Minnesota State Department of Education
Capitol Square ☐ 550 Cedar Street ☐ St. Paul, Minnesota 55101

Phone: (612) 296-2358

December 31, 1981

Chairman, House Appropriations Committee
and
Chairman, Senate Finance Committee

Dear Sirs:

Pursuant to Minnesota Laws 1981 Regular Session, Chapter 359, Section 2, Subdivision 6(e), I am herewith transmitting to you the progress report of the development of the Department of Education's Management Information Systems.

If you have any questions regarding the content of this report, please do not hesitate to contact me.

Sincerely,

JOHN J. FEDA
Commissioner of Education

JJF:MIM

cc: Legislative Reference Library (10)
Ronald J. Laliberte
Charles Coskran
Gerald Kleve

DEPARTMENT OF EDUCATION REPORT TO THE LEGISLATURE ON MANAGEMENT INFORMATION SYSTEMS DEVELOPMENT

July 1, 1981 - December 31, 1981

I. INTRODUCTION

This report is submitted to the Chair of the House Appropriations and the Chair of the Senate Finance Committees pursuant to the Laws of 1981, Regular Session, Chapter 359, Section 2, Subd. 6(e).

This report covers the period July 1, 1981 through December 31, 1981. The report is organized as follows:

Section	II	Development of SDE-IS
	III	Data Element Dictionary
	IV	Development of the ESV-IS
	V	Regional Services
	VI	Instructional Computing
	VII	Proposed Work Plan
	VIII	Budget for FY1982

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

During the past six months the Department has concentrated on maintaining the 25 systems currently operational within the Department and to improve their operating efficiency. These systems include the calculation of levy limits, generating payments of various school aids, projecting class and school enrollments, reporting the financial condition of each of the 437 school districts, and providing statistical data on teachers, pupils, and curriculae. Many of these systems required some level of modification because of changes in the laws, especially the levies calculation and aids payment systems.

During this time, the Department also completed programming six additional systems which calculate post secondary vocational education aids, account for computer resource usage, process data for the Department forms collection system, and score and analyze the test sheets of the fifth, eighth, and eleventh grade assessment program. The Department also completed writing a standards manual for the development and operation of Department information systems. The major effort centered around completion of the SDE-FIN, the finance system which accepts the computer data generated according to UFARS standards from school districts (through their respective regions), and which edits and reports that data. This is the first concrete example of processing data from all school districts to state level decision makers via electronic media transmissions. As a result, the 26 page, 1,400 item annual financial report has been eliminated. Not only is the data more accurate and more error free, for the first time this year the Governor and the Legislature are able to use data from FY1981 in their deliberations on the current State fiscal crisis. Previous to this, the most recent data would have been two years old.

The Minnesota Civil Rights Information System (MINCRIS) has also been modified to incorporate more efficient processing and simplified instructions for completing the forms. In its second year of operation, the MINCRIS system was expanded to include more detailed data on classrooms and special education students. With this expanded database, routine reports are being submitted to the Federal government and base data is being developed to assist the Department in its review of school districts' compliance with giving students equal educational

opportunities and Title XI regulations.

In addition, other agencies are increasingly using the SDE-IS database to satisfy their information needs rather than requesting reports from school districts. Reports have been developed for the State Demographer, the Council on the Economic Status of Women, plus the regular reports for the federal government and many special reports which simulate the effects of funding recision on state aids and transportation aids.

Not only is the large Burroughs computer mainframe being used to generate reports, but the Apple microcomputer is also being incorporated into the decision making process. Two commercial software systems which allow "what if" questions to be answered and which provide direct "hands on" small database experience are now in use by Department staff. Some of their uses include the analysis of CQE project budgets, reports on programs supervised by Department vocational educational staff, distribution of aids funded by the legislature as a special appropriation, and statistical analysis of sample data collected on various program participants. In addition the Apple is being used to receive data from the large computer mainframe and to transmit data to other large mainframes. These systems have the double advantage of reducing the amount of systems development of small databases and giving Department staff EDP training and experience.

