Formative Research Project (FRP) for School Sector Reform Program (SSRP): Longitudinal Study on System Indicators

Cohort Analysis and Trend Analysis

Jointly undertaken by Department of Education (DOE) and Research Centre for Educational Innovation and Development (CERID)

Tribhuvan University
Research Centre for Educational Innovation and Development (CERID)
Balkhu, Kathmandu, Nepal
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Longitudinal Study on System Indicators

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## Acronyms and Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>BPEP</td>
<td>Basic and Primary Education Programme</td>
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<tr>
<td>CERID</td>
<td>Research Centre for Educational Innovation and Development</td>
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<td>District Education Office(r)</td>
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<td>DOE</td>
<td>Department of Education</td>
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<td>ECED</td>
<td>Early Childhood Development</td>
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<td>ECED</td>
<td>Early Childhood Education and Development</td>
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<td>EFA</td>
<td>Education for All</td>
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<td>FRP</td>
<td>Formative Research Project</td>
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<td>GPI</td>
<td>Gender Parity Index</td>
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<td>ID</td>
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<td>LongSIS</td>
<td>Longitudinal Study on System Indicators</td>
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<td>MOE</td>
<td>Ministry of Education</td>
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<td>MOES</td>
<td>Ministry of Education and Sports</td>
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<td>PTA</td>
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<td>PTR</td>
<td>Pupil Teacher Ratio</td>
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<td>RED</td>
<td>Regional Education Directorate</td>
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<td>RP</td>
<td>Resource Person</td>
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<td>SIP</td>
<td>School Improvement Plan</td>
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<td>SLC</td>
<td>School Leaving Certificate</td>
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<td>SMC</td>
<td>School Management Committee</td>
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<td>SS</td>
<td>School Supervisor</td>
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<td>SSRP</td>
<td>School Sector Reform Program</td>
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<td>STR</td>
<td>Student Teacher Ratio</td>
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<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
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<td>VDC</td>
<td>Village Development Committee</td>
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<td>VEC</td>
<td>Village Education Committee</td>
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Executive Summary

Nepal Government, Ministry of Education and Department of Education, Nepal in the School Sector Reform Plan (SSRP) 2009 has defined Grade I to Grade VIII education as the primary level school. This report presents the cohort analysis of the three student cohorts enrolled in Grade I in the year 2002, 2003 and 2004. In the year 2011, the student who enrolled in Grade I in the year 2002 have passed out the Grade X, the students from the cohort of the year 2003 are in Grade IX, and the cohort of the year 2004 are studying in the Grade VIII in the year 2011. The cohort of up to the year 2004 cohort were in Grade VIII in the year 2011, which makes it statistically comparable among the three cohorts. The data base of other cohorts from the year 2005 to the year 2011 is also managed in the CERID database.

In this study, nine sample schools have been sampled from the three districts out of 62 sample schools from 16 districts in 2012. Out of these nine schools, secondary schools are one each from Dhankuta and Rasuwa district and two secondary schools from Banke district.

A team of three personnel for each three district was formed comprising of two personnel from CERID and one from DOE. The team visited the sample schools and gathered the necessary information from each school.

The conclusions of the study are that the net student flow from Grade I to Grade VIII have remained conspicuously low from 12 to 14 percent for all three cohorts. In this way Grade I appear to be the most difficult hurdle for all three cohorts, with the lowest flow. The flow percentage of boys in 2002 and 2003 cohorts is higher compared to girls, whereas in 2004 cohort flow percentage of girls is higher compared to boys. ECED experience leads to significant increment in student flow rate in all grades.

Similarly, the enrolment in Grade I show a declining trend. Per-student-classroom-space in the primary grades is generally less than the national norm in the beginning however decrease in the enrolment of students has increased per student classroom space in the later years. There was no definite pattern in the pupil-teacher ratio however, it was found in a decreasing trend. The GPI of the primary teachers in the sampled schools was higher in the base year and it started decreasing in the consecutive years and in the year 2011 the index was less than one.

