative and clerical works in school. But because of insufficient teachers in school they were also temporarily given the teaching job. Of 4 under SLC teachers, only one was female teacher. In general, both male and female teacher were found to have almost equal status in terms of educational attainment. Female teachers were slightly more qualified than their male counterparts. Nevertheless, it is important to note that over 55 percent of the primary teachers have qualification in only SLC and below. About 45 percent of the primary teachers have higher qualification than SLC (Figure 12 and Table 8). This is indeed a positive gesture towards quality education. However, the general trend among primary teachers with higher qualification is that they look for opportunity to teach in higher levels. This is mostly because there is no extra incentive for teachers with higher qualification.

FIGURE 12: TEACHER'S QUALIFICATION

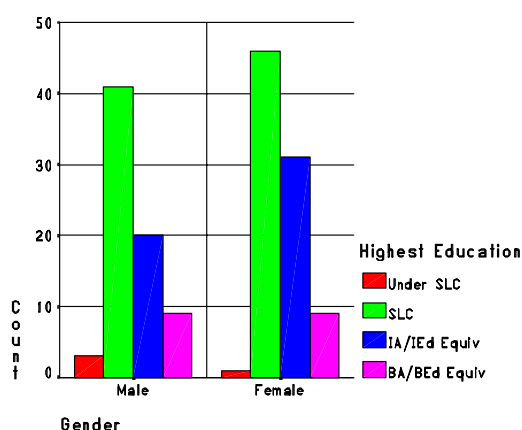
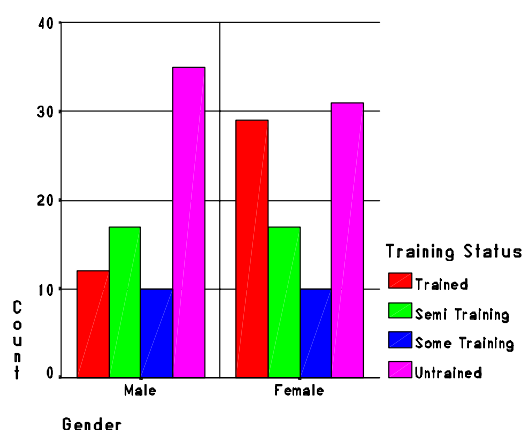


FIGURE 13: TEACHER'S TRAINING STATUS



Of the total primary teachers only slightly over 25 percent are fully trained. Another 21 percent are semi-trained nearing to complete training packages. Some 12 percent have received one or the other type of training. About 41 percent of the total primary teachers are still untrained (Figure 13 and Table 8). Training status among female teachers is somewhat promising compared to their male counterparts. Of the total female teachers in the primary, over one-third were fully trained whereas only 16 percent of all male teachers in the primary were fully trained.

Table 8: Teacher's education and training status

**Gender \* Highest Education Crosstabulation**

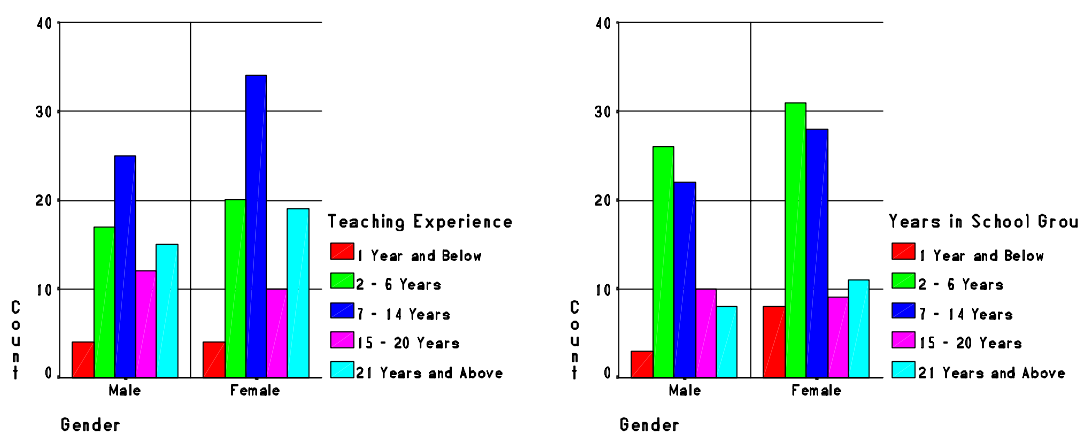
			Highest Education				Total
			Under SLC	SLC	IA/IEd Equiv	BA/BEd Equiv	
Gender	Male	Count	3	41	20	9	73
		% within Gender	4.1%	56.2%	27.4%	12.3%	100.0%
	Female	Count	1	46	31	9	87
		% within Gender	1.1%	52.9%	35.6%	10.3%	100.0%
Total		Count	4	87	51	18	160
		% within Gender	2.5%	54.4%	31.9%	11.3%	100.0%

**Gender \* Training Status Crosstabulation**

			Training Status				Total
			Trained	Semi Training	Some Training	Untrained	
Gender	Male	Count	12	17	10	35	74
		% within Gender	16.2%	23.0%	13.5%	47.3%	100.0%
	Female	Count	29	17	10	31	87
		% within Gender	33.3%	19.5%	11.5%	35.6%	100.0%
Total		Count	41	34	20	66	161
		% within Gender	25.5%	21.1%	12.4%	41.0%	100.0%

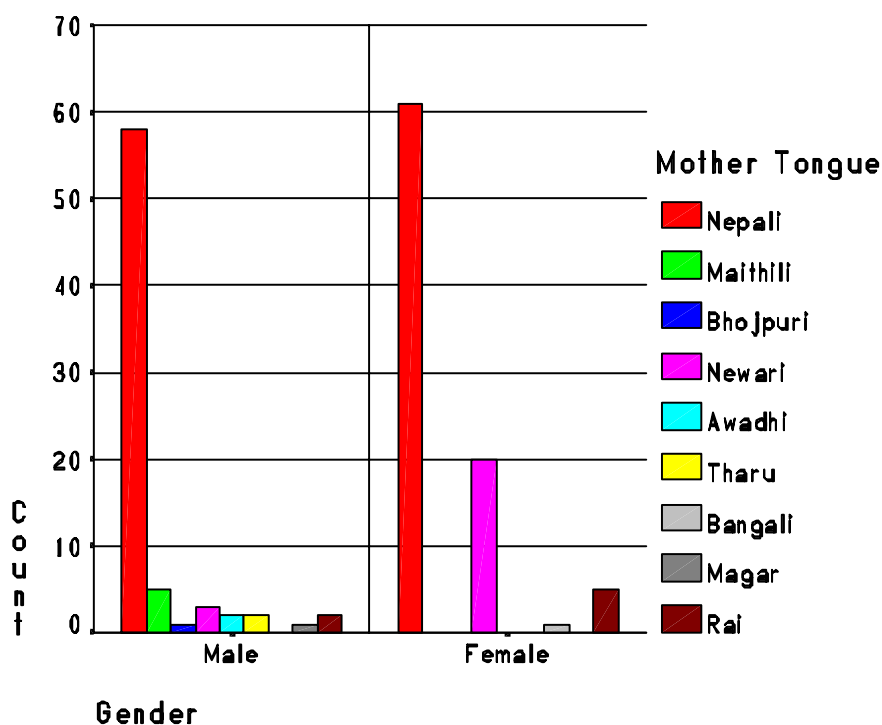
Both in terms of teaching experience and years in the same school, female teachers outnumber their male counterparts (Figure 14).

FIGURE 14: TEACHER'S TEACHING EXPERIENCE



Among primary schoolteachers Nepali was found to be the predominant mother tongue in both gender. However, male teachers were found to have come from wide language backgrounds whereas female teachers were confined to mainly two language backgrounds - Nepali and Newari (Figure 15).

FIGURE 15: TEACHER'S MOTHER TONGUE



Teacher's daily attendance in schools and their instructional time both were found rather unsatisfactory among quite a large number of primary school teachers. Out of 25 workdays in the month of 'Mangsir', nearly 40 percent of the primary school teachers were absent (on leave) for 5 or more workdays. Between the two genders, male were found more absent than the females. Over 68 percent of the female teachers were present in schools for more than 20 workdays. While only 52 percent of the male were present in schools for more than 20 workdays (Table 9, Figure 16). The instructional hours on the other hand is shared higher among males than for the females. About 39 percent of the male teachers were found to have 29 classes per week whereas only 15 percent of the female teachers had 29 classes per week. Apparently, the problem is that female teachers

are more regular in attending school but have less classes per week to teach. Male teachers on the other hand have more classes to teach but are frequently absent (Table 9, Figure 16).

