

THE CONTEXT

The DPEP was initiated in late 1994 as a unique and innovative effort towards achieving the objectives of UPE in educationally backward districts of India. At the project inception stage, it was realized that a sound information base for planning and monitoring of project intervention was an almost non-negotiable requirement. There were many challenges to establish and sustain such a system. This was particularly so as the prevailing system had completely lost its credibility with the data users. The educational statistics collected by the states under the guidance of the MHRD were not only inadequate to meet the growing needs of the decentralized planning but were characterized by inordinate delays, highly aggregative and were not amenable to validation and reliability tests. Since school statistics formed the core of educational statistics, it was rightly recognized that major reforms in school statistics both in terms of their scope and coverage as well as availability and use have to be carried out. Accordingly, NIEPA took up this as a challenge and accepted the responsibility for designing and implementing such a system for primary education.

THE APPROACH

The task of developing a school based statistical system was initiated by NIEPA during 1995 with the financial assistance from UNICEF. In tune with the spirit of DPEP, the district was selected as a nodal point for collection, computerization, analysis and use of school level data. The system was later on extended to state and the national level. The state level EMIS cells coordinate the activities of the districts.

NIEPA professionals with the involvement of other experts designed and developed the core data capture formats. Accordingly, NIEPA designed a software for implementation at the district level and provided the necessary technical and professional support to DPEP districts. A first version of the software named as District Information System for Education (DISE) was released during the middle of 1995. The district level professionals were assisted in the establishment of EMIS units, trained in the data collection, computerization and analysis using DISE. A major emphasis was on user

orientation in the use of educational and allied data for planning, management, monitoring and feedback on the DPEP interventions.

In addition to the DISE, many additional mechanisms for data validation and quality control of school statistics were also introduced. First, a 5-10% validation check is undertaken in all districts immediately after data collection. Second, the software provides for many consistency and validation checks. Third, a national survey is conducted every 2-3 years to establish the quality and reliability of DISE data. The second post enumeration validation survey is in progress now. 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 was undertaken during 1997-98 and was further followed by an extensive review during 2000-01 resulting in DISE2001. The capacity building program for implementing the new data capture formats and the software (DISE2001) have been undergoing since last one year. The continuous improvisation is necessary to reduce data redundancy and fine tune the data collection formats and the corresponding software with the emerging needs. Therefore major reviews with a 3-4 years gap have not only provided the necessary inputs for updating the EMIS approach but also ensured continuous involvement of the states and stakeholders in monitoring and evaluation.

MAIN FEATURES OF DISE2001

- § Presently the EMIS is confined to elementary stage covering eight years of education.
- § The school and village level data is updated annually with 30th September as the reference date.
- § The concepts and definitions of educational variables have been standardized at the national level. All states/districts follow the same definitions.

- § The software provides facilities for school code generation which is unique and consistent with various administrative levels.
- § The software captures two types of information base: at the village and the school level.
- § Village level data comprises variables related to the access to educational facilities of various types, identification of habitation without access to primary and upper primary schools based on distance norms, inventory of all types of educational institutions including recognized and unrecognized schools in the village, selected data on the number, enrolment and teachers/instructors in NFE/EGS and alternative schools, pre-primary education including *Anganwadis* and *Balwadis*. Data on age specific population and out of school children generated through household surveys forms part of the village data.
- § The DCF defines core data on school location, management, rural-urban, enrolment, buildings, equipment, teachers, incentives, medium of instruction, age-grade matrix, children with disabilities, examination results and student flows.
- § A large number of standardized reports on school related variables and performance indicators aggregated at the cluster, block and district level are generated by the software.
- § School summary report for each school is generated for sharing with the school/VEC. The school summary report contains key data on school and a summary of indicators which are compared with the cluster, block and the district averages. The transparency and sharing of data at school/village level has led to considerable improvement in the quality of reporting and also provides a chance to the stakeholder to know about the status of their school.
- § Detailed database on individual teachers, Para-teachers and community teachers and their profile including data on in-service training received would be available under DISE2001.
- § Eliminates the chances of data manipulation at various levels. The school remains responsible for the correctness of the data supplied. The software provides for internal consistency and exceptional cases listing.

- § The states/districts have flexibility of adding supplementary variables depending upon their specific requirements on year to year basis. No additional software for computerization and analysis of state/district specific data is required.
- § The state/districts can develop their own large databases using 'designer' module and integrate a variety of school/cluster/block level data with DISE2001. The software handles multiple databases at various levels and includes many tools of data analysis and presentation.
- § An easy to use dynamic graphics facility to enhance the presentation of various types of graphs and data. This feature is available for the raw data as well as with the generated variables.
- § Multi-user and modular system of software design for better management and security of databases. The software uses 'Oracle' as the backend tool for database management. The software works on both personal Oracle as well as Oracle for Workgroups.
- § Predefined queries on standard aspects like school list, list of villages without primary and upper primary schools, single teacher schools, schools without buildings, schools with high PTR etc., Users can define and save other queries.
- § User defined dynamic query on hundreds of variables to facilitate day-to-day management.
- § Facilities for basic statistical analysis including generation of new variables and their analysis.
- § 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.
- § The data from the district to state level is transferred following multiple modes including the transfer through Internet.
- § On line support built into the software. The website provides considerable scope for sharing and dissemination of project related information. Regular chat/counseling

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 FLOWS

The flow of data plays very important role in information system. DISE 2001 is a tool to support the decentralized planning and management of DPEP & SSA. The basic data collected from the primary schools is be verified by the Block Education Officer/Block resource Coordinator for its completeness and delivered to the District EMIS in-charge/DPEP/SSA Project Coordinator who will maintain records of all forms. Village data will also be collected and sent to the district in the same manner. The data is first computerized and analyzed at the district level.

District level data is aggregated at the state level using DISE@S software which is specially designed for state level analysis and tracking the progress of key performance indicators.

The data entry and consistency checking will be taken up at the District level. The data once validated will be stored at the District level and made accessible to the state SSA office. The national level SSA Bureau will also have access to the institutional level data.

SOFTWARE ARCHITECTURE

DISE2001 is based on the modular approach. Besides data entry and reports, software provides number of utilities for the end users. The architecture shows the arrangement of the components. DISE2001 is divided into seven modules as follows:

1. Database Organization
2. School Database
3. Village Database
4. Reports

5. Analysis
6. Graphics
7. Designer
8. Report Viewer.

FUTURE TASKS

DISE is presently operational in 202 blocks covering 33 districts. Interaction with the districts for implementation of DISE 2010in online.

DISE is also being developed in kannada language so that the users find it convenient to interpret the data and analyze various types of trends in kannada language. The distribution of school summary reports in kannada languages would be very useful for the school headmasters and the member of the Village Education Committee to understand the progress of their school over the years.