There is stability in the composition of the teachers by their ethnicity over the period of the study time in the sample schools. The majority of the teachers were Brahmin/Chhetri and Janajati, very few dalits and one from Muslim community. The percentages of the teachers with the qualification of Intermediate and Bachelor level are found to be in an increasing trend. This has decreased the percentage of teachers with only SLC qualification. There are very few percentage teachers with qualification of Masters’ Degree. The trend analysis shows that the percentage of teachers with teacher training certificate is in increasing trend.

The recommendations of the study are that the school level data keeping and the data analysis need to be consistent in all the school. To strengthen the school level data keeping, analysis, reporting and use, the stakeholders should feel the ownership of the data and use it for planning. The students should be given ECED experience prior to Grade I enrolment so that the hurdle of Grade II can be minimized. Need to encourage the potential individuals from so called “lower cast” and Muslim communities to join teaching profession.
Acknowledgement

The Cohort and Trend Analysis report of the Longitudinal Study on System Indicators under the Formative Research Program has specifically consolidated the student cohort data of three cohorts of 2002, 2003 and 2004 and trends on the specific indicators. This report presents the in-depth analysis of those three cohorts and trends. The information is based on individual student record of the 62 sampled schools, which the Ministry of Education of Government of Nepal is expected to find relevant to facilitate its process of planning, implementing, monitoring and managing EFA programs.

The study team would like to thank and acknowledge the cooperation and valuable support of all the head teachers, teachers, and representatives from related VDC/Municipalities of the sample schools for the role they have played in collecting and ensuring the quality of data. The team is also grateful to the representatives of Department of Education, MOE for their continuous support in undertaking the field work.

The Research Team is thankful to Director-DOE, Mr. Kamal Prasad Pokhrel, Deputy Director-DOE, Mr. Balaram Timilsina, Under Secretary-DOE, Mr. Narayan Prasad Subedi and Executive Director- CERID, Prof. Dr. Kishor Shrestha for their support to bring the report to this shape. The logistic management involved in the study has been successfully undertaken, as usual, by CERID administrative staff members. The study team appreciates their support and thanks them all for their unceasing commitments to the study. Last but not the least; thanks are also due to the Resource Person Mr. Purushottam Manandhar for his regular technical support.

Researcher Team
2012
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Chapter I: Introduction

Background

Research Centre for Educational Innovation and Development (CERID), Tribhuvan University with the technical support of the Ministry of Education and Research, Norway has successfully undertaken the Formative Research Project (FRP) for Basic and Primary Education Program (BPEP II) 1999-2004 and Education for All (EFA) 2004-09. FRP has helped the Ministry of Education/Department of Education to effectively implement those programs. The Longitudinal Study on System Indicators (LongSIS) was one of the major components of FRP.

Following the experiences of FRP during the implementation of previous educational reform programmes the government is committed to continue FRP in the implementation of School Sector Reform Plan (SSRP) 2009-15.

A Reflection on FRP LongSIS: Scope for LongSIS in SSRP

During the implementation of BPEP II, FRP was launched to facilitate its smooth implementation by generating research based information for progress monitoring and critical understanding of the issues for strategic policy revisions. The LongSIS has been an important component of FRP. It provided statistical data and a basis for trend analysis. The FRP and LongSIS were found useful and therefore continued in the implementation of EFA 2004-09.

LongSIS basically seeks information that focuses on the "WHAT" aspects of program activities by using the selected indicators, whereas the in-depth studies basically focus on the "WHY". In this sense, the former, by and large, generates key research questions for the latter. LongSIS attempt to continuously provide periodic information on attainment of targets pertaining SSRP.

Data based on 43 indicators collected from 62 schools strategically placed in 16 districts from 5 development regions and Kathmandu valley was the basis of LongSIS. The indicators included brief student profile listing name, gender, age, social group, enrolment, promotion, and dropout. FRP has been conducting cohort analysis of students enrolled at grade one in BS 2059 (AD 2002) and the subsequent years using this data. LongSIS has also been providing cross variable analyses relating to different indicators. It includes periodic data collection, analysis and reporting on the given indicators. The study provided quantitative database information.