TABLE: 9: TEACHER'S ATTENDANCE AND CLASS PER WEEK

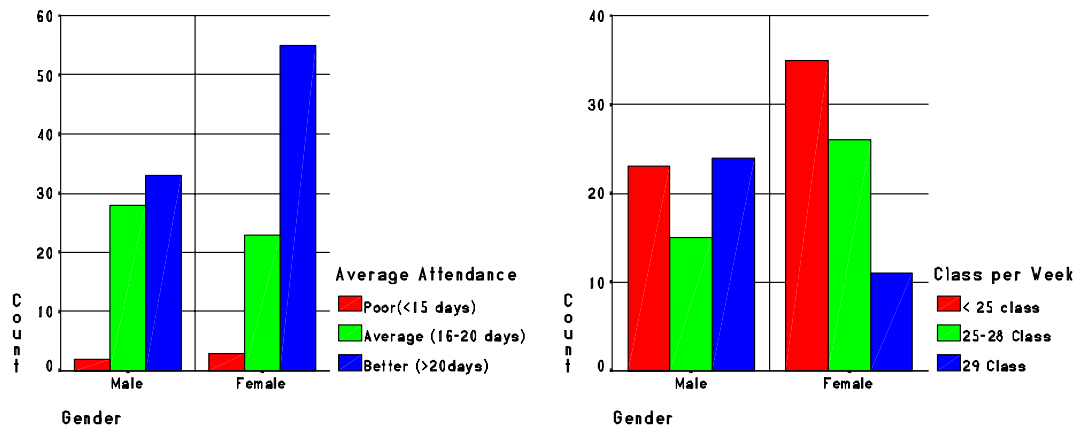
**Gender \* Average Attendance Crosstabulation**

			Average Attendance			Total
			Poor(<15 days)	Average (16-20 days)	Better (>20days)	
Gender	Male	Count	2	28	33	63
		% within Gender	3.2%	44.4%	52.4%	100.0%
	Female	Count	3	23	55	81
		% within Gender	3.7%	28.4%	67.9%	100.0%
Total		Count	5	51	88	144
		% within Gender	3.5%	35.4%	61.1%	100.0%

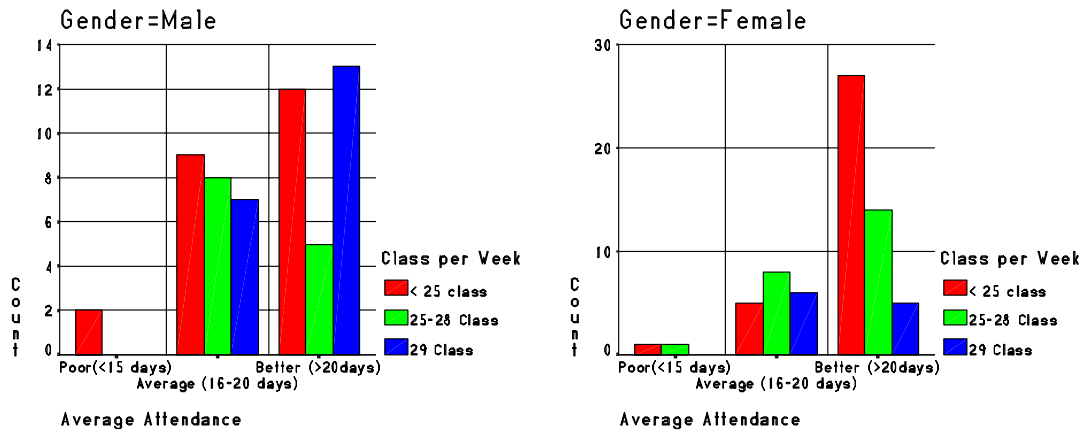
**Gender \* Class per Week Crosstabulation**

			Class per Week			Total
			< 25 class	25-28 Class	29 Class	
Gender	Male	Count	23	15	24	62
		% within Gender	37.1%	24.2%	38.7%	100.0%
	Female	Count	35	26	11	72
		% within Gender	48.6%	36.1%	15.3%	100.0%
Total		Count	58	41	35	134
		% within Gender	43.3%	30.6%	26.1%	100.0%

FIGURE: 16: TEACHER'S ATTENDANCE AND CLASS PER WEEK







### Analysis by school

In this section, a comparison of schools is done on the basis of several indicators, i.e., school's physical condition, student per class, student per teacher, student per space in school, and the average cost per student. Student achievement scores were not available for all schools for 2001; hence school's ranking on the basis of student test scores were obtained from the National Achievement Study. Average physical conditions of schools were determined on the basis of 13 different responses/observations received from schools. Each of the 13 responses was given a 3 point score – 3 for having the facility/services, in question, fully available in school. Partial availability of the services /facility in schools were given 2 points and 1 point was given to schools that did not have such facilities at all. Schools were then ranked based on the average score thus received out of the 13 responses - highest scoring school receiving high ranking. Similarly, based on average scores each of the indicators mentioned above have been ranked. Schools with better standing were ranked high on each of the indicators. Thus, higher ranking on each indicator would mean better conditions.

A simple descriptive analysis of schools reveals that of the 20 schools, only 5 schools had the minimum physical facility available in school. In other words, 75 percent of the total schools were lacking the minimum basic physical facilities in schools (Table 10).

TABLE 10: SCHOOL PHYSICAL CONDITION AND COST PER STUDENT

#### School's Overall Physical Rating

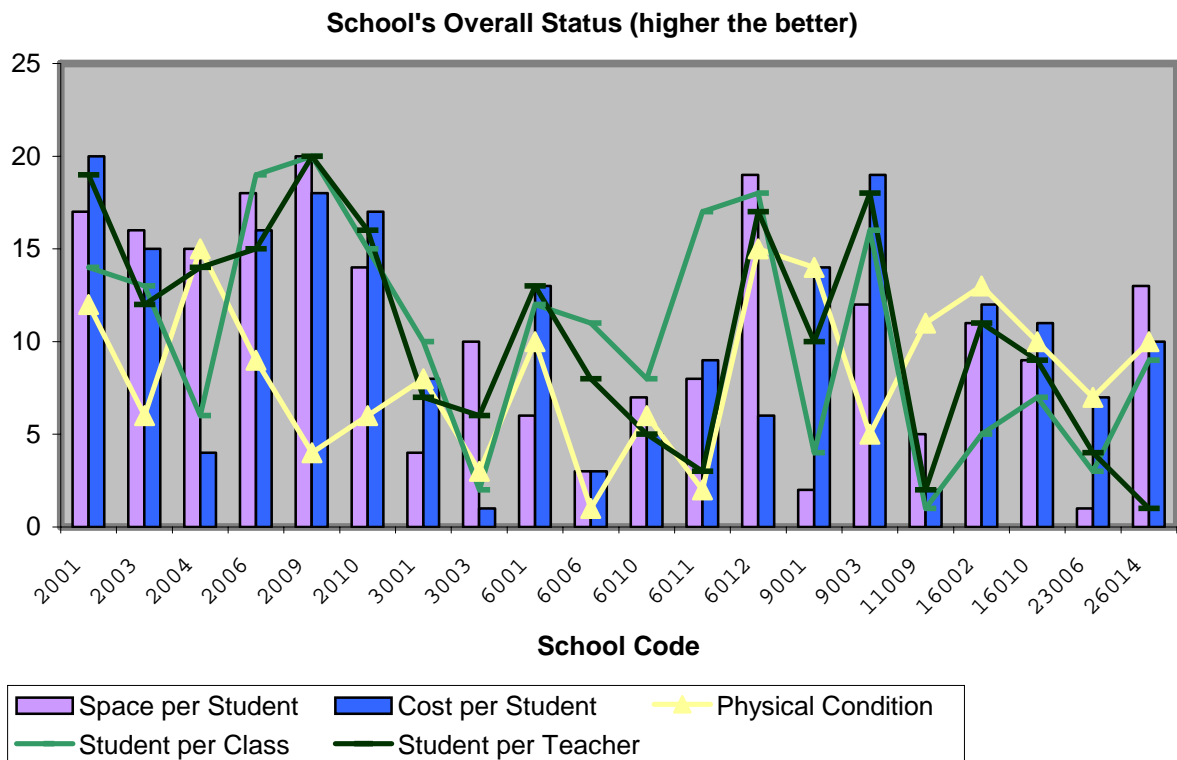
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Poor	8	40.0	40.0	40.0
Moderate	7	35.0	35.0	75.0
Better	5	25.0	25.0	100.0
Total	20	100.0	100.0	

#### Total Cost per Student

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 2000 and Below	9	45.0	45.0	45.0
2001 - 3000	5	25.0	25.0	70.0
3001 and above	6	30.0	30.0	100.0
Total	20	100.0	100.0	

Per student cost were also found substantially different among schools ranging from below Rs. 800 to over Rs. 4500 per student per year. Of the total public schools surveyed, 45 percent schools had per people spending below Rs. 2000 and 30 percent of schools had spending above Rs 3000 per people per year (Table 10).

FIGURE: 17: SCHOOL'S OVERALL STATUS



The overall status of schools, as indicated in the above graph (Figure 17), reveals somewhat proportional status to each other on a couple of indicators. The student-per-class and student-per-teacher exhibit similar pattern across the school. Similarly, space-per-student and cost-per-student also has the same trend with slight deviation in some cases. This greater association between variables may have been caused by the fact that the number of student is the sole determinant in cases student per teacher and per class ratios whereas the cost is the determinant of expenditure and space per student.

Among other things, school's physical condition does not seem to have any explicit relationship with other indicators. Whereas, space-per-student and student-per-teacher are all somewhat skewed toward cost per student. A correlation coefficient of all these indicators would give a much better idea. Hence, spearman's correlation is conducted.

