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Minnesota State Department of Education
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February 6, 1984

Chairman, House Appropriations Committee
and
Chairman, Senate Finance Committee

Dear Sirs:

Pursuant to Minnesota Laws of the 1981 Regular Session, Chapter 359, Section 2, Subdivision 6 (e), I am herewith transmitting to you the progress report of the Department of Education's Management Information Systems. This report covers the period of July 1, 1983 to December 31, 1983.

Sincerely,

A handwritten signature in cursive script that reads "Jack Ardoyno".

JACK ARDOYNO
Deputy Commissioner
Department of Education

JA:MIM

cc: Legislative Reference Library (10)

I. INTRODUCTION

This report is submitted to the Chairman, House Appropriations Committee, and the Chairman, Senate Finance Committee, pursuant to Minnesota Laws of 1981, Regular Session, Chapter 359, Section 2, Subdivision 6(e). The period covered is July 1, 1983 through December 31, 1983.

This report covers the present status and work accomplished in the following areas:

State Department of Education Information System (SDE-IS)
Elementary Secondary Vocational Information System (ESV-IS)
Data Management Within and by the Department
Microcomputer Systems and Uses

II. STATE DEPARTMENT OF EDUCATION INFORMATION SYSTEM (SDE-IS)

The State Department of Education Information System (SDE-IS) has been maintained and enhanced by modifications to the Levies System, and the Vocational Education System; by completion of the Child Care System, School Lunch Program, and Item Banking System, and by approval to add a Commodities System and Teacher License/Assignment System. In addition, increased emphasis and training has been given to Department users to use VISION to create and access data from the main databases without having a programmer write the program. Special attention has been given to the interfacing requirements for the school districts which are piloting the microcomputer finance system.

The status of each of the major systems which were modified or initiated are as follows:

1. Child Care System. The Child Care System programs which reimburse child care programs for their food expenditures were completed. Reimbursement payments to day care centers and home sponsors have been made since October 1983. The federal government has now authorized development of a system which provides for the ordering, distribution, and inventorying of food commodities. Work on this system begins January 1, 1984. When the Child Nutrition System has been completed, Minnesota will be one of only a few states with an integrated system covering each component of the child nutrition programs. Already, inquiries are being received from other states for information on its use by other states.

2. Levies. The 1983 Legislature changed some of the formulas used to calculate the levies used to fund school districts. These new calculations and appropriate reports were incorporated into the LEVIES System. The Levy Limitation Reports were distributed to county auditors on time. This system has now been made a responsibility of the section which calculates and distributes the various state aids.

3. Test Item Banking. This is a new system designed to provide a bank of test items that will allow a teacher to construct a test which meets the teacher's learning objectives. The system provides optical scanning scoring of the answer sheets and test reporting. The basic system is completed and ready for use.

4. Teacher Licensing. All except one of the programs of the teacher licensing subsystem have been written and are now being tested. Seven terminals and their associated modems have been purchased and are operational. Writing the teacher assignment subsystem, which relies on licensing data to validate assignments, is scheduled to begin January, 1984. The total system is scheduled to be operational by the beginning of the next fiscal year. When the teacher assignment subsystem is operational, the transfer of the systems formerly run at ISB will be completed. Those which remain at ISB are either too small, stand alone, or are not part of the SDE-IS.

5. Vocational Education. The Vocational Education Division has used the SDE-IS finance system extensively for analysis and

development of secondary and post secondary programs and budgets, and for student follow-up upon completion of their training. Now that Vocational Education is becoming an independent agency, it is agreed that they will continue to use the SDE-IS computer at least until the end of the current biennium. Any change after that will be reflected in the biennial budget submitted by the Department and Vocational Education. In the meantime, the systems will be maintained and/or enhanced using a contractual agreement between the Department and Vocational Education.

6. IDEAS. The Integrated Department of Education Aids System draws data from several SDE-IS systems and twice each month calculates the amount of aid payment due each school district. It prepares a computer tape for use by the Statewide Accounting System which actually issues the warrant for the State Treasury. When the 1983 Legislature made changes to the aid payment laws, this system was affected. The necessary reprogramming was accomplished on time to meet the aids payment schedule.

