Basic Education Information System (BEIS)
by
Lilia Z. Roces and Deogracias B. Genito, Jr.

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ABSTRACT

The Basic Education Information System (BEIS) serves as the primary MIS of the Department of Education. It was developed by a group (the Development Team) from the Database Management Unit of the Research and Statistics Division, Office of Planning Service, that Department. The BEIS processes and generates the data needed for planning, budget preparation, resource allocation and performance indicators.

The BEIS Quick Counts Module is currently installed and operational at the regional and divisional level. (DepEd Memo No. 211, dated October 2002).   It is used to process quick summaries on total enrolment, number of nationally-funded teachers, instructional rooms and school furniture. The module produces automated reports on pupil-teacher analysis, pupil-instructional room analysis and pupil-furniture analysis.

The BEIS School Statistics Moldule_ provides the details on school enrolment, staffing and facilities.(DepEd Memo No. 77, dated March 2003)

The BEIS Performance Indicators (BEIS-PI) calculates the Education for All (EFA) core indicators and other related educational indicators, based on the data generated through BEIS Quick Counts and School Statistics Module (DepEd Memo No. 316, dated September 2003)
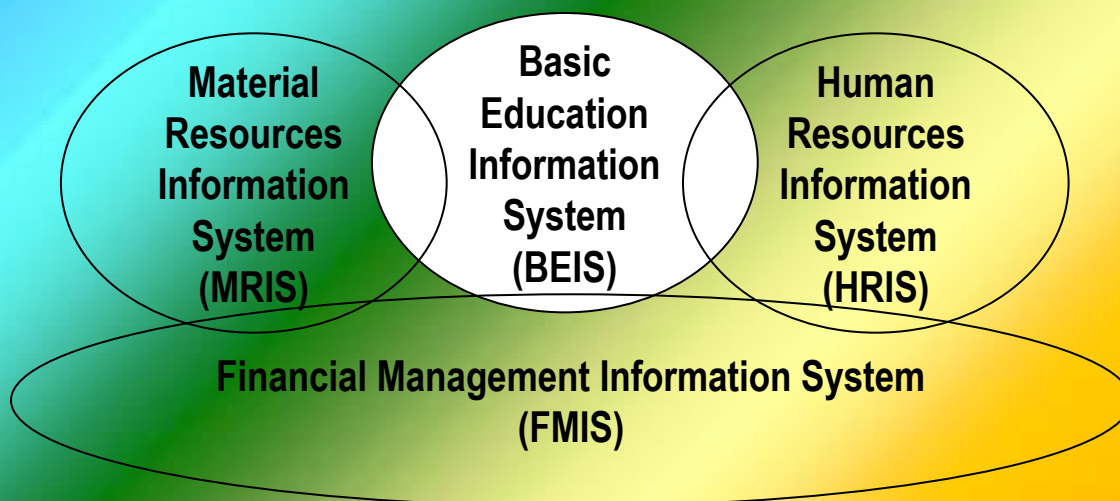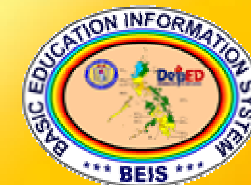.
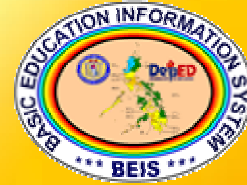
The Basic Education Information System
(Formal Education)

By

Mr. Deogracias B. Genito, Jr.
Information Technology Officer I
Head, Database Management Unit
Research and Statistics Division
Office of Planning Service
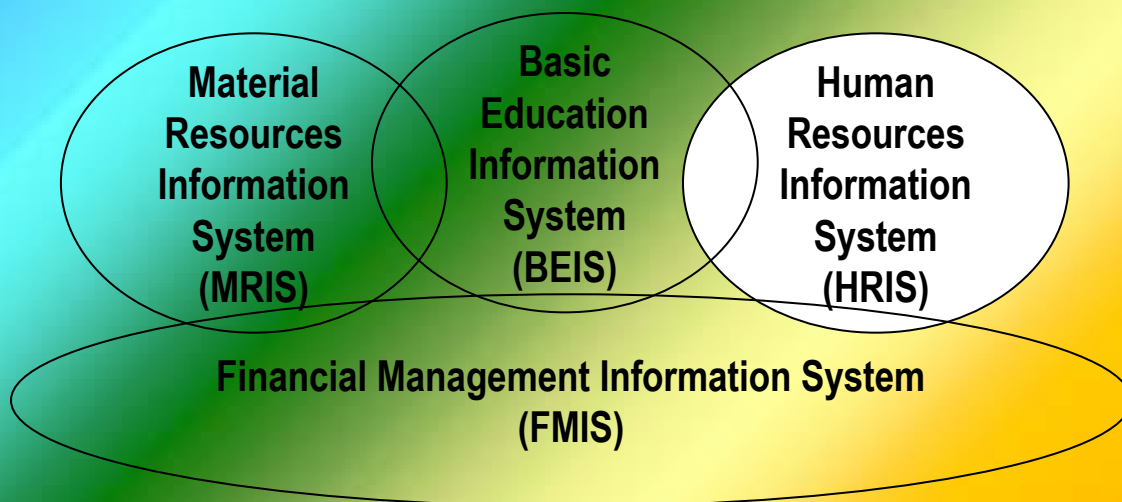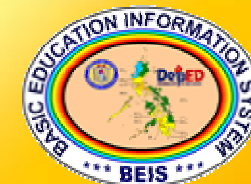Department of Education
PHILIPPINES

MIS Framework…

Material Resources Information System (MRIS)

Basic Education Information System (BEIS)

Human Resources Information System (HRIS)

Financial Management Information System (FMIS)

The **BEIS** represents statistical data based on straightforward counts (e.g., number teachers, or pupils, in a school, the number of instructional rooms, school furniture (desks, sets of tables and chairs and armchairs). The unit for the analysis of statistical data is institutional: individual schools at the lowest level, at higher levels, School districts, divisions, regions or the national education system as a whole.

The systems linked through shared School-ID.

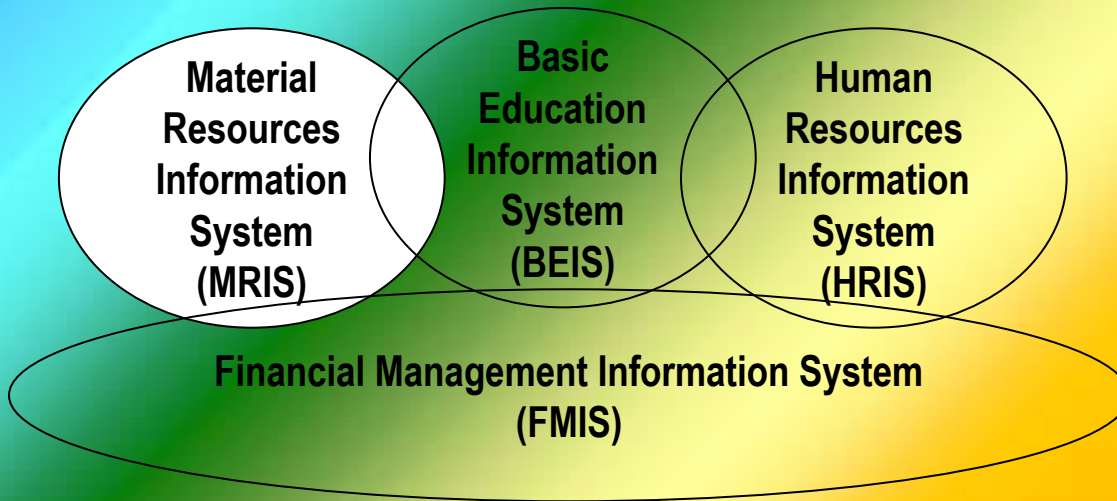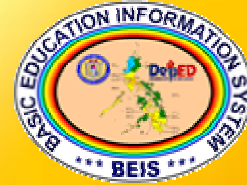The systems are coordinated *not* integrated.