This study now features software for keeping the record of information of students' enrolment, retention, promotion, attendance and achievement, information on teachers' qualification, training and experiences, and background of the parents since 2002. The study has utilized these data and information for trend and cohort analysis. The students are followed up by using student tracking system and providing Student ID for each student. The collected data are stored and organised in MS Access program.

It is, in this regard, there is a need to collect the data and information on all indicators for the academic years 2009, 2010 and 2011. As the school teachers are trained in the data collection and management and the schools were provided a set of computer equipment with required software devices the data collection and data management system need to be modified.
The study basically focuses on trend analysis and cohort analysis. This part of the report presents the cohort analysis of the three student cohorts enrolled in Grade I in the years 2002, 2003 and 2004. Most notably, it has made a remarkable breakthrough in systematizing the individual student cohort data with the year 2002 as the base year. This is the first attempt in Nepal to conduct this kind of research by CERID.

The study has also been developed to keep students tracking system. Detailed information of all the students enrolled in Grade I was gathered in the first year of the study. Similarly the information of these students was updated in the next year and also the information of new entrants of Grade I was collected. This process aimed to produce real internal efficiency components -- promotion, repetition and dropout rates. Until now these rates are derived by the Reconstructed Cohort Model developed by UNESCO.

**Computer Equipment**

In order to manage and use the data/information of school level data, the project provided a set of branded computer, UPS with battery backup for more than three hours, branded printer and some amount for the furniture for the computer and stationary to all the 62 sample schools of the 16 districts of Nepal.

The sample schools have been provided with NRs. Fifteen thousand each year for the proper data management in the schools. This amount was provided since the year 2002 with the objective to maintain the student enrolment, attendance and achievement register in the school. The support was also included to provide enough technical and logistic support to keep the teacher information updated.

Three days long training was conducted in Kathmandu to the head teachers and a teacher from all the 62 sample schools on the use of computer and the database software. The schools were then provided the computer set with necessary software as well as CERID database software developed in Microsoft Access.

---

1 A cohort study is a form of longitudinal study used in education, medicine, social science, etc. In statistics and demography, a cohort is a group of subjects who have shared a particular experience during a particular time span (e.g., people born in a certain year; batch army of XYZ; students enrolled in grade in a certain year). Cohorts may be tracked over extended periods of time in a cohort study.

### Table 1: SSRP Indicators

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<th>Indicators</th>
<th>Unit</th>
<th>Base Years</th>
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<td>11. Coefficient of Efficiency</td>
<td>Ratio</td>
<td>0.46</td>
<td>0.49</td>
<td>0.52</td>
<td>0.55</td>
<td>0.59</td>
<td>0.62</td>
<td>0.66</td>
<td>0.71</td>
<td>0.75</td>
<td></td>
</tr>
<tr>
<td>12. Learning Achievement Average Score of students in core subjects in grade 5 and 8</td>
<td>%</td>
<td>50</td>
<td>53</td>
<td>56</td>
<td>60</td>
<td>63</td>
<td>67</td>
<td>71</td>
<td>75</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>13. Pass Rate Percentage of students passed in the SLC and HSE National Examination</td>
<td>%</td>
<td>60</td>
<td>62</td>
<td>64</td>
<td>65</td>
<td>67</td>
<td>69</td>
<td>71</td>
<td>73</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>14. Literacy Rate Percentage of literate people</td>
<td>%</td>
<td>73</td>
<td>75</td>
<td>78</td>
<td>80</td>
<td>83</td>
<td>86</td>
<td>89</td>
<td>92</td>
<td>95</td>
<td></td>
</tr>
<tr>
<td>15. Literacy GPI (15+)</td>
<td>Ratio</td>
<td>0.61</td>
<td>0.74</td>
<td>0.90</td>
<td>0.92</td>
<td>0.93</td>
<td>0.95</td>
<td>0.96</td>
<td>0.98</td>
<td>1.00</td>
<td></td>
</tr>
</tbody>
</table>
Objectives
The main objectives of this study are as follows:

- To provide research-based information on basic indicators to MOE/DOE for monitoring of the attainment regarding the set targets of SSRP.
- To find out internal efficiency of school system by using Cohort Analysis.

