DOCUMENT RESUME

ED 066 820 88 EA 004 539

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|---|---|
| TITLE | Project ADMIRE: Assistance for Decision Making Through Information Retrieval in Education. End of Budget Period Report. |
| INSTITUTION | Lincoln Public Schools, Nebr. |
| SPONS AGENCY | Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; Nebraska State Dept. of Education, Lincoln. |
| REPORT NO | DPSC-67-3593 |
| PUB DATE | 30 Jun 70 |
| GRANT | OEG-0-8-03593-1778(056) |
| NOTE | 145p. |
| EDRS PRICE | MF-$0.65 HC-$6.58 |
| DESCRIPTORS | Computer Assisted Instruction; *Computer Oriented Programs; *Decision Making; Educational Equipment; *Electronic Data Processing; *Information Retrieval; Information Systems; Information Utilization; Personnel Data; *Program Evaluation; Student Records |
| IDENTIFIERS | Elementary Secondary Education Act Title III; ESEA Title III; Project ADMIRE |

ABSTRACT

This final annual evaluation of project ADMIRE describes the progress made in improving educational decisionmaking in a 5-county rural-urban area by the systematic collection, organization, and reporting of data about project schools and their populations. The five sections of the report (1) describe the organization of the report and the procedures used in developing the evaluation study; (2) summarizes the ADMIRE purpose as stated and inferred in the original project proposal and renewal requests; (3) describe the program's internal structure, organization, operational procedures, and activities conducted by the staff during the third evaluation period; (4) report the impact of ADMIRE as viewed by participants in the project; and (5) outline general findings from the various evaluation procedures. (JF)

# PROJECT ADMIRE

ASSISTANCE FOR DECISION MAKING THROUGH INFORMATION RETRIEVAL IN EDUCATION

## END OF BUDGET PERIOD REPORT

Elementary and Secondary Education Act of 1965, Title III, as amended

SCHOOL DISTRICT OF THE CITY OF LINCOLN
720 SOUTH 22 STREET
LINCOLN, NEBRASKA 68510

Project No. ~~67-6959-8~~ DPSC 67-3593
Grant No. OEG-0-8-093593-1778-(056)

STATE: NEBRASKA
NEBRASKA STATE PROJECT NUMBER 67-3593-09

Grant Period: 1 July 1969-30 June 1970

# STATISTICAL DATA

# ESEA TITLE III STATISTICAL DATA
## Elementary and Secondary Education Act of 1965 (P. L. 89-10), as Amended

| This Space for State Use Only | PROJECT NUMBER | COUNTY CODE | REGION CODE | ALLOTMENT |
|---|---|---|---|---|
| | | | | |

**SECTION A – PROJECT INFORMATION**

1. REASON FOR SUBMISSION OF THIS FORM (Check one)

A ☐ INITIAL APPLICATION FOR TITLE III GRANT
C ☐ APPLICATION FOR CONTINUATION GRANT
B ☐ RESUBMISSION
D ☒ END OF BUDGET PERIOD REPORT

2. MAJOR DESCRIPTION OF PROJECT (Check one): PROJECT MAINLY:

A ☐ CENTRAL CITY
B ☐ GEOGRAPHICALLY ISOLATED
C ☐ FOR MINORITY GROUPS
D ☐ PREKINDERGARTEN PROGRAM
E ☐ HANDICAPPED
F ☒ NOT APPLICABLE

3. PROJECT TITLE (5 words or less)

Assistance for Decision Making through Information Retrieval in Education

4. BRIEFLY SUMMARIZE THE PURPOSE OF THE PROPOSED PROJECT AND GIVE THE ITEM NUMBER OF MAJOR EMPHASIS AS LISTED IN SEC. 303., P.L. 89-10. (See instructions)

The purpose of the project is to improve educational decision-making in a five county rural-urban area by the systematic collection, organization and reporting about the school and its population.

| 5. NAME OF APPLICANT (Local Education Agency) | 6. ADDRESS (Number, Street, City, State, Zip Code) |
|---|---|
| School District, City of Lincoln, Nebraska | P.O. Box 200<br>Lincoln, Nebraska 68501 |

| 7. NAME OF COUNTY | 8. CONGRESSIONAL DISTRICT |
|---|---|
| Lancaster | 1 |

| 9. NAME OF PROJECT DIRECTOR | 10. ADDRESS (Number, Street, City, Zip Code) | PHONE NUMBER / AREA CODE |
|---|---|---|
| Dr. Robert Den Hartog | P.O. Box 200<br>Lincoln, Nebraska 68501 | 475-1081<br>402 |

I hereby certify that the information contained in this application is, to the best of my knowledge, correct and the local educational agency named below has authorized me, as its representative, to file this application.

| 11. NAME OF PERSON AUTHORIZED TO RECEIVE GRANT (Please type) | 12. ADDRESS (Number, Street, City, Zip Code) | PHONE NUMBER / AREA CODE |
|---|---|---|
| Dr. Anne Campbell | P.O. Box 200<br>Lincoln, Nebraska 68501 | 475-1081<br>402 |

POSITION OR TITLE

Administrative Assistant, Government Services

| SIGNATURE OF PERSON AUTHORIZED TO RECEIVE GRANT | DATE SUBMITTED |
|---|---|
| | |

| 13 | A. SECOND PRECEDING YEAR, FISCAL YEAR ENDING | B. PRECEDING YEAR, FISCAL YEAR ENDING |
|---|---|---|
| | June 30, 19 $ N/C | June 30, 19 $ |

| 14 | DOES THIS APPLICATION AMEND AN APPROVED PROJECT FOR CURRENT FISCAL YEAR (Check one) | | |
|---|---|---|---|
| | APPLICANT PROJECT NO | DATE APPROVED | AMOUNT APPROVED |
| | ☐ YES ☒ NO<br>If "Yes," please enter | | $ |

| 15. | LIST THE NUMBER OF EACH CONGRESSIONAL DISTRICT SERVED N/C | 16. | TOTAL NUMBER OF LEA's SERVED N/C |
|---|---|---|---|

17. FROM TOTAL NUMBER OF PERSONS SERVED (OR TO BE), GIVE THE PERCENT OF CHILDREN FROM FAMILIES WITH ANNUAL INCOME OF:

A. $2000 or less N/A % B. $2001 - 3000 N/A % C. Over $3000 N/A %

## SECTION B – TITLE III BUDGET SUMMARY FOR PROJECT (Include amount from Item 2c below)

| 1. | PREVIOUS OE GRANT NUMBER | BEGINNING DATE (Month, Year) | ENDING DATE (Month, Year) | FUNDS REQUESTED |
|---|---|---|---|---|
| A. Initial Application or Resubmission | | 7-67 | 6-68 | $ 96,546 |
| B. Application for First Continuation Grant | | 7-68 | 6-69 | $ 110,854 |
| C. Application for Second Continuation Grant | | 7-69 | 6-70 | $ 100,349 |
| D. Total Title III Funds | | | | $ 307,749 |
| E. End of Budget Period Report | | | 6-70 | |

2. COMPLETE THE FOLLOWING ITEMS ONLY IF THIS PROJECT INCLUDES CONSTRUCTION, ACQUISITION, REMODELING, OR LEASING OF FACILITIES FOR WHICH TITLE III FUNDS ARE REQUESTED. LEAVE BLANK IF NOT APPROPRIATE.

A. Type of Function (Check applicable boxes)

1 ☐ REMODELING OF FACILITIES 2 ☐ LEASING OF FACILITIES 3 ☐ ACQUISITION OF FACILITIES
4 ☐ CONSTRUCTION OF FACILITIES 5 ☐ ACQUISITION OF BUILT-IN EQUIPMENT

| B. 1. TOTAL SQUARE FEET IN THE PROPOSED FACILITY | B. 2. TOTAL SQUARE FEET IN THE FACILITY TO BE USED FOR TITLE III PROGRAMS | C. 1. AMOUNT OF TITLE III FUNDS REQUESTED FOR FACILITY $ |
|---|---|---|
| | | |

## SECTION C – SCHOOL ENROLLMENT, PROJECT PARTICIPATION DATA AND STAFF MEMBERS ENGAGED

| 1. | | PRE-KINDERGARTEN | KINDERGARTEN | GRADES 1 | 2 | 3 | 4-6 | 7-12 | ADULT | OTHER | TOTAL | STAFF MEMBERS ENGAGED IN IN-SERVICE TRAINING FOR PROJECT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A. School Enrollment in Geographic Area Served | (1) Public | 162 | 3498 | 3.5 | 3.4 | 3.6 | 9.7 | 19. | 9428 | 970 | 53,239 | |
| | (2) Non-public | 0 | 72 | .33 | .38 | .37 | 1.11 | .45 | 0 | 0 | 3,687 | |
| B. Persons Served by Project | (1) Public | 162 | 3498 | 3.5 | 3.4 | 3.6 | 9.7 | 19. | 9428 | 970 | 53,239 | 2224 |
| | (2) Non-public | 0 | 72 | .33 | .38 | .37 | 1.11 | .45 | 0 | 0 | 3,687 | 190 |
| | (3) Not enrolled | | | | | | | | | | | |
| C. Additional Persons Needing Service | (1) Public | | | | | | | | | | | |
| | (2) Non-public | | | | | | | | | | | |
| | (3) Not enrolled | | | | | | | | | | | |

* Figures in thousands

| 2. TOTAL NUMBER OF PARTICIPANTS BY RACE | WHITE | NEGRO | AMERICAN INDIAN | OTHER NONWHITE | TOTAL |
|---|---|---|---|---|---|
| | | | | | |

SECTION C – Continued

3. RURAL/URBAN DISTRIBUTION OF PARTICIPANTS SERVED OR TO BE SERVED BY PROJECT

| PARTICIPANTS | RURAL | | METROPOLITAN AREA | | |
|---|---|---|---|---|---|
| | Farm | Nonfarm | Central City Low Socioeconomic Area | Suburban | Other Urban |
| PERCENT OF TOTAL NUMBER SERVED | 21.9 | 6.3 | 65.5 | 0 | 6.3 |

SECTION D – PERSONNEL FOR ADMINISTRATION AND IMPLEMENTATION OF PROJECT

1. PERSONNEL PAID BY TITLE III FUNDS

| TYPE OF PAID PERSONNEL | REGULAR STAFF ASSIGNED TO PROJECT | | | NEW STAFF HIRED FOR PROJECT | | |
|---|---|---|---|---|---|---|
| | Full Time 1 | Part Time 2 | Full-Time Equivalent 3 | Full Time 4 | Part Time 5 | Full-Time Equivalent 6 |
| A. ADMINISTRATION/SUPERVISION | | 2 | .75 | | | |
| B. TEACHER: | | | | | | |
| (1) PREKINDERGARTEN | | | | | | |
| (2) KINDERGARTEN | | | | | | |
| (3) GRADES 1-6 | | | | | | |
| (4) GRADES 7-12 | | | | | | |
| (5) OTHER | | | | | | |
| C. SUBJECT-MATTER SPECIALISTS (Artists, Scientists, Musicians, etc.) | 1 | | 1 | | | |
| D. TECHNICIANS (Audio-visual, Computer Specialists) | 3 | | 3 | | | |
| E. PUPIL PERSONNEL WORKERS (Counselors, Psychologists, Social Workers, etc.) | | | | | | |
| F. MEDICAL AND PSYCHIATRIC PERSONNEL | | | | | | |
| G. RESEARCHERS, EVALUATORS | | | | | | |
| H. PLANNERS AND DEVELOPERS | | | | | | |
| I. DISSEMINATORS (Writers, Public Relations Personnel, Editors) | | | | | | |
| J. PARAPROFESSIONAL, TEACHER AIDES, ETC. | | | | | | |
| K. OTHER NONPROFESSIONAL (Clerical, Bus Drivers, etc.) | 3 | 5 | 4 | | | |

## SECTION E – PERSONS SERVED BY APPROVED INITIAL OR CONTINUATION PROPOSALS, ESTIMATED COST, AND NUMBER OF PROJECTS

| MAJOR PROGRAM OR SERVICES | TOTAL NUMBER OF PERSONS SERVED (Pupils may be counted more than once) | | | | | | | | | | ESTIMATED COST (Amount may overlap) | NUMBER OF PROPOSALS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GRADES | | | | | | | Adult | Other | Number of Nonpublic Pupils | | |
| | Pre-K | K | 1 | 2 | 3 | 4-6 | 7-12 | | | | | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) |
| 4.1 SCHOOL ADMINISTRATION DEVELOPMENT, EVALUATION, AND RESEARCH SURVEY | *All figures here in thousands 0 | .3 | .3 | .3 | 3 | .89 | 1.7 | 262 | | | $ 450 | |
| 4.2 TEACHER IN-SERVICE TRAINING | | | | | | | | 214 | | | 1-00 | |
| 4.3 MAJOR SUBJECT EMPHASIS | | | | | | | | | | | | |
| ARTS (Music, theater, etc.) | | | | | | | | | | | | |
| FOREIGN LANGUAGE | | | | | | | | | | | | |
| MATHEMATICS | | | | | | | 11 | | | | 8300 | |
| SCIENCE | | | | | | | | | | | | |
| SOCIAL STUDIES/HUMANITIES | | | | | | | | | | | | |
| VOCATIONAL/INDUSTRIAL ARTS | | | | | | | | | | | | |
| OTHER/Specify Business Education | | | | | | | 7 | | | | 4500 | |
| 4.4 INSTRUCTIONAL MEDIA/TECHNOLOGY | | | | | | | 18 | 587 | | | 5880 | |
| LIBRARY FACILITIES/MEDIA CENTER | | | | | | | | | | | | |
| COMPUTERS | .2 | 3.5 | 3.5 | 3.5 | 3.6 | 9.7 | 19. | 9428 | 970 | 3657 | 62164 | |
| EDUCATIONAL TV/RADIO | | | | | | | | | | | | |
| OTHER/Specify Test Scoring | | | | | 1.04 | 12. | 22.2 | 387 | | 99 | 15000 | |
| 4.5 INSTRUCTIONAL METHODOLOGY Specify | | | | | | | | | | | | |
| 4.6 SPECIAL EDUCATION, REMEDIATION, AND PUPIL PERSONNEL PROGRAMS | | | | | | | | | | | | |
| HANDICAPPED | | | | | | | | | | | | |
| REMEDIAL READING | | | | | | | | | | | | |
| MEDICAL/DENTAL/HEALTH | | | | | | | | | | | | |
| SOCIAL/PSYCHOLOGICAL | | | | | | | | | | | | |
| EDUCATIONAL GUIDANCE | | | | | | | | | | | | |
| 4.7 SPECIAL PROGRAMS | | | | | | | | | | | | |
| BILINGUAL EDUCATION | | | | | | | | | | | | |
| FOLLOW-THROUGH OF PREKINDERGARTEN PROGRAM | | | | | | | | | | | | |
| DROPOUT | | | | | | | | | | | | |
| EQUAL EDUCATIONAL OPPORTUNITY | | | | | | | | | | | | |
| PREKINDERGARTEN | | | | | | | | | | | | |

PART II-NARRATIVE REPORT

End of Budget Period Report

Elementary and Secondary Education Act of 1965, Title III, as amended

School District of the City of Lincoln
720 South 22 Street
Lincoln, Nebraska 68510

Project No. 67-63593-0
Grant No. OEG-0-8-03593-1778-(056)

State: Nebraska
Nebraska State Project Number 67 3593-03
Grant Period: 1 July 1969 - 30 June 1970

1. **For operational activities, discuss the effect of the project on the clientele by briefly stating the major objectives of the project and the techniques used in evaluating the extent to which these objectives were achieved.**

The purpose of Project ADMIRE is to improve educational decision making in a five county rural-urban area by the systematic collection, organization and reporting about the school and its population.

The specific third year objectives of the project to meet this purpose include:

1. To extend students' "hands-on" experience with the card punch and sorter.
2. To involve students in problem-solving activities with tele-processing terminals connected to the University of Nebraska's IBM 360 computer.
3. To extend the use of the Programma 101 table top computer.
4. To develop and refine the census file and attendance file.
5. To offer a budget and accounting system to the area schools (Classes II-III)
6. To continue the standardized test scoring service, teacher made test scoring service and item analysis.
7. To continue scheduling and grade reporting services.
8. To continue the food service acquisition, distribution and inventory system in the Class IV school system.
9. To continue active visitations to the area schools.

*Report on Keypunch and Card Sorter*

Log book records on the use of the keypunch and card sorter show an average use per day of 4.87 hours in the 23 scheduled schools in E.S.U. VI.

In the Lincoln Public Schools the four high schools averaged 3.8 hours per day instructional time on the keypunch and sorter.

Materials in the form of student manuals and teacher manuals prepared through Project ADMIRE accompany the equipment.

Over 7,000 students in E.S.U. VI had the opportunity to be introduced to data processing concepts by demonstration or actual "hands-on" contact with the equipment.

By count 3,145 secondary students had "hands-on" contact with the equipment, to the extent that they completed all or most of the units with the machines.

*Report on Teleprocessing*

Nine of the E.S.U. VI schools participated in the use of the 2741 terminal.

Students used the terminal as a tool and aid in solving mathematics related problems.

A conversational language called Calctran was taught because of the need for a quick and easy language to learn.

Students called long distance from their school to the University of Nebraska to use the computer, directly with their terminal

In Lincoln the four public high schools shared three ASR 33 teletypes.

In service activities were held to explain some functions of the remote system of the University of Nebraska.

Schools started with the language of Calctran, but were soon creating data sets, storing programs, and compiling programs in Fortran and other languages.

By comparison the use in computer time in the public schools in Lincoln went from $143 the first full month to $1040 the last month for a 606% increase over 9 months time.

*Report on the Programma 101*

The Programma 101 was used in 23 E.S.U. VI schools and six Lincoln junior high schools.

Materials written by Project ADMIRE's consultant accompanied the unit.

The Area Consultant spent at least one day in each of the schools demonstrating and introducing students and teachers to "What is a Computer?" as well as the Programma 101.

The in-service in this program was brought directly to each school, thereby removing the need for released time on the part of teachers or requiring them to travel to other communities for workshops.

*Report on Census File and Attendance File*

Current files for the Lincoln Public Schools contain information on all persons from age 0 to 20 in the Lincoln School District.

State census reports can be filed quickly and accurately for the entire district.

Updating and keeping the file current can be done more quickly than ever before.

Up-to-date card files can now be kept in the Student Services office printed directly by the computer from the census file.

Each semester student attendance is processed through the computer. Attendance is printed on each report card for each student, and the accumulated totals provide information for state appropriation to the local district.

*Report on Budget and Accounting (Classes II-III)*

Fulfilling this objective has been a major innovative thrust of Project ADMIRE during 1969-1970. Progress to date includes:

Adopting a nine digit account numbering system to the requirements of Class II and III schools.

Preparing budget documents for five schools: Geneva, Milford, Seward, Wilber and E.S.U. VI.

Preparing financial statements, payroll, and encumbrance reports for the schools on a monthly basis starting September 1, 1969. This represents a complete system of financial accounting.

Preparing a manual for the financial accounting application, which includes an Audit Trail, samples of the school initiated input documents, instructions on how to complete these documents, and samples of the print-outs with information on correction procedure.

Preparing the following special reports: W-2 Forms, Social Security Reports and Teacher Retirement Reports.

*Test Scoring Service*

Admire provides answer sheets and E.S.U. VI provides test booklets illustrating the effective cooperative efforts of the two units. The coordinating activities of the service unit and the Test Scoring committee from the schools make this a smooth running efficient service.

Services provided from Project ADMIRE include: test scoring, item analysis, student profiles, press-on labels, as well as summary sheets including norms for each test.

For E.S.U. VI, Project ADMIRE scored 16,426 standardized tests during 1969-1970.

For the Lincoln schools, 19,726 standardized tests were scored by Project ADMIRE.

Teacher made tests and summary surveys resulted in another 51,975 test sheets being scored by Project ADMIRE.

*Report on Scheduling and Grade Reporting*

All secondary schools (four senior high schools and nine junior high schools) in Lincoln scheduled through Project ADMIRE during the 1969-1970 school year.

Eleven service unit schools scheduled classes through the use of Project ADMIRE's scheduling program.

Beatrice junior and senior high schools also requested the scheduling services at an established cost through Project ADMIRE.

In the Lincoln schools, Grade Reporting is done for all secondary schools.

In E.S.U. VI two schools used the Grade Reporting services provided them during 1969-1970.

*Report on Food Service*

Summary of Services from Data Processing for School Food Service, Lincoln Public Schools.

A. Food information

1. Input into inventory upon purchase and receipt
2. Ordering of food by individual schools
3. Dispersement and delivery of food to individual schools
4. Food cost by schools and total food cost
5. Records for filing to meet agreement with government program
6. Perpetual inventory of food stores, year to date usage
7. Monthly inventory of storeroom in individual schools

B. Census and Sales Information

1. Daily count of students and adults served
2. Daily cash sales records

C. Monthly Financial Statement

1. Receipts
2. Itemized total food costs
3. Labor costs
4. Miscellaneous costs
5. Labor cost per plate
6. Food cost per plate
7. Miscellaneous cost per plate
8. Total cost per plate
9. Profit or loss

*Report on Visitations*

Schools participating in more than one ADMIRE activity were visited at least four times during the current year

Many visits were in-service in nature. The Area Consultant demonstrated the data processing equipment to teachers and students in each of the schools requesting the instructional service.

*Report on Method and Procedures for Evaluating the Project*

The Project entered into a contract with Dr. Howard Eckel, of the University of Nebraska, to serve as Project Evaluator. All material and applicable correspondence was sent to Dr. Eckel as data for evaluation.

Cost was contracted for $50 per day, not over thirty days, or a total of $1,500.

2. **Briefly describe project endeavors in which the anticipated results have exceeded expectations, and those in which results have not measured up to expectations.**

*Instruction*

The number of students in E.S.U. VI schools introduced to the equipment, coupled with its hourly use, student response and teacher response will promote the continuation of this program, and have exceeded expectations of the project staff.

Use and acceptance of the instructional program by students and teachers in Lincoln have exceeded expectations. Teacher participation and the desire on their part to become informed, directly provided the students with the opportunity to learn which otherwise could have been neglected.

*Test Scoring*

With 36,152 students' standardized tests scored, and 51,975 teacher made tests or survey sheets scored, the Project's expectations were again exceeded.

*Food Service*

Requests from national groups for speaking engagements by the Lincoln Public Schools Food Service Director indicate the recognition of the Lincoln program facilitated through Project ADMIRE's computer center. This recognition is above expectations.

*Student Census*

Although the Student Census application in the Lincoln schools functions extremely well, in the service unit schools the program failed to materialize.

Lack of expressed desire from many schools and the inability of a group of others to standardize coding procedures were the determining factors.

*2741 Terminal*

The use of the remote terminal in the service unit did not reach expectations. It is felt the objective was met, in that all schools were offered the use of the unit, and it was used effectively in the schools participating.

However, scheduling of computer time early in the year, long distance telephone connection problems, and installation of the unit before the use of the accoustical coupler slowed the progress of this portion of the instructional program.

*Grade Reporting*

Two of the eleven service unit schools who did scheduling with Project ADMIRE proceeded with the grade reporting. In many cases local school boards would not go along with a change from six-week grading periods to quarters, or adapt to a system of grades which would be easily handled by the computer and scan sheet reporting.