TABLE 11: SPEARMAN'S RANK CORRELATION - 1

**Correlations - Spearman's rho**

		RANK of PHYCOND2	RANK of SPCPSTD	RANK of GRLPCLAS	RANK of COSTPSTD	RANK of STDPCLAS	RANK of STDPTCH
RANK of PHYCOND2	Correlation Coefficient	1.000	.131	.354	.011	-.269	.156
	Sig. (2-tailed)	.	.581	.126	.965	.252	.511
RANK of SPCPSTD	Correlation Coefficient	.131	1.000	-.591**	.459*	.639**	.678**
	Sig. (2-tailed)	.581	.	.006	.042	.002	.001
RANK of GRLPCLAS	Correlation Coefficient	.354	-.591**	1.000	-.194	-.651**	-.388
	Sig. (2-tailed)	.126	.006	.	.413	.002	.091
RANK of COSTPSTD	Correlation Coefficient	.011	.459*	-.194	1.000	.594**	.672**
	Sig. (2-tailed)	.965	.042	.413	.	.006	.001
RANK of STDPCLAS	Correlation Coefficient	-.269	.639**	-.651**	.594**	1.000	.629**
	Sig. (2-tailed)	.252	.002	.002	.006	.	.003
RANK of STDPTCH	Correlation Coefficient	.156	.678**	-.388	.672**	.629**	1.000
	Sig. (2-tailed)	.511	.001	.091	.001	.003	.

\*\* . Correlation is significant at the .01 level (2-tailed).

\* . Correlation is significant at the .05 level (2-tailed).

The correlation coefficient of school indicators reveals no relationship of school's physical condition with other indicators. Although it is statistically not significant, girl student per class has the highest correlation coefficients ( $r = 0.354$ ) indicating that girl's enrollment is higher in schools with better physical conditions (Table 11). A negative correlation ( $r = -.269$ ) between school's physical conditions and student per class has been found. Since lower class-size (student per class) is considered better, school with lowest student-per-class ratio is ranked highest. Thus, a negative correlation between school's physical condition and class-size indicates that class-size also increases with the increase in school's physical condition. There may be a loop here caused by the fact that increase in the class-size would also mean increase in school's income through student/parent contribution. However, student contribution in the public schools, especially in the primary sections is so trivial that it could hardly make any significant impact on school's physical condition. This may have been true but due to the poor quality of financial data from schools such investigation has been postponed.

A statistically significant and strong negative correlation ( $-.591$ ) between girl's class size and per-student-space in school is found. This indicates that classes are mostly crowded in schools with high girl's enrollment – in other words, per-student-space is low in schools with higher girl's enrolment. But on the other hand girl per class is negatively correlated with student-per-class ( $r = -.651$ ). The correlation is also statistically significant at 99 percent of confidence level (Table 11). Normally, small class-size is considered better. Hence, small class size is ranked higher. A negative correlation between the two therefore indicates that girl's enrollment is higher in schools with small class size.

There is a strong positive correlation between space in school and costs per student ( $r = .549$ ). The correlation is statistically significant at 95 percent confidence level. Indicating

that cost per student is high in schools with higher space-per-student. Similarly, student-per-class and student-per-teacher both are highly positively correlated with space-per-student and that the correlation is statistically significant at 99 percent confidence. A positive correlation with these two variables indicates that class-size and student-teacher ratios both are better in schools with more space per student. Since all three indicators are contingent upon student size, a positive correlation seems inevitable.

TABLE 12: SPEARMAN'S RANK CORRELATION-2

Spearman's rho (Rank Correlation)

		School's Physical Condition	Space per Student	Girls per Class	Cost per Student	Student per Class	Student per Teacher
Student Age	Correlation Coefficient	0.129	0.125	0.019	0.278	0.116	0.211
	Sig. (2-tailed)	0.588	0.6	0.937	0.235	0.627	0.372
New Entrant	Correlation Coefficient	0.081	0.079	-0.165	-0.267	0.042	0.017
	Sig. (2-tailed)	0.734	0.739	0.487	0.256	0.862	0.943
Repeater	Correlation Coefficient	0.17	0.006	0.21	-0.117	0.046	-0.106
	Sig. (2-tailed)	0.474	0.979	0.374	0.623	0.846	0.657
Transferred In	Correlation Coefficient	0.22	0.259	-0.179	0.378	0.139	0.338
	Sig. (2-tailed)	0.352	0.271	0.45	0.1	0.558	0.145
Promoted	Correlation Coefficient	-0.048	-0.01	-0.043	0.226	-0.042	0.109
	Sig. (2-tailed)	0.84	0.967	0.856	0.337	0.861	0.647
Regular in School	Correlation Coefficient	0.151	0.218	0.097	0.322	0.003	0.121
	Sig. (2-tailed)	0.525	0.356	0.685	0.166	0.99	0.613
Irregular in School	Correlation Coefficient	-0.005	-0.334	0.15	-0.376	-0.061	-0.156
	Sig. (2-tailed)	0.982	0.15	0.529	0.102	0.8	0.51
Transferred Out	Correlation Coefficient	-0.058	0.173	-0.202	0	-0.145	0.116
	Sig. (2-tailed)	0.808	0.465	0.392	1	0.543	0.627
Drop Out	Correlation Coefficient	-0.046	0.13	-0.301	-0.137	-0.039	0.122
	Sig. (2-tailed)	0.846	0.584	0.197	0.564	0.871	0.607

Student characteristics such as enrollment and attendance status were also correlated with school variables. None of the variables, however, has significant correlation with each other. Though weaker and statistically insignificant, some correlation is observed between cost-per-student and the number of students transferred-in. Since high per-student cost is considered better, a positive correlation of .378 indicates that the proportion of students transferred-in is higher in schools with high per-student cost (Table 12). Similarly, transferred-in students are more in schools that have low student-teacher ratio. In a previous analysis, a close association between student-teacher ratio and per-student-cost has been established. Hence, both the correlations indicate same thing: cost-per-student.

A correlation of .322 between regular attendance and per-student-cost also reveals that the proportion of regular students is also high in schools that have high per-student cost. A negative correlation of -.376 between irregular student and cost-per-student suggest that the proportion of irregular students are higher in schools that have low per student cost (Table 12). Thus, the cost-per-student stands out from this analysis as the best predictor of student status: attendance and enrollment, and the higher the cost per student the better is the attendance and enrolment status.

School's physical condition has once again shown no significant correlation with either student's enrolment and attendance or with any other indicators used in this analysis. This may have been caused by the fact that school's physical condition even among better public schools is still rudimentary. Hence, the impact of school's physical condition on

student status and on the other indicators is trivial, and it is hardly possible to reveal using statistical tools. General linear models such as univariate, multivariate and linear regression were also conducted to examine the possible impact of school's physical condition on student enrolment and attendance. Although none of the above yields results that are statistically significant, some of those that predicted quite large variance have been presented below:

TABLE 13: MULTIVARIATE TEST - 1

**Tests of Between-Subjects Effects**

Dependent Variable: Promoted

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.638 <sup>a</sup>	7	9.112E-02	1.938	.150
Intercept	6.180	1	6.180	131.451	.000
SCHCOND	.295	2	.147	3.135	.080
COSTGRUP	3.199E-02	2	1.599E-02	.340	.718
SCHCOND * COSTGRUP	.276	3	9.212E-02	1.960	.174
Error	.564	12	4.701E-02		
Total	7.700	20			
Corrected Total	1.202	19			

a. R Squared = .531 (Adjusted R Squared = .257)

**Tests of Between-Subjects Effects**

Dependent Variable: Repeater

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	3.217E-02 <sup>a</sup>	7	4.595E-03	.521	.803
Intercept	.188	1	.188	21.260	.001
SCHCOND	6.470E-03	2	3.235E-03	.367	.700
COSTGRUP	9.074E-03	2	4.537E-03	.514	.610
SCHCOND * COSTGRUP	1.677E-02	3	5.590E-03	.634	.607
Error	.106	12	8.819E-03		
Total	.380	20			
Corrected Total	.138	19			

a. R Squared = .233 (Adjusted R Squared = -.214)

According to the tables given above (Table 13), school's physical condition and cost-per-student together explain over 50 percent (unadjusted) of the total variance in the proportion of promotees across the school. Similarly, the same independent variables explain over 20 percent (unadjusted) of the variance in the proportion of repeaters across school. Promotion and repetition rates in the primary school have been a matter of serious concern among educationists, policy-makers, and planners. While it is obvious that student pass or repeat the grade because of their test scores, the enquiry in many research however is mostly confined to the teaching, curriculum, textbooks and so forth. School's physical conditions have been less explored to explain why students repeat. The present analysis, in that regard, sheds some light on the consequence of poor school condition on student's performance. Girl's enrolment is one of the indicators taken in this study. The current analysis with a positive correlation between school's physical condition and girl's enrolment reveals that the girl's enrollment is higher in schools with better physical facilities. Since the study is based only on a limited sample, any assertions thus made would require to be verified through a nationally representing study.

School's physical condition and cost-per-student were used to predict student achievement scores by conducting a multivariate analysis. At this time quite significant results were obtained.