Methodology
The study on cohort analysis in education, especially individual student tracking is first of its kind in Nepal. Therefore this study attempted to do the cohort analysis by giving ten digit unique students ID to each individual student of 62 sample schools of 16 districts of Nepal till the year 2009. However, in the year 2012, the data has been collected from only 9 schools of three sample districts – Dhankuta, Rasuwa and Banke—three schools from each districts.

In the ten digit student ID, first two digits is for the enrolment year, subsequently two digits is district code, two digits is school code, single digit is grade the student entered in the school and the last three digits is student serial number. For example: In the ID 5903081007, first two digits 59 is the year 2059, next two digits 03 is Ilam district, 08 is school number, 1 is the grade the student entered in that particular school and last three digits 007 is student serial number.

The details of the methodology adopted for the study is given below.

Sample
There are three geographical regions (mountain, hill and tarai) and five development regions in Nepal. This makes a total of 15 strataums and Kathmandu valley (Kathmandu, Lalitpur and Bhaktapur districts) is taken as a separate stratum. In this way from total of 16 strataums, one district from each stratum was selected on the basis of various programs of BPEP II in the year 2002. The sample districts have been finalized in close collaboration with DOE/MOE.

The size of the sample school within a stratum is made proportionate to the total school size of the stratum. From each sample districts, 3 to 5 sample schools were selected. The population of the primary age children in the district was considered to determine the number of sample schools in the district. These schools were then selected in consultation with the DEO personnel from each sample district. Out of 3 to 5 sample schools from each sample district, at least one primary school attached Lower Secondary, Secondary or Higher Secondary School and other pure primary schools were selected as sample schools. All of these schools are public/community schools.

However, due to the time and financial constraints, nine sample schools have been sampled from the three districts out of 16 districts for this minimized longitudinal study on system indicators 2012. Out of these nine schools, secondary schools are one each from Dhankuta and Rasuwa district and two secondary schools from Banke district.

The sample districts by number of sample schools are given in Table 2:

<table>
<thead>
<tr>
<th>Dev. Region</th>
<th>District</th>
<th>Geographical Region</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mountain</td>
</tr>
<tr>
<td>Eastern</td>
<td>Dhankuta</td>
<td>3</td>
</tr>
<tr>
<td>Central</td>
<td>Rasuwa</td>
<td>3</td>
</tr>
<tr>
<td>Mid-Western</td>
<td>Banke</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>
Figure 1: Sample Districts in the Map

Tools
The following five tools were used for the information collection from the sample schools.

1. School Information Form
This form captures the general information of the sample school. The location, address, type of school, number of students in all grades, classroom size, etc. are included in this form.

2. Student Information form
The student information form includes the basic information of the students, their caste/ethnicity, information about their parents, monthly attendance, final achievement scores obtained and the status in the final school examination.

3. Teacher Information form
This form contains basic information of the teacher of the sample school. The information on the work experience, level, training, attendance, etc. of the teachers was collected in this form.

4. School Finance and other Information form
The information on library, income and expenditure, SIP, PTA, VEC, and school visits by different personnel was collected in this form.

5. VDC/Municipality level Information form
The information of the respective VDC/Municipality of the sample school is collected through this form. The age and caste wise distribution of the school age children, population and literacy status were collected in this form.
6. Computer Equipment checklist form

The checklist for the computer equipment monitoring form was used to find out the physical situation of the computer set, UPS and printer provided to the schools. As well as use of computer and the database software provided for the database management.

Data Collection Procedures

The data was collected by the researcher of CERID and the officials from DOE by visiting the three sample schools in the three sample schools. A team of three personnel for each three district was formed comprising of two personnel from CERID and one from DOE. The team visited the sample schools and gathered the necessary information from each school. The collection of the data of three years and the time constrain was the main challenge for all three teams. Even the student tracking for these three years was very tough for the teams. The sample schools as they are used to with the “project mania” had forgotten what they were trained for the last ten years and started to going back to the point where this project started in terms of management of the school data. The team had to face the same difficulties at the schools as at the point they have started in the year 2002 in some of the sample schools of these minimized sample schools of three districts.