MIS Framework…

Material Resources Information System (MRIS)

Basic Education Information System (BEIS)

Human Resources Information System (HRIS)

Financial Management Information System (FMIS)

In the **HRIS**, the unit of analysis is the person rather than the institution: an individual record is required for each staff member, teacher or non-teacher, employed in the education system.

The systems linked through shared School-ID.

The systems are coordinated _not_ integrated.

MIS Framework…

Material Resources Information System (MRIS)

Basic Education Information System (BEIS)

Human Resources Information System (HRIS)

Financial Management Information System (FMIS)

MRIS will include detailed data about physical facilities: the materials used in the construction of classrooms, for example, their state of repair, their dimensions. Detailed data concerning school desks, textbooks and others will also be included. Geographical information concerning the location of the school and its access to services will be likewise included.

The systems linked through shared School-ID.

The systems are coordinated _not_ integrated.

MIS Framework…

Material Resources Information System (MRIS)

Basic Education Information System (BEIS)

Human Resources Information System (HRIS)

Financial Management Information System (FMIS)
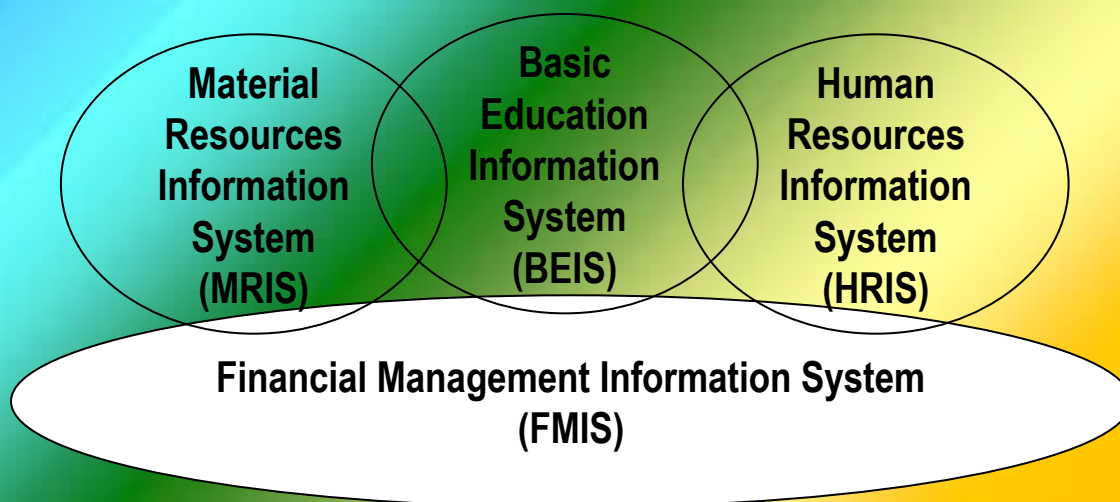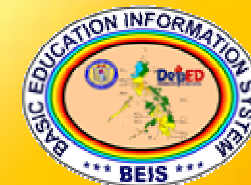
The **FMIS** shall link to all the others: financial resources are needed for the development of all aspects of an education system. In particular, there is a close link between financial data and payroll data, which shall be included in the HRIS. In the Philippines as in most other countries, teachers' salaries account for well over 80% of the total education budget.

The systems linked through shared School-ID.

The systems are coordinated _not_ integrated.

About BEIS…
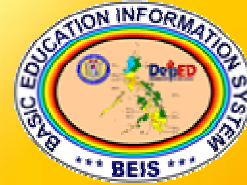
- Program name : Basic Education Information System in Formal Education

- Software development : In-house development by a team of 6 from RSD-OPS

- Training attended : 72 hours training on Visual Basic in MS-Excel Programming at the Ateneo Information Technology Institute (AITI) in July 2002

- Total number of data sets : more than 600

About BEIS…
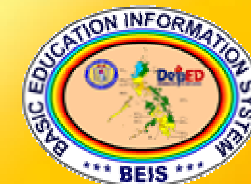
- Total Costs (including software development and maintenance, training of all planning officers and data encoders, transportation expenses and supplies/materials)

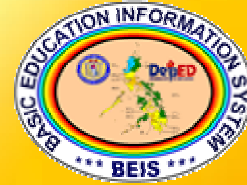|	Local Funds (PMIS)	UNICEF	TOTAL
Module 1 (Quick Counts)	390,896.00		390,896.00
Module 2 (School Statistics)	373,901.00	441,483.40	815,384.40
Module 3 (Indicators)	557,117.55	257,166.60	814,284.15
TOTAL COSTS (in Pesos)	1,321,914.55 (65.4%)	698,650.00 (34.6%)	2,020,564.55
(in US$) 1US$=P55	24,035.00	12,703.00	36,738.00

Historical Development…
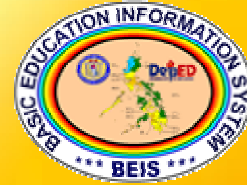
- **Original Manual System**

  - Until 1993, school data are gathered and analyzed manually.

  - Data entry errors and lack of coordination to other offices led to conflicting statistics.

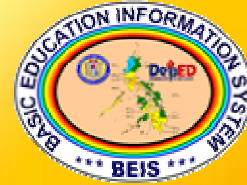 - Increasing volume of work led to processing delays.

Historical Development…

- **Early attempts to computerized the system**

  - During the late 1980's, there were two (2) attempts to computerized the collection, processing and analysis of school data.

  - Software development was outsourced in both cases.

  - However, there were problems in installation and utilization of the database. Neither system became functional.
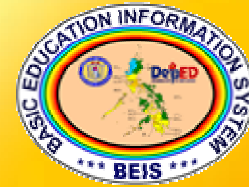
Historical Development…

- **UDGS: The first computerized system**

  - The Unified Data Gathering System (UDGS) was developed in 1993.

  - Software development was outsourced.

  - Despite bugs or error(s) in the computer program, UDGS used for data analysis and preparation of Statistical Bulletins between 1993 and 2001.
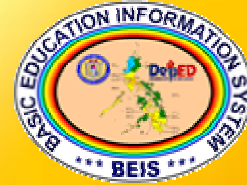
Historical Development…

🌐 **BEIS : The new computerized system**

    🌐 Reform of the Unified Data Gathering System (UDGS) commenced in August 2001, and culminated in early 2002 with the implementation of the new Basic Education Information System (BEIS).

    🌐 Major steps in the development of BEIS have included the following:

        🌐 (a) Re-design of the data gathering instruments;
        🌐 (b) Local DepED capacity building;
        🌐 (c) Central DepED software training and development of BEIS software; and
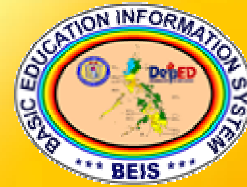   🌐 (d) BEIS analysis.