TABLE 14: MULTIVARIATE TEST - 2

Multivariate Tests <sup>c</sup>

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	1.00	515.20 <sup>a</sup>	4.00	9.00	.00
	Wilks' Lambda	.00	515.20 <sup>a</sup>	4.00	9.00	.00
	Hotelling's Trace	228.98	515.20 <sup>a</sup>	4.00	9.00	.00
	Roy's Largest Root	228.98	515.20 <sup>a</sup>	4.00	9.00	.00
SCHCOND	Pillai's Trace	1.09	2.98	8.00	20.00	.02
	Wilks' Lambda	.16	3.36 <sup>a</sup>	8.00	18.00	.02
	Hotelling's Trace	3.68	3.68	8.00	16.00	.01
	Roy's Largest Root	3.19	7.98 <sup>b</sup>	4.00	10.00	.00
COSTGRUP	Pillai's Trace	.91	2.09	8.00	20.00	.09
	Wilks' Lambda	.10	4.70 <sup>a</sup>	8.00	18.00	.00
	Hotelling's Trace	8.41	8.41	8.00	16.00	.00
	Roy's Largest Root	8.39	20.98 <sup>b</sup>	4.00	10.00	.00
SCHCOND * COSTGRUP	Pillai's Trace	1.02	1.42	12.00	33.00	.21
	Wilks' Lambda	.21	1.60	12.00	24.10	.16
	Hotelling's Trace	2.68	1.71	12.00	23.00	.13
	Roy's Largest Root	2.27	6.23 <sup>b</sup>	4.00	11.00	.01

a. Exact statistic

b. The statistic is an upper bound on F that yields a lower bound on the significance level.

c. Design: Intercept+SCHCOND+COSTGRUP+SCHCOND \* COSTGRUP

In order to conduct multivariate analysis, a mean score of student's achievement, i.e. in Math, Social Studies, and Nepali in grade-one in the year 2000 were determined for each school. Similarly, an overall score including all three subjects were also determined for each school. While it is true that the average score eliminates within school and within classroom discrepancy, the large size of student population does help to minimize extreme variation. The multivariate model with two independent variables, i.e., school's physical condition and the cost-per-student were not only statistically significant across all categories but also predicted substantially large difference among each category.

TABLE 15: MULTIVARIATE TEST - 3

## Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Average Score in Math	1255.36 <sup>a</sup>	7.00	179.34	6.54	.00
	Average Score in Social Studies	1577.68 <sup>b</sup>	7.00	225.38	7.45	.00
	Average Score in Nepali	1692.79 <sup>c</sup>	7.00	241.83	6.37	.00
	Overall Average Score	1455.18 <sup>d</sup>	7.00	207.88	12.01	.00
Intercept	Average Score in Math	33607.89	1.00	33607.89	1226	.00
	Average Score in Social Studies	35800.07	1.00	35800.07	1183	.00
	Average Score in Nepali	43161.25	1.00	43161.25	1137	.00
	Overall Average Score	37073.12	1.00	37073.12	2141	.00
SCHCOND	Average Score in Math	220.72	2.00	110.36	4.03	.05
	Average Score in Social Studies	370.26	2.00	185.13	6.12	.01
	Average Score in Nepali	285.02	2.00	142.51	3.76	.05
	Overall Average Score	279.63	2.00	139.81	8.07	.01
COSTGRUP	Average Score in Math	705.65	2.00	352.83	12.87	.00
	Average Score in Social Studies	1168.72	2.00	584.36	19.31	.00
	Average Score in Nepali	1493.35	2.00	746.68	19.68	.00
	Overall Average Score	1107.88	2.00	553.94	31.99	.00
SCHCOND * COSTGRUP	Average Score in Math	598.84	3.00	199.61	7.28	.00
	Average Score in Social Studies	212.49	3.00	70.83	2.34	.12
	Average Score in Nepali	332.14	3.00	110.71	2.92	.08
	Overall Average Score	336.19	3.00	112.06	6.47	.01
Error	Average Score in Math	328.95	12.00	27.41		
	Average Score in Social Studies	363.07	12.00	30.26		
	Average Score in Nepali	455.33	12.00	37.94		
	Overall Average Score	207.78	12.00	17.32		
Total	Average Score in Math	38727.89	20.00			
	Average Score in Social Studies	41119.70	20.00			
	Average Score in Nepali	48786.60	20.00			
	Overall Average Score	42144.96	20.00			
Corrected Total	Average Score in Math	1584.31	19.00			
	Average Score in Social Studies	1940.75	19.00			
	Average Score in Nepali	2148.12	19.00			
	Overall Average Score	1662.96	19.00			

a. R Squared = .792 (Adjusted R Squared = .671)

b. R Squared = .813 (Adjusted R Squared = .704)

c. R Squared = .788 (Adjusted R Squared = .664)

d. R Squared = .875 (Adjusted R Squared = .802)

The model predicted almost or over 80 percent (unadjusted) of the variance in score in each subject (Table 15). Indicating that the mean score difference across three groups in independent variables is significant. Hence, a post-hoc test was also conducted to determine which two groups differ the most. The post-hoc result indicated a significant difference in Math score between schools with poor and moderate physical facilities. The mean score in Social Studies and Nepali was not significantly different across the school. The overall average mean score across the school was however significantly different

between poor and moderate, and between moderate and better categories – in terms of physical facility available in school.

TABLE 16: MULTIVARIATE POST-HOC COMPARISON - 1

**Multiple Comparisons**

Tukey HSD

Dependent Variable	(I) School's Overall Physical Rating	(J) School's Overall Physical Rating	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Average Score in Math	Poor	Moderate	8.09*	2.71	.03	.86	15.32
		Better	1.45	2.98	.88	-6.52	9.41
	Moderate	Poor	-8.09*	2.71	.03	-15.32	-.86
		Better	-6.64	3.07	.12	-14.82	1.54
Better	Poor	-1.45	2.98	.88	-9.41	6.52	
	Moderate	6.64	3.07	.12	-1.54	14.82	
Average Score in Social Studies	Poor	Moderate	6.79	2.85	.08	-.81	14.38
		Better	-1.74	3.14	.85	-10.11	6.63
	Moderate	Poor	-6.79	2.85	.08	-14.38	.81
		Better	-8.53	3.22	.05	-17.12	.07
Better	Poor	1.74	3.14	.85	-6.63	10.11	
	Moderate	8.53	3.22	.05	-.07	17.12	
Average Score in Nepali	Poor	Moderate	5.69	3.19	.22	-2.81	14.20
		Better	-.48	3.51	.99	-9.85	8.89
	Moderate	Poor	-5.69	3.19	.22	-14.20	2.81
		Better	-6.17	3.61	.24	-15.79	3.45
Better	Poor	.48	3.51	.99	-8.89	9.85	
	Moderate	6.17	3.61	.24	-3.45	15.79	
Overall Average Score	Poor	Moderate	7.29*	2.15	.01	1.55	13.04
		Better	-.32	2.37	.99	-6.65	6.01
	Moderate	Poor	-7.29*	2.15	.01	-13.04	-1.55
		Better	-7.61*	2.44	.02	-14.11	-1.11
Better	Poor	.32	2.37	.99	-6.01	6.65	
	Moderate	7.61*	2.44	.02	1.11	14.11	

Based on observed means.

\*. The mean difference is significant at the .05 level.

Cost-per-student also yielded quite significant results. A post-hoc test revealed the group difference in the mean score statistically significant across all categories – indicating that the cost-per-student is significantly associated with the mean difference in score in Math, Social Studies, and Nepali. Another analysis has also revealed positive correlation (.452 at  $<.05$ ) between cost-per-student and the mean score indicating higher the cost-per-student the higher is the mean score. With the current analysis, thus, it can be confirmed that the cost-per-student is significantly associated with student's achievement score, and that increasing per student cost would also increase student achievement in all three core subjects.



TABLE 17: MULTIVARIATE POST-HOC COMPARISON - 2

**Multiple Comparisons**

Tukey HSD

Dependent Variable	(I) Total Cost per Student	(J) Total Cost per Student	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Average Score in Math	2000 and Below	2001 - 3000	5.62	2.92	.17	-2.17	13.41
		3001 and above	-8.33*	2.76	.03	-15.70	-.97
	2001 - 3000	2000 and Below	-5.62	2.92	.17	-13.41	2.17
		3001 and above	-13.95*	3.17	.00	-22.41	-5.50
	3001 and above	2000 and Below	8.33*	2.76	.03	.97	15.70
		2001 - 3000	13.95*	3.17	.00	5.50	22.41
Average Score in Social Studies	2000 and Below	2001 - 3000	6.56	3.07	.12	-1.62	14.75
		3001 and above	-12.86*	2.90	.00	-20.59	-5.12
	2001 - 3000	2000 and Below	-6.56	3.07	.12	-14.75	1.62
		3001 and above	-19.42*	3.33	.00	-28.31	-10.53
	3001 and above	2000 and Below	12.86*	2.90	.00	5.12	20.59
		2001 - 3000	19.42*	3.33	.00	10.53	28.31
Average Score in Nepali	2000 and Below	2001 - 3000	6.06	3.44	.22	-3.11	15.22
		3001 and above	-13.76*	3.25	.00	-22.42	-5.09
	2001 - 3000	2000 and Below	-6.06	3.44	.22	-15.22	3.11
		3001 and above	-19.81*	3.73	.00	-29.76	-9.86
	3001 and above	2000 and Below	13.76*	3.25	.00	5.09	22.42
		2001 - 3000	19.81*	3.73	.00	9.86	29.76
Overall Average Score	2000 and Below	2001 - 3000	6.26*	2.32	.05	.07	12.45
		3001 and above	-11.78*	2.19	.00	-17.63	-5.93
	2001 - 3000	2000 and Below	-6.26*	2.32	.05	-12.45	-.07
		3001 and above	-18.04*	2.52	.00	-24.76	-11.32
	3001 and above	2000 and Below	11.78*	2.19	.00	5.93	17.63
		2001 - 3000	18.04*	2.52	.00	11.32	24.76

Based on observed means.