The experienced and dedicated team members were able to manage to get very vital and essential information to analyse the cohort and trend analysis within this time limitation.

The years and Grades the data collected in this year from the 9 schools, three schools each from three districts are presented in the table.

<table>
<thead>
<tr>
<th>BS</th>
<th>2059</th>
<th>2060</th>
<th>2061</th>
<th>2062</th>
<th>2063</th>
<th>2064</th>
<th>2065</th>
<th>2066</th>
<th>2067</th>
<th>2068</th>
</tr>
</thead>
<tbody>
<tr>
<td>AD</td>
<td>2002</td>
<td>2003</td>
<td>2004</td>
<td>2005</td>
<td>2006</td>
<td>2007</td>
<td>2008</td>
<td>2009</td>
<td>2010</td>
<td>2011</td>
</tr>
<tr>
<td>2059</td>
<td>2002</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2060</td>
<td>2003</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2061</td>
<td>2004</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2062</td>
<td>2005</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2063</td>
<td>2006</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2064</td>
<td>2007</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2065</td>
<td>2008</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2066</td>
<td>2009</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2067</td>
<td>2010</td>
<td>9</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2068</td>
<td>2011</td>
<td>10</td>
<td>9</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

In the SSRP core document the Grade I-VIII has been defined as Basic Level of Education, therefore this report present analysis of three cohorts of the year 2002, 2003 and 2004 up to Grades VIII.

Limitations

The findings, conclusions and recommendation made by this study is based on only 9 schools (5 Primary, 4 Secondary) from Dhankuta, Rasuwa and Banke districts.

Comparison of the indicators has been made only in few possible aspects due to the lack of time and resources available.
Chapter II: Student Cohort Flow

The flow of the students enrolled in Grade I in three successive years i.e. 2002, 2003 and 2004 and reached Grade VIII without repeating any grades in eight consecutive years is presented in the following section. The only students who were enrolled in Grade I as fresh new entrants were analysed in this cohort analysis.

The repeater students who were already in Grade I have been excluded from overall student flow. These repeater students and new entrants is included and analysed in the trend analysis. The school leaver students were not included in the analysis.

Student Flow of Cohort 2002

The overall student flow of the cohort 2002 is presented in the following table. The number of students enrolled in Grade I in the year 2002 is taken as a base year and as 100 percent. Subsequently, the number and percentage of student who were upgraded in the next year is presented in the table.

<table>
<thead>
<tr>
<th>Year</th>
<th>Grade I</th>
<th>Grade II</th>
<th>Grade III</th>
<th>Grade IV</th>
<th>Grade V</th>
<th>Grade VI</th>
<th>Grade VII</th>
<th>Grade VIII</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>33</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>40</td>
<td>55</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>55</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>62</td>
<td>75</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>75</td>
<td>127</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>127</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>194</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Figures in parenthesis are percentage of the cohort.)

- More than 12 percent students who enrolled in Grade I in 2002 were able to reach Grade VIII in the year 2009 without repeating any grades.
- Among the students 66 percent reached Grade II in the year 2003.
- Similarly, 39 percent of the students reached Grade III in the year 2004.
- The percentage of student progress to Grade II was relatively lower due to extremely lower percentage of students promoted to Grade II (20%) in one of the sample schools.
Student Flow of Cohort 2003

The flow of student cohort of the year 2003 who reached Grade VIII in the year 2010 is shown in the following table.

<table>
<thead>
<tr>
<th>Year</th>
<th>Grade</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
<th>VI</th>
<th>VII</th>
<th>VIII</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td></td>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td></td>
<td>26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td></td>
<td>33</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td></td>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td></td>
<td>54</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td></td>
<td>65</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td></td>
<td>82</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td></td>
<td>171</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Figures in parenthesis are percentage of the cohort.)

- Among the total number of students enrolled in Grade I in 2003, only about 11 percent were able to reach Grade VIII in the year 2010 without repeating any grades.
- Less than half students were able to reach Grade II from the Cohort 2003.
- The reason behind the lower percentage of children moving to Grade II was again the same as described above (extremely lower percentage of students promoted to Grade II in one of the sample schools).
Student Flow of Cohort 2004

The flow of student cohort, who enrolled in Grade I as a new entrant in the year 2004 as it reached Grade VIII in the year 2011 is shown in following table.