BEIS : Primary MIS of DepED…

- **BEIS** processes and generates the data needed for planning, budget preparation, resource allocation and performance indicators.

- **BEIS** analyzes teacher deployment, instructional room allocation and pupil/student seating ratio.

- **BEIS** evaluates the performance of the education sector in terms of the EFA indicators and other related education indicators.

Features…

- Streamlined data gathering instruments with manual checks for internal consistency.

- Software provides computerized validity checks during data input.

- Unique school numbering system.

- Decentralized data inputting at the divisional level.

- Quick counts to provide budget data from schools within the year.

- Capable of disaggregating by legislative district, municipality/city, municipality class and urban/rural classification.

- Automated reporting for teacher deployment, instructional room and school furniture analysis.

Data Gathering Instruments…
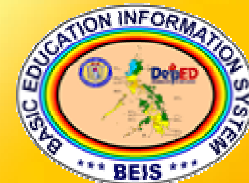
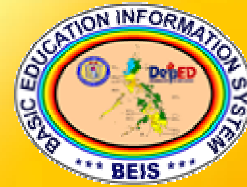- DepED Administrative Structure

  - 17 Regional Offices
  - 182 Divisional Offices
  - 2273 School District Offices
  - About 48,000 elementary and secondary schools (both public and private)

- Issuance of DepED Order

  - Government Elementary School Profile (GESP)
  - Government Secondary School Profile (GSSP)
  - Private School Profile (PSP)

The BEIS Modules…

- ## *Module I – BEIS-Quick Counts*
  - It involves only four major variables required for budget planning: enrolment, teacher numbers (nationally-funded only), instructional room provision and seating provision. It also includes pupil/student - teacher analysis, instructional room analysis and school furniture analysis.
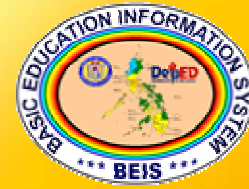
- ## *Module II – BEIS-School Statistics*
  - It includes a wider range of variables (enrolment by sex and by grade/year level, age profile, repeaters, dropouts, teachers' workloads, locally-hired teachers, etc.)

- ## *Module III – BEIS–Performance Indicators*
  - It calculates EFA Core Indicators and other related education indicators (e.g., participation rate, gross enrolment ratio, dropout rate, etc).
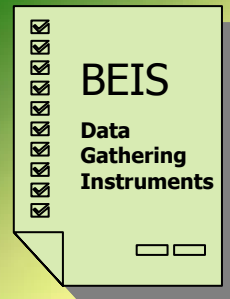
Schedule of data collection and processing…

Central
Region
Division
District / Schools

Schools
District
Division

Division

Central
Region
Division

Orientation of regional and divisional teams on BEIS data gathering instruments; dissemination to the schools
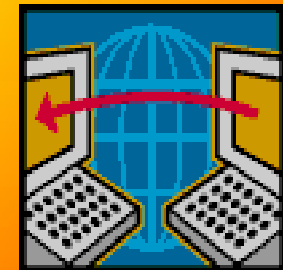
(July-August)

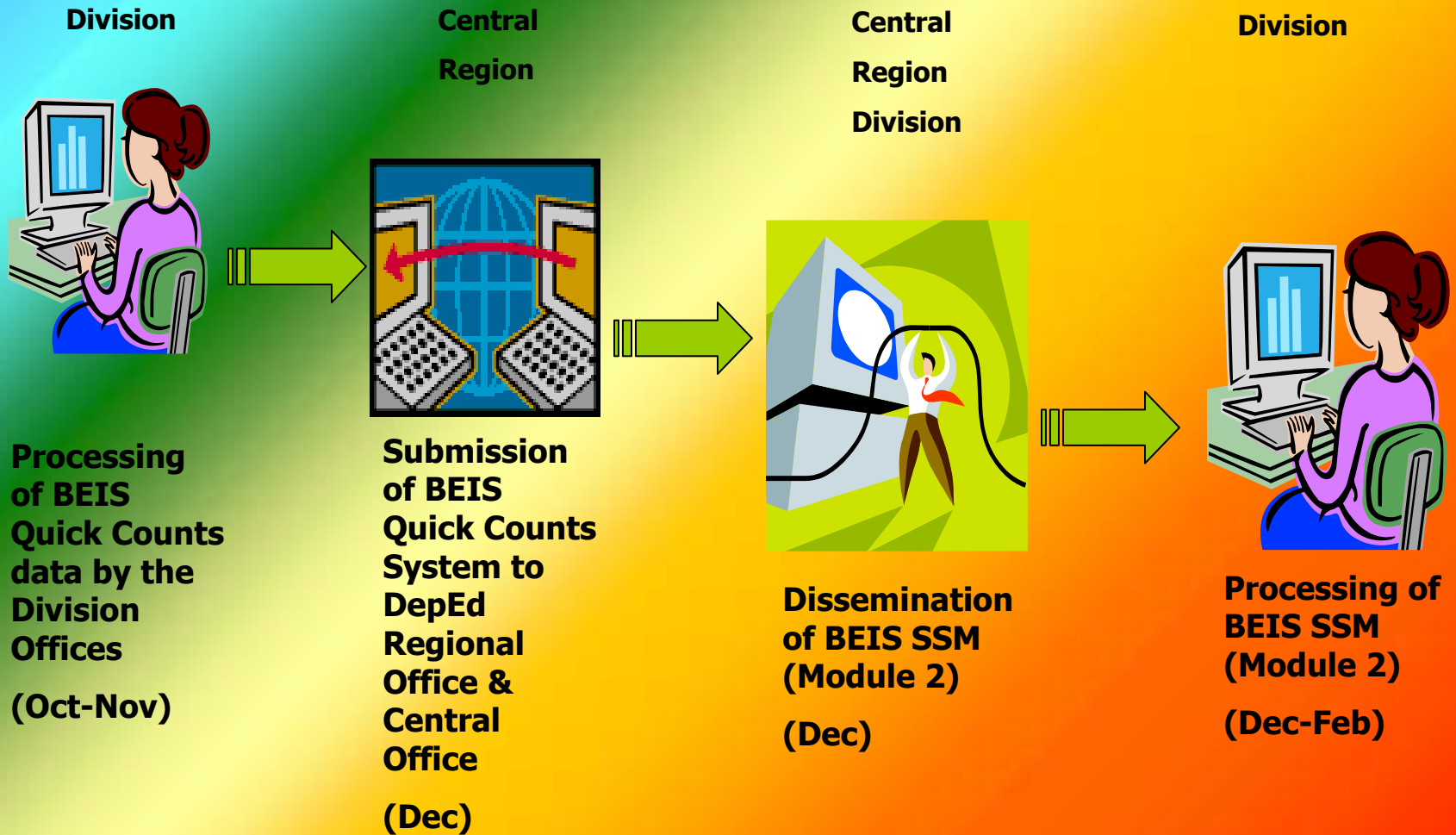**Retrieval of accomplished BEIS data gathering instruments**

(end of Sept)
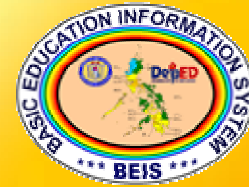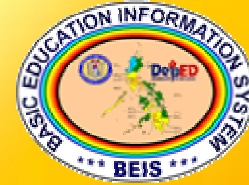
Manual validation of data