3. **Report the effect of the project on the educational institution or agency by discussing what you consider to be the greatest change resulting from the project.**

The greatest change resulting from Project ADMIRE is the awareness on the part of all administration in regard to the role data processing can play in decision making and information retrieval.

Project ADMIRE's Director, Dr. Robert DenHartog, through interest and knowledge of data processing is a directive force in moving the Lincoln schools toward a unified Program, Planning and Budgeting System.

The Business Affairs office depends upon the computer for services involving all budget transactions of the Lincoln Public Schools.

Personnel files aid the decision making process for the Personnel Director.

In the area of curriculum, information from grade reporting and test scoring affects the decisions made by these administrators

Consultants apply the test scoring results to their specific fields in evaluation.

At the building level principals use scheduling, grade reporting, test scoring information, as well as budgeting and accounting information in their decisions.

Although the Project was designed to aid administrators, the effects of the Project cannot be overlooked in regard to teacher participation in test scoring and instruction, or the interest and information imparted to students through the instructional program.

An in-service program through Project ADMIRE conducted by the Area Consultant introduced data processing concepts to all clerical persons in the Lincoln Public Schools. The importance of correct input information was emphasized as well as "What is a Computer?"

The instructional program has become part of the Business Education Department.

The mathematics consultant with teachers in Lincoln view the terminals as excellent teaching aids and problem solving tools.

The Director of Student Services finds the census file and test scoring service to be of great value to his office and staff

4. **Report the effect of the project on the cooperating agencies (1) listing all the community agencies that cooperated in the project (2) discussing the results of such cooperation; and (3) listing local educational agencies and counties which were served by the project and indicate any changes since initial application.**

1. Nebraska Department of Education
   University of Nebraska

   Archdiocese of Lincoln
   Southern Nebraska District, Lutheran Church, Missouri Synod
   Midwestern States Educational Information Project
   Educational Service Unit VI
   Iowa AEDS
   Educational Service Unit III

   IBM Corporation
   Exon's
   Lincoln Telephone and Telegraph Co.

2. The Nebraska Department of Education has aided ADMIRE in their approach to budget and accounting procedures. Their guidance has also been helpful in an approach to transportation studies which the staff of ADMIRE has been considering.

This year the State Department and staff were relied upon for information dissemination for Project ADMIRE and other Title III projects.

Dr. Nelson and his staff at the University of Nebraska Computing Center have provided consultation time to assist in the instructional program being offered through Project ADMIRE.

Relationship with the parochial and private schools of the area has always been good. Staff from ADMIRE has always been welcome, and in many cases people from these schools have been especially cooperative in assisting the coordination of project activities.

When we talk of Educational Service Unit VI we often think only of the schools. Staff of the unit, especially Merle Ebers, Administrator, have been extremely cooperative in assisting Project ADMIRE activities. Mr. Ebers is currently working out a proposal with the Lincoln schools and the area schools to carry on the programs of Project ADMIRE.

Lines of communication are always open with Educational Service Unit III's data processing center. Staff there used to serve only the Omaha schools, but now have become regional in respect to their unit. New applications and ideas are readily exchanged.

Although IBM is involved in our project through the sale and rental of equipment, their cooperation and help in providing services and consultation have gone beyond a business/client relationship.

Exon's have provided staff and materials for Project ADMIRE's program involving the Programma 101 computer. Competent, congenial staff promoted cooperation above the business/client relationship.

3. Participating school districts with four or more teachers by county are as follows:

**Fillmore County**

| | |
|---|---|
| Exeter Public Schools | No. 20 |
| Fairmont Public Schools | No. 19 |
| Geneva Public Schools | No. 75 |
| Grafton Public Schools | No. 16 |
| Milligan Public Schools | No. 71 |
| Ohiowa Public Schools | No. 40 |
| Shickley Public Schools | No. 54 |

**Lancaster County**

| | |
|---|---|
| Norris School District | No. 160 |
| Lincoln Public Schools | No. 1 |
| Malcolm Public Schools | No. 148 |
| Waverly Public Schools | No. 145 |
| Yankee Hill | No. 3 |

Blessed Sacrament Catholic Elementary School
Calvary Lutheran Elementary School
Cathedral of the Risen Christ Elementary School
Lincoln Christian Private Elementary School
Lutheran Junior High School
Pius X High School
Sacred Heart Catholic Elementary School
St. John's Catholic Elementary School
St. Mary's Catholic Elementary School
St. Patrick's Catholic Elementary School
Seventh Day Adventist Schools
Trinity Lutheran Elementary School

**Saline County**

| | |
|---|---|
| Crete Public Schools | No. 2 |
| Dorchester Public Schools | No. 44 |
| Friend Public Schools | No. 68 |
| Western Public Schools | No. 169 |
| Wilber Public Schools | No. 82 |

Seward County

| | |
|---|---|
| Centennial via Utica | No. 67-R |
| Milford Public Schools | No. 5 |
| Seward Public Schools | No. 9 |
| Concordia Teachers College High School | |
| St. John's Lutheran Elementary School | |

York County

| | |
|---|---|
| Benedict Public Schools | No. 3 |
| Bradshaw Public Schools | No. 56 |
| Gresham Public Schools | No. 54 |
| Henderson Public Schools | No. 95 |
| McCook Junction Public Schools | No. 83 |
| York Public Schools | No. 1 |
| Emmanuel Lutheran Elementary School | |
| St. Joseph's Elementary School | |

In addition to the schools listed above, there are approximately seventy rural Class I (K-8) districts in the five counties. Each district has its own board of education. The county superintendent of the counties is part of the project and advises members of Class I boards of education of the project.

5. **Discuss how project information was disseminated. Include such information as (1) the number of unsolicited requests for information; (2) the number of visitors from outside the project area; and (3) the estimated cost of such dissemination.**

During the second year budget period major emphasis was placed on information dissemination. A full-time technical writer was employed for this purpose. Many articles, pamphlets, manuals and brochures were prepared and sent out. This dissemination last year was directly responsible for several visitations to Project ADMIRE this year as well as many requests for information.

This year dissemination of information was handled through newspaper releases, national magazine articles, programs prepared for teacher groups, fraternal groups, service organizations, and parent student groups.

Mailing lists for Project ADMIRE which include all schools in Educational Service Unit VI, and involved educational personnel are printed from the computer on press-on labels. Labels for partial lists or entire lists can be selected by entering certain codes.

1. *Unsolicited Requests*

There have been twenty-four formal unsolicited requests for information received and fulfilled.

Many involved mailing information, while other involved programs or presentations.

A program using ADMIRE equipment and facilities was presented to a mathematics sectional meeting during teachers convention. Attendance of better than 100 could be counted.

A presentation was requested by Delta Pi Epsilon, Business Education fraternal association, for an introduction to data processing. Thirty persons attended the Sunday evening meeting and tour of ADMIRE's facility.

A parents' group in Exeter wished to know more about ADMIRE's instructional program at one of their regular Monday evening meetings. The Area Consultant presented a program at their school to a large group of parents and students.

Career Days, at the Lincoln high schools, held sectional groups for those students who were interested in Data Processing. The Area Consultant and Project Coordinator directed these sectionals.

A staff in-service day was held for Lincoln teachers between semesters this year. Project ADMIRE presented a program to interested teachers, which provided an introduction to data processing and a tour of the computer facility.

Platte College at Columbus, Nebraska, had purchased a Programma 101, but had not been applying it in any of their curriculum. The Area Consultant visited with them one afternoon to demonstrate ADMIRE's use of the machine and provide some direction for their efforts.

Through the direction established by Project ADMIRE the Food Service Program has gained much recognition. The Director of Food Services has been requested as a speaker at several conferences.

The clerical staff of the Lincoln schools requested an in-service program on data processing. A program demonstrating "What is a computer?", the importance of accurate input, and a tour of the computer center was presented to six workshop sessions and a total of 185 clerical people.

2. *Visitors from outside the project area.*

Persons visiting Project ADMIRE not included in the objectives would number 277 persons. Groups such as League of Women Voters, Faculty Wives, and other similar organizations who toured the facility are included in this figure.

Numerous student groups have been escorted through the facilities from within the project area, meaning E.S.U. VI and Lincoln. These are not included in the figure above.

3. *Much of the cost in dissemination of information this year would have to be classified as wages or salary costs,* since dissemination revolved around services. These costs are not included in the approximately $125 costs estimated for dissemination.

6. **Describe the methods and procedures being developed to carry the project forward without Federal support after the designated approval period.**

Upon request from Educational Service Unit VI and the Continuation Committee, Project ADMIRE staff prepared a cost analysis for the various programs being used.

Project ADMIRE took the following position. Since the number of applications used by individual schools varied so greatly from school to school, and contracts with each school for the services they desired would be costly to the schools and burdensome to the Lincoln schools, a proposal of a flat rate package was presented to the Educational Service Unit and the superintendents of the Service Unit schools. Under this proposal all applications currently developed and in operation would continue.

The package proposal was not accepted. ADMIRE then asked that the Service Unit present a counter proposal showing services desired. Merle Ebers, Administrator of E.S.U. VI, is currently devising a proposal for continuation on this basis. Mr. Ebers says many schools have included money in their budgets for ADMIRE services. Other schools are finding it difficult to find funds for their present budget let alone add other services.

At the present time no positive decision has been reached, but negotiations are continuing.

In Lincoln all programs will continue in operation. The instructional programs will be operated through the Business Education department and the Mathematics department. Other projects will be continued utilizing current staff and programs. The costs will revert to the General Fund Budget, but it is determined that the benefits outweigh the costs for the Lincoln Public Schools.

7. **List costs for budget period this narrative report covers:**

| | | |
|---|---|---|
| 1. | Total Cost | $122,169.44 |
| 2. | Total Nonfederal Support<br>Support in the form of use of equipment owned by the Lincoln schools, and some salaries to people who serve Project ADMIRE but are not paid through the Project. | 21,820.00 |
| 3. | Total Federal Support under Title III | $100,349.44 |
| 4. | Total Federal Support other than Title III | 0.00 |

# PART III -- EVALUATION

# A D M I R E

Evaluation Report

by

Howard Eckel

For the Period of

July 1, 1969 to June 30, 1970

## INTRODUCTION

In September of 1967 the Lincoln Public Schools received a Title III grant under the project title of ADMIRE--Assistance in Decision Making through Retrieval in Education. The central purpose of the project was to "improve educational decision making in a five county rural-urban area by the systematic collection, organization, and reporting about the school and its population". The first evaluation report on ADMIRE was submitted to the Lincoln Public Schools on July 30, 1968 and the second on July 30, 1969. This is the third and final annual evaluation report on the ADMIRE project.

The 1967-68 ADMIRE evaluation effort was concerned with four major tasks. First, it was necessary to develop an evaluation rationale and an evaluation procedure. Second, the evaluator translated the broad purpose of the project into a number of evaluation criteria statements--so stated as to form the guidelines for the evaluation of the project over the three year period. Third, the ADMIRE central staff organization and activities were described. And fourth, baseline data were gathered in reference to each criteria outlined from both in the Lincoln Public School district in which data processing has been in use for several years and in the various schools in Educational Service Unit 6.

In October 1968, the evaluator consulted with the ADMIRE staff concerning the accuracy of the 1967-68 report, the extent to which the evaluative criteria accurately expressed the project's goals, and project targets anticipated for the 1968-69 year. In general, the staff concurred with the evaluation content, procedures, and the evaluation criteria. However,

since the 1968-69 continuation grant provided for a portion of ADMIRL resources, staff, and services to be diverted to student instruction in participating schools, an additional evaluation criteria to include this supplementary purpose was added.

The 1968-69 evaluation report centered on establishing communications, working with participants in setting goals, organizing staff in-service programs, promoting data processing activities in Educational Service Unit 6, and developing instructional data processing programs for secondary school youth.

In the 1967-68 report, the evaluator gave special attention to the functioning of the project within the Lincoln Public Schools system while the 1968-69 evaluation stressed ADMIRE's effectiveness in Educational Service Unit 6 schools outside of Lincoln. This third and final annual report attempts to describe the progress made both within Lincoln and in outlying Educational Service Unit 6 school systems.

The 1967-68 and 1968-69 evaluation reports are on file with the Lincoln Public Schools. Also, a three-year report is being submitted with this document.

## SECTION I

## ORGANIZATION OF THE REPORT
## EVALUATION PROCESSES AND PROCEDURES

### Organization of the Report

The investigator has divided the evaluation report into five subdivisions. This first section describes the organization of the report and the procedures used in developing the evaluation study.

In the second section, the evaluator has attempted to summarize ADMIRE purposes as stated and inferred in the original project proposal and in renewal requests for 1968-69 and for 1969-70 fiscal years. These purpose criteria serve as the basic guidelines for a continuous program of evaluation. Also included in the "evaluation criteria" is a general evaluation plan for the duration of the project.

The third section describes ADMIRE's internal structure, organization, operational procedures, and activities conducted by the ADMIRE staff during the third evaluation period. This section deals with such internal matters as facilities, equipment, personnel, organizational patterns, descriptions of current data processing activities, policy, geographical areas served, and in-service activities for the staff.

The fourth section of this document reports the impact of ADMIRE as viewed by participants of the project. This "what was accomplished" phase has at least two purposes for this final evaluation year. First, it provides a vitally important feedback to ADMIRE staff concerning the judgments of the participants about the way that purposes are interpreted and the extent to which purposes are being realized; and second it is a report on the effectiveness of the use of federal funds to support the ADMIRE program.

The fifth section of the report is a summary of statements about the general findings from the various evaluation procedures. This section is intended to coordinate and summarize the findings within the framework of the project's specific subpurposes.

Evaluation Processes and Procedures

Evaluation Criteria. Meaningful evaluation must begin with the objectives which are to be accomplished through the use of certain stated procedures. Therefore, prior to the 1967-68 evaluation, the objectives as set forth in the 1967-68 and 1968-69 proposals were summarized and stated in an "evaluation model" or a set of "evaluation criteria". An attempt was made to include the major purposes as stated and inferred in a form which led logically to evaluative procedures. These statements were used for each of the first two yearly evaluation reports and are being used in this final report as guidelines for the evaluation process.

Publics, Processes, and Procedures. The evaluator includes five publics for the 1969-70 evaluation report. First, he describes the organization and operations of the central ADMIRE staff and the roles of staff members in the project. This includes a discussion of the staff's organization, the staff's qualifications, the physical facilities, data processing equipment, and activities of the staff including meetings with program participants.

The second population is the administrators and other staff in Educational Service Unit 6 school systems who are concerned with non-instructional data processing activities. The third population is a comparable group of administrators in the Lincoln Public Schools.

Questionnaires were designed to collect general information in reference to the involvement of Educational Service Unit 6 schools and

Lincoln Public Schools in ADMIRE and its services. These questionnaires were designed to determine for each school system eligible to participate in the project answers to such questions as "What ADMIRE services have been implemented, are being implemented, or are planned for the future? What is the breadth of school involvement in ADMIRE activities? What are the blocks in the system against either the lack of participation or limited participation? What is the effectiveness of the ADMIRE staff in communication with school staff? What is the degree of staff participation in regional ADMIRE activities? and What is the general attitude toward the ADMIRE project and its administrators?"

The fourth population surveyed is those Educational Service Unit 6 and Lincoln Public Schools instructors who worked directly with the data processing student instruction program. This group was asked to respond to questions concerning program organization, number of students, vocational significance, in-service for instructors, use of instructional equipment, and general comments about the effectiveness of the program.

The fifth population contacted in reference to ADMIRE was a select group of regional and state level personnel who continue to hold key roles in the extensions of the regional concept of data processing. This category included persons in the State Department of Education, the University of Nebraska, and educational service units. The interviews have two purposes. The first is to learn the concepts held about ADMIRE by persons in external key roles and the effectiveness of communication between administrators and state and regional officials. The second is to help acquaint these key persons about ADMIRE and its state-wide implications.

## SECTION II

## EVALUATION CRITERIA

The central purpose of ADMIRE as outlined in the initial proposal document is to create within one of Nebraska's area educational service units--Educational Service Unit 6--a prototype model for utilizing date processing systems in order to improve the decision making process about educational programs for pupils. The primary goal of decision making through data processing is reiterated in a number of objective statements in both the initial document approved August 15, 1967 and renewal proposals for 1968-69 and 1969-70.

While the initial proposal document does not limit proposed data processing activities to those directly related to pupil personnel--i.e., census file, pupil test scoring, grade reporting, and scheduling--it does give distinct emphasis to this area. For example, the initial document states that "The project is to improve educational decision making in a five county rural-urban area by the systematic collection, organization, and reporting about the school and its population... Decisions concerning individual pupil needs can be expedited and an opportunity to explore varieties of solutions to the problems involved . . . (through pupil personnel data processing) . . . The project will experiment with methods of performing decision making functions on electronic machines . . . by being able to integrate the information available (about pupils). . . Boards of education will find themselves better able to decide the emphasis in budget concerns . . . when an educational program for a school district has been based upon integration of significant information concerning the student population. . . . Stress in this project has been given to the area of pupil personnel services."

The original document also stresses data processing functions which would not only simplify accounting procedures but would also provide extended accessible, interrelated information about cost accounting, purchasing, and inventory. The proposal recognizes that one purpose of data processing is to free educational leaders from routine matters so that they may center their attention upon the central purpose of the school--instructi n.

The initial proposal also stresses the area concept of data processing. For example, it states that ". . . several states . . . are in the process of developing information systems. . . Systems and programming that are planned and developed in the proposed project can be readily adapted to statewide use."

In continuing the pupil personnel stress, the renewal proposals indicate that continued assistance in student scheduling, grade card reporting, standardized teacher made test scoring and analysis, payroll and financial accounting, census and attendance files, inventory, and annual supply and orders will be made available in Educational Service Unit 6 and the Lincoln Public Schools.

The renewal proposals also include provision for "in-service programs for administrators, teachers, clerks, and students to develop a better understanding of data processing." The tele-processing system proposed in the 1968-69 renewal document is not only for in-service for professional personnel but is to also demonstrate the value of this type of equipment for an area concept of data processing.

The original document appears to limit data processing development in Educational Service Unit 6 schools to activities designed to assist professional personnel in their task of the school's operation. While improved decision making about educational goals and procedures is the central theme, this basic goal is to be facilitated through improvements at the administrative and teaching levels.

The 1968-69 renewal document introduced a secondary project purpose--that of familiarizing secondary school students with data processing information through the use of portable data processing equipment. ADMIRE's entry into student instruction directly was interpreted as a major program re-emphasis.

The 1969-70 renewal proposal clearly featured student instruction in data processing as a major thrust rather than a secondary project purpose. The first three objectives of the 1969-70 renewal abstract were concerned with student instruction. Also, ADMIRE staff allocation appeared to confirm this re-emphasis.

Inasmuch as ADMIRE included student instruction as a major goal in the 1968-69 and 1969-70 renewal proposals, this purpose became an important area for evaluating the project in 1968-69 and will be a major evaluation area for 1969-70. Since this purpose is not logically a sub-part of the original central purpose--that of demonstrating the feasibility of developing educational data processing services on a regional concept for the purpose of improving education decision making in the region--it then must be stated as a separate primary purpose.

It is difficult to assess progress on the broad and general purpose of "assistance in decision making through retrieval in education". The

evaluator therefore developed a number of subpurposes assumed to contribute to the central board purpose. An attempt was made to state subpurposes in measurable concepts and these are termed evaluation criteria. These statements have been used as guidelines for evaluation from the beginning of the project. These evaluation criteria follow.

Primary Purpose I

ADMIRE proposes to demonstrate the feasibility of developing educational data processing services on a regional concept for the purpose of improving educational decision making in the region.

It then seems clear that the central purpose of ADMIRE may be stated in three phrases--"improved decision making" through "educational data process systems" as a possible "model for service units in the state".

This primary purpose is to be implemented through the development and implementation of a series of related technical, planning, training, and organizational activities. These contributing activities or subpurposes are being delineated herein in the form of an evaluation model or a series of evaluation criteria. These statements are intended to form the foundation for a continuous evaluation process of ADMIRE over the term of the project.

Subpurpose I -- ADMIRE will provide for the administrative planning and supervisory arrangements and procedures for implementing the proposals as outlined.

ADMIRE is an area program with provision for program leadership vested in the Lincoln Public Schools. A very important function of ADMIRE is to provide management leadership for the total project.

Subpurpose 2 -- ADMIRE will solicit the cooperation and involvement of school systems in Educational Service Unit 6 in a unified plan for collecting, storing, and retrieving and utilizing pupil personnel information through data

processing systems.

A basic assumption of ADMIRE is that computerized pupil personnel records provide data which are readily available in an interrelated form adaptable in analyzing the individual needs of pupils. So it is assumed that as the plan becomes fully functioning, it will cost less than maintaining comparable records manually, but will be much more useful in meeting individual needs.

Evaluation of Subpurpose 2 requires the determination of the extent of participation among eligible systems, the extent to which they have progressed in pupil personnel data collection and storage, uses which they have made of such information to date, and their future plans for additional uses of the system.

Subpurpose 3 -- ADMIRE will develop and implement a data processing system for student scheduling, grade card reporting, standardized and teacher made test scoring and analysis, payroll, financial accounting, census and attendance files, inventory and annual supply orders.

The Lincoln Public Schools initiated pupil personnel data processing in the fall of 1966 and have developed certain systems for collecting and storing data. With the extension of the service to an area, it is necessary to adapt the Lincoln system for area use.

Evaluation of Subpurpose 3 requires a periodic assessment of the extent to which adaptation is made and the judgment of participants as to the effectiveness of the system in their respective school systems.

Subpurpose 4 -- ADMIRE will involve teachers and guidance counselors in utilizing data processing in meeting the needs of individual students.

ADMIRE's designers have stressed the use of computerized pupil personnel data by professional personnel, especially teachers and counselors, in helping pupils to meet their individual needs.

The evaluation procedure will assess the extent to which teachers and counselors are familiar with data available to them under the system of ADMIRE and, as the program progresses, the extent to which they utilize the data in meeting pupil needs.

Subpurpose 5 -- ADMIRE will organize training programs for aiding educational administrators to better meet student needs through data processing.

ADMIRE stresses the need to orient educational leaders in school districts to become sensitive to the potential decision making possibilities through the use of the information available from pupil personnel data. Therefore, the leadership training program is central to the project.

Evaluation will give attention to the quality and effectiveness of ADMIRE training programs for educational administrators and other educational leaders.

Subpurpose 6 -- ADMIRE will assist boards of education of participating school systems to use computerized pupil personnel data in establishing personnel needs and financial support for educational programs.

It is recognized that boards of education must be directly involved in major educational innovations. Board members must be adequately acquainted with ADMIRE so that they can appreciate the decision making potential through a proven method of data analysis.

The evaluation process will consider the degree of knowledge which board members have about the data processing system of pupil personnel data in their school and their understanding and support of the program.

Subpurpose 7 -- ADMIRE will acquaint educational service unit administrators about the progress of the program and its possible implications for other area service units in the State of Nebraska.

