

Case Study

School Report Cards

July 2011

Governance Knowledge Centre

Promoted by Department of Administrative Reforms
and Public Grievances
Ministry of Personnel, Public Grievances and Pensions,
Government of India
<http://indiagovernance.gov.in/>

Researched and Documented by


oneworld.net
OneWorld Foundation India
www.oneworld.net.in
owsa@oneworld.net

Table of Contents

Executive Summary	2
Background	2
Working Design	5
Data collection process	5
Technology	6
Data Validation	7
Data Utilization	7
Enhancements	8
Methodology	8
Key Stakeholders	8
Lessons Learned	9
The Way Forward	10
References	11
Appendix A – Interview Questionnaire	12

Executive Summary

The National University of Educational Planning and Administration (NUEPA) has created a comprehensive online database to view information on primary and upper primary schools (up to class VIII) across 640 districts in India under the District Information System for Education (DISE) project supported by the Ministry of Human Resource Development (MHRD) and UNICEF. The online portal, School Report Cards¹, presents quantitative and qualitative information on 1.3 million schools beginning 2005 and can be viewed at www.schoolreportscard.in. The report cards also provide a descriptive report about individual schools on various educational variables.

The unit for data collection are schools at the village level and the online Management Information System facilitates aggregation of data at the state and national level. A standardised approach, known as Data Capture Format, is followed to collect the data from all schools and it is then entered into the DISE for analysis, monitoring and implementing universalising of elementary education at the policy level.

Data collection is followed by validation of all reports and finally it is published on the 30th September of every year by the NUEPA. These reports have been utilised to identify the gaps existing in the current education system and also used for monitoring Sarva Shikshya Abhayan (SSA)-programme facilitating universalisation of elementary education in all districts. Data on enrolment of students, teachers' attendance and examination results of both boys and girls in both rural and urban regions is helpful in tracking the progress of educational development without delaying it further. It is also utilised in formulation of policies.

Background

A good quality education is crucial to economic development of a country. The universalisation of primary education has been continuously emphasised by Indian policy makers. At present, Indian education system is one of the largest in the world; it caters to the needs of more than ten million students. However, despite the progress, much attention still needs to be given to quality of physical infrastructure, low enrolment, poor retention, poor performance of girls versus boys, high dropout rates, poor quality and achievements. Various reports by scholars and international organisations reveal that elementary education also

¹ The information about individual school on every aspect of elementary education is made in the form of 'School Report Card'.

suffers from locational disadvantage, social exclusion, gender disparity, disabled and marginalised children.

To effectively address the present gaps, there is a need to identify the limitations. The statistical information presently collected on enrolment, literacy and incentives are insufficient as it neglects the qualitative aspects of the education delivery. Further, considering the scale, the measuring and monitoring mechanism previously implemented for the education system has several challenges. Firstly, there was no standardized process of collecting data; multiple agencies and government directorates were involved in data gathering. Secondly, there is lack of understanding of the concept and definitions of educational statistics - the statistics captured are not completely reliable. Thirdly, the shortage of qualified and trained staff, especially at the lower levels makes systemised monitoring challenging.

Lastly, there was also lack of accountability at all levels of implementation.

To address these issues, District Primary Education Programme (DPEP) emphasized on decentralized planning and the need to have up-to-date and reliable school level information to develop a robust monitoring system. In 1994, the Ministry of Human Resource Development decided to design and develop a school based computerized information system, the main responsibility for which was entrusted to NUEPA. A pilot project for revitalization of educational statistics in India was initiated at NUEPA in 1995 with financial assistance from UNICEF.

The project was to examine issues related to identification of data needs, processes and procedures for data collection; developing a framework for data flows and computerization; and facilitating the use of educational indicators in planning, management, monitoring and evaluation. District was selected as a nodal point for collection, computerization, analysis and use of school level data as conventionally the district administration is responsible for actual implementation of educational programmes.

The first version (dbase) of the software, named as 'District Information System for Education' (DISE) was released by NUEPA in 1995. The district level professionals were assisted and trained in the establishment of Educational Management Information System (EMIS)² units. The first major review of the DISE software was undertaken during 1997-98 (PowerBuilder/SQL Anywhere). The software was later redesigned in 2001 in the light of requirements of the Sarva Shikshya Abhigyan (PowerBuilder/Oracle). Not only the coverage of

² EMIS is the overall information system for entering different aspects of education.