DOCUMENTATION. The special effort to write the documentation of the SDE-IS for the user has now been completed with the exception of those systems currently in development or modification. Review of technical manuals is being done by the system's designer. Review of the manuals and actual usage by users in the real world environment will be conducted in early 1984 with a view to recommend changes in the EDSS documentation standards where appropriate.

SDE-IS COMPUTER. The Department negotiated a new contract with METRO II for computer time. Instead of sharing two tightly coupled computers with the districts of METRO II, the Department now has exclusive use of a single stand alone computer. The transfer of programs took place in October and was hardly noticeable by anyone other than the Department and METRO II technical staff who worked very hard to ensure a smooth transition. The Department needs the additional computer resource because of the increase in processing aid payments and the addition of the Teacher Certification System. Other benefits include the increased control over scheduling and somewhat more control over costs. The new contract costs are essentially the same as the previous contract, however, it requires more Department staff time and creates a greater degree of independence and the associated risks and responsibilities.

SECURITY STUDY. The Department of Administration developed guidelines to implement their policy on security of equipment and data. The Department of Education has completed a draft report showing the current security procedures and recommendations for security of the SDE-IS and other Department systems.

III. ELEMENTARY SECONDARY VOCATIONAL INFORMATION SYSTEM (ESV-IS)

MECC provides administrative data processing services which support the statewide Elementary Secondary Vocational Information System (ESV-IS). These support services are provided to regionally based centers from which school districts obtain their administrative data processing services. Three major application systems comprise ESV-IS; Finance (ESV-FIN), Payroll/Personnel (ESV-PPS), and Student Support (ESV-SSS). The modifications of each system are moderated by regional advisory teams comprised of representatives of each region.

Before July 1, 1983, MECC received funding to maintain and enhance each of the three ESV-IS applications. Because funding for these activities was significantly reduced from \$1,000,000 to \$440,000 as of July 1, 1983, MECC has provided maintenance support for only ESV-FIN, ESV-PPS, and some microcomputer development. This maintenance support has been at a very limited level compared to previous years. Basically, debugging, legislated changes, and some minor enhancements are made to the systems, along with user and documentation support for the regions.

ESV-FIN - The Finance system consists of nearly 150 programs which contain over 500,000 lines of code. All school districts now report financial data through a regional center. Six of the seven regions use this system (ESV-FIN 5.0). TIES is making use of a comparable system for their reporting units. This system provides the school district with important operating information, while also providing the state with critical financial information.

During the period of July 1, 1983 through December 15, 1983, MECC had analyzed, coded, tested, and released 77 program modifications (enhancements or bug corrections). The "APPLE as a data entry device" system (FIN-APPLE) has been maintained by releasing a new version which incorporates several modification requests. A new manual was released for FIN-APPLE and documentation updates were made to the ESV-FIN manual.

ESV-PPS - The Payroll/Personnel system consists of nearly 120 programs and 500,000 lines of code. Approximately 200 school districts choose to use this non-mandated system for payroll processing, checks, reports, W-2s, and personnel reports. Altogether, approximately 300 school districts use an automated personnel/payroll system on the mainframe computer.

During the period of July 1, 1983 through December 15, 1983, MECC had analyzed, coded, tested, and released 79 program modifications (enhancements or bug corrections). The "APPLE as a data entry device" system (PPS-APPLE) has been maintained by releasing a new version which incorporates several modification requests. Documentation updates were made to both PPS-APPLE and ESV-PPS.

ESV REGIONAL CENTERS. The 1983 Legislature mandated the ESV Computer Council to report the result of their analysis to: determine the costs/benefits of the ESV-IS, the alternative number of regions, required ESV-IS software to support state reporting, alternative support for ESV-IS and SDE-IS, and the cost/benefit of releasing large districts from regional affiliation.

The report has been completed with a series of recommendations for changes to enhance the cost effectiveness of the ESV-IS such that only minor "mid-course" corrections should be implemented. The report recommends that the funding support of the regions should be a percentage of the total cost, and that a committee of users should develop a recommended cost apportionment methodology. Pending this analysis, the report recommends that state funding should remain at the 1982 level (3.6 million dollars). The users' committee should make its recommendation by March 5, 1984.