ADMIRE is intended to demonstrate to educational service units how a system of pupil personnel data processing can be utilized in making better decisions in meeting individual needs in the various educational systems of Nebraska. If this subpurpose is to be met, ADMIRE must include as a part of its program not only information to educational service unit administrators but must involve them in every way possible. A very important dimension of ADMIRE is not only to demonstrate the efficiency of data processing but to demonstrate the feasibility for similar types of programs in other educational service units.

The evaluation process will assess the extent to which educational service unit administrators understand the purposes and goals of ADMIRE and their recogniation of its application to their own areas.

Primary Purpose II

ADMIRE will facilitate instructional programs for secondary school youth in participating schools.

The ADMIRE staff will provide leadership, supervision, and data processing equipment to Educational Service Unit 6 and Lincoln Public Schools. The specific objectives are "to extend student 'hands on' experience with the card punch and sorter, to involve students in problem solving activities with tele-processing terminals connected to the University of Nebraska 360-65 computer, and to extend the use of the Programma 101 table top computer."

## SECTION III

## INTERNAL EVALUATION: THE PROJECT CENTER FACILITIES, EQUIPMENT, PERSONNEL, AND ORGANIZATION

ADMIRE's effectiveness depends upon its facilities, equipment, resources, personnel, and how these are arranged and organized to fulfill the objectives of the project. Section III of this report describes the ADMIRE facilities, equipment, personnel, major central staff activities, visitations and in-service programs during the year 1969-70.

### Facilities

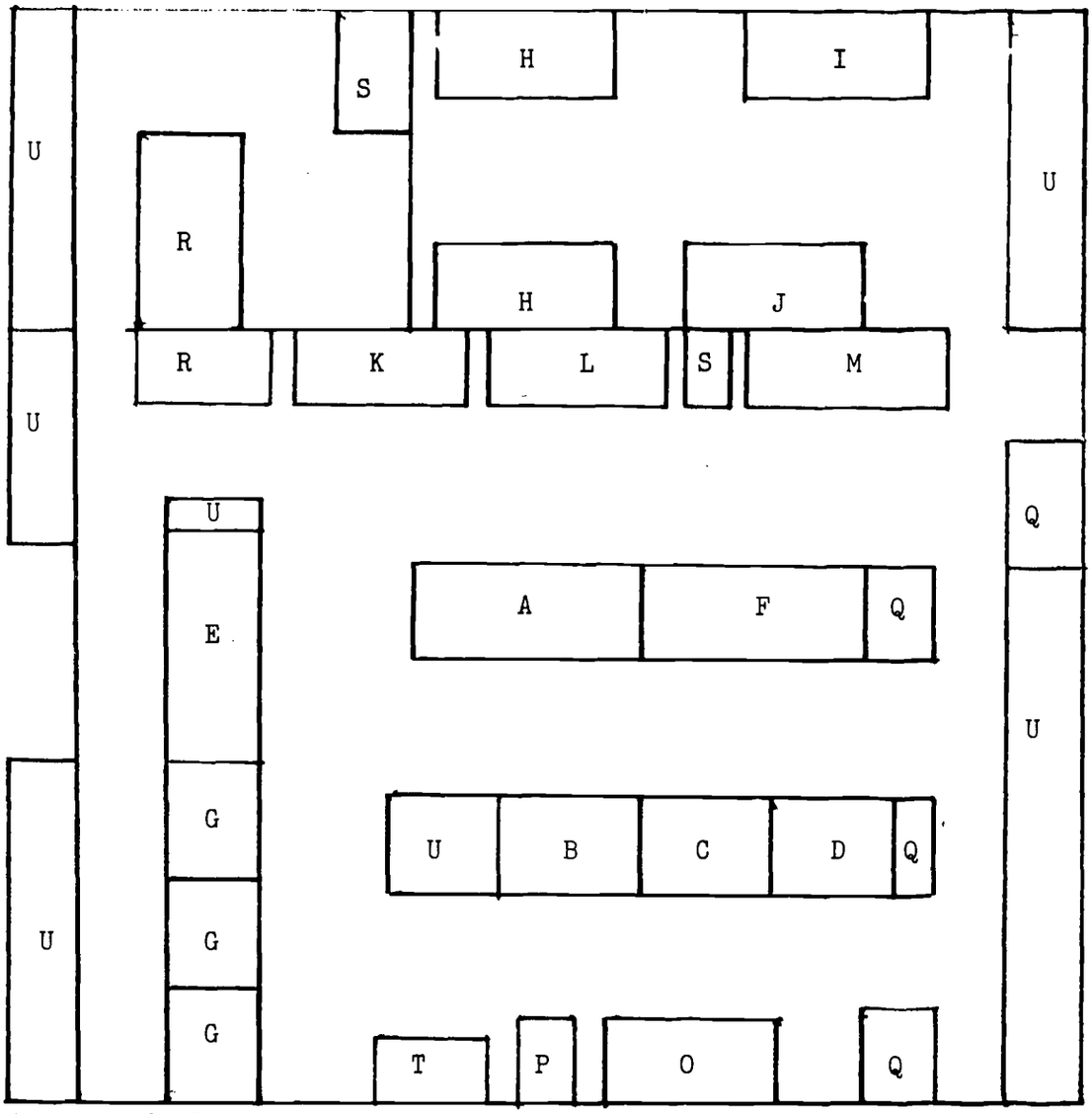
Project ADMIRE's facilities are located in the Lincoln Public School's Administration Building, 720 South 22nd Street, Lincoln, Nebraska. All administrative functions of the project take place in two basic areas, the office area and the machine room.

The ADMIRE computer room is basically the same as the last two years (see Figure 1). This room is an accoustically subdued, climate controlled area. The room has outside exposure on three sides. Additional storage space is provided in the form of stock rooms in other locations within the building.

The Project Coordinator's office is in the computer room area. The keypunch operators and machine operator also work in this area.

The administrative offices are located in the south end of the remodeled Public Schools Administration Building. Desks of the Administrative Assistant, Area Consultant, Systems Analyst, Programmers and Secretary are contained in this room. The Project Director's office adjoins this main work area.

# MACHINE ROOM LAYOUT




A. 1447 CONSOLE
B. 1440 COMPUTER
C. 1441 C.P.U. 16K
D. 1446 PRINTER CONTROL
E. 1403 PRINTER
F. 1442 CARD PUNCH/READER
G. 1311 DISK DRIVE
H. 029 KEY PUNCH
I. 059 VERIFIER
J. 029 KEY PUNCH INTERPRETER
K. 534 CARD PUNCH
L. 1230 TEST SCORING READER
M. 83 CARD SORTER
O. FORMS BURSTER
P. DECOLLATOR
Q. CARD FILES
R. DESK
S. FILE CABINETS
T. DISK FILE STORAGE
U. STORAGE

The conference rooms, cafeteria, auditorium, library and other public school facilities are made available to the ADMIRE effort.

Equipment

The IBM 1440 computer system is a powerful device and well adapted for use in the administrative functions currently undertaken. It has 16,000 positions of core storage, supplemented with three random access disk drives as auxiliary input and output devices.

This "second generation" computer with internal processing speed measured in micro-seconds can handle efficiently the administrative functions currently in operation. Difficulty arose when an attempt at Computer Assisted Instruction was made. When instructional demonstrations were requested they took priority over the regular work schedule causing interruption in the administrative work schedule.

This year, however, the instructional program connected four terminals to the University of Nebraska's IBM 360, eliminating the interruptions in the regular schedule of administrative functions.

The major components of the ADMIRE computer system are owned by the Lincoln Public Schools. These components are:

| Description | Quantity |
|---|---|
| 1440 IBM Computer | 1 |
| 1403 Printer | 1 |
| 1311 Disk Control Drives | 2 |
| 1441 Central Processing Unit, 16K | 1 |
| 1446 Printer Control Unit | 1 |
| 1442 Card Punch-Reader | 1 |

| | |
|---|---|
| 1447 Console Model I | 1 |
| 1230 Optical Mark-Scoring Reader | 1 |

Other equipment owned by the Lincoln Public Schools and used directly by Project ADMIRE are:

| Description | Quantity |
|---|---|
| Decollator | 1 |
| Forms Burster | 1 |
| Card Filing Cabinets | 8 |

Equipment owned by ADMIRE is as follows:

| Description | Quantity |
|---|---|
| Computer Equipment - | |
| IBM 1311 Disk Storage Drive | 1 |
| IBM Disk Packs | 18 |
| 2103 -D- Disk Cabinet | 1 |
| Accoustical Coupler (Data Set) | 1 |
| Computer Core, 8,000 Positions | |
| Bit Test | 1 |
| Delivery Equipment - | |
| Ford Van, Econoline | 1 |
| Hydraulic Lift for Van | 1 |
| Carts for Keypunch and Sorter | 3 |
| Media Equipment - | |
| Tape recorder, Cassette type, Voice of Music (with accessories) | 3 |
| Slide Projector, Carousel with Attachments | 1 |
| Programma 101, with accessories | 4 |

| | |
|---|---|
| Office Equipment - | |
| IBM Executive Typewriter | 1 |
| Remington Electric Typewriter | 1 |
| Diva Suma Calculator | 1 |
| Desks | 3 |
| Chairs, Steno | 1 |
| Chairs, Executive | 3 |
| File Cabinets | 3 |
| Printing Calculator, Remington | 1 |
| Tab File Card, 20 Drawer | 2 |
| Desk File | 1 |
| Auxiliary Rack | 1 |
| Typewriter Stand | 1 |
| Rental Equipment - | |
| ASR 33 Teletypes (with data set) | 3 |
| 2741 IBM Terminal | 1 |
| 029 Card Punches | 6 |
| 082 Card Sorters | 4 |
| 059 Verifier | 1 |
| 029 Interpreting Card Punch | 1 |
| 029 Non-Print Card Punch w/left zero | 1 |

Personnel

Project ADMIRE's staff is highly qualified and dedicated. The Project Director is Robert Den Hartog, Associate Superintendent for Business Affairs in the Lincoln Public Schools. He is recognized nationally as an authority

in the application of data processing to educational objectives. Professional periodicals have printed several articles of his, and professional groups of national organizations often request him as a speaker at their conferences. He is an active member of the Association for Educational Data Systems.

The Project Coordinator recently had an article of his published in the NASSP Bulletin regarding Project ADMIRE services. He has made contributions concerning data processing methods to the American Association of Secondary School Principals. His six years experience in educational data processing in the Lincoln Public Schools is invaluable to the operation of Project ADMIRE.

The Administrative Assistant to Project ADMIRE was formerly a superintendent at Bradshaw, one of the schools in Educational Service Unit 6. His interest in the project as a superintendent in one of the schools served by ADMIRE prompted his decision to join the staff for 1969-70.

All professional employees are certificated as Nebraska teachers or administrators. The non-professional employees all have experience in data processing through business, government, or public school backgrounds. Several of the non-professional employees have received training through adult classes in the Lincoln Public Schools

The employees of ADMIRE for 1969-70 are listed as follows:

Professional

Robert Den Hartog, Director (¼ time), Ph.D., Associate Superintendent for Business Affairs, Lincoln Public Schools.
Marvin M. Miller, Project Coordinator (full time), M. Ed.; educational data processing; previously secondary mathematics teacher.
Royce Holtgrewe, Area Consultant, (full time), M. Ed.; instructional applications of Project ADMIRE; secondary mathematics teacher previously.
Dave Ely, Administrative Assistant (½ time), M. Ed.,; school visitations, testing, internal administration, budget and accounting program.

Non-Professional

Jay Morehead, Systems Analyst
Anthony Wenzl, Programmer
James Zemke, Programmer
Terry Birkey, Machine Operator
Clara Williams, 1230 Optical Reader Machine Operator/Card Punch Operator
Rosemary Hitz, Card Punch Operator
Karen Buhrdorf, Card Punch Operator/Verifier Operator
Louise Stapleton, Secretary
Part Time Keypunch Help (On Call)

Organizational Patterns

From its inception in 1967-68, Project ADMIRE has been organized with an Advisory Council composed of administrators of the Educational Service Unit 6 schools, key State Department of Education personnel, Educational Service Unit 6 staff personnel, administrators from private schools, and representatives from the Lincoln City Schools. All persons are urged to actively participate in ADMIRE activities. The Director, along with the Advisory Council, has occasionally appointed members to act as Planning Committees.

During previous years special committees responsible to the Director and Advisory Council furnished and designed suitable educational goals for Project ADMIRE to accomplish. Effective committee leadership resulted in ideas and objectives from all committees for specific activities. The identification of these activities and the desire for these services have resulted in ADMIRE programs designed to benefit the local schools. This has had an impact on ADMIRE which necessitated a new emphasis on objectives more related to instructional activities.

The committees for the year 1969-70 function to keep existing programs going and to serve as advisory groups for continuation of the services after Title III funding ceases.

The internal organization of the ADMIRE staff reveals that most of the employees have clearly defined positions and responsibilities. An organizational chart listing the organizational arrangements for ADMIRE personnel, related offices, and groups is on page 23 of this report.

Georgraphical Area Served

The geographical area served by Project ADMIRE consists of the five counties in Educational Service Unit 6. These five counties are Fillmore, Lancaster, Saline, Seward, and York. Twenty eight public school districts, seven parochial schools, and seventy rural Class I (K-8) districts within these five counties are served by Educational Service Unit 6.

The population of Educational Service Unit 6, including the approximately 160,000 residents of Lincoln, makes up 14.7% of the state's total population. While the central focus of Project ADMIRE is on this 3,146 square mile area, activities of Project ADMIRE could serve as a prototype for this state's nineteen educational service units.

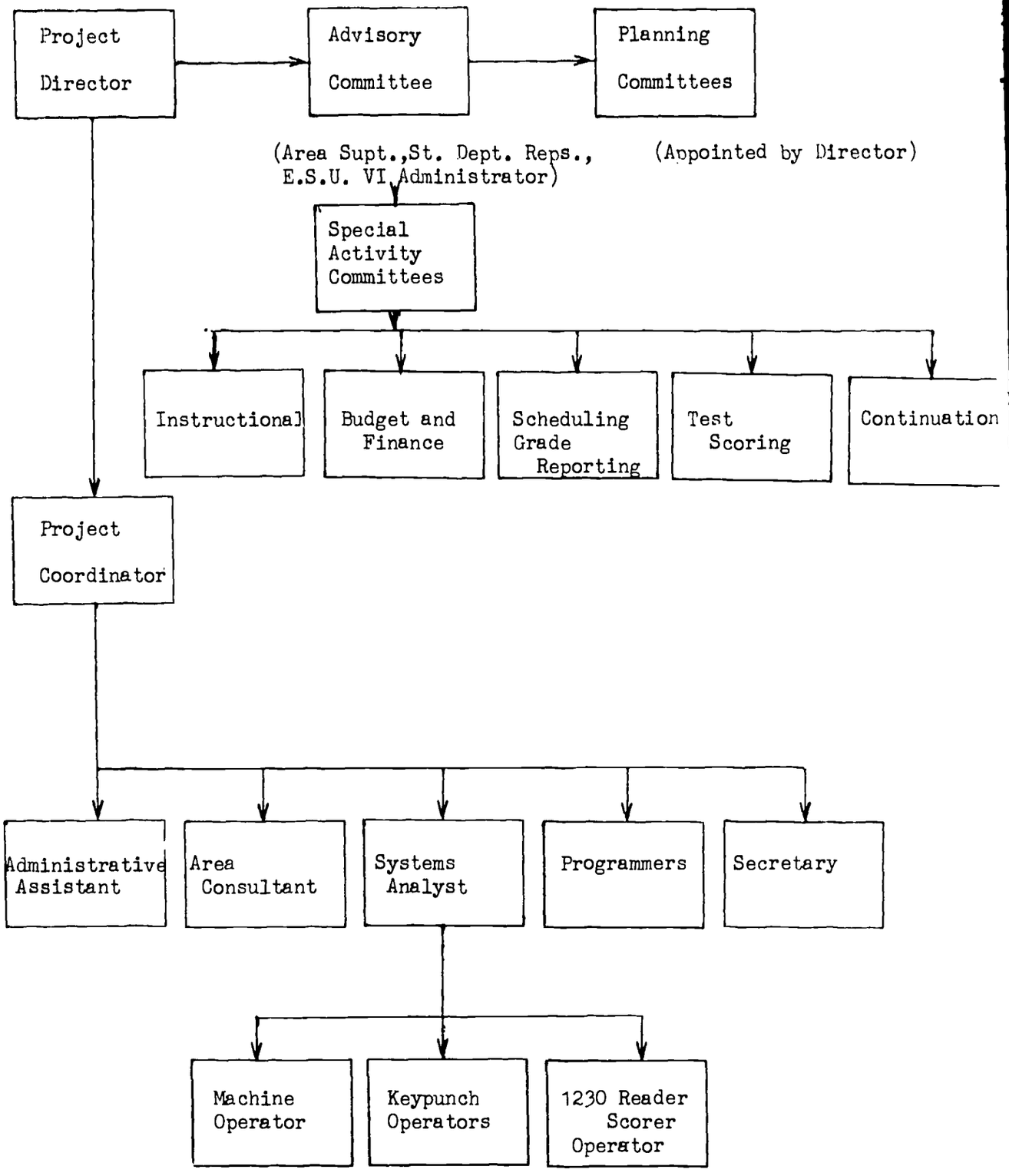
ADMIRE Activities

A descriptive list of most of Project ADMIRE's activities for the 1969-70 budget period are found on the next several pages.

| | |
|---|---|
| September 3 | ADMIRE staff meeting (these meetings were frequent during the year and often on impromptu basis, so they will not be mentioned again). |
| September 4 | Staff visit to Malcolm, Seward, Gresham, Benedict, York, Bradshaw, Henderson |
| September 5 | Staff visit to Norris, Waverly |
| September 8 | Terminal (ASR 33) installed at Northeast and East High |

# PROJECT ADMIRE

Organizational chart



| | |
|---|---|
| September 9 | Programma 101's in use at East High, Dawes Junior High, Centennial High school |
| September 11 | Planning meeting for talk to Teachers' Convention in October |
| September 17 | ADMIRE Advisory Meeting |
| September 17 | Issue instructional equipment schedules, mail copies to all participating schools |
| September 22 | Staff visit to Shickley; deliver instructional dquipment to Ohiowa |
| September 23 | Demonstration by Consultant to students at Ohiowa (Programma 101 and keypunch - sorter) |
| September 25 | ASR 33 terminal installed at Southeast High School |
| September 26 | Staff visit to Milford, Educational Service Unit 6, Dorchester, Friend, Exeter, Fairmont, Milligan, Wilber |
| September 29 | End Ohiowa with instructional equipment |
| September 29 | Delivered instructional equipment to Milford |
| September 30 | Demonstration of equipment to students and teachers at Milford |
| October 2 | Install 2741 terminal at Milford High School |
| October 3 | Demonstrated the use of the instructional equipment to students and teachers at Henderson |
| October 6 | Demonstration of Programma to math students at Henderson |
| October 7 | Programma delivered to Whittier Junior High |
| October 8 | 2741 terminal demonstrated to students at Milford |
| October 8 | Staff visit to Henderson |
| October 9 | Delivered a card sorter to East High School, keypunch and card sorter to Lincoln High School, and a keypunch to Southeast High School |
| October 13 | Continued use and demonstration of 2741 at Milford; visit and delivery of test scores to Seward. |

| | |
|---|---|
| October 13 | In-service with teachers on teletype terminals at East High School (arranged with University of Nebraska personnel) |
| October 14 | Arrange speaker for Career Day at East High School (Topic -- Data Processing) |
| October 15 | ADMIRE Advisory Meeting (P.S.A.B.)<br>Committee meetings included |
| October 15 | Second In-service Meeting on use and operation of ASR 33 teletypes connected to University of Nebraska's IBM 360 computer |
| October 17 | Staff visit to Seward High School |
| October 17 | End instructional equipment use at Milford |
| October 20 | Deliver instructional equipment to Exeter; visited Henderson High School; Consultant talked to Parents Group at Exeter High School (instructional equipment) |
| | Third in-service meeting on ASR teletype at University of Nebraska Computer Center |
| October 21 | Demonstration of instructional equipment at Exeter |
| October 22 | Career Day talk at East High School |
| October 22 | Fourth in-service meeting with the terminals at University of Nebraska Computer Center |
| October 23 | Consultant and Jerry Beckmann, East High Math Teacher, presented program on Computers in Mathematics to Teachers Convention Sectional |
| October 27 | Staff visit to Milford, Exeter, Henderson |
| October 28 | Move instructional equipment from Henderson to Seward High School |
| October 29 | Demonstration of Programma to math classes in Seward |
| October 30 | Programma 101 demonstration to more of the math classes in Seward |
| November 3 | Guided tour for Counselors through Data Processing center of Lincoln Public Schools |
| November 4 | Staff visit at Seward, Milford, and Exeter |

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| November 5 | Visit Lincoln Public High Schools using the terminals; view Bob Wohlers video-tape presentation of an introduction to the terminal |
| November 6 | Talk to students on the use of the 2741 terminal at Milford |
| November 7 | Move instructional equipment from Exeter to Gresham |
| November 9 | Consultant attended a Business Educational Group's monthly and presented a talk to them with a tour and demonstration of ADMIRE's Computer Center |
| November 10 | Introduction of data processing equipment to students and teachers at Gresham High School |
| November 12 | Presentation of the Programma 101 to all math classes at Gresham High School |
| November 14 | Staff visitation to Seward, Gresham, Benedict, McCool Junction, Fairmont |
| November 17 | Staff visit to East High School and Southeast High School (terminal use) |
| November 18 | Consultant worked with students at Southeast on the teletype terminal |
| November 19 | Testing Committee at Educational Service Unit 6 |
| November 19 | Move instructional equipment from Seward to Benedict |
| November 20 | Introduction of Data Processing Equipment by demonstration at Benedict |
| November 21 | Moved instructional equipment from Gresham to McCool Junction |
| November 24 | Demonstration for the use of the instructional equipment to all math classes and business classes at McCool Junction |
| November 25 | Introduction of the Programma to several math classes at Whittier Junior High |
| December 1 | Staff visit to Milford and McCool Junction |
| December 2 | Preliminary visit with Waverly teachers on use of the instructional equipment |

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| December 2 | Tour the University of Nebraska Computer Center with group of boys from Milford |
| December 3 | Staff visit to Benedict, Fairmont, and Milford |
| December 5 | Staff visit and in-service demonstration of Programma 101 at McCool Junction; moved instructional equipment from Benedict to Waverly |
| December 8 | Introduced the Programma 101 in math classes at Waverly; moved 2741 terminal from Milford to Waverly |
| December 9 | Demonstration of the Programma 101 to math classes at Waverly |
| December 10 | Moved instructional equipment from McCool Junction to Fairmont |
| December 11 | Consultant talked with math and business classes at Fairmont and demonstrated the use of each piece of equipment |
| December 12 | 2741 terminal installed at Waverly |
| December 13 | Students using the 2741 terminal and Programma 101 at Waverly |
| December 15 | Meeting with Lincoln secondary math teachers (terminal use) |
| December 16 | Instruction to 5 math classes at Waverly on the operation of the Programma 101 |
| December 17 | Staff visit to Wilber |
| January 5 | Moved instructional equipment from Fairmont to Milligan; demonstration for the business education classes on the use of the keypunch and card sorter |
| January 6 | Introduction of the Programma 101 to math classes at Milligan High School |
| January 7 | Staff visit to Waverly and Crete |
| January 9 | Moved instructional equipment from Waverly to Crete |
| January 12 | Introduction of the Programma to several math classes at Crete High School |
| January 14 | Staff visitation to Geneva, Crete, Dorchester, Milligan, Fairmont; delivered a Programma 101 to Dorchester |