III. DATA ELEMENT DICTIONARY

The Department has now completed a review of all data elements used on forms required by the Department and has developed a glossary of 3,000 additional terms which define or describe data elements not specifically used on forms but which are in general use in Education. In total, the Data Element Dictionary now contains 6,200 elements.

The Department has also developed the Data Acquisition Documentation System (DADS). This system provides general information on Department forms, computer systems, and broad areas of data collection. For example, one could find information on the forms, regional data collection requirements, people responsible, and related laws which collect, process, and report data on staff or student data elements. This is another step toward the development of the automated data dictionary/directory which will eventually eliminate the data acquisition calendar. Currently, the calendar is generated in hard copy format and mailed to each school district in August. The cost to the Department as a whole to produce the calendar is estimated between $12,000 to $15,000. Development of this system will allow automated production of the calendar as a byproduct of the other data management activities of the Department thus allowing staff to make better use of their time.

A problem long perceived but not resolved in State government is the retention of data on electronic media. The Department of Education has been working closely with the Department of Administration and has developed a retention schedule for data which resides on computer tape. This system is complete and awaits approval by the Records Management Section of Administration before implementation. Education is the only state agency to have accomplished this type of procedure.

The Department is presently in the process of establishing a departmental plan and procedure to implement Minnesota Statutes 121.931 which establish the statewide Elementary/Secondary/Vocational Education Management Information System. In this plan, no data will be collected if it is not justified within the provisions of the statutes. The new process requires that the data acquisition review committee review each request for new data; the SDE-IS database must be

considered as the principal data resource within the Department; and when a new data collection project is approved, it will provide a 180 day notification to the ESV regions to allow them time to set up the data collection procedures with their member districts.

This plan plus the establishment of data standards by the ESV Computer Council should result in additional reduction of the number of forms required by the Department. Since July 1, 1981, there has been a 14 percent reduction in the number of forms in the data acquisition calendar from 310 to 272.

IV. DEVELOPMENT OF THE ESV-IS

The Elementary/Secondary/Vocational Information System (ESV-IS) continues to be maintained and operated by the MECC-MIS division. There has been no substantial change in the finance system (ESV-FIN) or the personnel/payroll system (ESV-PPS). The student system (ESV-SSS) has been in pilot status in ESV Regions III (St. Cloud) and VI (METRO II) and recently in ESV Region II (Duluth). The ESV-SSS will be formally released to all regions when this extended quality assurance program is completed in Region II. In the ESV-FIN, the inventory subsystem which has been piloted in the Robbinsdale school district has been released to all other regions. Currently there is a joint effort being conducted between ESV Region VI, ESV Region VII (TIES) and MECC to look at the ESV-PPS and determine the amount of effort required to develop a third version which would be designed on a more modular basis and allow incorporation of unique differences required by the districts.

Of the $800,000 which the Legislature appropriated for basic support of the MECC-MIS services, $300,000 was assigned to a contingent account to be released by the Legislative Advisory Commission after the development of a Systems Architecture Plan. The Systems Architecture Plan must evaluate the feasibility to establish a central development group for software development. This evaluation has indicated an interest in the concept, but concrete steps toward actual development have not yet begun. The continued maintenance of the ESV-IS will be conducted by MECC and the contingent account was released for that purpose.

The use of microcomputers continues at an increased rate. The ESV-FIN APP, the so-called "Adrian model" (Independent School District 511) has been extended for use in all regions. This model uses an Apple II microcomputer to initially edit and build batches of financial data which are later transmitted to the large mainframe computer for final processing. Error messages, checks, and small reports are later transmitted to the Apple II for printing at the local district site. Already ten districts in ESV Region IV (Marshall) have begun using the ESV-FIN APP to build and edit batches of their financial data. This same concept has been extended to the ESV-PPS where data entry error correction and small reports would be transmitted back and forth. Thus far, no payroll checks are being written. Since the microcomputer applications are dependent upon the large mainframe to process second level edits which need to access the main database, and since the microcomputer is itself a complete computer, there is also a project to evaluate personnel, payroll, and student systems which can be run on the Apple as a standalone computer.