DISE was extended to non-DPEP states but it was also extended from primary to the entire elementary level of education. DISE was revised and has the following additional variables:

- Schools by Type of Boundary Wall
- Schools by Source of Drinking Water
- Furniture for Teachers and Students and Availability of Kitchen Shed in the School
- Enrolment by Minority
- Distribution of Children by Multiple Disabilities
- Examination Results of SC and ST Students etc
- Efforts are being made to develop DISE as complete user friendly menu-driven software
- Complete flexibility will be provided to users to add 'n' number of state and district-specific supplementary variables in the Data-Capture Format and generate reports at all desired levels
- To improve the consistency of data, efforts are being made to highlight schools that reported inconsistent data
- Export data to popular formats such as Excel and Text will be made available
- Users will be able to make data entry at Block level and then merge the data into single district level database by using the new improved DISE2001 Export Utility
- The additional features of the project are the DISE group of users on the website created to provide online help to Users and share problems. Secondly, there is school wise raw data that can be downloaded in an MS-Excel format for further empirical studies. For downloading the raw data, the user has to be registered by giving an email ID

The online portal, School Report cards³, presents the quantitative and qualitative information on 1.3 million schools beginning from 2005 and can be viewed at www.schoolreportscard.in.

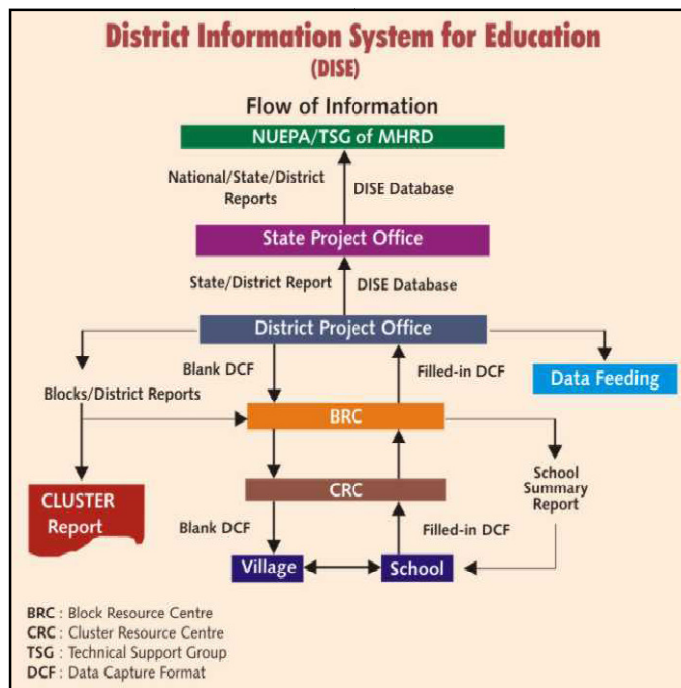
³ The information about individual school on every aspect of elementary education is made in the form of 'School Report Card'.

Working Design

The data collection for monitoring begins at the village level and the software DISE allows to aggregate data at the state and national level.

Data collection process

In every state, the Cluster⁴ Resource Centre (CSC) is assigned to visit all primary schools at the village/cluster level and enter information on a prescribed data capture format⁵ (DCF, see annexure B) based on student enrolment, teacher attendance, incentives, examinations, and other necessary parameters. The DCF is then signed by the highest authority-headmaster/headmistress for authenticity. The collected data is then sent to the Block Resource Centre (BRC) for verification and incomplete DCFs are returned to the CSC for completion. The BRC, after verification



enters the data into the DISE software. For those Blocks that do not have good connectivity, infrastructure and trained personnel, the data is entered at the district level.

It is important to note that while NUEPA provides professional and software support to all States and Union Territories for dissemination of school report cards; and conducts analysis of data provided by the state project directors, it is not involved in data collection process. The NUEPA is primarily responsible for strengthening the management information systems such as EMIS and DISE in the education sector.

⁴ A cluster comprises of 20-25 schools at the village level

⁵ DCF (data capture format) is a prescribed format based on concepts and definitions of educational variables that have been standardized at the national level. All states/districts follow the same definitions. However, in case of additional educational variables, DISE can enter this data too.

Technology

The DISE is a software system that generates analysis at the national level based on the information provided by the school; developed by NUEPA technical team. The infrastructure and resources are funded by the MHRD and UNICEF.