(Sept-Oct)

Dissemination of BEIS Quick Count System (Module 1) by DepEd Central

(Sept)

Schedule of data collection and processing…

Division

Processing of BEIS Quick Counts data by the Division Offices

(Oct-Nov)

Central

Region

Submission of BEIS Quick Counts System to DepEd Regional Office & Central Office

(Dec)

Central

Region

Division

Dissemination of BEIS SSM (Module 2)

(Dec)

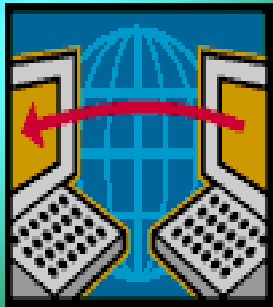**Division**

Processing of BEIS SSM (Module 2)

(Dec-Feb)

Schedule of data collection and processing…
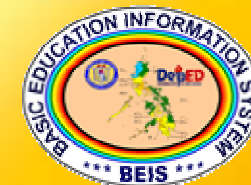
Central Region

Central Region Division

Submission of BEIS SSM (Module 2)

(end of Feb)

Generation of School Year Basic Education Statistics and BEIS - Performance Indicators (Module 3)

(Mar-Apr)

Timeframe = 9 Months

"This year's data within the year".

The Rainbow Spectrum…

Teacher Deployment Analysis

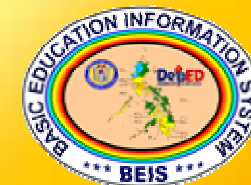| Pupil:Teacher Ratio	Color Code		Remarks
Less than 25		Blue	Excessive surplus teacher provision
25.00 – 29.99		Sky Blue	Surplus teacher provision
30.00 – 34.99		Green	Generous teacher provision
35.00 – 39.99		Yellow	National mean ratio
40.00 – 44.99		Gold	Manageable ratio
45.00 – 49.99		Orange	Moderate teacher shortage
More than 50.00		Red	Severe teacher shortage
No Teacher Available		Black	No nationally funded teachers

The Rainbow Spectrum…
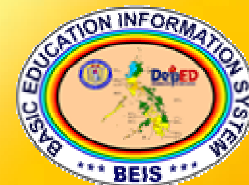
Instructional Room Analysis

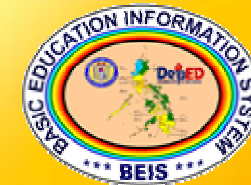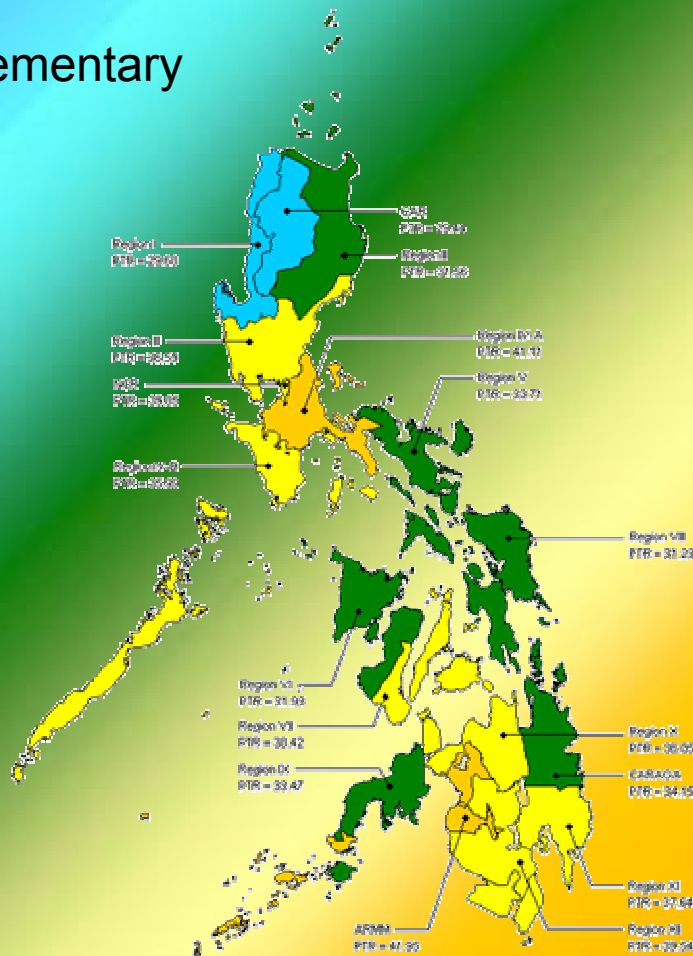| Pupil:Room Ratio	Color Code		Remarks
Less than 46		Blue	Meet Republic Act 7880 with one shift
46.00 – 50.99		Yellow	Fails to meet RA 7880 with one shift
51.00 – 55.99		Gold	Does not meet RA 7880 even with double shifting
More than 56		Red	Does not meet RA 7880, schools with severe shortage of classrooms
No Classroom Available		Black	No existing instructional rooms

The Rainbow Spectrum…

School Furniture Analysis

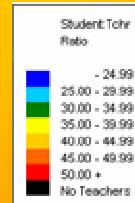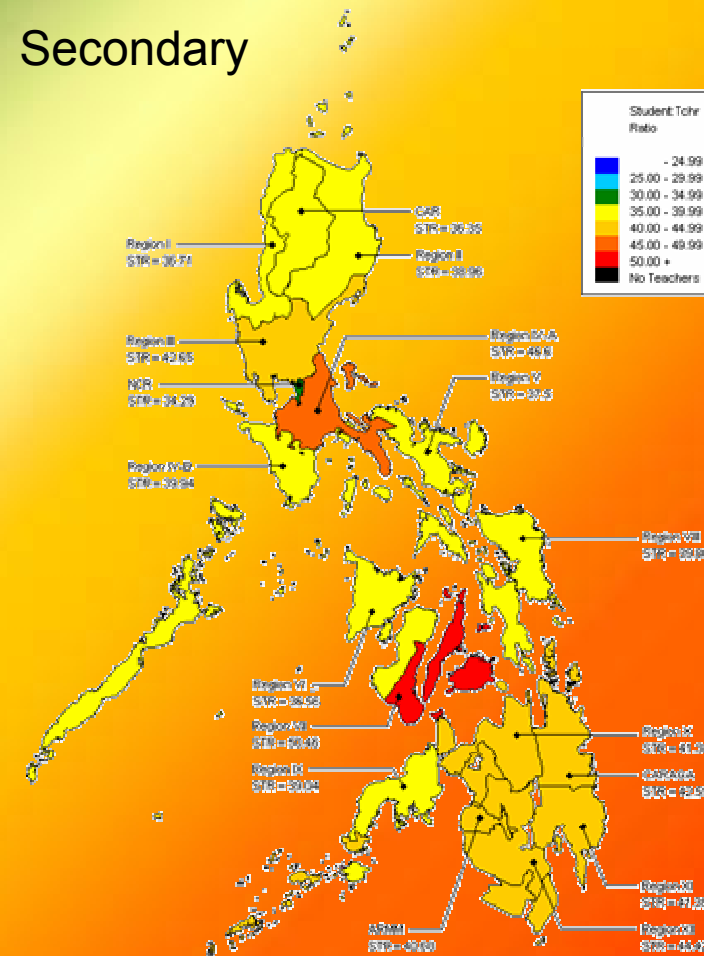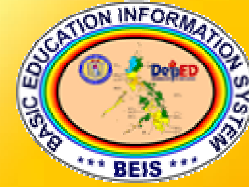| Pupil:Seat Ratio	Color Code		Remarks
Less than 0.49		Blue	Two-seats per pupil even in one-shift schools
0.50 – 0.69		Sky Blue	Surplus seat provision
0.70 – 0.89		Green	Generous seat provision
0.90 – 1.00		Yellow	Adequate in one-shift schools
1.01 – 1.99		Gold	Adequate in two-shift schools
2.00 – 2.99		Orange	More than 2 pupils per seat; Inadequate in two-shift schools
More than 3.00		Red	More than 3 pupils per seat; Severe shortage in two-shift schools
No Seats Available		Black	No existing seats