The last report showed the distribution of FY 1984 funds as appropriated by the Legislature. Distribution of the available FY 1985 funds has now been agreed upon. The following table shows the distribution of both years.

REGION	FY1984	FY1985
Region I Moorhead	\$490,750	\$202,566
Region II Duluth	\$425,136	\$175,483
Region III St. Cloud	\$512,771	\$211,656
Region IV Marshall	\$475,993	\$196,475
Region V Mankato	\$559,633	\$230,999
Region VI METRO II	\$469,128	\$193,641
Region VII TIES	\$700,589	\$289,181
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TOTAL	\$3,634,000	\$1,500,000

The master contract for computer equipment which had been negotiated by MECC on behalf of the state and school districts and awarded to Burroughs Corporation was terminated in March, 1983. The Regional Directors determined there was little need for a state contract for mainframe equipment, but did determine a need for continued reduction in cost for peripherals, particularly terminals; therefore, that contract was extended an additional two years, especially since Burroughs has agreed to include any upgrades to their terminals and to include the microcomputer within the terms of the contract. The Regional Directors, with the assistance of the state's Attorney General, also negotiated a statewide contract for Burroughs to provide maintenance services for the existing computer equipment.

IV. DEPARTMENT OF EDUCATION DATA MANAGEMENT

Our effort to examine all the data collected by the Department is finally bearing fruit. The strategic plan is to heavily involve the collectors, users, and providers of data and to make each one aware of the cost of time and money to provide information. It has become a participatory system and the results are a commonality of code, reduction in redundancy, focus on a single collection effort within the Department, and a sharing of the data among the various reporting units.

In 1977, there were 600 forms used by the Department to collect data from the school districts. Through elimination, consolidation, and changes in programs, there are now 199 forms. In March, 1983, there were 3,621 data items identified on the data dictionary. Of these, 3,100 have been defined. The remaining 521 are not being used and have been discarded. Within the data element dictionary, there are procedures to identify the technical use of each data item such as the data set, COBOL name, and machine description. There are references to the laws, regulations, and rules which use the element. There is an English language definition, reference to the source form, codes, values, and synonyms. Before any new data item can be established, all of this information must be developed, and out of it comes the decision that this is truly a new data element or a redefined old data element. While the product appears to be the development of the data element dictionary, the dictionary has in fact become a process with the end product being the establishment of a data element.

The definition is established by the Uniform Terminology and Coding Committee (UTAC). The UTAC has been developing a common language for reporting data. Initially focusing on the terms used for handicapping conditions, the committee has found discrepancies in 17 different data elements. Totally, there are 20 different groups or sets of data which need common terminology developed. It is estimated that the committee will have completed its task by October, 1984. This effort will be coordinated with MECC and the regions in order to unify the coding throughout the ESV-IS and SDE-IS systems.

Before any form is distributed, it must first be approved by the Data Acquisition Review Committee (DARC) which consists of five school and four MDE staff persons. During the past year, the DARC has reviewed 120 forms. Of these, 7 were not approved, 42 were approved for one year with changes recommended for future years, and 21 were changed before distribution.

In August, the 1983-84 Annual Data Acquisition Calendar was distributed. This document was generated by computer this year, thereby reducing from eight weeks to one week the time it took to update the data, lay out the pages, and prepare the Calendar for the printer.

The Department has now started the development of a directory for manually collected forms. Building on the work completed by the Student and Personnel/Payroll Task Forces of 1982, the UTAC has completed review of 252 student data elements, 202 staff data elements, and 75 program

data elements. The finance data will be correlated with the UFARS requirements. When that is completed, the building facilities will be reviewed next.

To assist users to more easily access and use the data, the Department has arranged to pilot test a Burroughs system called ERGO which provides a tutorial in its use and allows users to operate the terminal to develop their own reports.

V. MICROCOMPUTER SYSTEMS

The microcomputer has gained such a hold on the administrators and users of administrative systems that it seems appropriate to review the current status of the various systems, and enumerate the types of uses being made of small computers.