\*. The mean difference is significant at the .05 level.

## Chapter V

### Discussion of the results

#### Student Enrolment

Enrolments over the past three years have been found increasing in all community schools. The average school-size among sample schools is 241 students and the average class-size is 42 students in the primary level. Increase in the primary enrolments is encouraging because of the increasing participation of the girls, socially disadvantaged and deprived populations. Nationally, girls' enrolment in the primary levels in year 2000 was only 41 percent. Among sample schools girls' enrolment was found over 50 percent in the year 2001.

Similarly, enrolments across ethnic groups and especially among Religious and Occupational groups, and the Dalits are also increasing in the community schools. Of the total population in community schools, Religious and Occupational group have the largest share with 40 percent enrolment. Followed by Brahmin and Chhetri – 30 percent, and the Dalits - 11 percent. Thus, students belonging to rather poor and working class families are in abundance in the community schools.

While it remains ambiguous, due to the absence of empirical evidence as to what is truly contributing and how much for such increment in student enrolment, a common sense appeal goes to the growing awareness among families. Although questions have been raised about insufficient and ineffective use of various targeted programs such as the scholarships for girls, Dalits and disadvantaged population<sup>3</sup>, its impact on student enrolment cannot be ignored. Similarly, the policy of female teacher in each school might also have some impact on girls' enrolment. Whatever may be the cause, increase in student enrolment cannot be just taken triumphantly and that enrolment alone doesn't make school effective. Increase in enrolments also demands increased public as well as community liability. Hence, it is worth examining the correlates of increasing enrolments with some other aspects of primary education.

#### Equitable resource allocation

Although some pockets still exist<sup>4</sup> in which despite close access to schools participation of special focus group population is poor, the general trend of student enrolment in community schools is encouraging with improving participation from the girls, deprived and socially disadvantaged population. Students in community schools that come from deprived family, special focus group and girls are also the target groups and at risk population for many specialised government and I/NGO intervention. However, the government and I/NGO programs aimed at deprived; special focus group; and girl's education mostly adopt the non-formal mode of education. The current influx of children from the same background in community schools calls for shifting the strategy to include

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<sup>3</sup> A number of scholarships that includes both cash and kind are provided by the MOES each year for special focus groups including the girls. Some of these include Rs 500 for dress and Rs. 300 for supplies, some provide cooking oil, kerosene oil, and so forth. There are also several I/NGOs such as Save the Children (US) that are also providing scholarships and other support for these school-going children. Also see 'Study of Access to Education for Special Focus Group', CERID, 2002.

<sup>4</sup> Study on 'Access to Education for Special Focus Group – CERID, 2002' has identified several pockets in which despite close access to school, participation of special focus group population is almost none.

formal mode of education by increasing appropriate support for community schools. The trend among community schools is such that they are mostly catering to the needs of the non-affordable families. For the affordable ones, there are numerous opportunity and access to education. Apparently, they are the children of the families mostly at risk. The support, in whatever form – scholarship: cash or kind that exists in community schools for deprived and focus group children is both insufficient and ineffective compared to their enrolments.<sup>5</sup>

### **Early enrolment and grade repetition**

As the number of new entrants has increased over the years and so is the number of repeaters in grade 1. In the year 1999, there were only 15 percent repeaters in grade 1, which soared up to over 25 percent among sample schools in the year 2001. The increasing number of repeaters in grade 1 is also characterized with increasing underage enrolments in the same grade. These repeaters are seemingly not those who have failed in grade 1 but rather those who have passed section A or B of the same grade last year. Making two sections in grade 1 is becoming widespread among community schools. To the school management, making two sections in grade 1 serves two purposes. Firstly, it helps relieve community/parent's pressure to enrol under age children and to filter students with different cognitive levels into two sections. And secondly, they count students in both sections as grade 1 student in order to maintain the desired student/teacher ratio so that they can retain certain number of teachers in school. While this seems logical as a survival strategy for most of the community schools and a relief from day-care for many working family, it cannot be denied that this could be an opportunity or a serious problem depending upon available resources and infrastructure in schools.

Early enrolment in schools certainly improves school attendance and eventually student's achievement. However, the underage students are receiving grade 1 curriculum and learning environment, which is quite inappropriate. We all know that community schools in Nepal are meagrely resourced and students are barely surviving with almost any attraction available for learning. Failing to provide sufficient and appropriate facilities for the pre school children would only increase frustration, distraction and deviant characteristics among students in their early ages.

Making pre-primary section as a separate tier by empowered Municipality/VDC by giving the authority to approve pre-primary schools, the Education Act (7<sup>th</sup> amendment) has indeed realised the importance of both pre-school education as well as of the role of local authorities for the development of local education. However, the review of the Act reveals the lack of guiding concepts as to what is an ideal pre-primary school and how it might help improve student's learning achievement. The Act doesn't explicit as to what are the essential services and facilities that must be available in these pre-primary schools. The third party review of the BPEP Phase-II has recommended for the minimum level of physical facilities for primary schools and to meet those minimum requirements jointly by the BPEP and community participation. Need of the same for the pre-primary cannot be ruled out.

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<sup>5</sup> There is unfavorable school environment for the children from the disadvantaged community - 'Education for All: Year 2000 Assessment, Nepal Country Report, EFA committee, MOES, 2000. See also 'Study of Access to Education for Special Focus Group', CERID, 2002.

We, together with many other developing nations, have been experiencing quality trade-off against expanding access to primary education. Much of the trade-off in the primary is commonly observed as associated with the inability to provide the necessary resources sufficiently, inefficiency in school management, and lack of leadership<sup>6</sup>. The fear is that we might fall prey to the same outcomes as in the primary if we just think of expanding access and ignoring the basic correlates of quality in the pre-primary education. Opening pre-primary schools by providing just an extra teacher and a classroom would only shift the problem momentarily from the primary sections.

As stated earlier, making two sections in grade 1 is mostly a survival strategy for many community schools to recoup more resources from the government's basket. Enrolment of underage students in grade 1 is thus compelling in order to survive whereas repeating them in the same grade becomes necessary, as per the Act, due to their underage. In order to alleviate high repetition rates in grade 1 the government is piloting in several districts a Continuous Assessment System (CAS) also known as the liberal promotion policy. As per the policy, everyone in grade 1 in the pilot district should go to grade 2 next year with no one repeating the same grade anymore. This may be a quick and effective strategy to eliminate the high repetition rates from grade 1 but is obviously not in the interest of many economically and educationally weak schools.

Recent findings from Chitwan<sup>7</sup> indicate a dramatic change in the strategy adopted by community schools – those who would have been considered, in other districts, as repeaters due to their underage, are now called the dropouts in CAS districts and re-entered in the same grade as new students for next year. Thus, opening pre-primary schools without adequate and appropriate resources and even adopting the liberal promotion policy would alleviate the problem only momentarily and partially, if at all. As the root of the problem is the inadequate resource in community schools<sup>8</sup> strategies other than those addressing directly into the root would only yield remedies superficially.

### **Class-size/teacher-student ratio**

Another area that also needs critical analysis is the availability of teachers in school or the teacher student ratio or class-size for that matter. The Act has stipulated a normal class size for the Mountains, Hills, and Terai and Valley districts as 40, 45, and 50 respectively. By including this ratio in the Act, the government has indeed shown its concern for regulating the class size in schools. The Act also allows schools to open a new section once they exceed the ratio. However, effective enforcement of these ratios has been mostly shadowed under the government's financial constraints and political interest. Instead of achieving the ratios, the ratio itself has been changed, time and again, to adjust increasing student enrolments.

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<sup>6</sup> Comparing the better results among private schools it has been argued that “Weak school leadership, sporadic supervision and monitoring, and inadequate ... equipment further constrain the teaching and learning environment” in the public schools - ‘Nepal: Priorities and Strategies for Education Reform’. Human Development Unit, South Asia Region. The World Bank. July 2001.

<sup>7</sup> See ‘Study of Access to Education for Special Focus Group’, CERID, 2002.

<sup>8</sup> Recently conducted third-party review of the BPEPII program – ‘Report on a Third Party Review of BPEP Phase-II, TEAM Consult, 2001 – has reported several factors that are responsible for student's better performance in the private schools such as better school facilities and better school management, qualified teachers and the parent's ability to help. The report also suggests determining the minimum level of facilities in the primary schools.

The Basic Needs Fulfillment Program – 1985-2000, published by the National Planning Commission in 1987 had set-up a target of achieving student teacher ratio of 20, 30, and 40 students per teacher in the mountain, hill and Terai districts by the year 2000. The average student teacher ratio in the primary in 1987 was 35 with a total enrolment of 1,812,098 students. By the year 2000 there has been a two-fold increase in the primary enrolment to 3,623,150 students. Primary school teachers, on the other hand, haven't doubled in the last 13 years. There were 51,266 primary school teachers in 1987, which has increased to only 97,879 teachers in 2000. To meet the BNP targets a total of over 120,000 primary school teachers – about 23,000 additional teachers - would have been required. Apparently, it wasn't possible for the government to support such a huge number of additional teachers. However, increasing the ratio of 40, 45, and 50 doesn't support anything other than adjusting within the number of teachers currently existing. Ironically, strict enforcement to the new ratios would not only adjust but also yield a surplus of over 15,000 primary school teachers.