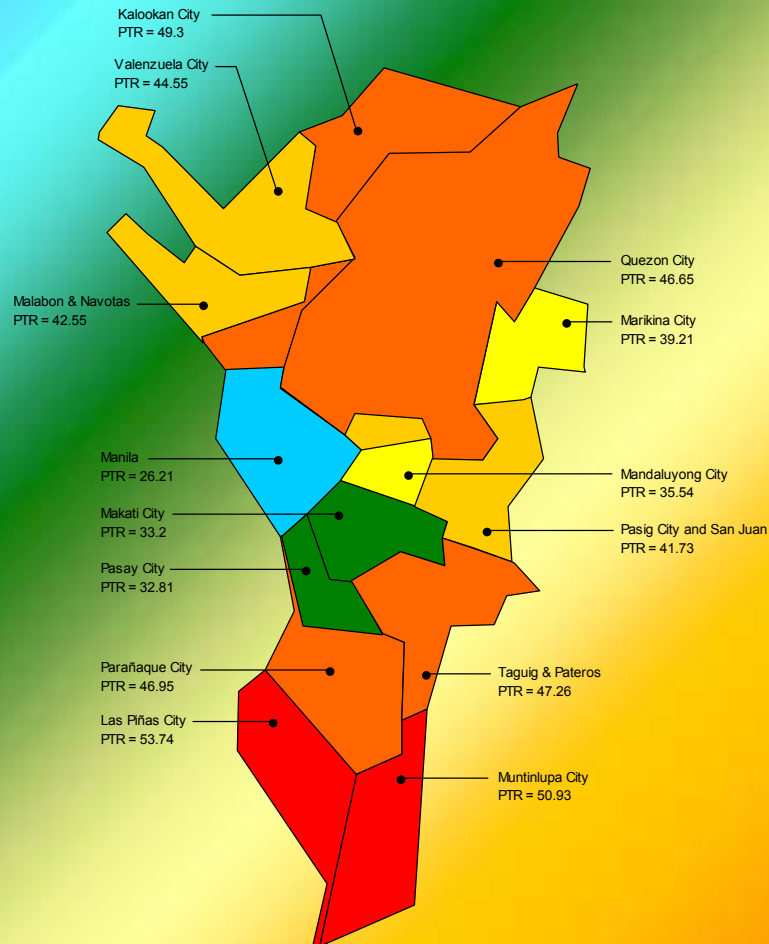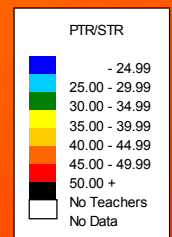# The BEIS Maps…
(Regional Level)

Elementary

Secondary

The BEIS Maps…
(Divisional Level)

Elementary

Kalookan City
PTR = 49.3

Valenzuela City
PTR = 44.55

Malabon & Navotas
PTR = 42.55

Manila
PTR = 26.21

Makati City
PTR = 33.2

Pasay City
PTR = 32.81

Parañaque City
PTR = 46.95

Las Piñas City
PTR = 53.74

Quezon City
PTR = 46.65

Marikina City
PTR = 39.21

Mandaluyong City
PTR = 35.54

Pasig City and San Juan
PTR = 41.73

Taguig & Pateros
PTR = 47.26

Muntinlupa City
PTR = 50.93

Secondary

Kalookan City
STR = 46.75

Valenzuela City
STR = 46.69

Malabon & Navotas
STR = 47.7

Manila
STR = 18.9

Makati City
STR = 37.12

Pasay City
STR = 37.16

Parañaque City
STR = 40.58

Las Piñas City
STR = 50.28

Quezon City
STR = 37.68

Marikina City
STR = 43.15

Mandaluyong City
STR = 35.55

Pasig City and San Juan
STR = 36.07

Taguig & Pateros
STR = 44.6

Muntinlupa City
STR = 47.53

PTR/STR
- 24.99
25.00 - 29.99
30.00 - 34.99
35.00 - 39.99
40.00 - 44.99
45.00 - 49.99
50.00 +
No Teachers
No Data

The BEIS Maps…
(Secondary Level)

Liberty NHS
STR = 16.71

Loreto NHS
STR = 31.29

Tubajon NHS
STR = 25.67

Plaridel NHS
STR = 27

Tag-abaca NHS
STR = 37.1

Albor NHS
STR = 40.62

Melgar NHS
STR = 19

Sering NHS
STR = 35.75

Don Ruben E.
Ecleo Sr. MNHS
STR = 35.61

Rizal NHS
STR = 36.33

Dinagat School of
Fisheries
STR = 20.94

Surigao Del Norte NHS
STR = 36.3

R. E. Ecleo, Sr.
NHS

T.S Pantilo, Sr. MNHS
STR = 32.14

Cagdianao NHS
STR = 35.89

San Francisco NHS
STR = 39.14

Balite NHS
STR = 25.54

Asa NHS
STR = 39

Sta. Cruz NHS
STR = 28.04

Matin-ao NHS
STR = 30.04

Placer NHS
STR = 39.67

Masgad NHS
STR = 48.47

Campo NHS
STR = 30.91

Cantapoy NHS
STR = 27

Villa Riza NHS
STR = 10.4

Claver NHS
STR = 31.67

Mainit NHS
STR = 26.9

Gigaquit Nat'l. Sch. of
Home Industries
STR = 26.42

Timamana NHS
STR = 32.27

Bacuag Nat'L Agro-
Indust'L Sch.
STR = 0

Tubod NHS
STR = 39.86

Alegria NHS
STR = 36.37

PTR/STR

	- 24.99
	25.00 - 29.99
	30.00 - 34.99
	35.00 - 39.99
	40.00 - 44.99
	45.00 - 49.99
	50.00 +
	No Teachers
	No Data

DepED
DEPARTMENT OF EDUCATION

BASIC EDUCATION INFORMATION SYSTEM
*** BEIS ***

The BEIS Analysis…
(National Level)