DISE is a sophisticated software system that operates on Oracle server on offline basis. It has eight modules, with an additional help module, has been designed to demonstrate the following:

- a) Database organisation: It is the overall database structure in which the user has the option to add more variables to the database based on the school DCF. The variables are finalized by the state.
- b) School database: Every school is given a unique 11 digit code to facilitate easy search. Data entered is based on school's location, management, rural-urban, enrolment, buildings, equipment, teachers, incentives, medium of instruction, age-grade matrix, children with disabilities, examination results etc.
- c) Village database: Village level data comprises variables related to i) access to educational facilities of various types, ii) identification of habitation without access to primary and upper primary schools based on distance norms ii) inventory of all types of educational institutions including recognized and unrecognized schools in the village iv) selected data on the number, enrolment and teachers, etc.
- d) Reports: Following the data entry, both aggregated reports (national level) and disaggregated reports (schools information at village, cluster block, district and state level) can be viewed, analysed, and exported with the username and password. These reports are based on a pre-defined format.
- e) Analysis: This feature allows user to search for information on individual schools or aggregated data.
- f) Graphics: Data can be viewed in the form of visual representation such as charts, bars, graphs etc.
- g) Designer: It permits the user to customize the database and add more variables/parameters beyond DCF.
- h) Report viewer: The report viewer module provides the facilities for sharing of standard reports with a multiple users without full software installation. This provides for

sharing of electronic reports on performance and other indicators. Data can be exported to many other formats for further analysis.

Data Validation

Many additional mechanisms are introduced to ensure validity and quality of school statistics:

- First, a 5 to 10 percent sample size is used to validate the credibility of the data collection in all districts.
- Second, the software utilized provides for automated checks for consistency and validation.
- Third, a national survey is conducted every 2-3 years to establish the quality and reliability of DISE data.
- Fourth, the reverse flow of data has been strengthened to ensure transparency and dissemination of data up to the school level. These types of validation measures and transparency of data has resulted in considerable improvement in the quality of data collection and reporting.
- The DISE has also a built in provision for regular feedback. Besides the annual review workshops, the first major review of the DISE.
- Regular chat/counselling sessions are held using electronic media. Efforts are being made to develop a network of districts and state level EMIS and provide interactivity using teleconferencing and other modern technologies. The work on this aspect is in progress.

Data Utilization

School reports generated by DISE has been utilised to check gaps and achieve universalisation of elementary education under SSA and District Elementary Education Plans across the country. The school reports provide both raw and analysed data on school location, management, rural-urban, enrolment, buildings, equipments, facilities, teachers, incentives, mediums of instructions, children with disabilities, examination results; and enrolment by social category, grade and gender. It also gives information on individual teachers, community teachers and their profile including data on in-service training etc.

Another important aspect of the project is the school specific raw data that individuals can download it for academic and administrative purposes by registering on their website with their email addresses. The raw data enables disaggregated analysis of individual schools.

Enhancements

At present, the DCF and DISE has been structured along SSA norms and guidelines however, from 2010-11, there is a plan to revise the structure along with Right to Education (RTE)⁶ enabled report cards which looks into school management issues such as timings of school sessions, teachers responsibilities and workload, special training given to students that have applied late and functions of School Management Committee. Secondly, a pilot to enter data on online platform has been launched in Karnataka, Himachal Pradesh and Pondicherry to test its effectiveness. States with good connectivity and uninterrupted electricity supply can opt for this.

Lastly, NUEPA has plans of extending data collection beyond class 8 till 12 It takes states and districts, depending on the size and composition, two to three months to collect data and ten to fifteen days to verify them. The school and village level data is updated annually with 30th September as the reference date.

Methodology

The GKC Research Team selected School Report Cards as a best practice as it provides extensive information on primary schools at the local level and upwards in India; committing itself to improve education by identifying gaps and providing policy makers material to reform the education sector. The Team visited the head of EMIS (Educational Management Information System) and the System Analyst at NIEPA to learn about DISE.

Key Stakeholders

NUEPA is engaged in capacity building and research in educational policy, planning and administration and is the nodal agency to implement and design the software DISE. NUEPA maintains all primary schools database, conducts trainings of resource centres stationed at clusters (group of villages), block, district and state level.

MHRD is the overall supervisor and coordinator of all education related programs in the country and has funded 20 lakhs per annum for this project. The other donor is UNICEF and provides funds for software development and infrastructure such as computers, scanners, printers.

⁶ Right to Education (RTE) is a fundamental right of all children aged six to fourteen and RTE act was passed in 2009 where as SSA is a joint scheme for universal education by the state and centre and is not an obligation.

Lessons Learned

Comprehensive online database for monitoring

DISE operates at all three levels of administration. It provides information of all schools at the district level (DISE at district level), state level (DISE at state level, also known as state education planning system) and national level (DISE at national level) online at www.schoolreportcards.in. In addition to this, raw data is a school unit-wise disaggregated data which is available online and can be accessed by registered users free of cost.

DISE generated reports are also used for analyzing the progress of SSA at the national level. Beginning FY 2010-11, it will be structured along RTE to ensure that all children between 6 to 14 years of age get education for free.

Collecting credible data

Effective implementation requires reliable monitoring and measuring information. DISE is sophisticated software that eliminates the chances of data manipulation at various levels. The school (headmaster) remains responsible for the correctness of the data supplied. The software provides for internal consistency and exceptional cases listing.