<table>
<thead>
<tr>
<th>Year</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I</td>
</tr>
<tr>
<td>2011</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>199</td>
</tr>
</tbody>
</table>

(Figures in parenthesis are percentage of the cohort.)

- In the 2004 Cohort, 14 percent students were able to reach Grade VIII in the year 2011 without repeating any grades.
- About 58 percent students reached Grade II in the year 2005.
- Among the students who reached Grade II in the 2nd year, 76 percent students reached Grade III.
Comparison of Student Flow of Cohorts

The flow of students in the three cohorts is presented in the following chart. There is sudden down falls in the progress of the students in Grade III to IV and Grade VI to VII.

Figure 2: Student flow in the three cohorts

- There is a steep down fall in the percentage of the students flow from Grade I to Grade II in all the three student cohorts.
- The percentage of student flow in Grade IV is almost coinciding in all the three cohorts.
- The percentage of students who reached Grade V, Grade VI and Grade VII are different.
- However, the percentage of students reaching Grade VIII is almost equal for 2002 and 2003 cohort and higher by 4 points for 2004 cohort.

Student Flow by Gender

The gender of the students and the differences in the pattern of their flow in different grades in the successive years are presented in this section.
Student Flow of Cohort 2002 by Gender

The flow of the student by gender is presented in the following figure.

Figure 3: Student flow of cohort 2002 by gender

- The flow of the student in the figure shows that the percentage of boy students is slightly higher compared to girl students up to Grade IV in 2002 Cohort.
- The percentage of boys and girls coincides in the Grade V, however there is a consistent flow of girl students and downfall of boy students.
- The cohort flow percentage of boy students’ drop from Grade V and the percentage of girl student are higher compared to boy students from Grade VI to VIII.

Student Flow of Cohort 2003 by Gender

The comparison of the students flow in the cohort 2003 is presented in the following figure.

Figure 4: Student flow of cohort 2003 by gender
• The flow of the both boy students in Grades I, II and III are higher compared to girl students in the 2003 cohort.
• The flow of boy and girl students in Grades V almost coincides.
• Again the boy students flow is higher compared to boy students in the Grades VI and VII.
• The percentage of boy and girl students in Grade VIII is almost equal.

_Student Flow of Cohort 2004 by Gender_

The student flow of the cohort 2003 by gender is presented in the following figure.

**Figure 5: Student flow of cohort 2004 by gender**

![Graph showing student flow of cohort 2004 by gender](image)

• The flow of the boy students is consistently below the flow of the girl student from Grade II till Grade VIII in 2004 cohort.
• The gap in the percentage of flow of the girl and boy students is widest in Grade IV by about 17 percent.
• There is consistent gap between girl and boy students by about 14 points in Grade V and Grade VI.
• The gap between girl and boy students by about 11 points in Grade VII and Grade VIII.

_Comparison of Gender-Wise Student Flow of the Cohorts_

The comparison of pattern of gender-wise student flow of three cohorts is presented graphically given figures.

The following figure shows the comparison of flow of girl students in the three cohorts.
The girl students flow in 2004 cohort is higher compared to other two cohort flow of years 2002 and 2003.

• The flow of girl students is lower in 2003 cohort compared to other two cohorts.
• There is gap within the percentages of the three cohorts from all the grades.

The following figure shows the comparison of flow of boy students in the three cohorts.

Student Flow with ECED Background

This section presents a comparison of the flow of cohorts of the students with and without ECED/pre-primary experience before enrolling in Grade I.
Student flow with ECED background of cohort 2002

The comparison of flow of student cohort of 2002 of the students with and without previous ECED/pre-primary experience before getting enrolled in Grade I is presented here.

**Figure 8: Student flow of Cohort 2002 with ECED background**

- In 2002 Cohort, more than 22 percent student who enrolled Grade I with ECED background reached Grade VIII, without repeating any grades.
- It shows that 93 percent students with ECED background reached Grade II.
- There is a downfall in the percentage of flow of students from Grade II to Grade III.