Dropouts in Public Elementary Schools, by Grade and by Sex
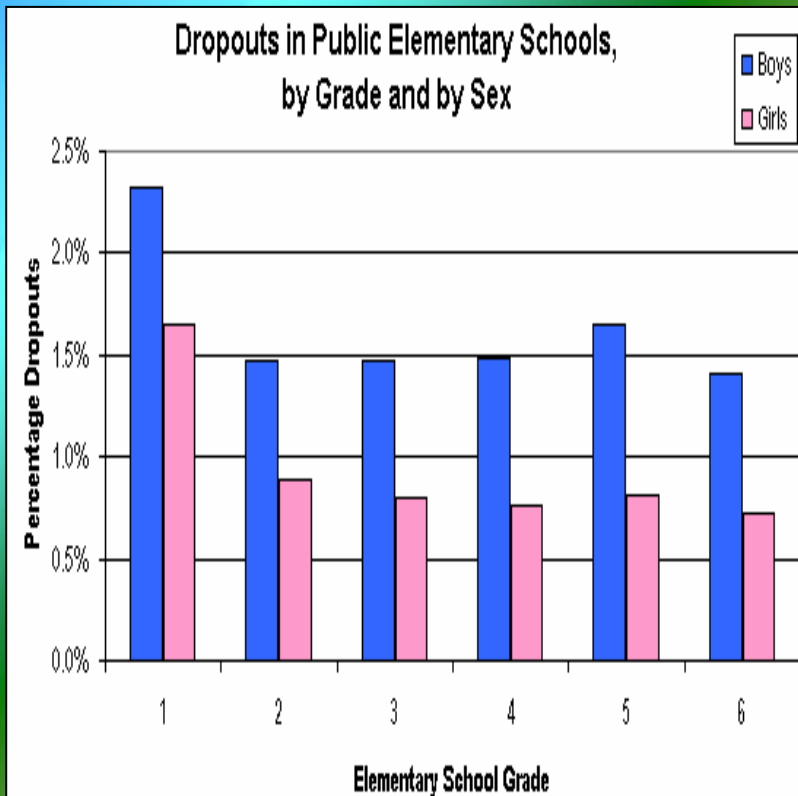
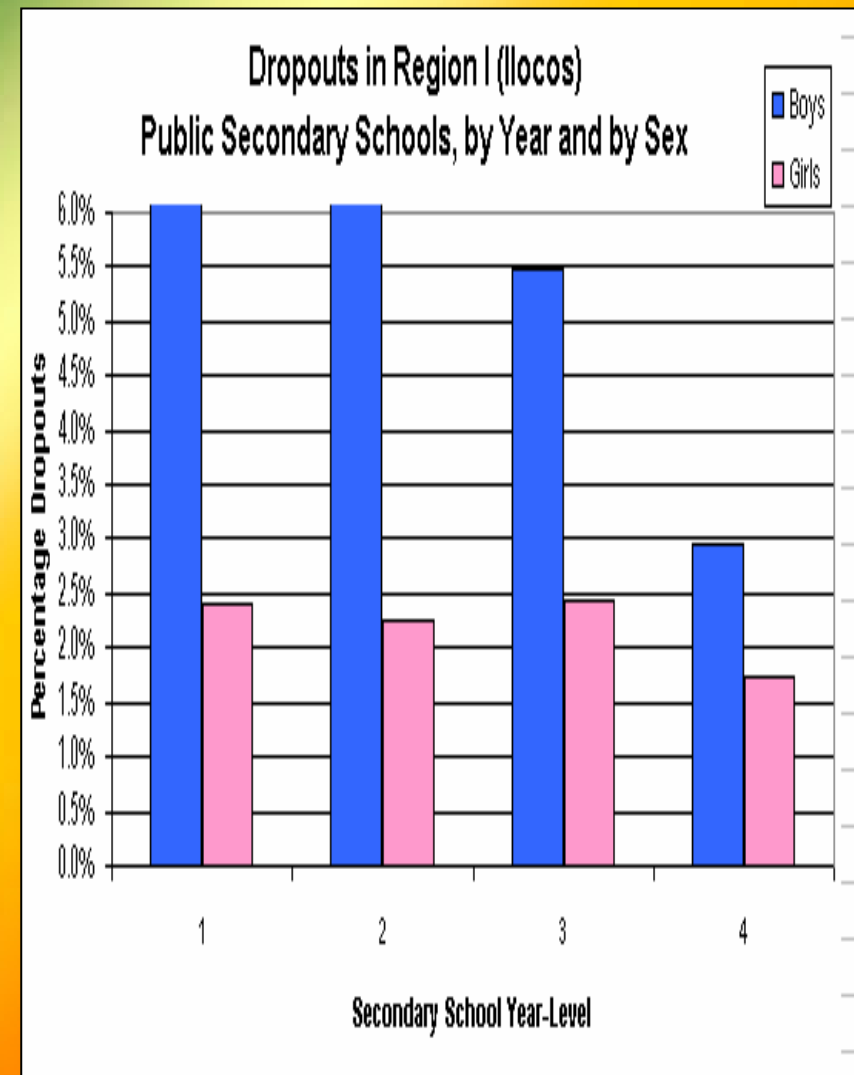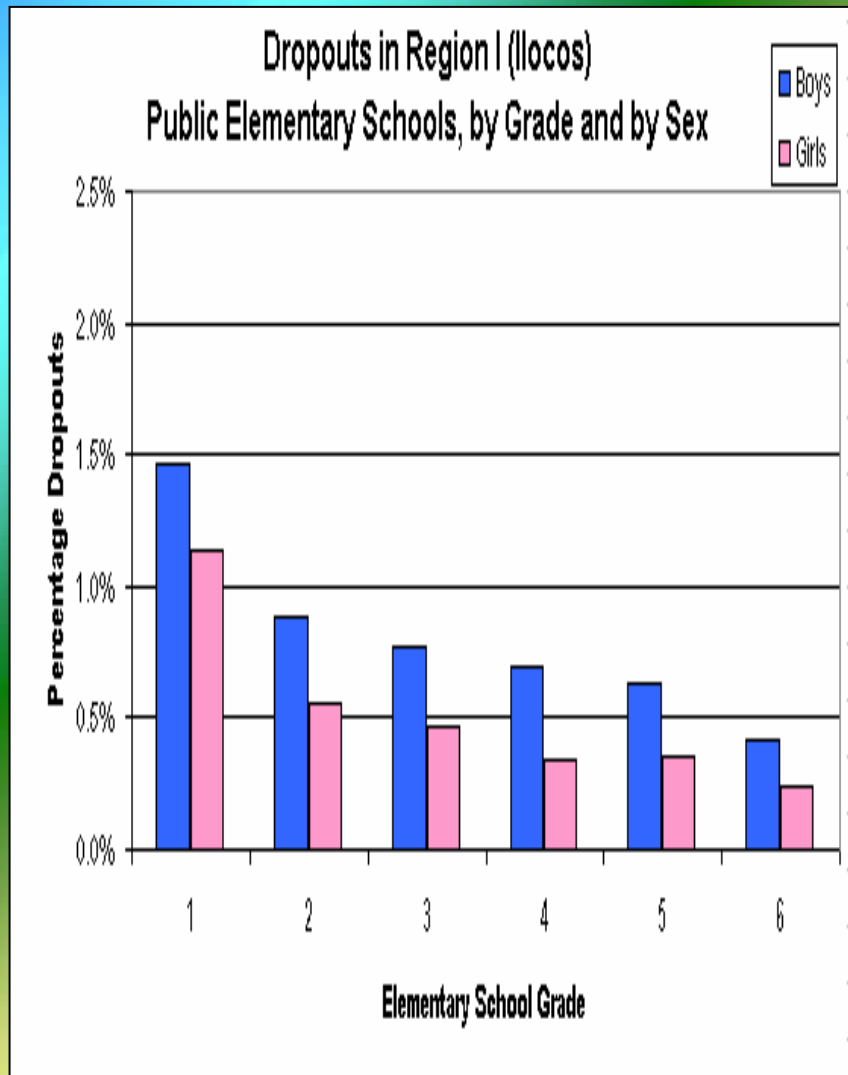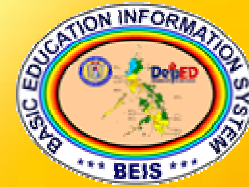*Dropout rates are higher for boys than for girls at all grade levels.*