The Ortonville school district (ISD 062) has developed the major part of a standalone finance system for the Apple microcomputer. This system is in the process of receiving clearance by the UFARS Council. The FY1981 annual financial report data for Ortonville was successfully transferred from the district to the regional computer with MECC's assistance.

Because of the increased usage of the microcomputer, MECC is conducting a survey

of school districts to determine their usage and needs for systems which are applicable on the microcomputer. This report will be available by March.

By September, MECC had assisted each of the regions and the Department in developing the 1981-82 school year telecommunications plan. This plan was subsequently approved by and funded by the Department.

V. REGIONAL SERVICES

The multi-regional computer center at Moorhead has become operational. Governed by representatives of the 253 school districts which it serves, the center provides full ESV-FIN and ESV-PPS services and is planning to start ESV-SSS in April with the student scheduling module. The governing board has also approved the use of the ESV-FIN APP using the Apple microcomputer for data entry and reporting. The first ten school districts are being trained on the system which, because of their geographic dispersion, is expected to reduce telecommunication costs.

Additional usage of the microcomputer is taking place in ESV Region III (St. Cloud) where the Apple is linked to the mainframe, or it may be linked to the CP9500 satellite communication processors.

In ESV Region V (Mankato) a B1955 minicomputer serves as an ESV-FIN satellite in Rochester and performs other processing in a standalone mode. This satellite was funded through special regional assistance provided by the 1979 Legislature.

Some of the same funds were used to establish a B1900 minicomputer in the Minneapolis school district to assist them in their conversion to the ESV-FIN. Since this has been completed, ESV Region VI (METRO II in St. Paul) is now assisting Minneapolis to convert other programs such as personnel and student systems onto the Burroughs equipment.

In ESV Region II, there is a major effort to install the ESV-SSS for use by the Duluth School Districts. Four other districts in the region are anticipating their use of the system.

In general, all the regions are either using microcomputers or are studying their usage. The major problems identified by the districts center around their lack of familiarity with microcomputers, concern over having the technical expertise available for trouble-shooting and backup, and the limitations and capabilities of the microcomputer.

One provision of the State Master Contract with Burroughs allows the transfer of equipment between regions without paying remarketing fees. The Department has utilized this provision to transfer the following hardware:

B1855 minicomputer from Region I to MECC,
Power Distribution System from Region I to MECC,
Two tape drives from Region II to MECC,
One card reader from Region II to MECC,
One 1800 LPM printer from MECC to Region V,
One 1100 LPM printer from Region V to Region III,
Three 750 LPM printers from Region III to MECC, and
35 computer adapters from MECC to various regions.

As a result, remarketing charges have been avoided at a substantial savings to the regions and MECC.

Each of the regions have been studying their fee schedule and resource utilization with an eye toward revising their fee structure. At the same time, the Department has contracted with Peat, Marwick, Mitchell and Company to study the regional subsidy distribution formula used by the state and to recommend alternative formulae. Their preliminary report contains a formula which is being reality tested. Their final report is due in January, 1982.

Throughout the development of the ESV-IS, it was emphasized that districts would be transmitting required state reports to the Department electronically. It has finally happened and all districts have now transferred their unaudited and audited financial data for FY1981 via an electronic medium.

VI. INSTRUCTIONAL COMPUTING

As more microcomputers are acquired there is a slight drop in the number of school districts which use the Instructional Timesharing System. Currently, approximately two thirds of all districts access the large Control Data mainframe of the Timsehare System. On the other hand, nine of ten districts utilize microcomputers. The estimate for the current school year is that 93 percent of all districts utilize one or the other or both modes of instruction.

The bidding for a small microcomputer was completed in August and the contract was awarded to Atari whereby the Model 400 computer, plus disk drive and video is available for $575 with a substantial discount on other Atari equipment and software. The contract also requires the conversion of at least 75 courseware programs to be converted to the Atari by November 15, 1981. This was accomplished and these programs, along with the revised documentation, will be released beginning January, 1982.

Thus far, 180 Atari computers have been ordered and it is estimated approximately 600 will be purchased by the end of the school year.

The State negotiated Apple microcomputer contract has expired. Currently, negotiations are being held for a process or contract which will allow school districts to purchase additional Apple II's expeditiously and cost effectively. Under the former contract, 2,867 Apple microcomputers were purchased.