Student Flow with ECED Background of Cohort 2003

The flow of student cohort 2003 of the students with and without ECED/pre-primary experience is presented below:

**Figure 9: Student flow of Cohort 2003 with ECED background**

- About 21 percent student who enrolled in Grade I with ECED background reached Grade VIII, without repeating any grades in 2003 cohort. As compared to the overall students flow (10.5%) this is almost double.
The percentage of students with ECED background who reached Grade II is 65.

**Student Flow with ECED Background of Cohort 2004**

The flow of student cohort 2004 of the students with and without ECED/pre-primary experience is presented below:

- About 27 percent of students who were enrolled in Grade I with ECED background reached Grade VIII, without repeating any grades in 2004 cohort.
- It shows that the students with ECED background in 2004 cohort have even more positive effect on students flow compared to 2003 cohort.
- More than 82 percent of students who had prior ECED experience reached Grade II.
- The percentage of students flow from Grade II to Grade III is more than 74.
Chapter III: Trend Analysis of Selected Indicators

Trend analysis is one of the major tools used in the longitudinal studies for the data analysis. The trend analysis of the pertinent indicators over a period of time (2002-2011) is done in this section.

Student Enrolment

The trend analysis of the students’ enrolment of in Grade I is presented in the following figure.

- There is consistency in the enrolment of students in Grade I in the years 2002 to 2004.
- The enrolment of students in Grade I peak up in the years 2005 and 2006.
- The percentage of student enrolment decreases from the year 2007.
- The student enrolment is lowest in the year 2011.

Per student classroom space

The Education Regulation has set 0.75 sq. meters i.e., 8.1 sq. ft. per student classroom space for basic level. The available space for the students in the sample school during the study period is presented in this section.
The classroom space is almost as per the set norm from the year 2002 to 2004.

From the year 2005 to 2007, per student classroom space deceased up to 6 sq. ft. in the year 2006.

Per student classroom increased from the year 2008 even higher than the set norm.

In the year 2011 it reached up to almost 11 sq. ft. per student.

**Pupil teacher ratio**

The ratio of pupil and teacher in the classroom has significant effect in the teaching learning process. The trend of pupil teacher ratio in the given sample schools during the study period of 2002 to 2011 is presented in the figure below.

- The pupil teacher ratio was about 28:1 in the years 2002 to 2004.
- It shows that the pupil teacher ratio reached up to 36:1 in the year 2005.
- The ratio started decreasing from the year 2006 resulting to 10:1 in the year 2011.
Teachers and Teaching Learning Materials

The qualifications of the teachers, trainings that the teachers get, composition of teachers in the schools and availability of the teaching materials are some of the factors analysed in this section.

**GPI of teachers**

The Gender Parity Index (GPI) of teachers shows the participation of female teachers in the education sector.

![Figure 14: GPI of Teachers](image)

- The Gender Parity Index (GPI) of teacher was 2.31 in the year 2002 and 2003.
- The GPI of teacher started decreasing from 2.19 in the year 2004 to 1.09 in the year 2009.
- In the year 2011, the GPI of teacher was 0.96.

**Teachers and ethnicity**

The distribution of the teachers by their ethnicity in the sample schools is presented in the following chart.

![Figure 15: Distribution of Teachers by Ethnicity](image)

- The majority of the teachers were from others (Bhramin/ Chhetri) and Janajati ethnicity.
- There is a very few percentage of teachers from Dalit ethnicity.
- There is one Muslim teacher starting from the year 2009.

**Teachers and their qualification**

The distribution of the teachers by their education attainment in the sample schools is analysed in the section.

**Figure 16: Distribution of Teachers by Education Attainment**

- There were more than 62 percent of teachers with education qualification of SLC in the year 2002, which gradually decreased in the subsequent years.
- The percentage of teachers with education qualification of Intermediate level has started increasing gradually in the subsequent years.
- In the year 2011, there were more than 40 percent Intermediate, 35 percent SLC, 21 percent Bachelors and 2 percent Masters level teachers.