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| January 15 | Dennis Frederick (ETV) requested the use of Programma 101 for use on his television presentation |
| January 16 | Moved instructional equipment from Milligan to Geneva; visit with cooperating teachers in Dorchester and Crete |
| January 19 | In-service demonstration to teachers at Geneva High School on the use of the Programma 101 |
| January 20 | Introduction for Dorchester teachers and students on the Programma 101 in five math classes; staff visit to Crete |
| January 23 | Staff Development Day at the Lincoln Public Schools; Talk and tour with Consultant and Coordinator (Marv Miller) with interested teachers |
| January 26 | Moved terminal from Waverly to Wilber |
| January 27 | State Department Evaluation of Project ADMIRE; visit to Seward, Dorchester, and Crete |
| January 28 | Demonstration of the 2741 terminal to classes at Wilber; staff visit to Geneva to check instructional equipment |
| January 29 | Staff visit to Malcolm |
| January 30 | Moved instructional equipment from Crete to Malcolm |
| February 2 | Introduction for business classes and math classes on the use of the instructional equipment |
| February 3 | Demonstration of the 2741 terminal to students in Wilber math classes; staff visit at Geneva, Shickley, and Exter |
| February 5 | Staff and Ron Massie (math consultant) visit of University of Nebraska at Omaha's computer center, and terminal installation at Omaha Westside High School |
| February 6 | Moved 2741 terminal from Wilber to Exeter; moved instructional equipment from Geneva to Shickley |
| February 9 | Instruction on the use of the Programma 101 to math classes at Shickley High School |
| February 10 | Demonstration of the 2741 terminal at Exeter; staff visit at Dorchester |

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| February 12 | Took Programma to Goodrich Junior High |
| February 13 | Moved instructional equipment from Malcolm to Dorchester |
| February 16 | Staff visit to help introduce data processing equipment |
| February 17 | Staff visit to Shickley and Exeter; moved 2741 terminal to Milligan |
| February 18 | Moved ASR 33 teletype to Lincoln High School |
| February 20 | Moved instructional equipment from Shickley to Friend |
| February 23 | Demonstration of the Programma 101 to math classes at Friend High School |
| February 25 | Introduction of the teletype to math classes at Lincoln High School |
| February 27 | Staff visit to McCool Junction, Benedict, and York |
| March 2 | Introduction of the ASR 33 teletype to students in several classes at Lincoln High School |
| March 3 | Demonstration of the 2741 terminal to business education classes at Crete High School |
| March 4 | Moved instructional equipment from Dorchester to York; staff visit to Friend |
| March 5 | Demonstration of the Programma 101 to math students in York; visit to Bradshaw High School |
| March 6 | Staff visit to Crete; check on use or questions about the terminal |
| March 10 | Use of teletype at Lincoln and demonstration to classes of students |
| March 11 | Moved instructional equipment from Friend to Bradshaw |
| March 12 | Introduction of the Programma 101 to math classes at Bradshaw |
| March 13 | In-service Day for Clerks and Secretaries of the Lincoln Public Schools; presented a talk and conducted a tour of the Data Processing Center for 165 to 190 people |

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| March 16 | Staff visit to Bradshaw |
| March 17 | Staff visit to Bradshaw to return repaired Programma; staff visit to York |
| March 20 | Demonstration of the teletype terminal to Lincoln High students; moved sorter from York to be repaired |
| March 23 | Moved 2741 terminal from Crete to Dorchester |
| March 24 | Meeting with Dr. Nelson of University Computing Center |
| March 25 | Demonstration of the 2741 terminal to students in Dorchester |
| March 31 | Moved the instructional equipment from York to Centennial High School |
| April 1 | Moved instructional equipment from Bradshaw to Pius X High School |
| April 2 | Demonstration of the Programma 101 to Pius X math teachers |
| April 3 | In-service with Clerks of Lincoln Public Schools on "What is a Computer?" |
| April 7 | Staff visit to Centennial High School |
| April 9 | Moved 2741 terminal from Dorchester High School to Centennial High School |
| April 10 | ADMIRE staff visit to Des Moines to view their data processing courses and Project ACCESS in Polk County |
| April 14 | Demonstration to students of Centennial High School on the use of the 2741 terminal |
| April 15 | Relocate the Programma 101's in some of the Lincoln Schools; visit Culler Junior High |
| April 17 | Staff visit to Bradshaw High School |
| April 20 | Moved Programma 101 to Culler Junior High; demonstration of its operation to math teacher |
| April 22 | Moved instructional equipment from Pius |
| April 23 | Relocated instructional equipment in Norris High School |

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| April 24 | Moved instructional equipment from Centennial High School to Wilber High School |
| April 27 | State Evaluation with Bill Sesow and Carl Novak (Project ADMIRE activities in the Lincoln Public Schools) |
| April 28 | Introduction of the Programma 101 to math classes in Norris High School |
| April 29 | Students in Wilber received introduction to the Programma in several of their math classes |
| April 30 | Demonstration of the more complicated programming techniques of the Programma 101 to math classes in Norris High School and Wilber High School |
| May 1 | Moved 2741 terminal from Centennial to Friend High School; demonstration of the use of the terminal to the math teachers at Friend High School |
| May 4 | Demonstration of the use of the 2741 terminal to classes at Friend High School |
| May 5 | Platte College at Columbus requested the use of and information about the Programma 101. They purchased one and were currently not using it in any developed curriculum. Staff visit and demonstration at Columbus |
| May 6 | Further demonstration of the Programma at Wilber High School |
| May 8 | Demonstration of the 2741 terminal at Friend High School |
| May 13 | End instructional equipment at Norris High School |
| May 14 | End instructional equipment at Wilber High School |
| May 15 | Moved Programma 101 to Pound Junior High; demonstration of the Programma 101 to math classes at Pound Junior High School |
| May 18 | Moved Programma 101 to Irving Junior High School; demonstration of use to math teachers at Irving Junior High |
| May 20 | Demonstration of the use of the Programma 101 to students at Pound Junior High School |

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| May 25 | Demonstration of the use of the Programma 101 to students at Irving Junior High School |
| June-July | The instructional equipment of Project ADMIRE will be used in Summer School classes to be taught by the Instructional Consultant of Project ADMIRE |

Staff Visitations and In-Service

The 1968-69 evaluation referred to a lack of visitations to the area high schools. This year the Project ADMIRE staff visited each school participating in Project ADMIRE activities four times during the year.

The purpose of these visitations ranged from explaining ADMIRE services to conducting in-service training on the data processing equipment.

Most visitations were highly informal. With the trend of ADMIRE activities being more instructional in nature it's only logical that the majority of the visitations served as in-service training in the operation of the instructional equipment.

The Area Consultant spent at least one day in each school demonstrating and introducing the Programma 101 or keypunch and card sorter to teachers and classes of students.

These in-service programs have appeared to be very successful and helpful to the teachers and students. In-service in this way brought the program to the schools, teachers, and students, thereby not requiring teachers to drive to other communities to attend workshops on Saturdays or after school. School administrators did not have to feel obligated to provide released time to their staff to participate in the instructional program.

Within the Lincoln schools all high school math teachers were invited to participate in an in-service program designed to familiarize them with the University of Nebraska's computer center and applications they could

use with the remote terminals. Attendance at these four sessions averaged around fifteen at each session.

The Area Consultant was always "on call" to trouble shoot problems or to demonstrate the available equipment. Numerous in-service activities concerning the ADMIRE instructional equipment took place in the Lincoln schools. The Programma 101 was demonstrated at many of the junior high schools and the ASR Teletypes were demonstrated to many high school math classes in several of the high schools.

Data Processing Functions Within the Lincoln Public Schools

The central purpose of ADMIRE is to introduce certain data processing procedures in schools within a region, Educational Service Unit 6. Inherent in this purpose was the strengthening of data processing equipment, functions, and services within the Lincoln Public Schools. It is assumed that services within the Lincoln Public Schools introduced and strengthened under ADMIRE are now available to Educational Service Unit 6 schools if such services are deemed helpful. Therefore, the fact that such services have been developed and were refined under ADMIRE is considered as important evaluation data. Following are data processing programs with brief descriptions of each.

Food service information. Three types of food service information are processed by computer. They are food information, census and sales information, and monthly financial statements.

Computerized food information data include input into inventory upon purchase and receipt, ordering of food by individual schools, dispersement and delivery of food to individual schools, food costs by schools and total food costs, records for filing to meet agreement with government program,

perpetual inventory of food stores year to date usage, and monthly inventory of storerooms in individual schools.

Computerized census and sales information includes daily count of students and adults served and daily cash sales records.

Computerized monthly financial statements include receipts, itemized total food costs, labor costs, miscellaneous costs, labor costs per plate, food costs per plate, miscellaneous costs per plato, total costs per plate, and profit or loss.

Inventory and purchasing. Two different inventory files are used for purchasing and inventory control purposes. They are the stock inventory file and the non-stock inventory file.

The stock inventory file contains all items in the Lincoln Public Schools supply warehouse. Stock catalogs are printed from the inventory file. The invoices are printed, charges are made to budgets, and inventory is up-dated during a single computer run. Weekly inventory reports are printed showing quantities on hand and units used year to date.

The non-stock file contains all items which may be ordered (other than those carried as stock items). This file is composed of approximately 20,000 items. Catalogs are printed for each curriculum area in quantities sufficient to handle all schools. Orders from individual schools are consolidated and bid sheets are printed. Low bid prices and vendor numbers are used to print purchase orders. All items ordered and initially encumbered and distribution lists are sent to all schools. When items are received, charges are assessed to individual school budgets.

Testing and test score analysis. Project ADMIRE has assisted the Lincoln Public Schools develop and refine computerized scoring and analysis

of both standardized and teacher made tests. Emphasis is not only placed on machine scoring but also on analyzing the potential of each student and suggesting areas in which re-teaching may be needed.

The item analysis print-out provides the school with several items of information and evaluation. Not only does it provide the school with a defensible and reliable method of ranking students without expending valuable time and money resources but it also records the comparative achievement of the class.

The format of the print-out includes a general heading including the name of the school, the subject being tested, such information or designation as refers to period and/or section, the teacher's name, and the number of students tested. Test detail including the number of and the name of each student tested, a register of student responses for each test question, the correct key for answer responses and a number line of test items in intervals of ten appearing above and below the student registers, response-answer interpretation including correct answer and incorrect answer, omitted response, and invalid response are also included.

Information on test totals include raw score, classroom rank, percentile rank, and percent correct.

Grade reporting. All four senior high schools and all ten junior high schools participate in the computerized grade reporting plan.

One of the more important needs relating to school analysis is a better method of organizing, analyzing, integrating and interpreting teacher estimates of pupil's work. Project ADMIRE offers as an adjunct to its registration and student scheduling service the computerized process of grade reporting and recording. The purpose of this service is to provide

a summary evaluation report which will focus attention on the desired outcomes of the school program, group progress, and individual progress.

The first step in the normal grade reporting and recording begins with the up-dating of the class roster for each section of each subject. However, the roster for up-dating is an output from one step in the scheduling process. Teachers indicate on the up-dated roster the grades for each of their students each nine weeks and at the end of each semester.

The output of the grade reporting procedures consist primarily of four copies of the pupil progress report at intervals of nine weeks; one consolidated class list for each section complete with grades corrected and confirmed by the teachers; one pressure sensitive cumulative report for each pupil each year to be attached to the cumulative permanent record of this student, the pressure sensitive report includes the pupil's grade for each course, the pupil's grade average, his class rank, and the total hours earned by the pupil; and attendance. Furthermore, the procedure includes a distribution of grades within a course and by sections within a course, a computation of grade average for the entire course and grade average for each section within a course, a list of failures, a list of incompletes, and an honors list.

The major objectives of computerized grade reporting are to conserve time of staff members, provide more time for use in student counseling, provide greater opportunities for parental participation, permit closer scrutiny and refinement of curricular offerings, facilitate better teacher load and balance, and improve the fuller utilization of existing facilities.

Student scheduling procedures and sequential steps in the student scheduling process are as follows. Participating school prepares a student request sheet (registrations) listing courses offered. Data processing punches these request cards, punches the course table cards, and edits all student requests for invalid courses. Data processing also prints course tallies. The school prepares a list of courses showing a potential conflict matrix. Data processing develops the conflict matrix. The school prepares course description sheets (master schedule). Data processing punches master schedules, provides initial schedule run or runs, prints up-dated master schedule, prints listing of students with conflicts, provides final scheduling run, and prints up-dated master schedule. Data processing also provides for copies of student schedules and one to four copies of the class lists and study hall lists.

Budget and accounting. The Lincoln School District utilizes a machine system to account for funds in the budget approved by the Board of Education. All receipts and expenditures are coded with account codes and the processes of writing orders, paying claims, and writing payroll provide the input information necessary for the complete accounting system.

At the time each purchase order is written, information is entered into the system which provides a record of all outstanding orders and in turn the amount encumbered against each account. When the claim is processed for payment against a given order, the input information necessary to write the warrant for payment is used to update the encumbrance file (remove the record or reduce the amount if a partial payment) and enter the expenditure against the proper disbursement account. Unexpended and unencumbered balances are available in all accounts at the end of every accounting period.

The system provides for control of all warrant and receipt numbers with a controlling balance in cash accounts which can be reconciled with bank or treasury balances. The account numbers allow for division of accounts into separate funds which are offset or balanced by individual cash accounts.

The accounting codes are designed to allow information to be printed in a sequence required for State Reports or in a project or administrative responsibility sequence. This project sequence is utilized to provide the special accounting required for the various Federal projects. Since this information is readily available from input data required for payment of claims, the special fund reports can be prepared with little additional machine time.

In regard to payroll, the time sheet listing personnel assigned to each school is prepared by data processing and sent to the various administrators for certification. The principal certifies attendance or absence and lists substitutes where used, then returns the time sheet to the business office. After an audit, the time sheet goes to data processing where cards are punched for all absences and substitutes. This information is combined with each individual record stored on disk, deductions are machine calculated, and a register is printed for audit. After all necessary adjustments are completed, a final payroll register is printed, employee records are updated, and payroll warrants are written. This information is then used to provide needed deduction registers. A payroll distribution is printed to provide budget and accounting information.

A portion of the updated employee record is printed to provide the year to date earnings register which lists accumulated gross salary as well as the accumulated deductions in all areas where such information is required.

This same source provides information for machine preparation of various reports such as state retirement, social security and W-2's.

Student instruction. Project ADMIRE introduced a student instruction program for both the Lincoln Public Schools and Educational Service Unit 6 schools at the beginning of the second year of the project, 1968-69. The objectives of this program were to extend student "hands on" experience with the card punch and sorter, to involve students in problem solving activities with tele-processing terminals connected to the University of Nebraska 360-65 computer, and to extend the use of the Programma 101 tabletop computer.as an aid to learning programming techniques and as a tool in solving math related problems.

Equipment used in the student instruction program included six 029 key punchers, four 83 card sorters, 4 Programma 101 tabletop computers, one 2741 terminal, and three ASR 33 teletypes.

A description of instructional activities provided for this part of the program and the overall evaluation of the program are described in more detail in the external evaluation on page 77 of this report.

## SECTION IV

## EXTERNAL EVALUATION: ADMIRE PURPOSES, PROCEDURES, AND SERVICES

A number of external publics were asked to respond to questions concerning purposes, problems, and services of ADMIRE. In 1967-68 an assessment of progress was centered on schools in Lincoln with secondary emphasis on schools in Educational Service Unit 6. In the 1968-69 report greater emphasis was given to K-12 private and public school systems in Educational Service Unit 6. In this third and final annual report, careful attention is given to both the Lincoln Public Schools and Educational Service Unit 6 K-12 school systems. Stress is not only placed on data processing services about students and to aid the teaching process but also upon student instruction in data processing. Also, since discussions relevant to regional data processing for educational purposes are dependent upon State Department officials and educational service unit administrators, the knowledge and attitudes of these groups about ADMIRE and its functions are included not only in the 1967-68 and 1968-69 reports but also in this final report.

### Educational Service Unit 6 K-12 Schools

A comprehensive questionnaire was developed for both public and private K-12 schools in Educational Service Unit 6. (See Appendix A for the questionnaire and Appendix B for a listing of to whom the questionnaire was sent.) The questionnaire included questions concerning data processing services implemented, year in which they were implemented, and those which were considered feasible; the degree to which services offered have been effective; attitudes concerning data processing by various groups within the school and

community; the effectiveness of communication and leadership provided by the ADMIRE staff; and a detailed analysis of the particular data processing activity or activities in which the school system is involved. Participants were also asked to indicate their general impression of the data processing program and an overall summarization of their feelings about the Lincoln Public Schools data processing program.

Seventeen of the twenty-two questionnaires sent were returned for a 77% response.

Superintendents, Educational Service Unit 6 Schools

Seventeen returned (77% responding)

Table 1 on the following page is a summarization of the questionnaire responses made by superintendents of K-12 schools in Educational Service Unit 6.

Services Implemented. Eight of the seventeen respondents indicated that they have implemented student scheduling while one considered it feasible. Two said they participated in grade reporting and two indicated that it was feasible for their schools. Two of the responding schools felt that attendance accounting and school census may be feasible for their school systems.

Sixteen of the responding schools participated in machine test scoring and another nine considered this as a feasible type of service. One considered activity fund accounting feasible. Four respondents indicated that they participated in financial accounting and four considered this service feasible. Two of the responding schools indicated that cooperative purchasing is feasible for them. Two of the comments indicated that the size of their schools determined the value of data processing procedures. Two comments strongly supported the financial accounting and payroll functions.

TABLE 1

SUMMARY OF QUESTIONNAIRE SENT TO SUPERINTENDENTS
IN EDUCATIONAL SERVICE UNIT 6 SCHOOLS

Total Persons Responding = 17

| Item description | | | | |
|---|---|---|---|---|
| 3. Degree of effectiveness | High | Moderate | Low | |
| Student scheduling | 4 | 3 | 1 | |
| Machine test scoring | 11 | 4 | 1 | |
| Financial accounting | 3 | | | |
| Student instruction in data processing | 8 | 2 | 1 | |
| 4. Factors which prevent or limit participation | Yes | No | Uncertain | |
| a. Administration feelings? | 3 | 8 | | |
| b. Teacher feelings? | 1 | 10 | 3 | |
| c. School board feelings? | 5 | 6 | 3 | |
| d. Community feelings? | | 8 | 4 | |
| e. Size of your school system? | 12 | 5 | | |
| f. Unclear about advantages of service? | 1 | 10 | | |
| 5. Organizational factors which prevent or limit participation | Yes | No | Uncertain | |
| a. Services offered? | 4 | 8 | | |
| b. Communication of advantages? | 3 | 8 | 1 | |
| c. Assistance in development and use? | 1 | 9 | 1 | |
| d. Quality of services rendered? | 2 | 8 | 1 | |
| e. Promptness of services? | | 10 | 1 | |
| 6. Participation in STUDENT SCHEDULING | | | Yes | No |
| a. Have forms presented problems? | | | 1 | 7 |
| b. Completed forms returned in satisfactory time? | | | 8 | |
| c. Reduced overall time spent? | | | 3 | 5 |
| d. Enabled you to improve master schedule? | | | 4 | 4 |
| e. Consider data accurate? | | | 8 | |
| f. Enabled you to make better decisions? | | | 6 | 2 |
| g. Resulted in better educational program? | | | 4 | 4 |
| 7. Participation in TEST-SCORING AND ANALYSIS | | | Yes | No |
| a. Have forms presented problems? | | | 6 | 10 |
| b. Enabled you to better evaluate test items? | | | 10 | 6 |
| c. Completed forms returned in satisfactory time? | | | 15 | |
| d. Save time of teachers? | | | 12 | 4 |
| e. Consider data accurate? | | | 15 | |
| f. Resulted in better educational program? | | | 11 | 4 |
| g. Enabled you to make better decisions? | | | 11 | 4 |

Continued

TABLE 1 continued

| Item description | Yes | No | Uncertain |
|---|---|---|---|
| 8. Participation in FINANCIAL ACCOUNTING | | | |
| a. Has format presented any problems? | 3 | 1 | |
| b. Completed forms returned in satisfactory time? | 3 | | |
| c. Reduced overall time spent? | | 4 | |
| d. Consider data accurate? | 3 | | 1 |
| e. Enabled you to make better decisions? | 3 | | 1 |

Participants did not name additional data processing services other than the ones listed that would be of value to them.

Respondents were asked to indicate the degree of success for each of the data processing services which have been implemented in their school systems. Four respondents said that student scheduling was highly effective, three that it was moderately effective while one indicated its effectiveness as low. Eleven felt that machine test scoring was highly effective, four moderately effective and one rated its effectiveness as low. Three respondents indicated that financial accounting was highly effective in their systems. Eight of the eleven who responded to the student instructional program indicated that the program was highly effective, two said it was moderately effective while one indicated that it was ineffective. The one who indicated that the student instructional program was ineffective said the reason for this was that the machine was not available an adequate length of time. He said "the instruction had to be too hurried for the students."

Resistance Encountered. Respondents were asked to indicate the kinds of factors in their schools which prevented or limited the school's participation in ADMIRE. Of eleven respondents three said that the administrator's feelings did inhibit the program while eight indicated it did not. Only one indicated that teacher's feelings was a block in the development of the program while ten indicated that teacher's feelings did not block the program and three said they were uncertain about the effect that teachers had on the program. Five said that the feelings of the board of education prevented the development of the program, Six said that the board's attitude was not an inhibitor in the development of the program. Three were uncertain about this question. Eight respondents felt that the community's feelings did not inhibit the program while four were uncertain. Twelve indicated that the size of the school was the primary reason for their limited participation while five felt that the size of the school was not an important factor. One thought that lack of clarity concerning the advantages of the services prevented its development in his school. Ten felt that lack of clarity was not a factor in the development of the program. One administrator commented that the school board's feelings made participation in financial accounting impossible while the size of the school made the participation in student scheduling and grade reporting unrealistic. Another respondent commented that they had already previously contracted with a private concern to provide such services and since they were satisfied did not feel they wanted to change. One respondent felt the cost factor prevented participation while another two said the size of their school did not permit them to participate.

Effectiveness of ADMIRE's Organization and Services. Respondents were asked to indicate the factors associated with ADMIRE's organization and services which prevented or limited their participation in the services.

Four of twelve responding indicated that the services offered limit their participation while eight indicated this was not an important factor. Eight respondents felt that the central staff was effective in its communication with the local schools. Three said that the central staff's communication limited their participation; one was uncertain. Only one felt that lack of assistance from the ADMIRE staff prevented their participating while nine indicated that lack of assistance was no problem to them. Eight of the ten responding said that the quality of data processing services was no problem to them. One person commented that all factors associated with ADMIRE's organization and services were well understood. Another said, "I realize during the first year (test scoring) that we are likely to have anumber of 'bugs' to work out before it can operate effeciently. I'm sure that next year will be better."