* It should be noted that the data do **not** include pupils who complete the grade, but do not continue their education in the following year.
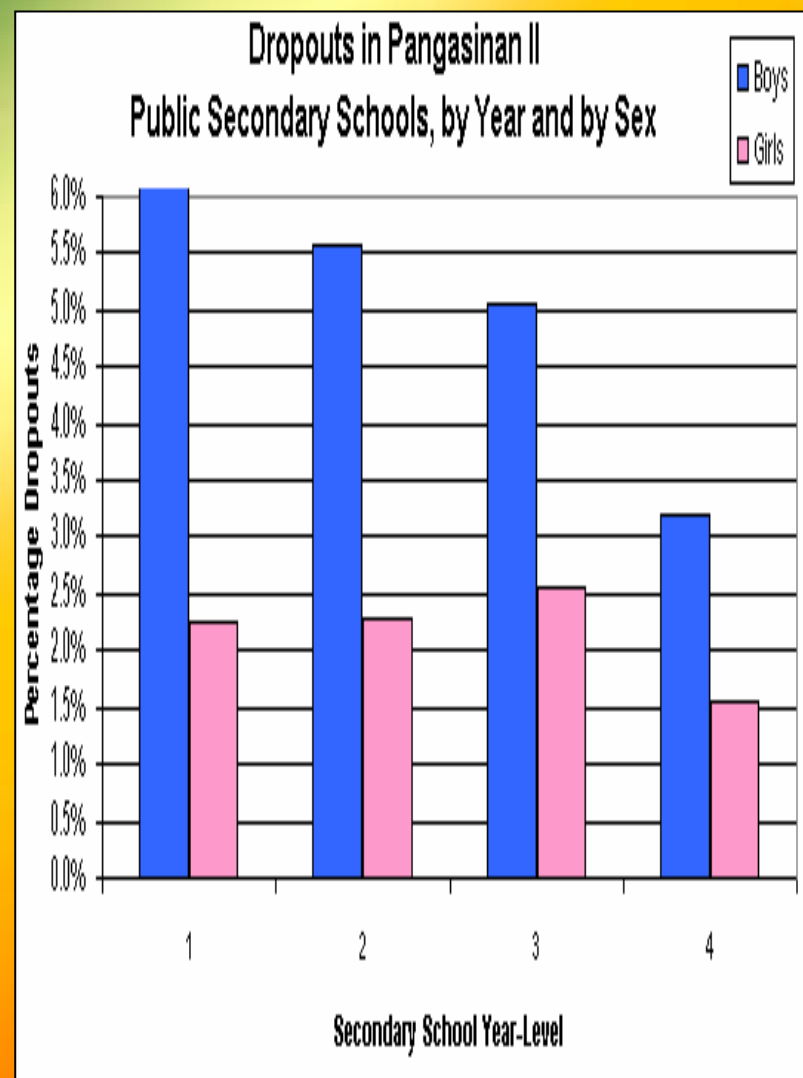

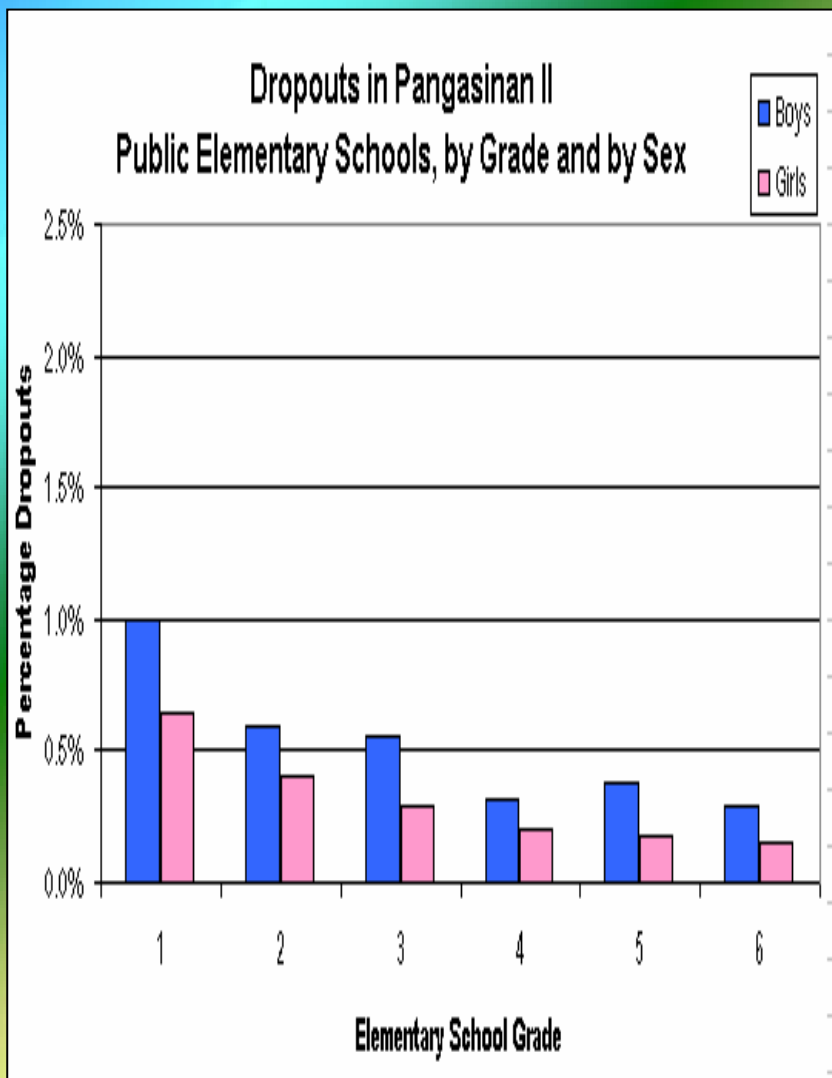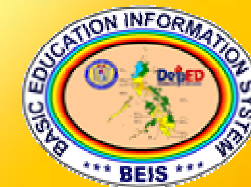Dropouts in Public Secondary Schools, by Year-Level and by Sex
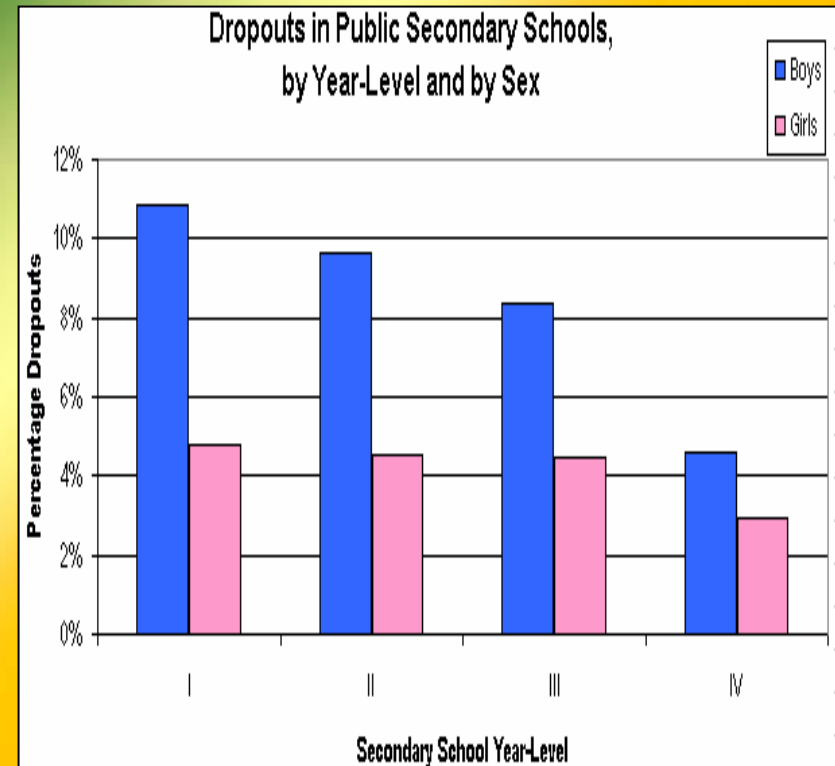
Secondary dropout rates are much higher for boys than for girls, especially in the junior year-levels.