**Teachers with training certificate**

The government has provided various training to the teachers. The teacher training certificates are provided to the teachers after successfully completing the trainings. In this regard the distribution of the teachers who received the training certificate is presented in this figure.

**Figure 17: Distribution of Teachers with Training Certificate by Gender**
• There were 51 percent teachers with training certificate in the year 2002 and it reached 73 percent in the year 2011.

• In the year 2002, among the teachers with training certificate the percentage of female and male teachers were about 77 and 23 respectively.

• The percentage of male teachers started increasing in the subsequent years.

• The percentage of female and male teachers with training certificate in the year 2011 is 56 and 44 respectively.
Chapter IV: Status of Computer Equipment

The team of researchers from CERID and personnel from DOE visited nine sample schools of three districts – Dhankuta, Rasuwa and Banke. The team had a checklist to find out the status of the hardware, software and the database software and its use in the school level. Based on the observation and conversation with the HT, the synthesis report is presented here.

The computer equipment provided were kept in the Head Teacher's room or office room. In some schools where there is a very poor physical infrastructure for the safety of the computer, the provided computers are kept safe and packed at the head teachers’ residence where it was also found that they were misused for playing games by their siblings/relatives.

Most of the teachers, who participated in a three days training during the handover of the computers in 2010, were "computer illiterate” and “not interested” in computers.

Technical problems such as- virus, bursts in UPS and CPU, lack of technical knowhow due to lack of interest.

The database software has not been used, because of various reasons. Among them is the usability of the software in the local level. There is a need of survey to make the developed software more appropriate and usable at the school level. The output reports need to be useable in the daily basis.

The scope of sending the database using internet/email is very high and this need to be encouraged to minimize the cost of the project.

The schools need to prepare at least a teacher responsible for the data management, and this teacher should be provided with the basic computer operational training.

The computer trained teacher should be made capable of using CERID database program and be able to send the necessary data to CERID at least twice a year as Flash data collection.

Flash data and LongSIS data may not match due to various reasons, LongSIS tracks each and every child once enrolled in the school.
Chapter V: Conclusions and Recommendations

The conclusions and recommendation of the study are presented in this section.

Conclusions

The conclusions of the study are mentioned below under two sub-headings.

Cohort Analysis

- The net student flow from Grade I to Grade VIII have remained conspicuously low from 12 to 14 percent for all three cohorts.
- Grade I appear to be the most difficult hurdle for all three cohorts, with the lowest flow.
- The flow percentage of boys in 2002 and 2003 cohorts is higher compared to girls, whereas in 2004 cohort flow percentage of girls is higher compared to boys.
- ECED experience leads to significant increment in student flow rate in all grades.

Trend Analysis

- The enrolment in Grade I show a declining trend.
- Per-student-classroom-space in the primary grades is generally less than the national norm in the beginning however decrease in the enrolment of students has increased per student classroom space in the later years.
- There was no definite pattern in the pupil-teacher ratio however, it was found in a decreasing trend.
- The GPI of the primary teachers in the sampled schools was higher in the base year and it started decreasing in the consecutive years and in the year 2011 the index was less than one.
- There is stability in the composition of the teachers by their ethnicity over the period of the study time in the sample schools. The majority of the teachers were Brahmin/Chhetri and Janajati, very few dalits and one from Muslim community.
- The percentages of the teachers with the qualification of Intermediate and Bachelor level are found to be in an increasing trend. This has decreased the percentage of teachers with only SLC qualification. There are very few percentage teachers with qualification of Masters’ Degree.
- The trend analysis shows that the percentage of teachers with teacher training certificate is in increasing trend.

Recommendations

- The school level data keeping and the data analysis need to be consistent in all the school. To strengthen the school level data keeping, analysis, reporting and
use, the stakeholders should feel the ownership of the data and use it for planning.

- The students should be given ECED experience prior to Grade I enrolment so that the hurdle of Grade II can be minimized.

- Need to encourage the potential individuals from so called “lower cast” and Muslim communities to join teaching profession.
References


Department of Education. *Flash Report I and II*. Sanothimi, Nepal: Author


http://www.uis.unesco.org/i_pages/indspec/cohorte.htm