Student Scheduling. The participants were asked to respond to a number of questions concerning their student scheduling services. Of the eight respondents, seven said the forms caused them no difficulty. All eight thought that completed forms were returned in adequate time. Only three of the eight indicated they felt the scheduling services reduced the amount of time spent on this activity. Four indicated that the participation in the scheduling service enabled them to improve their master schedules while four said that it did not. All eight felt that it improved the accuracy of scheduling information. Six felt that the scheduling services improved their decision making while the eight divieded four and four in terms of

their feelings about whether the scheduling program resulted in a better educational program.

Comments in reference to the student scheduling varied somewhat. Some comments indicated that they felt as they became more familiar with the service that it would become more effective in their schools. One other thought that with their size of school (under 100) that they could do the scheduling just as effectively manually.

Test Scoring and Analysis. Participants were asked to respond to several questions concerning the test scoring and analysis services. Sixteen schools responded to this question. Ten of the sixteen said that the forms presented no problems. Ten felt that the service helped them better evaluate test items and procedures. Fifteen said that the test data was returned on time; twelve that the service saved time of teachers; and fifteen said that the information returned was highly accourate. Eleven felt that the test scoring service resulted in a better educational program for the pupils and eleven said that the service helped them make better decisions about student instruction.

The comments made by respondents concerning test scoring were all positive. A typical comment was "I have appreciated the cooperation that we have received through the testing portion of ADMIRE. They have always tried to be helpful and accommodating."

Financial Accounting. Respondents who were participating in the financial accounting program were asked to respond to questions relative to this service. Four schools responded to most of these questions. Three of the four respondents indicated that the financial accounting format had caused them some difficulty; three that the financial forms were returned in plenty of time; four that the service had not reduced the overall time

the school spends on financial accounting, and three that the financial accounting data was accurate. Three respondents indicated that the service enabled them to make better decisions.

Comments relative to the financial accounting program varied from those who said that the program was really too new to tell how effective it could be to comments concerning satisfaction with ADMIRE's leadership in reference to this program. One person said "I feel ADMIRE was not properly prepared to begin the program as no manual of procedure was available until late in the year; forms used had to undergo a number of changes; not enough help available to us at the ADMIRE level; communications were a problem at times; secretarial help at the local level needed a workshop."

General Impressions of the ADMIRE Project. ADMIRE participants in Educational Service Unit 6 were asked three questions intended to get general reactions and a general feedback of their attitudes toward the ADMIRE project. Questions designed to elicit general feedback responses were: Realizing that every organization can benefit from suggestions, do you have any specific suggestions for improving the operation in general? What has impressed you the most about the whole data processing operation? and based on everything you have said, could you summarize your feelings about the Lincoln Public School System's data processing program? Feedback comments ranged all the way from very positive comments to supportive comments with recommendations and suggestions to a few somewhat negative comments.

Some of the positive comments were: "The way in which the people working with and for Pojrect ADMIRE have always been willing to help us in any way they could with the various services. They've been receptive and considerate of our needs and of our wishes. We've enjoyed working with them." "The rapid processing of information." "Making available to schools services that had not been readily available in the past." "Information that can be available for data processing." "They have a wonderful staff. They have been extremely cooperative and helpful." "I have been quite favorably impressed with the interest and service provided. It has been a valuable experience. As a result of this exposure, money has been budgeted next year to continue with most of the services. The staff has gone out of their way many times to work out a particular problem for us."

Examples of positive comments with suggestions for improvement were: "It has been very beneficial. The grade reporting process has created more work for us; however, the other services have been very beneficial." "I feel that it has a lot to offer in services that can and do improve the school program of services to students. I also feel that the school with a small enrollment may not find as much need for some of the services as a large school system. In all, we've been pleased with the services we've had from Project ADMIRE's data processing programs." "Has a good potential for us, but not utilized to fullest extent. I haven't felt that we were a 100% part of the program. Could be and probably is our fault." "I think it is fine! Question I have, Does a school our size really benefit from such services? Perhaps to a limited extent. At any rate, we will keep posted and try to make use of these services, provided they are still available."

Comments concerning recommendations for improvement were: "Better coordination and communication between the Project ADMIRE center and the schools using the services." "Work closer with individual schools. More help on the machines and personnel working with schools outside of Lincoln." "We need an experienced coordinator in all areas of the computer." "Get the price down at a level schools can afford." "I feel there should be at least one person whose sole duties would consist of communication with and providing services to the schools participating in Project ADMIRE programs." "Financial accounting is a great program and would like to continue but the cost factor for our size school could be in question."

## Principals, Lincoln Public Schools

In accordance with ADMIRE purposes, new data processing functions were initiated and existing data processing functions were strengthened under the ADMIRE project. This was done through the introduction of data processing in both the Lincoln schools and in Educational Service Unit 6 schools and through the strength of data processing techniques and procedures in the Lincoln Public Schools.

Because of the vital role the Lincoln schools played in the total project, attention was given to an evaluation of the effectiveness of the data processing function in the Lincoln Public Schools at the close of the first year of the project. Therefore, included in this final and third evaluation report is a follow-up assessment of the effectiveness of the ADMIRE project in the Lincoln Public Schools.

A comprehensive questionnaire was developed for all Lincoln Public Schools. A copy of this questionnaire is included in Appendix C.

The questionnaire was mailed on May 8, 1970 to a total of forty-six Lincoln Public School principals. Included were thirty-two elementary school principals, ten junior high school principals, and four senior high school principals. Inasmuch as two questionnaires were returned from multi-level schools (one a junior and senior high school and one an elementary and junior high school) their responses were recorded twice -- once in each of the applicable categories used. Responses were received from twenty-eight elementary, ten junior high, and four senior high school principals for an overall total of 91% returned.

Principals - Lincoln Elementary Schools

Twenty-eight returned (88% responding)

Table 2 on the following page is a summarization of the questionnaire responses made by the principals in the Lincoln elementary schools.

Twenty-seven schools reported they participated in attendance accounting, twenty-eight in machine test scoring and analysis, twenty-eight in activity fund accounting and twenty-six in the catalog order system.

Services desired. Schools were asked if there were additional data processing services they believed would be of benefit to them. Four of the ten responding said no. Suggestions made were printout of pupils by street address, individual and daily record keeping for individualized instruction, summer school class scheduling, and grade reporting. One person indicated that "due to use of our local service, we are limited in having comparisons to national norms."

Resistance encountered. Respondents were asked whether they sensed resistance to the data processing services by certain groups. Only one of twenty-five respondents said that administrators resisted the program. Five

TABLE 2

SUMMARY OF QUESTIONNAIRE SENT TO PRINCIPALS
IN LINCOLN PUBLIC ELEMENTARY SCHOOLS

Total Persons Responding = 28

| Item description | | |
|---|---|---|
| 3. Encountering resistance from | Yes | No |
| a. administrators? | 1 | 24 |
| b. teachers? | 5 | 22 |
| c. students? | | 25 |
| d. community? | | 25 |

| 4. Communications | Satisfactory | Unsatisfactory |
|---|---|---|
| a. written directions? | 20 | 6 |
| b. face to face interactions? | 21 | 5 |
| c. telephone converations? | 25 | 1 |
| d. in-service activities? | 22 | |

| 7. Participation in ATTENDANCE ACCOUNTING | Yes | No |
|---|---|---|
| a. Have forms presented problems? | 6 | 21 |
| b. Completed forms returned in satisfactory time? | 21 | 6 |
| c. Save time of administrators? | 22 | 4 |
| d. Save time of teachers? | 21 | 5 |
| e. Consider data accurate? | 19 | 6 |
| f. Resulted in better educational program? | 12 | 8 |
| g. Enabled you to make better decisions? | 8 | 14 |

| 8. Participation in TEST-SCORING AND ANALYSIS | Yes | No |
|---|---|---|
| a. Have forms presented problems? | 6 | 18 |
| b. Enabled you to better evaluate test items? | 13 | 9 |
| c. Completed forms returned in satisfactory time? | 17 | 7 |
| d. Save time of teachers? | 23 | 2 |
| e. Consider data accurate? | 18 | 5 |
| f. Resulted in better educational program? | 19 | 3 |
| g. Enabled you to make better decisions? | 17 | 6 |

| 9. Participation in ACTIVITY FUND ACCOUNTING | Yes | No |
|---|---|---|
| a. Have forms presented problems? | | 22 |
| b. Statements returned in satisfactory time? | 20 | 2 |
| c. Save time of administrators? | 17 | 4 |
| d. Save time of teachers? | 11 | 6 |
| e. Consider data accurate? | 21 | |

| 10. Participation in CATALOG ORDER | Yes | No |
|---|---|---|
| a. Have forms presented problems? | 5 | 22 |
| b. Do clerks assume work? | 19 | 8 |
| c. Reduced overall time spent? | 14 | 11 |
| d. Improved efficiency in making supplies available? | 16 | 9 |
| e. Consider data accurate? | 20 | 4 |
| f. Enabled you to make better decisions? | 13 | 7 |

of the twenty-seven indicated that teachers resisted the program while twenty-five indicated that neither students nor community seemed to resist the program.

Elementary principals made several comments concerning resistance from administrators, teachers, students, and community. Comments indicated some dissatisfaction on the part of teachers relative to the film scheduling service. Two comments were made to the time lag between the time that standardized tests are given and results made available. Two comments were made relative to an improving attitude on the part of personnel in the school relative to the data processing services. One person said "on activity fund accounting we would rather keep our own bank account and books." Another said "clerks report inconsistencies and irregularities in attendance which seem completely incongruous to reports submitted to 'the machine'." Another comment, "I have not really encountered resistance. There have been many questions raised about the value of data processing when it takes so long to 'clean up' printouts. They continue to come to the building with errors that have been corrected."

Communications. Of the twenty-six responding to the communications inquiry, twenty indicated that written directions were highly satisfactory while six said unsatisfactory. Twenty-one felt that face to face interactions were satisfactory while five indicated that they were unsatisfactory. Only one of twenty-six indicated that telephone conversations were unsatisfactory and twenty-two felt that in-service activities were quite satisfactory.

The ten comments made in reference to communication indicates that principals felt some lack of understanding of certain of the data processing services. Several of these comments were: "No in-service

activities." "Our communication has been satisfactory but limited. We need more understanding of systems and processes." "At times not enough time to digest before a due date." "They don't always know what they will do." "I feel improvement is needed in this area. It has appeared that we've moved into the data processing area too rapidly for good communications to take place."

Attendance Accounting. Participants were asked to respond to a number of questions relative to attendance accounting. Twenty-seven responded to these questions. Twenty-one of the twenty-seven said that the record information presents no problems. Twenty-one felt that the reports are returned in satisfactory time. Twenty-two of twenty-six responding said that the services provided saves the time of the administrator while twenty-one of twenty-six said that it saves the time of teachers. Nineteen of twenty-five responses indicated that the accuracy of the material is satisfactory. Twelve of twenty responding said that attendance accounting provides for a better educational program for pupils while eight of twenty-two respondents indicated that the program provides for better decision making for student programs.

Principals made sixteen comments about the attendance accounting program. A number of these were supportive such as "Satisfactory", "Seems to be satisfactory at this time", "Has saved many man-hours for teachers to teach", and "We enjoy having the total record sheet on each pupil in our office." The principals made a number of comments about improving the program. They said we need a "better method of 'cleaning up' the printouts. Far too many repeated corrections which return to us still inaccurate." "Mark each child's card for absences only and have computer read and analyze

total school." "Has made more work for the clerk." It needs a better integration with the census program." "Because of the present use made of these figures, there is no need to report them but one time (at the end of the year)." "At times it is hard to understand why material can be correct one time but not correct the next." "Be consistent in procedures and directives."

Test Scoring and Analysis. Twenty-four elementary principals responded to questions relative to test scoring and analysis data processing services. Eighteen indicated that there is no problem with the forms used; thirteen that the service helps them better evaluate the test items and procedures; seventeen that the test data is returned at a time when it is most useful; twenty-three that the services save time of teachers; nineteen that the data processing material appears to be accurate; nineteen that the test scoring and analysis service has improved the educational program in their schools and seventeen that the service has improved the quality of decisions made about students.

Principals made a number of comments about ways in which the test scoring and analysis program could be improved. One said that teachers need more in-service education relative to the program; two persons indicated that the test score information is not returned in time to be of great use to the teachers; and one that there are "gross errors" on some of the test score returns. One persons said "I agree that many teacher hours have been gained by machine scoring. However, it has become mechanical and has lost a lot of it diagnostic value. When teachers hand scored, they were in a better position to diagnose the problems." Another said "A slide or rule with the code and correct name that would fit the numbers would be most helpful." "Test results are often confusing probably due to the amount of information available and partly due to unfamiliarity to test. Some younger children are confused by test directions."

Activity Fund Accounting. Twenty-two elementary principals responded to questions relative to the effectiveness of activity fund accounting. Twenty-two indicated that the record information presented no serious problems; twenty that the information is returned in adequate time; seventeen that the services do save time of the administrator; and eleven that it saves time of teachers. Twenty-one respondents said that the activity fund statements are accurate.

Three of the five comments were very complimentary and supportive. Another respondent said "We would rather keep our own bank account for activity funds." Still another said "More regularly scheduled reportings, particularly now that schools are being held more accountable for budget expenditures."

Catalog Order. Twenty-seven elementary principals responded to the catalog order questions relative to the effectiveness of this data processing service.

Twenty-two indicated that the forms used present no problems; nineteen that the service makes it possible for clerks to do some work formerly done by professional staff; fourteen that the catalog order service reduces the overall time the school spends on acquisition, distribution, and inventory; sixteen that the service improves the efficiency in making supplies available to professional personnel; twenty that the service has been accurate and thirteen that the service has made it possible to improve the decisions relative to the program of the school.

A number of comments were highly supportive of the program. Illustrations follow. "A great improvement over past methods. I like it." "Labor saving is great." "Very pleased with this service." Principals also made some suggestions for improvements such as "Identification of items in large quantities make it difficult to distribute to departments and classrooms;

has improved some." "The service is not always accurate." "No opportunity to check supplies at time of delivery. Storage problem." "There needs to be a closer liaison between people in curriculum and people in business affairs. People who are making up catalogues need to be responsible to consultants in instruction." "No suggestions excepting greater accuracy by the operators would be an improvement." "More information needed on items; catalog needs to be more legible. Too much re-checking needed to be done."

Suggestions for improvement. Respondents were asked to indicate what suggestions they would make for the overall improvement of the data processing system. Respondents made several suggestions about improving both communications and in-service programs to interpret the meaning of the data processing services. Several comments were: "Improve communication between center and schools." "More coordination of all types of information collection." "Continue in-service of new administrators and clerks as in the past." Closely related to these comments were those relative to closer integration of the technical aspects of data processing and the educational implications. For example, one person said "Personally feel that the programmers should have some knowledge in the area of education." "There needs to be a closer liaison between people in curriculum and people in business affairs. Perhaps programmers need better training." "Results can only be as good as the information that goes into the machines. This seems to be where most of the mistakes take place." Other comments in response to the question on improving the operation were: "Need to continue to develop procedures that will insure greater accuracy." "It would seem that possible more attention could be given to the elimination of errors."

Impressions about data processing Operation. Respondents were asked to indicate what has impressed them most about the whole data processing operation. Twenty persons responded to this question. Four persons indicated that they

were impressed with the speed in handling data. Two were impressed with the availability of a large amount of information.

Other comments were negative in nature. Two said that they were impressed with the large number of personnel that it requires to operate the data processing function and the associated expense of the program. For example one said, "The difficulty in inauguration, the large number of 'clerks' required, the expense." Other comments were: "How long it takes to get the 'bugs out'." "I have not been impressed at all." "The inaccuracy of the child accounting process." "Patience of personnel in face of 'beefing' from too many teachers and principals."

Typical positive comments about the program were "Potential and capability." "Magnitude." "More information available in much less time."

"Payroll accounting has been excellent." "Quicker, easier, time saver." "As we have become educated, we are appreciating it more." "The speed of reports."

Overall summarization. Each participant was asked "Based on everything you have said, could you summarize your feelings about the Lincoln Public School System's data processing program?"

Twenty-two persons responded to this question. Positive remarks made about the program follow. "Data processing has simplified the process of accounting, of attendance and ordering of materials." "Although many 'bugs', I think that remarkable progress has been made and appreciate its services." "We are learning to appreciate it more every day." "I believe the data processing system is successfully striving to improve the service it performs for the organization. The transition from old methods of accounting to the data processing tends to hide the value of time saving to the individual building but ultimately I feel it will become most obvious in its worth. The data processing overall provides an invaluable service to our total program." "It has made it possible for our staff to devote more time to priority items." "Each year improvement is noted." "Excellent." "It has come along quite well." "As far as we have gone in this short time the system has done much." "Very good. Keep it up." "Has good possibilities." "A step in the right direction -- it has a tremendous future." "Helpful." "Program is proceeding satisfactorily." "Generally, good." "The service is improving."

Negative feelings reported by principals were: "It has been most frustrating because of the inaccuracy of the pupil enrollment printouts that has required numerous corrections of information that has at one time

or another been corrected." "I'm certainly not as pleased about its services as I wish I were. The difficulty in checking on something probably stands out most in my mind." "Could building inventories be placed on computer?" "It has a ways to go yet. We have been naive and have expected too much too soon." "It needs time to refine techniques of operation so that figures can be reliable." "Hope it becomes more accurate and punctual." "At this point I have not been impressed at all. If printouts were accurate, data processing could be invaluable, but under the circumstances it is creating more work at the building level than it is worth. I cannot visualize a business operating with so many errors being made." "Much need yet for greater utilization and in-service of local school personnel. Need for revision of data collection forms, e.g., pupil accounting and requisitioning of audio-visual materials." "Takes time for teachers, clerks, and administrators to know how to utilize and get greatest benefit from material produced."

Principals - Lincoln Junior High Schools

Ten returned (100% responding)

Table 3 on the following page is a summarization of the questionnaire responses made by the principals in the Lincoln junior high schools.

All ten of the responding junior high school principals indicated that they were participating in student scheduling, grade reporting, attendance accounting, machine test scoring and analysis, and catalog order system. Nine of the ten indicated that they participate in the activity fund accounting.

Services Desired. There were five responses to this inquiry concerning additional services desired. Comments made were: "Only that some general

TABLE 3

SUMMARY OF QUESTIONNAIRE SENT TO PRINCIPALS
IN LINCOLN PUBLIC JUNIOR HIGH SCHOOLS

Total Persons Responding = 10

| Item description | | | |
|---|---|---|---|
| 3. Encountering resistance from | | Yes | No |
| a. administrators? | | | 9 |
| b. teachers? | | 2 | 8 |
| c. students? | | | 8 |
| d. community? | | | 9 |
| 4. Communications | Satisfactory | Unsatisfactory | |
| a. written directions? | 10 | | |
| b. face to face interactions? | 10 | | |
| c. telephone conversations? | 10 | | |
| d. in-service activities? | 6 | 1 | |
| 5. Participation in STUDENT SCHEDULING | | Yes | No |
| a. Have forms presented problems? | | 1 | 9 |
| b. Completed forms returned in satisfactory time? | | 10 | |
| c. Reduced overall time spent? | | 6 | 4 |
| d. Enabled you to improve master schedule? | | 5 | 4 |
| e. Consider data accurate? | | 10 | |
| f. Enabled you to make better decisions? | | 8 | 1 |
| g. Resulted in better educational program? | | 7 | 3 |
| 6. Participation in GRADE REPORTING | | Yes | No |
| a. Have forms presented problems? | | 2 | 8 |
| b. Completed forms returned in satisfactory time? | | 10 | |
| c. Save time of administrators? | | 7 | 3 |
| d. Save time of teachers? | | 9 | 1 |
| e. Consider data accurate? | | 9 | 1 |
| f. Resulted in better educational program? | | 5 | 4 |
| g. Enabled you to make better decisions? | | 9 | 1 |
| 7. Participation in ATTENDANCE ACCOUNTING | | Yes | No |
| a. Have forms presented problems? | | 5 | 5 |
| b. Completed forms returned in satisfactory time? | | 10 | |
| c. Save time of administrators? | | 7 | 3 |
| d. Save time of teachers? | | 7 | 3 |
| e. Consider data accurate? | | 9 | 1 |
| f. Resulted in better educational program? | | 6 | 4 |
| g. Enabled you to make better decisions? | | 7 | 3 |

continued

TABLE 3 continued

| Item description | | | |
|---|---|---|---|
| 8. | Participation in TEST-SCORING AND ANALYSIS | Yes | No |
| | a. Have forms presented problems? | | 9 |
| | b. Enabled you to better evaluate test items? | 8 | |
| | c. Completed forms returned in satisfactory time? | 9 | |
| | d. Save time of teachers? | 9 | |
| | e. Consider data accurate? | 8 | 1 |
| | f. Resulted in better educational program? | 8 | 1 |
| | g. Enabled you to make better decisions? | 8 | 1 |
| 9. | Participation in ACTIVITY FUND ACCOUNTING | Yes | No |
| | a. Have forms presented problems? | | 8 |
| | b. Statements returned in satisfactory time? | 6 | 2 |
| | c. Save time of administrators? | 6 | 3 |
| | d. Save time of teachers? | 5 | 3 |
| | e. Consider data accurate? | 8 | 1 |
| 10. | Participation in CATALOG ORDER | Yes | No |
| | a. Have forms presented problems? | 3 | 7 |
| | b. Do clerks assume work? | 8 | 2 |
| | c. Reduced overall time spent? | 6 | 4 |
| | d. Improved efficiency in making supplies available? | 8 | 2 |
| | e. Consider data accurate? | 10 | |
| | f. Enabled you to make better decisions? | 7 | 3 |

information card might be developed with a lot of data recorded on each student once a year. This would prevent us from having to fill out additional forms throughout the year. When the additional information on students was needed, it could be run through the computer and taken from the general information card." "Due to use of our local service, we are limited in having comparisons to national norms -- none at this time." "At this time, I would suggest that we refine what we are doing before undertaking new services." "Not until we get the bugs out of our present system." "No."

Resistance Encountered. Respondents were asked to indicate whether they encountered any resistance from administrators, teachers, students,

and the community. Of the ten responding, nine said that there is no resistance from administrators; eight said that there is no resistance from teachers; and eight said there is no resistance on the part of students. However, some said that the grade reporting is not well accepted by students. Nine of the ten indicated that there is very little resistance on the part of the community.

Four of the ten principals made comments in reference to resistance. "Teachers, students, and community did resist in the beginning. This has changed because the results are much more accurate than in the beginning. Also the die-hards have given up." "Errors are made and then corrected, but corrections are seldom updated." "Some resistance due to deadline time pressure and no satisfactory way to check error without spending a lot of time." "Time lag too long between completion of tests (standardized) and arrival of results."

Communications. Participants were asked to indicate the effectiveness of written directions, fact to face interaction, telephone conversations and in-service activities. All ten respondents indicated that written directions, fact to face interaction, and telephone conversations are satisfactory. Six of the ten felt that in-service activities are satisfactory. One said in-service is unsatisfactory while three did not respond to this question.