Interactive and customised database for convenience

The states/districts have flexibility of adding supplementary variables depending upon their specific requirements on year to year basis. No additional software for computerisation and analysis of state/district specific data is required.

An easy to use dynamic graphics facility to enhance the presentation of various types of graphs and data is also featured on the portal.

Video conferencing with officials

Data of all schools are entered into the DISE software both at district and state level in district project office and state project offices (known as MIS units). The MIS units are equipped with sufficient hardware, software and computer professionals trained by NUEPA. The MHRD uses video conferencing facility available at NIC to monitor the DISE activities at the state level.

The Way Forward

OXFAM India has suggested important points to improve the educational standard and make the programme more impactful for the beneficiaries. Firstly, there is an urgent need to trace gaps in the quality of teaching and include monitoring of 10 years of schooling rather than 8. An in-built school health programme as well as counselling facilities can support children facing psychological and social issues.

Secondly, recruitment of qualified teachers should be emphasized and new skills should be imparted such as teaching training, student management, leadership development and assessment learning etc.

Thirdly, education is not limited to classrooms. Extra-curricular activities must be held for an overall development of the child enhancing their skills and leadership qualities.

Fourthly, schools in rural areas lack in infrastructure, hence alternatives like not for profit school models/low cost schooling option can be implemented.

Lastly, there is a need to conduct independent reporting and evaluations in areas that haven't been explored such as insights into children not going to school, improving teaching curriculum, promoting leadership, involving disabled children and ways to prevent discrimination and disadvantage faced by children in the classroom.

With financial support, political commitment and the above mentioned suggestions, there is hope in raising the educational development index in the country.

Research was carried out by OneWorld Foundation India (OWFI), Governance Knowledge Centre (GKC) team.

*Documentation was created by Research Associate **Attrika Hazarika***

For further information, please contact Naimur Rahman, Director, OWFI, at owisa@oneworld.net

References

1. Elementary Education in India: Progress, Setbacks and Challenges, OXFAM India, by A K Shiva Kumar and Preet Rustagi, September 2010
2. Primary Education in India: Delivery and Outcome: A district level analysis based on DISE data, Journal of Educational Planning and Administration by Atanu Sengupta and Naibedya Prasun Pal, January 2010
3. District Education Information System <http://www.dise.in/>
4. School Report Cards <http://www.schoolreportcards.in/>
5. Ministry of Human Resource Development <http://www.education.nic.in/>
6. Sarva Shikshya Abhiyan <http://ssa.nic.in/>

Appendix A – Interview Questionnaire

Stakeholders and roles

1. According to our research, NUEPA, MHRD and UNICEF are the major stakeholders in this project. Are there any other organisations involved? Can you elaborate on roles and responsibilities of various stakeholders?

Scope of the Project

2. What is the geographical scope of this project? Is it implemented in all districts of India?
 - a. If no, how are the districts selected?
 - b. What is the total number of districts covered under this project?
3. Does this project cover all government primary and upper primary school? What is the total number of schools and students covered under this project?

Data Collection

4. Data collection is entered at village and school level. Based on parameters (key performance indicators), has there been any improvement in the last five years of the project in terms of:
 - student enrolment for both boys and girls
 - student attendance for both boys and girls
 - attendance of teachers both male and female
 - literacy rate for both boys and girls
 - Basic school infrastructure
 - gender parity in education
 - dropouts
 - examination results
5. What procedure is followed to validate the data received at village level?
6. Considering the large scale of this project, what challenges are faced during collection/consolidation of data?

Financial Sustainability

7. Would you say School Report Cards is a financially sustainable project? If yes, how? If no, why not?
8. What is the total amount allocated for this project? Can you provide us an approximate breakdown of costs on the following:
 - Technology
 - Data Entry Operators
 - Other expenses

Technology

9. What is the difference between EMIS and DISE?
10. As per our research, DISE is divided into seven modules:
 - Database Organization
 - School Database
 - Village Database
 - Reports
 - Analysis
 - Graphics
 - Designer
 - Report Viewer
- a) Could you elaborate on how each module (data collection) is being utilised? For instance in planning, managing, promoting quality education. Can you cite any example where the data has helped MHRD in formulating/conceptualizing new education policy?
11. Has DISE has been successful in implementing/monitoring Sarva Shikshya Abhayan in terms of:
 - Increasing student enrolment
 - Improving Teachers attendance
 - Increasing literacy
 - Improving basic infrastructure
 - Improving gender parity in education

Implementation and Impact

12. Were there any challenges in initiating this project? If yes, what were they and how were they overcome?
13. What are the factors that make this project successful?
14. At present, the monitoring is limited to government schools. Are there plans to extend the programme to private schools?