On the other hand, a different teacher student ratio of 1:30, regardless of location, is specified for the institutionalized schools in the Act. This dual policy reflects the government's realization of the importance of lower teacher student ratios as well as being unable to supply additional teachers to the community schools. As we have learned through the literature that student achievement is contingent upon not just one thing but many things and that class size often plays a crucial role in student achievement particularly in grades 1-3. Teacher student ratio is found highest in Dhading with over 81 students per teacher followed by Chitwan with almost 60 students per teacher. It is lowest in Kathmandu with only 30 students per teacher followed by Dhankuta with slightly over 26 students per teacher. Not surprisingly, both Kathmandu and Dhankuta rank as the highest scoring districts whereas Dhading and Chitwan rank lowest ranking districts measured in terms of student achievement in grade III. Similarly, 70 percent of the high scoring schools<sup>9</sup> in the sample districts the average class size was 40 students or below, whereas in 80 percent of the low achieving schools class-size were over 40 students. A direct relationship between student-teacher ratio and student learning achievement signifies the lower the ratio the higher the student achievement. Apparently, raising student teacher ratio in the one hand and expecting higher education quality or higher student achievement on the other contradict itself.

### **School's physical condition and cost per student**

Using 13 basic indicators of school's physical condition it is found that 75 percent of the community schools fall into moderate and poor conditions. Those in the moderate and poor conditions lack the very basic amenities such as the usable and separate toilets for girls, drinking water, clean school environment, enough furniture and ventilation in the classrooms, and play ground. Most of the classrooms in the community schools were found consisting of bare walls, a chalkboard, and some furniture. There were no displays of any kind and nothing that would attract children to be in the classroom for the entire day. The concept of joyful learning in the community schools is found mostly crippled in the absence of materials, environment, and the very guiding concepts to making the classrooms attractive and joyful. Virtually nothing is there in the classrooms in the community schools that exhibit or motivate these young kids to come and be in the school

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<sup>9</sup> Ten schools ranking highest and ten ranking the lowest in the test scores in Nepali, Math and Social Studies taken by the 'Studies on National Assessment of Grade III Students' were selected as sample schools for this study.

all the day and everyday. Instead, mostly in the junior classes, it looked like the teacher kept students hostage in the classroom. Once the teacher was out momentarily, every one ran out in the field. They find joy not inside the classroom but out in the fields. This very characteristic is also cultural because classrooms have been strictly regarded as for the teaching only. Since many schools lack playground and playing inside the classroom is insane, no surprise school environment producing repelling effect among students. Hence, it is quite important to define<sup>10</sup> and enforce to maintain the minimum basic services and facilities in schools.

Among various analyses conducted in this study, cost-per-student and school's physical condition stand out as the most significant variable determining not only the girl's enrolment, promotion and repetition rates but also student's achievement scores in all three major subjects: Math, Social Studies, and Nepali. Several other studies related to the internal efficiency in primary education in Nepal have focused more onto school management, supervision and monitoring. It can't be denied that, among other things, school management, supervision and the leadership are the fundamental correlates of effective school. However, the pre-condition to make use of these correlates effectively is making schools ready with at least the minimum basic infrastructure and resources. Although school effectiveness research is mostly divided into two schools of thought – family factor vs. school factor; both schools agree that there is a minimum threshold to which even educational quality is contingent on school's resources and infrastructure. Implying that improving effectiveness would require the minimum resources and facilities in schools as pre-condition. Improvements in management and supervision would probably work best in schools lagging behind in terms of educational quality despite having the basic resource in place. It would also work best in school that has higher wastage caused by improper use of available resources. Both the dropout and repetition rate in grade 1 is substantially high in Nepal. Hence improving management and supervision becomes the first and easy choice. In this study, we have found that reporting high repetition and dropouts has become mostly compelling for many community schools to secure resources from the government's basket. Thus, increasing cost-per-student is not only important to increase student enrolment and achievement but also to reduce educational wastage like repetition and dropout rates.

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<sup>10</sup> See also 'Report on a Third Party Review of BPEP Phase-II, TEAM Consult, 2001.

## Chapter VI

### Conclusion and Recommendation

Making two sections in the primary, especially in grade 1, is becoming widespread among public schools. To the school management, making two sections in grade 1 serves two purposes. Firstly, it helps relieve community/parent's pressure to enrol under age children. And secondly, they could count students in both sections as grade 1 student in order to maintain the desired student/teacher ratio and they can retain certain number of teachers in school. This seems logical as a survival strategy for most of the public schools and a relief from day-care for many working family. However, it cannot be denied that this phenomenon could be either an opportunity or a problem. It largely depends on how we perceive it. Early enrolment in schools would certainly improve school attendance and eventually student's achievement. However, inappropriate and insufficient infrastructures would only produce more dislike among underage students. Public schools in Nepal are already meagrely resourced and students are barely surviving with almost any attraction for learning in schools. Underage students or the pre-school age children in this case need more fun, games and plays not just the teacher or a building. Failing to provide these facilities in schools would increase frustration, distraction and deviant characteristics among students in relatively early ages. Hence, it is quite urgent and timely to make appropriate government intervention to regulate under-age enrolments (pre-school enrolment) in schools by establishing a separate tier of school and teachers for pre-school children.

Students enrolled in the primary section are found mostly heterogeneous with regard to their ethnicity, and the girl's enrolment was astounding in these public schools. Students belonging to rather poor and working class families were in abundance in the public schools. The common explanation to this phenomenon is that children of affordable family go to nearby private schools. This may, for some reason, be a problem but is also an opportunity to address public schools with more concerted effort than before. Because, student population in public schools that come from deprived family, special focus group and girls have been on the rise, and they are the groups in target for government and I/NG interventions.

The Education Act (7<sup>th</sup> amendment) has stipulated a normal class size for the Mountains, Hills and for Terai and Valley districts as 35, 45, and 50 respectively. By including this ratio in the education Act, the government has indeed shown its concern for regulating class size in schools. Ironically, the student-teacher ratio (or the minimum class-size) is more influenced by the availability of students in these regions rather than optimizing their student's learning achievements. Nevertheless, like many other researches, here and abroad, class-size has been found as significant determinant of student achievement across the school. Hence, the need for a critical research on appropriate class size for Nepal is clearly demonstrated. The class size or the student teacher ratios also needs to be justified on the grounds of student achievement. As we have learned from the literature that student achievement is contingent upon not just one thing but many thing and that class size could be the one predominant.

Promotion, repetition and dropout (PRD) rates are the predominant indicators of internal efficiency of an education system. Lack of reliable data and use of inappropriate methods attribute the inconsistency that exists in education statistics reported by the MOES/DOE especially on PRD data. It is not only this research that has revealed a low dropout rate

but several other research have also indicated similarly low rates. For example, the NMIS report revealed dropout rates as low as 2 percent in the primary level. Hence, it is high time to conduct serious study to figure out the real dropout population and to regulate the dropout statistics with due care. It has been observed among sample schools that they do not keep any records of drop out student. Information of dropout student depends mostly on class teacher's recollection. In schools with small population this may work well but in larger schools this may not be helpful. Similarly, teacher's frequent turnover might also influence significantly.

In order to constitute the SMC as per the current education act (7<sup>th</sup> amendment), schools require update information not only of the students but the parent and guardians as well. The awful record system in schools could pose both administrative as well as legal threat to the larger interest envisioned in the amendment. Hence, a serious attempt is urgently needed to bring scientific record keeping in all schools, and it should be updated and validated by appropriate authority on a regular basis.

While it is believed that most of the out-of-school children in Nepal belong to the hard-core population i.e., associated with economic and/or social hardships, there is no information as to how many of them have never attended schools. Considering the extremely high gross enrollment and high dropout rates especially in grade 1, it can be assumed that many of the out-of school population might have attended school at one point of time and that they could have dropped out for some reason. If this is the case, we might need to look at the factors associated school dropout more critically.

Among various analyses conducted in this study, cost-per-student and school's physical facilities stands out as the most significant variable determining not only the girl's enrolment, promotion and repetition rates but also student's achievement scores in all three major subjects: Math, Social Studies, and Nepali. However, school's physical condition and cost-per-student in public schools are both of sub-standard and very low. Increasing cost-per-student is thus not only important to increase student enrolment and achievement but also to reduce educational wastage like repetition by increasing the proportion of promotees in schools. .

With the current levels of analyses it has been found that school's physical condition and the cost-per-student are both significant predictor of school's effectiveness measured on key criterion such as, girl's enrollment, promotion and repetition rates, and student achievement.

Finally, although the observation and analysis of this study have shed some light on several confounding issues in the primary education in Nepal, a longitudinal study with nationally representing samples would be appropriate to argue these findings more confidently. The current study also strongly recommends, among other things, including school factors like cost-per-student and schools' physical facility he included in future studies on school effectiveness.



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## Appendix: A

### Description of Sample District and School

There are 20 schools selected on the basis of their average achievement score in Math, Nepali and Social Studies in the National Assessment of Grade 3 Students (2001). These 20 schools happen to come from seven districts: Dhankuta, Morang, Chitwan, Rupandehi, Dhading, Kathmandu, and Kave. It is believed that a brief description of each of the districts and schools would be helpful in making assertions by relating research findings with this background information.