* It should be noted that the data do **not** include pupils who complete the grade, but do not continue their education in the following year.
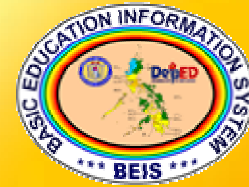
The BEIS Analysis…
(Regional Level)

Dropouts in Region I (Ilocos) Public Elementary Schools, by Grade and by Sex

Dropouts in Region I (Ilocos) Public Secondary Schools, by Year and by Sex

The BEIS Analysis…
(Divisional Level)

Dropouts in Pangasinan II
Public Elementary Schools, by Grade and by Sex

Dropouts in Pangasinan II
Public Secondary Schools, by Year and by Sex

Management Accomplishments…

- ## _Capacity Building._

  - The system has led directly to a substantial strengthening of the human resources available to DepED at all levels of the organization.

- ## _More effective targetting of new teaching positions._

  - Central-level managers targetted new teaching positions more effectively to the shortage divisions during Deployment 2002. Likewise, many divisional managers targetted the new positions more effectively to the teacher-shortage schools.

Management Accomplishments…
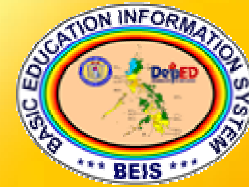
- ***<u>Timely deployment of new teaching positions.</u>***

  - The deployment of teachers to fill the newly-created positions was speeded up considerably. More than 90% of the new positions were filled in time for the start of School Year 2002-2003.

- ***<u>More effective targetting of the following:</u>***

  - Construction of new classrooms under the DepED-School Building Program (DepED-SBP).

  - Distribution of school desks and armchairs to the furniture-shortage schools.

Policy Reforms…
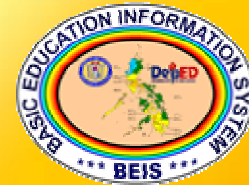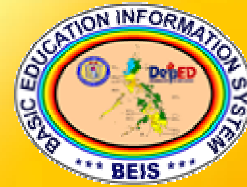
- ## _Decentralization._

  - BEIS contributed to DepED's decentralization policy by successfully transferring responsibility for the input of educational data from the regional offices (where it had been located under UDGS) to the divisional offices.

- ## _Transfer of vacant teaching positions._

  - In Departmental Order No. 50, dated June 19, 2003, DepED has established guidelines for the transfer of vacant teaching positions from teacher-surplus to teacher-shortage schools, based on the BEIS Teacher Deployment Analysis and the color-coding system.

Benefits…

- ***Development of a standard school identification number system.***

  - A central component of BEIS is a unique 6-digit school identification number. A key feature of this identification number is that it never changes – even if the classification, (e.g., mother school, annex school) or administrative affiliation (e.g., school district, municipality) of the school changes.

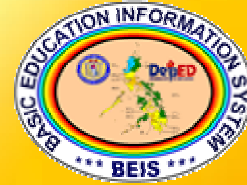- ***Timely availability of the Quick Count Data.***

  - BEIS makes provision for the rapid analysis of certain key variables needed for policy and budget decisions.

Self Assessment : Implementation Capacity of DepED…
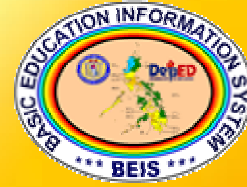
- At present, every divisional team is capable of inputting the BEIS data accurately and to a tight time schedule, of preparing Deployment Request Forms including color-coded teacher data.

- Furthermore, local organizational skills were considerably enhanced: procedures for delivering the BEIS forms to the schools and ensuring their prompt return, and for carrying out manual validity checks before data input, were put in place.
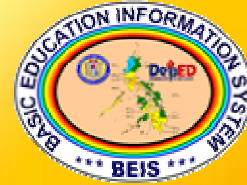
Remaining / Planned Activities and Outputs…

- ## *Continued data validation.*

  - Validation of data at central, regional and divisional levels are continuously being implemented. And when necessary, spot visits to schools and division offices are being done to verify the accuracy of the data.

- ## *Refining of BEIS data gathering instruments and enhancement of the BEIS computer system.*

  - BEIS instruments will continuously be improved to include other data which will be required by the Department and to make the forms more user-friendly. There is also a need to upgrade the system to a higher-level language programming.

Remaining / Planned Activities and Outputs…

- ***Continued monitoring of teacher, classroom and school furniture distribution patterns.***

  - It will be important to continue monitoring changes in distribution patterns of basic resources.

  - The Regional and Divisional Impact Monitoring Instruments have been prepared which facilitate the analysis of trends over time.

- ***BEIS Documentation.***

  - Producing a pamphlet or a publication describing the processes through which the BEIS was developed and its salient features will be explored.
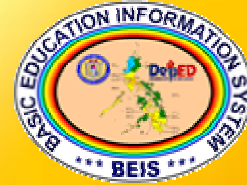
Status of BEIS Databases…
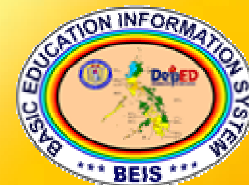
🌳 **School Year 2002-2003**

- 🌳 Quick Counts Data - 100% available
- 🌳 School Statistics Data - 100% available
- 🌳 Performance Indicators - 100% available

🌳 **School Year 2003-2004**

- 🌳 Quick Counts Data - 100% available
- 🌳 School Statistics Data - 100% available
- 🌳 Performance Indicators - 100% available

Issues and Concerns…

- ## *Needs Analysis*

  - Additional permanent staff assigned to the Division Planning Unit. Currently, there is only one (1) permanent staff - the Division Office Planning Officer.

  - State-of-the-art IT equipment and internet connection.

  - Sufficient funds for supplies, computer maintenance, conduct of BEIS orientation/workshops and monitoring.

  - Intensive training on data analysis and utilization.
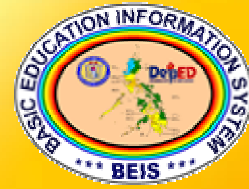
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