For both these machines, the major need is good software. Currently there are 25 courseware projects in progress. The schedule calls for 8 to 14 programs for the Apple and 4 to 7 programs for the Atari to be released each month. This is more than three times the rate of last year.

Even with the increase of microcomputer programs, the total usage on the mainframe computer is down only slightly. Partly this is due to the increased use of microcomputers, partly it is due to the requirement that courseware programs which were duplicates of programs being run on microcomputers had to be taken off the mainframe computer. This latter requirement was completed November 1, 1981. Another reason the use of the mainframe is down only slightly rather than greatly is that the State University System usage is up. It appears that after gaining experience on the microcomputer, students want to solve more complex problems which can only be accomplished on a large machine and not on the micro.

As a result of a reduction in state support of instructional telecommunications costs, and in anticipation of sharply increased line usage fees, MECC has requested that 52 schools reconsider further usage of the instructional timesharing system. About half of the districts are favorable to this request and were moved to an in-wats system, the others are considering other alternatives or indicate their desire to remain. The reduced cost of the revised network will help offset the increased line usage fees and the sharp reduction

in state support in FY1983. It is anticipated that there will continue to be a need for state support. MECC is now studying options to its fee structure to support telecommunications.

VII. WORK PROGRAM SUMMARY

Basically, there will be a continued effort to maintain the systems, both administrative and instructional, as previously indicated. Changes will be made dependent upon the changes in funding.

It is anticipated that there will be increased use of the SDE-IS database to secure additional information for policy committees of the Legislature, and within the Department's effort to reduce reporting from the school districts. Concurrent with this is the establishment of the data review procedures within the Department.

The needs and operations of a central development group will continue to be discussed. The Systems Architecture Plan and its parent, the Long Range Plan, will be completed and presented to the State Board for approval.

The review of the SDE-IS by the Legislative Auditor will be completed and reported.

Additional review and revision of the telecommunication networks will take place.

A revised fee schedule will be worked out with the districts for implementation in the 1982-83 school year.

The ESV-SSS will be officially released for use by all school districts.

The ESV-FIN APP will have an enhanced checkwriter feature added.

The ESV-PPS will have the microcomputer alternative available to districts and should be in pilot status by June, 1982.

The State negotiated contract for Burroughs equipment expires in 1983. A committee will be working toward development of specifications for a replacement of the present contract.

As indicated previously, there is a planned schedule for releasing instructional courseware for the large central mainframe computer, the Apple II microcomputer, and the Atari microcomputer. From twelve to twenty programs will be released each month.

VIII. BUDGET FOR FY1982

The specific budget for each of the components of this report was listed in the previous report.

Since then, the State's financial condition has changed dramatically. As yet, no specific budget reductions have been ordered, however, in anticipation that there will be some reductions, a preliminary plan has been prepared. This plan, if it is implemented, would have the following components:

There would be an across the board reduction of MECC support, regional subsidies, and telecommunications corresponding to the percentage reduction generally required of the Department.

The regions are being placed in a double bind since both their state support may be reduced and their member school districts' budgets are being reduced. Generally, there is no alternative to secure additional money and services will have to be cut.

The MIS implementation consultant project, now on hold, will be eliminated.

Within Education Data Systems, at least two positions will be reduced, two student worker positions providing assistance on the data element dictionary will be eliminated, and technical assistance contracts will be reduced, in addition to whatever can be reduced in printing, travel, and other expenses.

Without a specific dollar amount, it is difficult to project the specific consequences of these reductions, except that some of the reporting requirements imposed on school districts will continue to be done manually unless the legislature reverses its mandate for the reports. Requests for information from the Department will be delayed because of reduced availability of staff.

The effect of budget cutbacks on MECC is primarily on staff. Depending on the depth of the reduction, one instructional coordinator, two programmer analysts, one manager, and several part-time programmer positions will be vacated. In addition, two vacant positions will remain vacant. As a result, fewer teacher workshops will be conducted, less courseware will be developed, and problems with the administrative computer programs will receive less attention and be delayed in their resolution.