While the State Department of Administration has negotiated a contract for IBM personal computers, the Department of Education, MECC, and school districts still consider the APPLE the primary instructional microcomputer and is the current preference for an administrative computer. The IBM, however, is being considered, and some software will be adopted to the IBM as time goes on.

MECC's role in providing microcomputer software for administrative tasks is evolving over time as new and better microcomputer technology becomes available. Initially, microcomputers did not play a role in administrative processing. Over time, MECC developed software that allows school districts to enter their financial and payroll transactions into a microcomputer which in turn transmits the transactions to the ESV Regional Centers where the actual processing of the data takes place. Currently, all new software being developed uses the microcomputer in "stand alone fashion" where not only are the transactions entered into the microcomputer but also all processing is done by the microcomputer.

With continued improvement in technology and awareness of the capabilities available to microcomputer users, increased microcomputer software development is a necessary service to Minnesota school districts. Plans are to provide software this fiscal year in the areas of student systems, transportation systems, energy conservation, and equipment management.

Other governmental agencies also are benefitting from MECC developed software. This fiscal year, cities and municipalities coordinated through IISAC will begin using a modified version of finance and payroll. A contractual agreement between MECC and IISAC provided the resources necessary for MECC to make the needed changes to existing software in a manner that would provide IISAC with both systems at a very low cost.

Applications for three basic areas are currently being provided in the administrative microcomputer area: finance, payroll, and information handling.

FINANCE MICROCOMPUTER SYSTEM - This application is currently being tested in 7 school districts, 5 on floppy diskettes and in two additional districts using hard disk technology. Two of the pilot districts are testing the capability to transmit school financial data in summary form directly to the MDE and five are transmitting detail data to the ESV Regional Center which in turn produces summary data that is transmitted to the MDE. The reporting of financial data through regional centers has been the standard method of reporting. The pilot of this system is being monitored by the MDE to assure the system follows generally accepted accounting procedures and that the system can produce the necessary financial data to the MDE. The ESV Computer Council will be reviewing the results of this project and making its report to the Legislature by February 15, 1984.

PAYROLL MICROCOMPUTER SYSTEM - This application was released for use to Minnesota school districts in December. The system was piloted in 6 school districts with enrollments ranging from 299 students to 539 students and producing between 45 to 123 payroll checks per pay period. As of January 1, five additional school districts began using the system with the largest having 784 students. The system will accommodate up to 250 employees and many additional school districts of the smaller size are expected to begin using the system in the 1984 calendar year.

DATA HANDLER - This application is currently being used by numerous school districts in Minnesota. As of December, 945 copies of Data Handler had been distributed through MEOC with additional copies being distributed through the ESV Regional Centers. The general nature of this application has allowed its use to range from teaching elementary database concepts to high school business education classes to maintaining overdue book information in libraries.

DEPARTMENT OF EDUCATION. Within the Department of Education, 30 microcomputers are being used as multi-purpose machines for such applications as word processors, data base handlers, spread sheet analysis, and graphics. Detailing the uses of the microcomputer would show a variety of individual applications such as:

- Maintenance of mailing lists,
- Registrations for workshops,
- Maintaining personnel records,
- Development and analysis of budgets,
- Projections of expenditures within budgets,
- Adult basic education records,
- Telephone records and expenditures record keeping,
- Writing state and federal reports,
- Developing site review reports,
- Library building records,
- School district entitlement reports,
- Electronic computer originated mail,
- Development of 35 mm slides and transparencies,
- Reading level analysis of textbooks,
- Inventory records,
- Development of maps,
- Electronic communication with other states.

This is only a sample to show the variety of uses of the microcomputer.

A major concern which needs to be addressed by the Department is the manipulation of data taken from the main database but processed by the microcomputer. The danger is one of inappropriate mixing of data or reinventing reports already available. Staff is strongly advised to stay with commercial vendor and staff supported software and to use VISION or other report generating systems on the mainframe computer. This encourages the use of the microcomputer only for those applications with unique data.

The contract for the IBM Personal Computer does create problems of incompatibility, training, and uses. Examination of the issues surrounding the IBM PC will be done beginning in FY 1985. Until then, the focus will remain with the uses of the APPLE microcomputer and

.. training staff in the use of microcomputer technology.