#### District Background

1. **Dhankuta** is located in the eastern hill region. Primary school enrolment in the district is 31,703 of which there are 15,553 girls in 305 primary schools. The number of primary teachers in the district is 1,114 among which 303 are female teachers. Thus, teacher-student ratio for the primary level is 28.5 and student per trained teacher is over 47. The promotion rate at grade 1 for the district is just above 55 percent. The gross enrolment rate at primary level for the district is above 144 percent. The net enrolment rate is about 95 percent.
2. **Morang** is located in the eastern Terai region. Primary school enrolment in the district is 116,229 of which there are 53,670 girls in 611 primary schools. The number of primary teachers in the district is 2,889 among which 854 are female teachers. Thus, teacher-student ratio for the primary level is 40.2 and student per trained teacher is over 93. The promotion rate at grade 1 for the district is just above 63 percent. The gross enrolment rate at primary level for the district is above 103 percent. The net enrolment rate is about 82 percent.
3. **Kavrepalanchok** is located in the central Hill region. Primary school enrolment in the district is 71,646 of which there are 33,329 girls in 580 primary schools. The number of primary teachers in the district is 1,872 among which 413 are female teachers. Thus, teacher-student ratio for the primary level is 38.3 and student per trained teacher is over 76. The promotion rate at grade 1 for the district is just above 54 percent. The gross enrolment rate at primary level for the district is above 144 percent. The net enrolment rate is about 93 percent.
4. **Dhading** is also located in the central Hill region. Primary school enrolment in the district is 64,824 of which there are 29,793 girls in 488 primary schools. The number of primary teachers in the district is 1,565 among which 302 are female teachers. Thus, teacher-student ratio for the primary level is 41.4 and student per trained teacher is over 86. The promotion rate at grade 1 for the district is just above 41 percent. The gross enrolment rate at primary level for the district is above 150 percent. The net enrolment is about 92 percent.
5. **Chitwan** is located in the central Terai region. Primary school enrolment in the district is 86,435 of which 43,099 are girls in 451 primary schools. The number of primary teachers in the district is 2,382 among which 783 are female teachers. Thus, student per teacher ratio for the primary level is 36 and student per trained teacher is over 72. The promotion rate at grade 1 for the district is just above 53 percent. The gross enrolment rate at primary level for the district is above 146 percent. The net enrolment rate is about 94 percent.

6. **Kathmandu** is located in the central region, is a valley and also the capital of the country. Primary school enrolment in the capital district is 117,197 of which there are 55,532 girls in 1014 primary schools. The number of primary teachers in the district is 4,205 among which 2,677 are female teachers. Thus, student per teacher ratio for the primary level is 27.9 and student per trained teacher is over 107. The promotion rate at grade 1 for the district is just above 74 percent. The gross enrolment rate at primary level for the district is above 115 percent. The net enrolment rate is about 86 percent.
7. **Rupandehi** is located in the western Terai region. There are 419 primary schools and 83,192 primary students enrolled in the district. Girls' enrolment in the primary is 35,140. The number of primary teachers in the district is 2085 among which 730 are female teachers. Thus, student per teacher ratio for the primary level is 39.9 and student per trained teacher is over 88. The promotion rate at grade 1 for the district is just above 57 percent. The gross enrolment rate at primary level for the district is above 91 percent. The net enrolment rate is about 74 percent.

*Data Source: MOES/DOE. Educational Statistics of Nepal, 2057B.S.*

## **School Background**

### **Sample Schools in Kavre District**

#### *1. Shree Pancha Kanya Primary School, Daregaunda, Chhatrabanjh VDC.*

- **Location:** The school is located in north-faced hill of the Dapcha area of Kavre district. The school is about 20 KM away from the district headquarter – Dhulikhel. It is at the centre of Daregaunda village and surrounded by houses. It has a small playground. In terms of space it has no scope to upgrade classes in the school. It serves six small settlements including 157 households. The catchment area also includes four settlements from Puranagaon VDC, in addition to the two settlements from the Chhatrebanjh VDC.
- **Inhabitants:** Most of the habitants (69 %) of the catchment area are Brahmins. The other major caste groups residing in the catchment area are Tamang (19 %), and Sarki (Dalit) (11 %). The School Improvement Plan (SIP) states that average literacy rate for the area is 60.75 % and GER is 144 %. However, the average Net Enrolment Rate (NER) is reported as 65 %. The NER broken down by ethnicity indicates the major problem area. It reports that the NER for Tamang is 27 % and that for the Sarki (Dalit) as only 15.9 %. Moreover, the discussion with the teachers revealed that many of the students from the Tamang and Sarki community repeat grades and they drop before completing primary education. These communities seasonally go to work in the brick industries in the urban areas. The school age-children go with their parents either to help them in the work or to look after the younger brothers/sisters. Thus, there is a problem of non-enrolment and retention of the children, especially from the Tamang and Sarki community.
- **General feelings:** The school was selected as one of the better performing schools in the national assessment. The physical facilities in the school cannot be considered very good. It does not have windows in the classroom, furniture for the student is not sufficient, and toilet is yet to be built. However, the teachers were found well **motivated**. They had a lot of confidence on them. Few years back, it had a different

story. The villagers were not that happy and they started taking their kids to other public or private school. Now, the teachers have worked hard and the enrolment is in the rising trend. The school has good reputation in terms of extra-curricular activities. It has won district level and RC-level competitions few times in song and dance events. Most importantly, the teachers were found proud of their students and they claim that their students have performed well even in the secondary school after graduating from the school. Similarly, they claimed that the record management in the school is one of the best in the area. They provided every kind of information we asked for except the examination results for the current year. To sum up, team-work and confidence on the part of the teachers can be regarded as the strengths of the school.

2. *Shree Namobuddha Primary School, Kurugaon, Simalchaur Shyampati VDC.*

- **Location:** The school is located in a hill-top of the Dapcha area, Simalchaur VDC of Kavre district. The school is about 20 KM away from the district head-quarter. It is located about 1.5 km away from the nearest settlement, i.e., Kurugaon. It serves 184 households from four settlements, i.e., Bimire, Swanra, Kurugaon, and Chegen. Since the school is attached to non-of the settlements, it is difficult even to fetch water. It is very close to graveyard of the Tamang community. So the location of the school cannot be considered appropriate.
- **Inhabitants:** The population in the catchment area of the school is comprised of solely Tamang community. The literacy status was low as reported by the teacher but the exact statistics was not known. The School Improvement Plan for the school has not yet been prepared and the relevant documents are with the head teacher at his home. So information about the households and the enrolment statistics (GER/NER) could not be gathered. However, it was sensed through the discussion with the teachers and the parents that the school community was not that much serious about the performance of the school. One of the parents, when asked what could be done to improve the school, said: "We are completely illiterate. What could we say about the school. It is the teachers who know everything. Nevertheless, it would be better if all the teachers could visit school regularly." It indicates the ignorance of the villagers in the management of schools and at the same time points to the fact that the teachers are not regular at school. It was observed that only two of the five teachers were present on the day of visit.
- **General feelings:** The teachers were not very serious to their job. They say, "These kids are like mentally retarded. They don't understand. They don't have capacity to learn. The parents are indifferent to the school matters. Actually, it is a matter of shame to be a teacher of such a school." This indicates the lack of confidence on the part of the teachers. Among the five teachers, one was deputed to an urban school on the interest of the teacher rather than on the interest of the school. Two of the remaining teachers were reported to visit to the DE Office. At the day of the visit, only 40 students were present in total. However, the attendance register shows that the total enrolment was more than 150. The record keeping system was poor. More serious was that even the attendance registers do not give the true picture about enrolment and attendance. In all respects, the performance of the school cannot be regarded as satisfactory. The most lacking part was the commitment on the part of the teachers.

3. *Shree Ladkeshowr Primary School, Kolbhanjyang, Balthali VDC.*

- **Location:** The school is about 15 km away from the district headquarters. The availability of physical facilities in the school is satisfactory. It has small playground in the school compound. It serves three villages, namely, Dandagaon, Majhtol, and Kolbhanjyang. Moreover, according to the teachers and one of the parents, 10 to 15 students from other neighboring villages (Lukuwa and Dhunganadanda) come to this school as they regard it as a "Good" school. There is a private primary school within a five minutes walking distance and a public primary school within a 15 minutes distance. Moreover, there is a secondary school nearby. Even then the number of students in the school was found quite good (about 115 regular students).
- **Inhabitants:** Different ethnic/caste groups reside in the area. The major caste groups in the area are Brahmins, Chhetries and Tamangs. The school has received some sort of assistance from a German tourist. He has been continually supporting the school for last three years for two additional teachers. Moreover, the assistance includes the improvement of physical facilities.
- **General feelings:** The confidence of the teachers was really praiseworthy. The teachers reported that it is at par with the private school in the nearby village in terms of quality. They were again asked what made their school superior to other schools. The following answers were obtained:
  - Teachers are committed; so they are regular and work very hard.
  - It has offered additional courses (in fact additional textbooks) on English, Nepali and Mathematics. The parents were quite ready to buy those additional textbooks. There are six teachers (4 in the government payroll and the other two on the support provided by tourist).
  - They have a one-year preparatory course before grade 1. They have started this for last three years and the students with pre-primary education are presently at grade two. The teachers claim that those students will certainly produce better results in the grade five examinations.
  - There is a provision of monthly test and the teachers report back the students' progress to the parents. This was one of the striking feature of the school, which is not common in other public schools. Moreover, the teachers reported that they give homework and correct in-group.