Seven of the ten respondents made comments in reference to communications. They were: "Need to involve assistant principals, clerks and maybe one counselor from each building." "Directions too many times given in terms unique to data processing. Hard to follow by person out in the building." "Feel we could benefit from in-service programs so as to utilize

the services fully." Three of the respondents indicated that they had not had communications from the central office. One indicated that it was very helpful.

Student Scheduling. The junior high school principals were asked to react to questions relative to the student scheduling program. Nine of the ten said that the information presented does not cause any problem; ten said that the information is returned in adequate time; six, that the scheduling service reduces the overall time the school spends on scheduling; five that the service enables them to improve the master schedule and therefore provided better selections for students while ten said that the scheduling data is accurate; eight that the scheduling information enables them to make better decisions; and seven that the participation in the scheduling service permits them to make better educational program decisions for pupils.

Ten comments were made in reference to the student scheduling program. Three comments related to the lack of control and flexibility in the scheduling of students; two remarks to in-service for new types of programs as they are introduced; and four remarks were highly supportive of the program.

Grade Reporting. Junior high school principals were asked to respond to a number of questions relative to the grade reporting service. Eight of the ten indicated that the record information cause them no difficulty; all ten said that the forms are returned in adequate time. Seven said that the service saves time of the administrator and nine respondents indicated that it saves time of teachers. Also, nine of the ten said that the service is accurate. Five of nine responding said that the educational program is improved through the grade reporting service and nine out of ten believed that the grade reporting service improves their decision making process.

Eight comments were made relative to the grade reporting program. Two of these comments indicated that the program is satisfactory as is. Other

suggestions were: "Review/evaluate forms peridocially in terms of needs and goals of reporting." "Time deadlines cause a problem. No easy way to check for accuracy." "Teachers are asked to update so often that the savings of time are minimum." "Many decry that the junior high report is impersonal. A coding should be worked out to show what the student can do to improve, if he is working at or below his ability, and so forth." "I think the grade reporting system is more accurate and saves time, but it is not a better system."

Attendance Accounting. Five of the ten responding indicated that the information presented causes no difficulty. One said that the cards could be heavier and that the squares on the cards could be larger. All ten said that the forms are returned in satisfactory time. Seven of the ten said that the service saves time for both administrators and teachers. Nine indicated that the accuracy of the material is satisfactory. Six felt that the service improves the educational program for pupils and seven said that it improves the decision making process about students.

Eight junior high school principals made comments concerning attendance accounting. Three of these responses were positive indicating that the service was much improved, a good system, and satisfactory. Other comments made were: "Change forms for recording." "Develop new card to keep attendance on." "I know that the machine (most of the time) only feeds back what is reported--the problem as I see it is that this process goes on with no control of the output by teacher or administrator." "Use scanner sheet for total counts--it would save us time." "Better updating of files necessary."

Test Scoring and Analysis Services. Nine of the ten administrators indicated that forms as used present no problems; eight said that the service enables them to better evaluate test items and procedures; and nine indicated

that the test data are returned in adequate time to obtain the most use from the material. Nine said that the service saves the time of teachers. Eight said that the test material is accurate. Eight felt that the test service results in a better educational program and eight said that the program improves the decision making process about students.

Five principals made comments in reference to test scoring. Two of the remarks were in reference to the need for in-service for teachers and educational personnel. For example, one said "Teachers need in-service education and knowledge of the capacity of the machine and how to use the results." Other remarks made by respondents were: "Our use of this service for teacher-made tests is too limited to accurately evaluate." "More statistical data." "It would help if we could get the Iowa Basic Skills and the Iowa Tests of Educational Development results back sonner."

Activity Fund Accounting. Eight of eight responding indicated that the forms cause them no difficulty; six said that the statements are returned in satisfactory time; six that the service saves time of administrators and five said that it saves time of teachers. Eight said that activity fund accounts are accurate.

Seven respondents made comments about the activity fund accounting. Comments were: "Accuracy is a problem because of changing prices, i.e., catalogue prices are not always the same as the current price." "Personnel handling this program at PSAB are to be commended for their courtesy and helpfulness. They are often called upon for explanations or assistance in regard to dispersement of funds and are invariably most helpful." "All we get is a printout of the funds in our account. This has proved to be accurate." "If we could receive activity fund reports more often." "They do an accurate job but is quite slow. If we could get this information

faster it would help."

Catalogue Order. Seven of the ten responding indicated that the forms cause no trouble. Eight that catalog order services allows clerks to do some work formerly done by professional staff; six that the service reduces the overall time by which the school spends on acquisition, distribution and inventory of school supplies; eight that the service improves the efficiency in making supplies available to professional personnel; and nine that the catalog order service has been accurate. Seven said that the service has helpd the school to make better decisions.

Principals made comments about the catalog ordering program. Five of these comments indicated that the service is satisfactory or rapidly improving. Relevant comments were: "Identification of items ir large quantities make it difficult to distribute to departments and classrooms; has improved some." "Unnecessary duplication of checking orders. One printout of original order would be sufficient for checking and correcting where needed. Item names are more meaningful than numbers to those ordering. Alphabetical rather than numerical listing might be preferable. Addressing of all supplies to individual who has ordered them would be helpful and would eliminate time-consuming sorting and distribution."

Suggestions for Improvement. Respondents were asked to make suggestions about ways in which the present system can be improved. Seven comments were made to this questicns. Comments made by respondents were: "Continue in-service of new administrators and clerks as in past." "The operation is going well for this type of service. It still has its drawbacks in reference to time and check for errors." "It seems that we are sometimes asked for information from the consultants that should or could be available from data processing." "Keep making minor improvements. It takes time but we are getting there." "Do not add more services until the deficiencies have been worked out of what we have." "Is difficult for small school with a comprehensive elective system to program without a great deal of individual hand work to balance class overloads.

Impressions about Data Processing Operation. Respondents were asked to indicate what impressed them most about the whole data processing system. Ten comments were made in response to this question. Comments made were in reference to the complexity and the amount of material which can be handled.

Typical comments were: "The vast amount of information gained from the analysis of material fed into the machines." One person indicated that promptness impressed him most about the program. Another indicated that the personnel had been helpful. Comments were: "Attendance and grade reporting of most help. We feel teachers have more time at end of semesters." "It helps make better decisions because of the volume of information that is at our disposal." "It was a big mess at first but is rapidly improving."

Overall summarization. Respondents were asked to indicate an overall summarization of their feelings about the Lincoln Public Schools' data processing program. Ten comments were made in response to this question. The major number of these comments appeared to be positive in nature. Positive comments were: "From all the information I have it appears to me that the Lincoln system is operating as well as any -- probably due to the staff in the program and the excellent leadership of Marv Miller." "Overall it is an improvement and as we become more familiar with its use, it will become a more efficient system. The personnel in data processing have been very courteous and helpful." "Basically a good system. Personnel cooperative and make it go." "It is improving." "I feel that the computer is a necessity for modern day school." "Am happy and glad for the service. The people I work with at data processing are competent, cooperative, and helpful." "Services are very satisfactory." Comments suggesting improvements were: "Preparation for this system is much more time consuming that in the past." "Takes time for teachers, clerks, and administrators to know how to utilize and get greatest benefit from material produced."

Principals - Lincoln Senior High Schools
Four returned (100% responding)

Table 4 on the following page is a summarization of the questionnaire responses made by the principals in the Lincoln senior high schools.

All four senior high schools participated in student scheduling, grade reporting, attendance accounting, machine test scoring and analysis, activity fund accounting, and catalog order system.

Services desired. Respondents were asked whether there were additional data processing services which they believed would assist their school systems. Two of the four said none at this time. A third said "More instructional-type uses as they become refined and workable." A fourth indicated "Only that some general information card might be developed with a lot of data recorded on each student once a year. This would prevent us from having to fill out additional forms throughout the year. When the additional information on students was needed, it could be run through the computer and taken from the general information card."

Resistance encountered. Three respondents said that there is no resistance on the part of administrators. A fourth indicated that there are problems. He questions whether this could be termed resistance. Three of the four respondents indicated that there is no resistance on the part of teachers. A fourth indicated that there is some but that others are well satisfied. All four senior high school principals said that there is no resistance on either the part or students of the community. Respondents did, however, indicate that neither students nor community are well enough acquainted with the program to raise any serious questions about it.

In regard to comments, one administrator indicated that "resistance is a difficult term to use. There are complaints, problems. Most people willing to work for solutions."

TABLE 4

SUMMARY OF QUESTIONNAIRE SENT TO PRINCIPALS
IN LINCOLN PUBLIC SENIOR HIGH SCHOOLS

Total Persons Responding = 4

| Item description | | |
|---|---|---|
| 3. Encountering resistance from | Yes | No |
| a. administrators? | | 3 |
| b. teachers? | | 3 |
| c. students? | | 4 |
| d. community? | | 4 |
| 4. Communications | Satisfactory | Unsatisfactory |
| a. written directions? | 4 | |
| b. face to face interactions? | 4 | |
| c. telephone conversations? | 4 | |
| d. in-service activities? | 3 | |
| 5. Participation in STUDENT SCHEDULING | Yes | No |
| a. Have forms presented problems? | | 4 |
| b. Completed forms returned in satisfactory time? | 3 | 1 |
| c. Reduced overall time spent? | 3 | |
| d. Enabled you to improve master schedule? | 2 | 1 |
| e. Consider data accurate? | 3 | 1 |
| f. Enabled you to make better decisions? | 4 | |
| g. Resulted in better educational program? | 3 | |
| 6. Participation in GRADE REPORTING | Yes | No |
| a. Have forms presented problems? | 1 | 3 |
| b. Completed forms returned in satisfactory time? | 4 | |
| c. Save time of administrators? | 1 | 2 |
| d. Save time of teachers? | 4 | |
| e. Consider data accurate? | 4 | |
| f. Resulted in better educational program? | 1 | 1 |
| g. Enabled you to make better decisions? | 3 | 1 |
| 7. Participation in ATTENDANCE ACCOUNTING | Yes | No |
| a. Have forms presented problems? | 2 | 2 |
| b. Completed forms returned in satisfactory time? | 4 | |
| c. Save time of administrators? | 2 | 2 |
| d. Save time of teachers? | 1 | 3 |
| e. Consider data accurate? | 4 | |
| f. Resulted in better educational program? | | 2 |
| g. Enabled you to make better decisions? | 3 | 1 |

Continued

TABLE 4 continued

| Item description | Yes | No |
|---|---|---|
| 8. Participation in TEST-SCORING AND ANALYSIS | | |
| a. Have forms presented problems? | | 3 |
| b. Enabled you to better evaluate test items? | 4 | |
| c. Completed forms returned in satisfactory time? | 3 | 1 |
| d. Save time of teachers? | 3 | 1 |
| e. Consider data accurate? | 4 | |
| f. Resulted in better educational program? | 4 | |
| g. Enabled you to make better decisions? | 4 | |
| 9. Participation in ACTIVITY FUND ACCOUNTING | Yes | No |
| a. Have forms presented problems? | | 4 |
| b. Statements returned in satisfactory time? | 3 | 1 |
| c. Save time of administrators? | 3 | 1 |
| d. Save time of teachers? | | 3 |
| e. Consider data accurate? | 4 | |
| 10. Participation in CATALOG ORDER | Yes | No |
| a. Have forms presented problems? | 1 | 3 |
| b. Do clerks assume work? | 4 | |
| c. Reduced overall time spent? | 3 | 1 |
| d. Improved efficiency in making supplies available? | 2 | 1 |
| e. Consider data accurate? | 3 | 1 |
| f. Enabled you to make better decisions? | 3 | 1 |

Communication. Senior high school principals were asked whether written directions, face to face interaction, telephone conversation, and in-service activities relative to data processing services are satisfactory. All four respondents indicated that written directions, face to face interaction, and telephone conversations are satisfactory. Three of the four felt that in-service activities are satisfactory while one respondent did not reply to this question.

One principal indicated that "not much activity in these areas (in-service activities). No real opinion." A second comment was "Marv Miller's work and direction is outstanding."

Student Scheduling. All four respondents said that the forms used present no serious problems. Three said that the forms are returned within a satisfactory time while the fourth indicated that forms are not always returned in a satisfactory time. Three said that the scheduling service has reduced the overall time the school spends on the schedule while one is uncertain. He indicated there is a great time saving on routines but more time is required on verifications. Two of the four said that the scheduling service has helped them improve the master schedule. Three indicated that scheduling information is accurate while one said that key punch errors are quite frequent. All four said that the scheduling service helps them make better decisions. Three of the four respondents believed that it helps them improve their educational program.

Principals made the following comments regarding the scheduling program. "Scheduling service has been satisfactory. No recommendations." "Scanner sheets rather than key punch." "Generally good cooperation and service. Machine 'time' and key punch 'time' and accuracy are sometimes a problem." "We are hopeful that the Socrates program under consideration will help this."

Grade Reporting. Three of the four responding indicated that the forms used in grade reporting cause no problems. All four said that the information is returned in satisfactory time. One believed this service saves time of the administrator while two said that it does not; one is uncertain. All four respondents believed that the service does save time of teachers. All four principals also believed that the grade reporting data is accurate. One believed that the grade reporting has improved the program for students, one said that it has not, a third said that it is about the same, and a fourth said he is uncertain. Three of the principals believed the service has facilitated improved decisions while one said that it has not.

Principals made the following comments about the grade reporting program. "Time savings on routine operations but more verification time needed than before. Reduction of number of grade reports (from six to four) met with some opposition by parents and staff but this is not a data processing problem. However, some feelings of 'impersonality' and loss of citizenship marks is perhaps related." "Continue to strive for accuracy by teachers reporting and key punch procedure. For the most part it has been fairly accurate." "Satisfactory."

Attendance Accounting. Two of the four respondents said that the forms do not cause them any problems. All four indicated that the information is received in satisfactory time. Two said that the service sames time of administrators. One believed that it saves time of teachers. One person commented, however, that this question is very difficult to answer. All four principals believed that the attendance accounting data is accurate. Two believed that the attendance accounting services do not provide a better educational program while one said that it is about the same and the fourth is uncertain. Three of the four said that the service improves the decisions possible while one said that it does not.

Principal comments about attendance accounting were: "Quite accurate considering volume of information handled--PSAB personnel very pleasant to work with--scanner sheet quite time consuming as set up; perhaps could be reorganized to demand less time." "We did not record attendance on old report cards to parents so this service does provide more information to them." "Too much clerical hand recording in preparing reports for IBM center. Print outs are very helpful in analyzing total attendance picture." "Use scanner sheets for total counts--it would save us time."

Test Scoring and Analysis. Three of the four respondents said that the forms cause them no difficulty. All four respondents said that the service enables them to better evaluate the test items and procedures. Three respondents indicated that the test data are returned in adequate time. Three principals believed that the service saves time of teachers. All four believed that the information is accurate. Also, all four said that the service improves the educational program and also improves the quality of decisions.

The comments made by principals in reference to test scoring and analysis follow. "This service, of course, works best with large groups of short answer tests." "Good service. Wish more of our teachers would use it."

Activity Fund Accounting. All four senior high school principal respondents said that the forms used for activity fund accounting cause them no difficulty. One, however, indicated that the sizes and stock used etc. create some problems. Three of the four responding said that the activity fund accounting statements are returned within a satisfactory time.

Also, three of the four responding said that the service saves time of the administrators. Three persons said that it does not save time of teachers. One person indicated that the teachers are not involved in this activity. All four believed that the materials received are accurate.

Comments made by principals in reference to activity fund accounting follows. "We have presently agreed upon a relatively usable system--quite accurate; quite acceptable." "Excellent service, accurate, on time." "They do an accurate job but is quite slow. If we could get this information faster, it would help."

Catalog Order. Three of four responding said that forms present no problems. All four indicated that the catalog order service allows clerks to do some work formerly done by professional staff. Three said that the service has reduced the overall time the school spends on acquisition, distribution, and inventory of school supplies. Two said that the service improves the efficiency in making supplies available to professional personnel. Two said that the service is accurate while a fourth indicated that it is probably quite accurate considering the volume handled. Three of the four respondents indicated that the service does help the principal make better decisions.

Comments in reference to the catalog order system are as follows; "Satisfactory." "In distribution, items use to be marked according to who ordered it. This is no longer the case. This makes the distribution difficult." "Greater accuracy in units of measure. Drop supplementary books from catalog. Color code or tab departmental sections. Give final print out of items relating them to catalog number and purchase number earlier."

Suggestions for improvement. Each respondent was asked to indicate suggestions for the overall improvement of data processing operations. One respondent indicated "No improvements." A second said "More input into procedures from the local schools. More face-to-face communications."

Impressions of process. Respondents were asked to give their impressions of the total data processing operation. Comments were: "Personnel has been very helpful." "Helpful in giving added data and service. Input materials (preparation) and verification procedures continue to be time consuming in a way different from previous system." "Marv Miller's help, catalog ordering of supplies."

Overall summarization. Each respondent was asked to indicate general feelings about the Lincoln Public Schools' data processing program. One respondent said, "I believe that we are making progress toward our goals." Others said, "While many times it is frustrating and time consuming and at times it seems we always have to serve a machine rather than have it serve us, I do feel that it is a definite service. I do feel we should spend a year refining what we have before we take on too many new things." "Many benefits -- some persisting problems. Each new program (census for example) creates a building clerical load and added problems for administration in how to do the work." "Services are very satisfactory."

## SECTION V

## STUDENT INSTRUCTION

The original request document submitted in 1967 stressed the development of data processing procedures designed to assist professional personnel in their task of the school's operation. No provision was made in this original document for instructional programs for students.

The 1968-69 renewal document introduced a second project purpose -- that of familiarizing secondary school students with data processing information through the use of portable data processing equipment. ADMIRE's entry into instruction directly would appear to be a major program re-emphasis during the second year. The 1968-69 Educational Service Unit 6 evaluation questionnaire included questions about the student instructional program and the results were reported in the 1968-69 evaluation report.

Considering the emphasis given student instruction during the 1969-70 ADMIRE project, it would appear that student instruction has become one of the two major emphases of the program. Therefore, greater attention is being given to the student instruction phase of the project during this third and final year report.

This section on student instruction is divided into a number of subdivisions. First a brief statement is made about the objectives of the program and the equipment made available for the student instruction phase of the project. The next three subdivisions describe the program in Educational Service Unit 6 schools. The first of these deals with the operation of the Educational Service Unit 6 student instructional program for the 1969-70 year, the second is the ADMIRE staff's evaluation of the program, and the third is the evaluation assessment made by the external evaluator on the basis of questionnaires distributed to instructors in the program.

The last portion of the section includes an ADMIRE description and analysis of the Lincoln Public Schools student instructional program followed by the external evaluator's report of participant reactions gathered through an assessment questionnaire.

Student Instruction Objectives

During the 1969-70 school year Project ADMIRE's instructional program operated under the following objectives: (1) To extend students' "hands on" experience with the keypunch and card sorter, (2) to involve students in problem-solving activities with teleprocessing terminals connected to the University of Nebraska's IBM 360 computer, and (3) to extend the use of the Programma 101 desk top computer as an aid to learning programming techniques and as a tool to solving math related problems.

Student Instruction Equipment

Equipment used in Project ADMIRE's instructional program is divided into two parts. The first part includes the equipment used in Educational Service Unit 6, and the second part includes the equipment used in the Lincoln Public Schools.

| Equipment | ESU 6 | Lincoln | Total |
|---|---|---|---|
| 029 keypunch | 2 | 4 | 6 |
| 82 card sorter | 2 | 2 | 4 |
| Programma 101 desk top computer | 2 | 2 | 4 |
| 2741 terminal | 1 | 0 | 1 |
| ASR 33 teletype | 0 | 3 | 3 |

Program and Operation - Educational Service Unit 6

On August 26, 1969, a scheduling form was sent to each of Project ADMIRE's cooperating schools. The form was used to enable these schools to apply for the instructional equipment consisting of a keypunch, card sorter, and Programma 101.

A total of 23 secondary schools from Educational Service Unit 6 responded. On September 15, the dates these schools selected were used to form the tentative schedule. Each school was sent a copy confirming their request.

The equipment was scheduled for a period of time from two to three weeks dependent upon the size of the school. The equipment was scheduled to arrive sometime between the last scheduled date of the previous school and no later than the end of the first scheduled school day. The schedule was met in every instance.

ADMIRE Staff Evaluation - Educational Service Unit 6

Evaluation of the use of the equipment was done through two methods. Time sheets were kept by each participating school as students progressed through the prepared units on the keypunch and sorter. Teachers were contacted personally as to use by students and a survey form regarding student participation was completed on each school.

Summary Use Table (Keypunch and Sorter)

| | | |
|---|---|---|
| 1. | Number of schools | 23 schools |
| 2. | Hours of use in all schools | 1332 hours |
| 3. | Average per school use | 57.9 hours |
| 4. | Days scheduled (2 units) | 273 days |
| 5. | Average hours per day use | 4.87 hours |

The summary above is an indication of the degree to which the keypunch and sorter were used in the area schools. As a point of interest it might be noted that the range of hours in the unit went from 1.33 hours per day in one school to 11.315 hours per day in another. The 11.3 hours per scheduled day is a little hard to believe until you look at the log book and find times from 7:00 a.m. to 10:00 p.m. plus Saturday, Sunday, and holidays recorded in some instances.

Project ADMIRE is impressed by the fact that the equipment was in use in Educational Service Unit 6 for an average of 4.87 hours in each of the predominantly six hour school days.

A self-contained desk top computer called a Programma 101 accompanied the keypunch and sorter to each service unit school. No official log was kept on its use. Later counts on students and comments about its use verify its activity.

This machine was included in the instructional package to provide students with the opportunity to learn problem solving techniques related to data processing using the machine as a tool to solve mathematics problems. Programming techniques and computer concepts can be taught to students extremely well with this small unit.

The Instructional Consultant, Royce Holtgrewe, spent at least one day in each school with the Programma 101. This day was almost always spent explaining the machine to students in classes as well as to the teacher of the class. Students wrote and executed a program the first hour they used the machine as well as received some insight on "What is a Computer?" This approach to in-service was felt to be better than working with groups of teachers because students were involved, the teacher did not have to miss

any classes, and the teacher did not have to travel to attend a workshop. The individual approach allowed for easier introduction to all teachers.

Specific examples of student involvement are as follows:

1. A boy in Henderson in a matter of a few days wrote a program which the Consultant had been trying unsuccessfully to write all summer.

2. A ninth grade boy at Schickley spent from 3:30 to 5:30 with the Consultant learning about conditional branching (the most difficult function of the machine).

3. Another boy did not want to be in school when the Consultant came to remove the unit because of the attachment he had acquired and the interest he had developed in this small machine.

4. A girl in McCool Junction took the unit home with her over a weekend so she could learn about its operation.

5. Mr. Eastwood in Geneva commented as to how a girl in his class wrote a program on her own to solve for the cosine of any angle after just about a half-hour's introduction to the machine in class.

6. Students in Milford, because of their use and interest in the Programma, quickly mastered the use of the remote terminal. Interest lead this group of boys to inquire about the University's computer. We toured the University's facility and introduced these boys to another type of terminal as well as saw the machine with which they had been communicating over long distance telephone lines.

Comments could be made about the equipment's use in every one of the schools.

At the start of the second semester the 2741 terminal was scheduled for use in nine of the service unit schools. The terminal was to be used

as a problem solving aid and a device to teach basic problem solving techniques and programming skills once again in the math and applied science fields.

The programming language used, called Calctran, enabled students to do more things than they could do with the Programma. Graphing of functions and use of alphabetic characters were just a few of the more obvious advantages.

After a demonstration by the area consultant and brief study of some programs already written it is believed that students could call long distance to the computer center and operate in a conversational mode using a language called Calctran.

The schools using this service were: Milford, Waverly, Exeter, Crete, Milligan, Centennial, Wilber, Friend, and Dorchester.

Summary. Figures show that better than 7000 secondary students in Educational Service Unit 6 had the opportunity to gain an introduction to concepts in data processing through one of Project ADMIRE's instructional units. Actual record of student use in the service unit shows that 3,145 of the secondary students used the keypunch, the card sorter, wrote programs on the Programma or used the terminal connected to the University's computer. These figures do not include the numbers of students that may have received demonstrations of the equipment.

External Evaluator's Assessment - Educational Service Unit 6

On May 19, 1970 a questionnaire designed to determine the effectiveness of the ADMIRE student instructional program in Educational Service Unit 6 was sent to 49 instructors who had worked with the program during

the 1969-70 school year. (See Appendix D for a copy of this questionnaire.) Thirty-two instructors or 65% returned the questionnaire.

The questionnaire was divided into six subdivisions. The subdivisions are: program organization, number of students participating, vocational significance of the program, in-service for instructors, use of instructional equipment, and the overall effectiveness of the program as perceived by the instructors.

Program Organization. Respondents were asked how the program was organized in their school. They were asked whether data processing was offered as a special course or a part of an established course. According to responses twenty-nine instructors offered it as a part of an established course while only two set up a special course in data processing in their school systems. Twenty-one schools offered the program as a part of office practice, typing, or accounting, seven included it as part of the math program while one included it in the program of physics.

Respondents were asked to comment relative to the organization of their program. Most comments were very supportive of the value of the program in their schools. Typical of these were: "The degree of sophistication of the work carried out by students was something to be proud of. The Programma 101 was the highlight of this year. Students came in on their free time to get help on the programs they wrote and also to test out their programs. The hook-up with the computer in Lincoln proved to be very interesting to about half of the freshman and thoroughly overwhelmed the older grades with imaginative ideas of what could be accomplished with a computer." Additional remarks dealt with routine organizational matters or very highly supportive of the computer instructional program.

Number of students. Respondents were asked "Approximately how many students under your direction participated in the data processing program?"

Thirty-one instructors reported that 911 students participated in data processing experiences during the 1969-70 year. The range was from four to one hundred twenty-eight with a median of fifteen to twenty. Considering the response was 65%, it is fair to assume that there was at least 1,200 students participating in the program in Educational Service Unit 6 school systems.

Respondents were also asked, "Of the students under your direction who were provided the opportunity to participate, approximately what percentage demonstrated little interest, moderate interest, great interest?" Approximately one third of the respondents indicated that any place from 90 to 100% of the students in their program demonstrated great interest in data processing. Half of the respondents indicated that over 50% of students demonstrated great interest in the program.

Several of the comments inferred that at least a part of the problem of interest by students may have been that of instruction. For example, one respondent said "Now that I see how the program operates, I could involve greater numbers of students another year." Also, there was some evidence that lack of interest may have been associated with problems in scheduling the machines so that they were available to students.

Vocational Significance. Respondents were asked to indicate how many students participating under their direction had changed their vocational aspirations as a result of the ADMIRE student data processing program. This question apparently gave respondents some difficulty since a number indicated that this was "not known". However, a number of respondents

indicated one, two, three, etc., which would lead one to believe that they were aware of at least one or two persons who had made changes in their vocational directions as a result of the data processing student instructional program.

While many of the comments confirmed the respondents' "unknown" comment, many did indicate that they had knowledge of students who were working in the direction of a data processing profession as the following quotations would indicate. "I have knowledge of four." "Three students have decided to take up computer programming." "We have one boy who applied and received a scholarship to Mount Mary College this summer in programming." "Several students stated they planned to continue in the direction of data processing." "I am not sure about changing vocational interest, but six students actually are committed to a computer program at present."

In-service for Instructors. Respondents were asked "How many visits did an ADMIRE staff member make to your school in reference to the data processing instructional program?" The number of visits according to responses of instructors ranged all the way from one to six. One person indicated that he lost count but that it was at least six or seven. The thirty-two responses to this question gave a total of approximately 126 visits that were made to their school systems by the in-service instructor on the student program.

The comments made by instructors were highly supportive of Mr. Holtgrewe's work with the program. Nearly all of the twenty comments made were in support of Mr. Holtgrewe's fine work with the topic, "Use of Instructional Equipment".

Use of Instructional Equipment. Respondents were asked to indicate the amount of time each of the instructional unit equipment was assigned

to their students during the 1969-70 year and the approximate average percentage of each day that the equipment was in use. The percentage of the school day each piece of equipment was used ranged from approximately 15% up to 100%. Most respondents indicated that the equipment was used in the 75% to 100% range.

A number of comments were made relative to the use of the equipment in the various school buildings. Many of these comments would suggest that the problem of use often was one of organization within the various school systems. For example, one person said, "We would have used the computer hook-up (terminal) more but unfortunately we were required by the superintendent here to store and operate it in his office near the phone-jack there. This was not a good situation because on certain days his office was busy and students could not use it." Other comments indicated that the location in which the equipment was kept limited the use of it. In one case, the instructor said that one piece of equipment was kept in the business education office and was used quite frequently. Another piece of equipment was kept in the music room but could be used very little because of other activities there. Other respondents indicated that the equipment was in their building at a time when other school activities prevented full use. For example, one said "We were playing in the District, Regional and State basketball tournament. Therefore, students had little time to use the equipment."

Overall effectiveness. Respondents were asked to comment concerning the overall effectiveness of the student instructional program, the types of problems that were encountered, and the instructor's judgment about the desirability of continuing the program in the future.

There were thirty-two comments made in response to this question. All thirty-two respondents indicated that they felt that it would be worthwhile for the program to continue in their schools. Several said "Program is quite effective." "Definitely feel that the program should be continued." "I hope I'll be able to get the equipment again next year." "If we had (the equipment) available again, I feel that I could do a much better job with it."

A number of comments were made relative to the effectiveness of the program with students. Comments here too were all positive. For example, respondents said, "Studying this material (data processing) without the equipment would have been very dull." "The students are truly excited about using this equipment. They can work on their own because of the excellent recorded instructions." "Many of our students have had no previous experience of observing similar machines in operation so this was a tremendous opportunity for them." "In a small school in a rural area like this, many (students) would not have this opportunity."

There were responses regarding certain limiting factors about the program in the various schools. In most cases the limitations were associated with problems within the school system rather than the equipment or the effectiveness of ADMIRE leadership. For example, one person said, "The machine set here a lot of the time unused because of class scheduling but this is our problem and possibly can be solved." Another said "Most of the problems encountered are due to our local situation and not to the program itself such as poor facilities to locate the equipment." Another said, "The only problems which we encountered were problems with the telephone hook-up."

It was quite obvious from the responses on the questionnaire about the student instructional program that this program is very well received by all schools responding to the questionnaire. They in general feel that the program has been very highly effective, that students have responded well to this type of instruction, that the ADMIRE leadership and in-service has been outstanding, and that all participants are interested in continuing the program another year.

ADMIRE Description and Analysis - Lincoln Public Schools

Buford Jones, Business Education Consultant for the Lincoln Public Schools, had charge of the ADMIRE instructional equipment for the four Lincoln public high schools.

To evaluate the use of the equipment in the public schools an accurate record of student use was kept at Lincoln East High School. In order to serve the needs of the business students at East High the equipment was in use 3.229 hours of each school day.

This figure is very good when you consider that classes in adult educational programs meet at East High each afternoon and evening. Adult classes in keypunch training are offered through the department and they control the operation of the keypunch during the afternoon and evening hours.

Therefore this 3.229 hours per day accumulated by East High students is strictly during morning classes.

The following table is a summary of use in the business education classes in the four Lincoln public high schools. These figures include only those students who completed the taped units or prepared materials

offered in these classes. This record is for the keypunch and card sorter only.

| School | Students | Hours per day |
|---|---|---|
| Northeast | 106 | 4 |
| East | 43 | 3.229 |
| Southeast | 54 | 4 |
| Lincoln High | 123 | 4 |

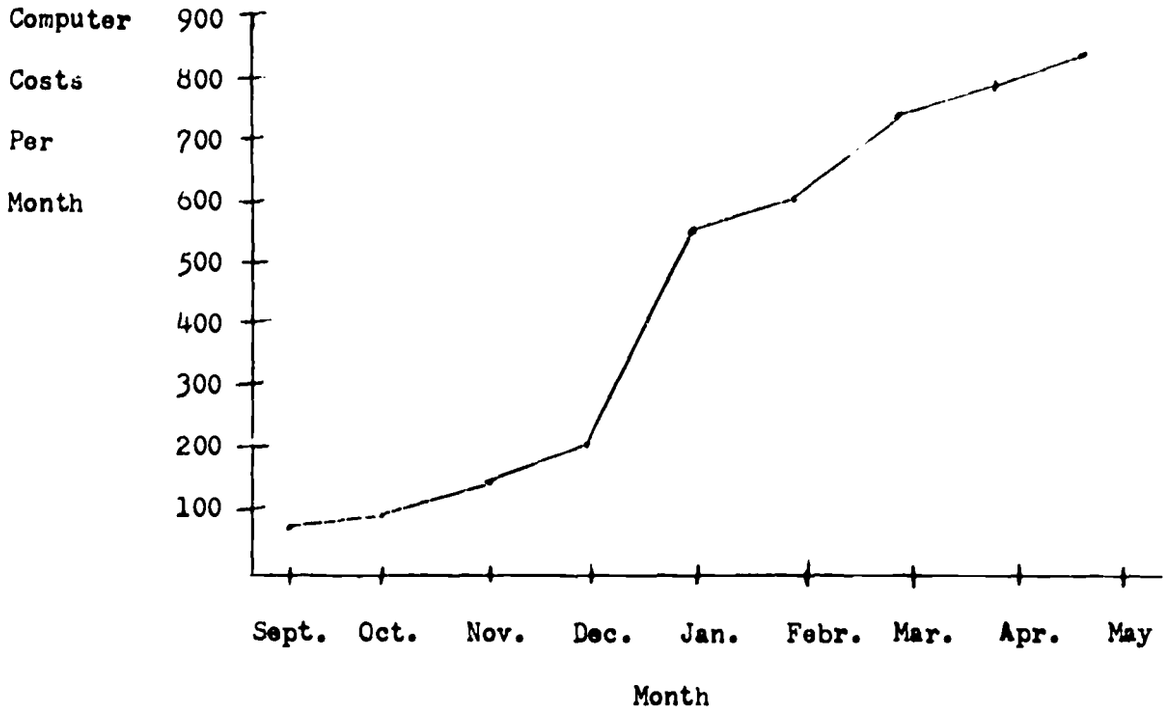
In July 1969 Project ADMIRE rented 3 ASR 33 teletype units from the Lincoln Telephone Company. Arrangements were made with the University of Nebraska to connect these units to their IBM 360 through telephone connection. Personnel in each of the high schools were assessed as to some experience or background in data processing or programming experience.

Four in-service workshops were held with University personnel in order to acquaint the Lincoln teachers with possible uses and equipment available through the University.

As the equipment was delivered it was placed in each of the high schools according to projected ability to use the terminal. East High received the first terminal, Northeast the second, and Southeast the third. The terminal at Southeast was later moved to Lincoln High so all four schools would have an opportunity to use the equipment.

Calctran was first chosen as the language to demonstrate because of the ease of learning the language. Most teachers with their experience in Fortran were not satisfied with Calctran and before too long teachers and students alike were writing Fortran programs, creating data sets, and receiving results on the terminals.

Specific applications and problems solved can be obtained from the cooperating teachers. In order to demonstrate the increasing use as the year progressed the following graph compares the cost of the service from the University with the month in which the terminal was used.




External Evaluator's Assessment - Lincoln Public Schools

On May 19, 1970 a questionnaire designed to determine the effectiveness of the ADMIRE student instructional program in the Lincoln Public Schools was sent to eleven instructors who had worked with the program during the 1969-70 school year. (See Appendix D for a copy of this questionnaire.) Nine instructors or 82% returned the questionnaire.

The questionnaire was divided into six subdivisions. The subdivisions are: program organization, number of students participating, vocational

significance of the program, in-service for instructors, use of instructional equipment, and the overall effectiveness of the program as perceived by the instructors.

Program Organization. Respondents were asked how the program was organized in their school. They were asked whether data processing was offered as a special course or a part of an established course. According to responses four instructors offered it as a special course in data processing while five included the data processing in established courses. Three of the five were in office practice classes while the other two were in mathematics.

Comments relative to program organization dealt with special ways the program was handled in the various situations. Some of these were: "Programming and use of the teletype terminal was also a part of the established courses in pre-calculas and calculas." "The special course was offered at 8:00 in the morning for anyone that was interested, three times a week for five weeks. However, the teletype unit was removed from our building before this class got under way." "A special video tape was prepared, which together with a hand out was presented to the students to gain as wide an exposure as possible. Our attempt was to create interest in the students in using the computer terminal, and let them take it from there." "As we couldn't get thirty-seven students on keypunch and sorter in one semester, we took only those who indicated an interest. We put two students at a time on each machine." "This was voluntary. Most students out of a class of thirty-seven volunteered for the keypunch and sorter."

Number of students. Respondents were asked approximately how many students under their direction participated in the data processing program. The responding instructors in the Lincoln Public Schools reported that 655

students participated in the program under their direction. Student interest ranged from 5% to 80% with great interest and from 5% to 85% with little interest. An analysis of the overall percentages of great interest, moderate interest, and little interest indicate that approximately 30% of Lincoln Public School students showed little interest, 45% moderate interest, and 25% great interest.

One respondent said, "It seemed that many students who I thought would be interested in continuing the study of computer programming found that they were not that interested, yet many who had little previous interest in mathematics or computers were completely carried away by the unit."

Vocational significance. Respondents were asked to indicate how many students participating under their direction had changed their vocational aspirations as a result of the ADMIRE student data processing program. Apparently respondents were not familiar with the extent to which students may have changed their vocational interest as a result of the data processing experiences. Several comments, however, were made relative to this question. "I would judge that at least 15% will go directly into data processing, and that 60% will use the knowledge that they have gained in other fields. 75% of my present class indicated that they feel competent enough to use remote terminals that are available on campuses today." "Most students enjoyed the data processing. Many, however, indicated they would not wish working with data processing equipment all day long." "The students who used the machines, for the most part, enjoyed them. However, they indicated that they would be bored with a full time job of this nature. Perhaps after the summer, a few might go into further training."

In-service for Instructors. Respondents were asked to indicate the number of visits an ADMIRE staff member made to their school in reference to the data processing instructional program. Respondents reported all the way from no visits to as many as three or four visits. One person reported "at least four days." However, some indicated that they had been visited as many as ten times during the 1969-70 year.

Most of the respondents indicated they participated in two in-service sessions in the last school year. One indicated that he had conducted two seminars for teachers involved in the program.

Two respondents rated the in-service leadership as excellent, three as good, and one as fair.

Use of instructional equipment. Respondents were asked to indicate the amount of time each of the instructional unit equipment was assigned to their students during the 1969-70 year and the approximate average percentage of each day that the equipment was in use. It would appear from the responses made concerning the use of the equipment in the Lincoln Public Schools that most of the responses were built around regular class periods. Several said that they used the equipment 47 minutes during a period 100% of the time that it was available. It would appear from this information that in the Lincoln Public Schools the equipment may not have been used extensively outside of these regular class periods. However, some indicated that they may have used the equipment as much as one or two hours a day. Others said that the terminal was available for students during the day so they could use it during times when they were not in other classes.

Comments relative to the equipment use were: "To estimate the time used out of three years is difficult but when equipment was here it was in

use and we could have used several more units of the same kind. Students first semester this year when there were 37 in the class were quite frustrated because they had such a time getting to use the Programma and the terminal." "During the period when we were restricted on the use of time, many of our people became discouraged when they couldn't connect or get on. I can now see that some restrictions will need to be made on the length of time any one student can use the terminal." "With our presentation of the computer, only about half a dozen students really became interested in the computer."

Overall Effectiveness. Respondents were asked to comment concerning the overall effectiveness of the student instructional program, the types of problems that were encountered, and the instructor's judgment about the desirability of continuing the program in the future.

A number of comments were made in reference to the value of the program and hope for its continuation. For example, some comments made were: "We appreciated having the computer this semester." "I would be very much in favor of continuing a program of terminal exposure for our students." "I feel that there is a need for similar programs in our school but I would be opposed to any program unless it would be taught as a separate class." "A very worthwhile project that should be continued." "We shall continue this as a part of our office machines unit in our office practices class." "I believe there is a definite need for such a course, but I am not in favor of the way that it was set up this year." "We should make every effort to continue the program."

Several responses were made in reference to the way in which the program appeared to operate. Illustrations of such comments were: "Perhaps

the least desirable aspect of having had the terminal was the lack of pre-planning and scheduling for its use." "I do not like the 3M books -- programmed learning. I prefer to have my class work together in a subject of this kind." "Our problems were primarily from having the remote terminals installed without any previous training on their uses or any instruction from the University computing center on the NUROS and JCL to operate the terminal."

Other comments appeared to be suggestions for improvement and change for future programs. Some comments made were: "I am convinced that exposure to the maximum number of students is necessary and desirable, and then let interest guide the continuation of study." "I would like to see a special programming course set up with a definite course of study and taught by someone who has had enough experience and knowledge about programming so that they can teach it effectively." "In my estimation there should be two separate courses -- one for people who will be in business offices and another for science and math." "Only people who are really interested in data processing should be taking the course. I had many low caliber students who needed another 5 hours to graduate -- they are not interested in data processing." "The computer as a tool in business, science and engineering is increasing the capacity of students to advance. It is difficult for many in our society to understand and more people who are exposed to it the less misunderstanding there will be. People won't be so apprehensive about it either."

## SECTION VI

## SUMMARY

In September 1967 the Lincoln Public Schools obtained a Title III grant for the purpose of initiating data processing procedures in schools in Educational Service Unit 6. The focus of the project was to "improve educational decision making in a five county rural-urban area by the systematic collection, organization and reporting about the schools and population." One objective of the project was to form a regional educational data processing prototype which could be readily inaugurated in other educational service units in Nebraska. This was to be accomplished by first strengthening the data processing equipment, staff, and services for the Lincoln Public Schools and second providing leadership and data processing services to schools in Educational Service Unit 6.

The 1968-69 proposal re-affirmed the major ADMIRE purpose but introduced a supplementary project -- that of student instruction in both the Lincoln Public Schools and Educational Service Unit 6 schools. Concerning ADMIRE emphasis on student instruction during the final year of the project, the evaluator must conclude that the student instruction objective holds equal importance to that of the original project objective. Therefore, both of these objectives have been given careful consideration in the final report.

Because of the different types of variables necessary for the assessment of the two parallel obejctives, they are being discussed separately in this summary.

"Improve Educational Decision Making"

The success of ADMIRE's objective to "improve educational decision making in a five county rural-urban area by the systematic collection, organization and reporting about the school and the population" depended upon a number of conditions and developments both within Educational Service Unit 6 and within the larger state. Since it is difficult if not impossible to measure the improvement of the decision making process, the evaluator must then look at a number of other variables which are assumed to be components of the improved decision making process purpose. First, it was necessary that the Lincoln Public Schools data processing hardware be adequate to service the schools in Educational Service Unit 6. Second, it was necessary to develop a technical staff adequately competent to complete data processing services accurately, effectively, and promptly for participating schools. Third, it was necessary that the Lincoln Public Schools introduce and strengthen data processing services within their system which could then be extended to Educational Service Unit 6 schools. Fourth, it was necessary to develop ADMIRE staff skills to interpret to educational personnel in the Lincoln Public Schools as well as Educational Service Unit 6 schools the advantages of available services and to assist school administrators on processes for introducing available data processing services. Fifth, it was necessary that certain state level agencies provide leadership in establishing a state-approved uniform pattern for the collection and reporting of certain data about the school and its students. Sixth, it was necessary to communicate to educational leaders in the state the feasibility for developing an area concept of data processing services in Nebraska; and

seventh, it was necessary that funds continue to be made available for an adequate period of time to permit the ADMIRE staff to introduce and establish the types of appropriate data processing activities within participating schools.

Data Processing Equipment

The Lincoln Public Schools have expanded data processing equipment adequately to handle routine data processing needs for participating school systems. The Lincoln Public Schools equipment is inadequate to accommodate complex processing such as modular scheduling. Also, arrangements were made with the University to tie into their computer for different types of student instruction.

ADMIRE Technical Staff

In the judgment of the evaluator, the technical staff is highly competent in developing data processing programs for participating school systems. Evidence collected from the internal evaluation and the reported experiences of participating schools support this contention. Data processing functions are performed expertly and promptly.

Data Processing Services - Lincoln Public Schools

There is adequate evidence from responses to Lincoln Public Schools questionnaires distributed in 1968 and again in 1970 that significant progress has been made in expanding and improving data processing services to schools in the Lincoln system. According to respondents of the 1968 questionnaire, there was some variability among certain types of schools in terms of the types of data processing being implemented in the schools. According to

1970 questionnaire responses, practically all schools in the Lincoln system within a certain group, i.e., elementary, junior high, and senior high, had implemented the same types of data processing services.

In-service Leadership

As indicated above, in the judgment of the evaluator the data processing technical skills and performance is excellent. It is quite one thing to provide the technical know-how in data processing and quite another to help superintendents, principals, and teachers understand data processing procedures and change their behavior accordingly. Probably it requires a quite different set of skills to work with professional personnel on an in-service basis than those used in the technical aspects of data processing.

The general data collected from questionnaires in both Educational Service Unit 6 and Lincoln Public Schools leads the evaluator to reiterate some of the assessment statements which were made for the 1968-69 report.

The general attitude of the professional personnel -- superintendents, principals, and teachers -- toward the ADMIRE staff is excellent. A few remarks were made concerning a recognized need for in-service experiences in reference to data processing procedures. Superintendents, principals, and teachers are not noted for their recognition of needing organized educational programs for themselves.

There were many comments made in connection with the questionnaire which leads the evaluator to believe that a considerably greater effort needs to be made in helping professional personnel understand the potential savings in time and energy for themselves and the advantages which can come from a highly developed data processing system. Comments made by professional personnel indicate a lack of knowledge and understanding about data

processing. Much of it appears to be the type of static which results from proposed organizational innovations.

Future efforts in initiating data processing procedures in the Lincoln Public Schools or on a regional basis will need to give careful attention to comprehensive in-service activities. Consultant visits, voluntary interest groups, topical discussion, and so forth will be needed to bring professional educators along with the data processing innovations.

This statement is not intended as a statement of negative assessment on the part of the present ADMIRE staff. It should best be stated as an understanding growing from the experience of the project.