4. *Shree Lankhanamai Shanti Primary School, Dhulikhel Municipality*

- **Location:** The school is located at the centre of the Dhulikhel city and is surrounded by houses on almost three sides. Nevertheless it has a playground and good buildings. The student enrolment in the school is not encouraging. Last year, there were no students in grade five. There are three other schools in the five minutes walking distance. So, if the school is forced to compete for students and thereby receive grants-in-aid accordingly, it may be difficult for the school to survive in the locality.
- **Inhabitants:** The residents of the surrounding houses are mainly Dalits (Kasai). The head-teacher was asked why he was losing students. What do you need to do to win confidence of the parents? The response to the first question was that the school is wrongly located. Parents from upper caste groups do not like to enroll their kids to

this Dalit locality. Secondly, if I get two more teachers (there are four teachers now), I can start pre-primary classes, and they will be better prepared for primary education. Thus, there are social and economic issues.

- **General feelings:** By observing at the physical facilities, the school can be rated as good or very good. However, the parents feel that the teachers are not very much committed. They are very harsh to students. Nevertheless, It is clear that the characteristics of student population of the school are different from other neighboring schools.

5. *Shree Ram Secondary School, Koshidekha VDC*

- **Location:** The school is located about 30 km away from the district headquarters. It is very close to the local market and to the motorable road. The school was selected as one of the poor performing school in the national assessment.
- **Inhabitants:** The population is comprised of different ethnic/caste groups. The major ethnic/caste groups residing in the area include Tamang, Brahman, Magar and Dalits. There are five settlements in the catchment area of the school. They are Naralthowk, Tripathithowk, Jyamire, Thapaliyathowk, and Kalinjor. The total 6-10 population in the area is 180 among that 87 are girls.
- **General feelings:** Though the school was selected on the poor-performing category, the feeling in the field was quite different. The head-teacher commands good respect from his colleagues, though he is in the primary position. All the teachers plan jointly and there is no problem in execution. They have prepared a good SIP. The parents and the local representatives (VDC chairperson, ward-chairperson) were contacted. They were quite happy with the performance of the school. They further claimed that this is one of the best schools in this Palanchowk area.

## **Appendix B: School in Picture**



## Appendix C: Survey Tools

### School Effectiveness: Synthesis of indicators *Formative Research Program for BPEP II* CERID/TU 2058 (2002)

Researcher: Vishnu Karki

#### For the Surveyor/Interviewer

**PLEASE REMEMBER: While full cooperation and trust of the respondent is the key to our success, maintaining integrity is our research ethics.**

**Note:**

- 1) *Introduce yourself, your purpose and this project's objectives in brief;*
- 2) *Before proceeding for interview or data collection, inform respondent or interviewee that all information will be dealt confidentially and that these information will be used only to analyze school's effectiveness and in educational planning, policy making and implementation purposes. We must insure each of the respondents that none of the individual/personal information will revealed in any form. Only summarized information will come out for the general use.*
- 3) *Though much of the information in these forms look heavily contained with quantitative data, our analysis depends much on **qualitative information**. Therefore, **while taking notes or copying data please pay extra attention to anything that looks different, unusual, inconsistent, interesting or something that catches your eyes**. Note down these feelings or findings on the form wherever you find space or on the back and do relate your notes with the question/response. You may also use your personal diary to note your observations.*
- 4) *Please **do not** write/copy any information that **you think** is right. You may note your feelings/observation about the given information and probe to find the truth.*
- 5) *All sections are critically important for our analysis. Please do not leave any section or question empty.*
- 6) *Finally, please note if you find difficulty in presenting question to the interviewee or retrieving/copying data from school/community sources due to the structure of the survey instruments. Or anything that you would suggest, based on your current experience, to improve this instrument.*
- 7) *Upon completion of the survey in the school/community or with the parents, do not hesitate to express gratitude for their time.*

## Thank you for your cooperation

### Form A. School Data Form

<b>School Code:</b>	<b>Name of the School:</b> .....
<b>Location:</b> Urban / Rural	<b>Address (VDC/Municipality):</b> .....
<b>District:</b> .....	<b>Village:</b> ..... <b>Ward:</b> .....

**School's Basic:**

- i) Number of grades in school:
- ii) School status (Please circle): **Public** / **Private** / **Semi-public**
- iii) Number of **Teachers:**

	Total	Female
Total (including secondary*)		
Primary only		

*\* Do not include Higher Secondary teachers*

- iv) Number of **Students:**

	<b><u>Total Including Secondary*</u></b>		<b>Primary only</b>	
	<i>Total</i>	<i>Girls</i>	<i>Total</i>	<i>Girls</i>
<i>This Year (2001)</i>				
<i>Previous Year(2000)</i>				

*\* Do not include students in Higher Secondary grades.*

- v) Number of **classes\*** in school (**count section as separate class**)

Number of <b>total</b> class (including secondary)	
Number of <b>primary</b> class only	

*\*Do not include higher-secondary class.*

- vi) Number of **classrooms\*** in school (including secondary):

Number of <b>total</b> classrooms (including secondary)	
Number of <b>primary</b> classrooms	

*\*Include classrooms used for primary and/or secondary class instruction only.*

a) **School Finance:**

School's **total income last year:**

Source	Amount
HMG Regular	
Other	

School's **total expenditure last year:**

**Expenditure by category:**

Categories	Amount
Teacher's salary	
School administration	
School maintenance	
Educational materials and equipment	
Extracurricular activities	
Others: . . . . .	

b) **Class size and enrolment:**

Primary **Enrolment:**

	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
Total					
Girls					

Primary **classroom size:** approximate **length** and **width** (in feet)

Grade	1	2	3	4	5
Section 1					
Section 2					

**d) Educational quality: (Teacher in Primary grades only)**

Teacher's Name	Highest Level of Education Achieved	Training	Teaching Exp # Years	# Years in this school	Mother tongue	Gender	Avg. attendance in Mansir (N= )	Average instructional hour per week	Origin: Local / outsider	Current Position
	(A)	(B)	(C)		(D)	(E)	(F)	(G)	(H)	(I)
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

Note: (A) mention the level/degree of education achieved; (B) mention type of training received including its length; (D) language spoken at home for general communication; (F) N=number of days school was open in Mansir; (I) Current position – on deputation (to this or to other school), study leave .. etc.

**e) Open questions to schoolteacher:**

- i) Approximately how many school going age (6-10/15) population lives in the service area of this school?
- ii) Approximately how long students commute to/from this school (mention in minutes)?
- ii) Approximately how many are out-of-school (do not go to school)?
- iii) In your opinion, what are the main reasons to be out-of-school?
- iv) What do you think can help bring these out-of-school children in school?
- v) What are the main reasons for students to repeat in grade-one in your school?
- vi) What can be done to improve this situation?
- vii) What activity/facility do you think could help this school become community center?

Form B: Parental Interview Form

**1. Parent's perception to school**

- a) How do you see **this school** (mention name of this school) in terms of performance?

- b) In your opinion what are the strong aspects in this school?
- c) What are the weak aspects in this school?
- d) In your opinion, what would make this school better to serve the needs of your family as well as of the community?
- e) Have you ever visit this school?
- f) What would make this school a community center so that you and others feel comfortable to visit more frequently?

**2. Family background**

**A) Family size** – family members living together and sharing to/from family income. Begin with the household head and mention **his** relation to others.

Name	Gender	Age	Household-head's relation to others, e.g., if the other one is his/her son mention son and so forth.	Occupation if any
	M/F	Current		
1			Household Head	
2				
3				
4				
5				
6				
7				
8				
9				

**B) Parent's Education:**(Highest level of education achieved/passed including NFE)

<b>Father's Education</b>	
<b>Mother's Education</b>	

**C) Caste** – Caste of the family:

**D) Family status:** (✓appropriate box)  Single parent  Both parent  
 First married  Second married.

**If second married,**

- 1) How many times did you marry?
- 2) With how many spouses you are currently living?

**E) Family stability** – frequency of movement (from one place to another).

- 1) How long have you lived in this place? (✓ appropriate box)

< 1year	1-2 year	2-5 year	>5year
---------	----------	----------	--------

- 2) How many times did you change your habitat in this place?

None	Once	Twice	More than twice
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**E) Language spoken at home**

**3 Family economy**

- a) What is **your** occupation? (tick ✓ on appropriate box)

Occupation	Main	Second	Other
Agriculture/ Farm field laborer			
Industrial worker			
Public servant			
Private worker			
Self employed (own business)			
Housewife/husband			
Other (specify) .... .... .... ....			

- b) What is **your spouse's** occupation? (tick ✓ on appropriate box)

Occupation	Main	Second	Other
Agriculture/ Farm field laborer			
Industrial worker			
Public servant			
Private worker			
Self employed (own business)			
Housewife/husband			
Other (specify) .... .... .... ....			

- c) How many (number of persons) in your family earn?

- d) Do you own land?    Yes    No    If yes, how much? (bigha/ropani)

- e) Do you own livestock?    Yes    No

**If yes, how many? (mention numbers in respective boxes):**

Cow/Bulls, Buffalo

Goat/Sheep

Poultry

Other animals (specify): ... ..

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