State Plan

Interviews with ADMIRE staff as well as other leaders in the field of data processing for education in Nebraska reveals the belief that it is impossible for the data processing state plan to come about before certain decisions about data processing can be made on either a local or regional basis. A state adopted uniform plan could assist the project in several ways. First, persons becoming involved in the data processing system could be assured that the system would not have to be revised to fit in with some future state pattern. Secondly, the incentive for participation would be increased since data about the school and pupils could be transmitted by a computerized system directly to the State Department of Education. This would eliminate the preparation of certain reports. Third, a state plan would encourage participating schools to accept a state adopted system instead of insisting on maintaining their individually established methods for gathering and reporting data about the school and students.

It would appear that one problem encountered by ADMIRE in the development of their own program has been the lack of a state-wide plan for school systems. Probably the leadership for reaching certain state-wide agreements about data processing must come about from the state level rather than from a local school district. This would suggest that leadership may be needed either from the State Department of Education, from the University, or both.

While up to this time this leadership has not appeared to be available, it would seem from visits with persons in the State Department of Education, especially Dr. Francis Colgan, that careful consideration is appreciated, and appropriate steps are beginning to be taken for a state-wide plan in the future. In a number of respects, the ADMIRE project may have stimulated this new interest in developing state leadership for this important state-wide purpose.

Interpreting ADMIRE to State Leaders

As indicated earlier in this summary, one objective of ADMIRE was to develop a prototype for other educational service units. It was the hope that the Educational Service Unit 6 in conjunction with the Lincoln Public schools would develop cooperative computorized services in such a way that they would serve as educational service units. As the various educational service units develop their data processing organizations, it then might become possible for them to tie into a state-wide system. An important part of this assessment then was to determine the attitude of educational service unit administrators and their knowledge about data processing on a regional basis.

The evaluator interviewed four educational service unit administrators concerning their knowledge about the ADMIRE project and their attitude toward the basic regional concept. All four were quite familiar with the ADMIRE project and were supportive of the general plan and procedure.

While educational service unit administrators appeared to be familiar with ADMIRE and generally supported the plan, there was little evidence that they had really thought through a plan for their own educational service units. It had apparently occurred to them that such a plan might work but they had not developed models which would likely work in their own communities. They appeared to lack the necessary information, knowledge, and perhaps motivation to take the leadership for the development of a plan in their own educational service units. It appeared that leadership would be well accepted either from the University of Nebraska or the State Department of Education. Some Educational Service Unit administrators continued to have doubts about the role of service units concerning data processing functions. They did not appear to have better alternatives; they had not crystalized an answer to the challenge in their own minds.

Funding the Continuation of Data Processing

Data processing services will of course continue as a part of the integral operation of the Lincoln Public Schools. The question arises about the continuation of the project in Educational Service Unit 6 schools. In part the assessment of the success of the project is contigent upon the degree to which the project continues in Educational Service Unit 6. In the early spring of 1970 the ADMIRE staff made available to the Educational Service Unit 6 administrator a cost for providing the services to service

unit schools. Quoted costs are: $1 per student per year for the testing service; $1 per student per year for the scheduling service; and a minimum charge of $900 for the accounting and budgeting service. While it is not definite how many schools will continue with the services, the Educational Service Unit 6 administrator believed that one school would continue with the accounting service, five schools with scheduling, and fourteen or fifteen with the testing service.

It is also significant that the service unit has appropriated $5,000 to be used in coordinating the data processing services in Educational Service Unit 6. The administrator also indicated that if this proves to be successful, it is likely that the service unit board will increase this amount another year.

The service unit administrator believed that there are certain kinds of financial problems involved with the continuation of the program. He felt that if the school systems could have been asked to participate financially in the project from the beginning even though the amount may have been small, it would have been more likely that they would continue. Another problem was that the data processing format often required school systems to change certain of their patterns of operation in order to participate. This was not only true in the case of budget and accounting but also was the case in such activities as grade reporting.

Another problem was that some schools had already contracted for certain of their services with private concerns prior to the introduction of the services by ADMIRE.

It was the judgment of the service unit administrator that the fee as stated by the Lincoln Public Schools is fair but not necessarily less than private quotations for comparable services.

It is obvious that it will be some time before an assessment can be made of the degree to which the data processing services are continued in Educational Service Unit 6 schools.

## "Extend Student 'Hands on' Experience"

The second major objective of ADMIRE is "to extend student 'hands on' experience with the card puncher and sorter, to involve students in problem solving activities with teleprocessing terminals connected to the University of Nebraska 360-65 computer, and to extend the use of Programma 101 tabletop computers."

In Educational Service Unit 6 schools nearly all computer instruction was conducted through office practice courses (twenty-one) and math courses (seven). Approximately 1200 students were involved with 75% showing great interest in data processing procedures. As many as twenty-five to thirty students appeared to have selected computer science as a vocation as a result of the student instruction program.

Instructors in data processing programs for students said that a range from two to six or seven visits were made by the ADMIRE program supervisor. Twenty-five rated the instructor's visits as exellent and seven as good. All comments were highly supportive of Mr. Holtgrewe's leadership in the program.

Educational Service Unit 6 school respondents reported that equipment was on the average used approximately 75% of the regular school day. A

number of internal organizational problems were cited which prevented fuller use in some cases.

Educational Service Unit 6 respondents expressed a very strong plea for the continuation of the program. They said the program had worked well, that students were generally excited about the experience, and that future programs could be greatly improved on the basis of the past two years of experience.

In the Lincoln Public Schools nine out of eleven data processing instructors in the ADMIRE project returned questionnaires. Four of the nine courses reported were offered as special courses in computer science. Of the other five in which data processing experiences were offered, three were office practice and two mathematics courses. On the basis of number of students reported in the program by respondents, it is estimated that approximately 800 students participated. Of those participating, instructors reported approximately 25% demonstrated great interest, 45% moderate interest and 30% little interest in the program.

Lincoln instructors reported visits by the ADMIRE student instruction supervisor as none to four days. Comments concerning Mr. Holtgrewe's in-service leadership were supportive.

Equipment in the Lincoln Public Schools appeared to be mainly confined to specific courses with some use during other parts of the school day. While instructors in the service unit schools responded to use of the equipment throughout the full day, Lincoln instructors reported a percentage of use during a particular 47 minute period.

Lincoln instructors generally support the continuation of the program. They tended to included in their comments limiting conditions and suggested improvements.

## APPENDIX A

ADMIRE EVALUATION QUESTIONNAIRE
E.S.U. #6 School systems
May 8, 1970
To Be Completed by School Superintendent

School Name_____

District Name_____

School Superintendent_____

Number of Years in Present Position_____

Number of students: K - 6 _____ 7 - 9 _____ 10 - 12 _____
K - 8 _____ 9 - 12 _____

This is the third and final year of ADMIRE, a Title III project developed and sponsored by Lincoln Public Schools designed to provide certain data processing services to schools in area Service Unit No. 6. It will help us assess the project's effectiveness if you will carefully answer the following questions.

1. Below are listed data processing services which ADMIRE considered feasible for participating schools during the project's planning stages. Please indicate in Column A those which have been implemented in your school; in Column B what year the service was implemented; and in Column C those which you consider feasible in the future for your system.

| | A Implemented | B Year Implemented | C Considered Feasible |
|---|---|---|---|
| a. Student scheduling | _____ | _____ | _____ |
| b. Grade reporting | _____ | _____ | _____ |
| c. Attendance accounting | _____ | _____ | _____ |
| d. School census | _____ | _____ | _____ |
| e. Machine test scoring | _____ | _____ | _____ |
| f. Activity fund accounting | _____ | _____ | _____ |
| g. Financial accounting | _____ | _____ | _____ |
| h. Cooperative purchasing | _____ | _____ | _____ |

Comments:

2. Are there other data processing services not listed in Question 1 which you believe would be feasible and desirable in your school system?

Comments:

3. Below are listed the ADMIRE services which were offered E.S.U. #6 school systems. For those services implemented in your school, please indicate the degree to which they have been effective.

| | High Effectiveness | Moderate Effectiveness | Low Effectiveness |
|---|---|---|---|
| Student scheduling | _____ | _____ | _____ |
| Machine test scoring | _____ | _____ | _____ |
| Financial accounting | _____ | _____ | _____ |
| Student instruction in data processing | _____ | _____ | _____ |

Comments:

4. There may be factors in your school system which prevented or limited your school's participation in ADMIRE services. Please indicate below those which you believe may have limited your participation.

a. Administration feelings? Yes_____ No_____ Uncertain_____

b. Teacher feelings? Yes_____ No_____ Uncertain_____

c. School board feelings? Yes_____ No_____ Uncertain_____

d. Community feelings? Yes_____ No_____ Uncertain_____

e. Size of your school system? Yes_____ No_____ Uncertain_____

f. Unclear about advantages of service? Yes_____ No_____ Uncertain_____

Comments:

5. There may have been factors associated with ADMIRE's organization and services which prevented or limited your participation in the service. Please indicate below those factors which you believe limited your participation.

   a. The services offered? Yes_____ No_____ Uncertain_____

   b. Communication to your school the advantages of the various ADMIRE data processing services? Yes_____ No_____ Uncertain_____

   c. Assisting your school develop and use the available ADMIRE services? Yes_____ No_____ Uncertain_____

   d. The quality of data processing services rendered by ADMIRE? Yes_____ No_____ Uncertain_____

   e. The promptness of data processing services rendered by ADMIRE? Yes_____ No_____ Uncertain_____

   Comments:

6. If you are participating in the STUDENT SCHEDULING service, please answer the following questions:

   a. Have the forms used to record information presented any problems? Yes_____ No_____

   b. Are the completed report forms returned to you within a satisfactory time? Yes_____ No_____

   c. Has the SCHEDULING service reduced the overall time the school spends on the schedule? Yes_____ No_____

   d. Has your participation in the SCHEDULING service enabled you to improve your master schedule and therefore provide better selections for pupils? Yes_____ No_____

   e. Users have found the accuracy of the material in a data processing operation can vary. Do you consider SCHEDULING data provided for you to be accurate? Yes_____ No_____

   f. Compared with the amount of information you had before, has the SCHEDULING information made available through data processing enabled you to make better decisions? Yes_____ No_____

g. Overall, do you feel your participation in the SCHEDULING service results in a better educational program for your pupils than existed before the service? Yes_____ No_____

h. Please comment about the SCHEDULING program and recommend ways to improve the service.

7. If you are participating in the TEST-SCORING AND ANALYSIS service, please answer the following questions:

a. Have the forms used presented any problems? Yes_____ No_____

b. Has this service enabled you to better evaluate test items and procedures? Yes_____ No_____

c. Are the TEST data returned to you at a time when they are the most useful? Yes_____ No_____

d. Does this service save the time of teachers? Yes_____ No_____

e. Users have found the accuracy of the materials in a data processing operation can vary. Do you consider TEST data accurate? Yes_____ No_____

f. Overall, do you feel your participation in the TEST service results in a better educational program for your pupils than existed before you began the service? Yes_____ No_____

g. Compared with the amount of information you had before, has the TEST information made available through data processing enabled you to make better decisions? Yes_____ No_____

h. Please comment about the TEST-SCORING program and recommend ways to improve the service.

8. If you are participating in the FINANCIAL ACCOUNTING service, please answer the following questions:

   a. Has the FINANCIAL ACCOUNTING format introduced by ADMIRE presented any problems? Yes_____ No_____ Uncertain_____

      Comments:

   b. Are completed financial forms returned to you within a satisfactory time? Yes_____ No_____ Uncertain_____

      Comments:

   c. Has the FINANCIAL ACCOUNTING service reduced the overall time the school spends on financial accounting? Yes_____ No_____ Uncertain_____

      Comments:

   d. Users have found the accuracy of the material in a data processing operation can vary. Do you consider FINANCIAL ACCOUNTING data provided for you to be accurate? Yes_____ No_____ Uncertain_____

      Comments:

   e. Compared with the amount of information you had before, has the FINANCIAL ACCOUNTING information made available through data processing enabled you to make better decisions? Yes_____ No_____ Uncertain_____

      Comments:

   f. Please comment about the FINANCIAL ACCOUNTING program and recommend ways to improve the service.

9. Realizing that every organization can benefit from suggestions, do you have any specific suggestions for improving the operation in general?

10. What has impressed you the most about the whole data processing operation?

11. Based on everything you have said, could you summarize your feelings about the Lincoln Public School System's data processing program?

## APPENDIX B

### LISTING OF TO WHOM SUPERINTENDENT'S QUESTIONNAIRE SENT

Superintendent
Benedict Public Schools
Benedict

Superintendent
Bradshaw Public Schools
Bradshaw

Superintendent
Centennial Public Schools
Utica

Superintendent
Crete Public Schools
Crete

Superintendent
Dorchester Public Schools
Dorchester

Superintendent
Exeter Public Schools
Exeter

Superintendent
Fairmont Public Schools
Fairmont

Superintendent
Friend Public Schools
Friend

Superintendent
Geneva Public Schools
Geneva

Superintendent
Gresham Public Schools
Gresham

Superintendent
Henderson Public Schools
Henderson

Superintendent
Malcolm Public Schools
Malcolm

Superintendent
Milford Public Schools
Milford

Superintendent
Milligan Public Schools
Milligan

Superintendent
Norris School
Hickman

Superintendent
Ohiowa Public Schools
Ohiowa

Superintendent
Seward Public Schools
Seward

Superintendent
Shickley Public Schools
Shickley

Superintendent
Waverly Public Schools
Waverly

Superintendent
Wilber Public Schools
Wilber

Superintendent
York Public Schools
York

Superintendent
Pius X High School
Lincoln

APPENDIX C

"ADMIRE" DATA PROCESSING EVALUATION

Lincoln Public Schools
May 8, 1970

School Name_____

Person Answering this Questionnaire_____

Position_____

Organizational Pattern
(K-6, 9-12, etc.)_____ Numeber Pupils_____

1. In which of the following data processing services does your school participate?

| | | |
|---|---|---|
| Student Scheduling | Yes_____ | No_____ |
| Grade Reporting | Yes_____ | No_____ |
| Attendance Accounting | Yes_____ | No_____ |
| Machine Test Scoring and Analysis | Yes_____ | No_____ |
| Activity Fund Accounting | Yes_____ | No_____ |
| Catalog Order System | Yes_____ | No_____ |

2. Are there additional data processing services which you believe would assist your school system? Please comment.

3. Are you encountering resistance to the services in which you are participating from:

a. administrators: Yes_____ No_____

b. teachers: Yes_____ No_____

c. students: Yes_____ No_____

d. community: Yes_____ No_____

Comments:

4. Communication, written directions, face to face interaction, telephone conversations, and in-service activities play an important role in the success of a data processing operation. How do you rate your communication with the Lincoln Public Schools data processing personnel?

   a. Written directions: Satisfactory_____ Unsatisfactory_____

   b. Face to face interactions: Satisfactory_____ Unsatisfactory_____

   c. Telephone conversations: Satisfactory_____ Unsatisfactory_____

   d. In-service activities such as workshops, staff meetings, conferences, formal class instruction, field trips, tours of the data processing center, etc.: Satisfactory_____ Unsatisfactory_____

   Comments:

5. If you are participating in the STUDENT SCHEDULING service, please answer the following questions:

   a. Have the forms used to record information presented any problems? Yes_____ No_____

   b. Are the completed report forms returned to you within a satisfactory time? Yes_____ No_____

   c. Has the SCHEDULING service reduced the overall time the school spends on the schedule? Yes_____ No_____

   d. Has your participation in the SCHEDULING service enabled you to improve your master schedule and therefore provide better selections for pupils? Yes_____ No_____

   e. Users have found the accuracy of the material in a data processing operation can vary. Do you consider SCHEDULING data provided for you to be accurate? Yes_____ No_____

   f. Compared with the amount of information you had before, has the SCHEDULING information made available through data processing enabled you to make better decisions? Yes_____ No_____

   g. Overall, do you feel your participation in the SCHEDULING service results in a better educational program for your pupils than existed before the service? Yes_____ No_____

h. Please comment about the SCHEDULING program and recommend ways to improve the service.

6. If you are participating in the GRADE REPORTING service, please answer the following questions:

a. Have the forms used to record information presented any problems? Yes_____ No_____

b. Are the completed report forms returned to you within a satisfactory time? Yes_____ No_____

c. Does this service save the time of administrators? Yes_____ No_____

d. Does this service save the time of teachers? Yes_____ No_____

e. Users have found the accuracy of the material in a data processing operation can vary. Do you consider GRADE REPORTING data to be accurate? Yes_____ No_____

f. Overall, do you feel your participation in the GRADE REPORTING service results in a better educational program for your pupils than existed before you began the service? Yes_____ No_____

g. Compared with the amount of information you had before, has the GRADE REPORTING information made available through data processing enabled you to make better decisions? Yes_____ No_____

h. Please comment about the GRADE REPORTING program and recommend ways to improve the service.

7. If you are participating in the ATTENDANCE ACCOUNTING service, please answer the following questions:

a. Have the forms used to record information presented any problems? Yes_____ No_____

b. Are the completed report forms returned to you within a satisfactory time? Yes_____ No_____

c. Does this service save the time of administrators? Yes_____ No_____

d. Does this service save the time of teachers? Yes_____ No_____

e. Users have found the accuracy of the material in a data processing operation can vary. Do you consider ATTENDANCE ACCOUNTING data to be accurate? Yes_____ No_____

f. Overall, do you feel your participation in the ATTENDANCE ACCOUNTING service results in a better educational program for your pupils than existed before you began the service? Yes_____ No_____

g. Compared with the amount of information you had before, has the ATTENDANCE ACCOUNTING information made available through data processing enabled you to make better decisions? Yes_____ No_____

h. Please comment about the ATTENDANCE ACCOUNTING program and recommend ways to improve the service.

8. If you are participating in the TEST-SCORING AND ANALYSIS service, please answer the following questions?

a. Have the forms used presented any problems? Yes_____ No_____

b. Has this service enabled you to better evaluate test items and procedures? Yes_____ No_____

c. Are the TEST data returned to you at a time when they are the most useful? Yes_____ No_____

d. Does this service save the time of teachers? Yes_____ No_____

e. Users have found the accuracy of the materials in a data processing operation can vary. Do you consider TEST data accurate? Yes_____ No_____

f. Overall, do you feel your participation in the TEST service results in a better educational program for your pupils than existed before you began the service? Yes_____ No_____

g. Compared with the amount of information you had before, has the TEST information made available through data processing enabled you to make better decisions? Yes_____ No_____

h. Please comment about the TEST-SCORING program and recommend ways to improve the service.

9. If you are participating in the ACTIVITY FUND ACCOUNTING service, please answer the following questions:

a. Have the forms used to record information presented any problems? Yes_____ No_____

b. Are ACTIVITY FUND ACCOUNTING statements returned to you within a satisfactory time? Yes_____ No_____

c. Does this service save the time of administrators? Yes_____ No_____

d. Does this service save the time of teachers? Yes_____ No_____

e. Are statements and reports on ACTIVITY FUNDS accurate? Yes_____ No_____

f. Please comment about the ACTIVITY FUND ACCOUNTING program and recommend ways to improve the service.

10. If you are participating in the CATALOG ORDER service, please answer the following questions:

a. Have the forms used presented any problems? Yes_____ No_____

b. Has the CATALOG ORDER service allowed clerks to do some work formerly done by professional staff? Yes_____ No_____

c. Has the CATALOG ORDER service reduced the overall time the school spends on acquisition, distribution, and inventory of school supplies? Yes_____ No_____

d. Has the CATALOG ORDER service improved the efficiency in making supplies available to professional personnel? Yes_____ No_____

e. Has the CATALOG ORDER service been accurate? Yes_____ No_____

f. Compared to the former system of acquisition, distribution, and inventory, has the CATALOG ORDER service enabled you to make better decisions? Yes_____ No_____

g. Please comment about the CATALOG ORDER program and recommend ways to improve the service.

11. Realizing that every organization can benefit from suggestions, do you have any specific suggestions for improving the operation in general?

12. What has impressed you the most about the whole data processing operation?

13. Based on everything you have said, could you summarize your feelings about the Lincoln Public School System's data processing program?

APPENDIX D

ADMIRE EVALUATION QUESTIONNAIRE

Student Instructional Program
May 1970

School Name_____

Name of Respondent_____

Respondent's Position_____

1. Program organization:

Data processing instruction was offered through
_____ a. special courses
_____ b. a part of established course(s).

If offered as a part of established courses, what course(s)
_____
_____

Comments:

2. Number of students:

a. Approximately how many students under your direction participated in the data processing program?_____

b. Of the students under your direction who were provided the opportunity to participate, approximately what percentage demonstrated
_____ little interest
_____ moderate interest
_____ great interest.

Comments:

3. Vocational significance:

How many student participants under your direction have changed their vocational aspirations as a result of the ADMIRE student data processing program? _____

Comments:

4. In-service for instructors:

a. How many visits did an ADMIRE staff member make to your school in reference to the data processing instructional pr· ram?

_____

b. How many ADMIRE sponsored in-service meetings on student instruction did you attend during 1969-70? _____

c. How do you rate the effectiveness of the ADMIRE staff in assisting local instructors?

_____ excellent
_____ good
_____ fair

Comments:

5. Use of instructional equipment:

Please indicate the amount of time each of the following instructional equipment units were assigned to your students during the 1969-70 year and the approximate average percentage of each school day that the equipment was in use.

| Equipment | Time allotted | Percentage of time used |
|---|---|---|
| a. Keypunch | _____ | _____ |
| b. Card sorter | _____ | _____ |
| c. Programma 101 | _____ | _____ |
| d. Teletype terminal | _____ | _____ |

Continued

Comments:

6. Please comment on the overall effectiveness of the student instructional program, problems encountered, and your judgment about the desirability for continuing the program in the future.

# A D M I R E

## Final Evaluation Report

by

Howard Eckel

For the Period of

July 1, 1967 to June 30, 1970

ADMIRE

Final Evaluation Report

## Introduction

The ADMIRE project--Assistance in Decision Making through Retrieval in Education--had two major purposes. The original purpose first approved in September 1967 indicated that the central objective of the project was to "improve educational decision making in a five county rural-urban area by the systematic collection, organization, and reporting about the schools and its population". However, the renewal document for 1968-69 not only requested support for the continuation of the initial stated purpose but also requested support to develop a student instruction program in data processing for school systems both in Educational Service Unit 6 and for the Lincoln Public Schools. Therefore, the first external evaluation, 1967-68, centered on the first purpose only while the second and third assessments included the initial purpose plus the student instruction dimension of the project.

## Evaluation Criteria

The external evaluator considered his first task to be that of developing a specific measurable "evaluation criteria" by which the ADMIRE project could be assessed. This was done by a careful analysis of the proposal document and visits with those who developed the ADMIRE concept. ADMIRE staff were asked to examine and react to the criteria statement. The criteria for the first year of the project consisted of a central purpose plus a number of supporting purposes. The second major purpose relating to student instruction was included for the second year's evaluation assessment.

ADMIRE Progress, 1967 to 1970

The rationale for a project such as ADMIRE is not only to implement a major concept but to determine what processes prove successful, and the nature of blocks encountered. What is often overlooked is the importance of learning, what succeeds as well as what is unsuccessful. It follows then that ADMIRE stressed some of the subpurposes listed below more than others and that certain approaches were included which are not adequately described in the criteria. However, to be consistent with the original evaluation plan the subpurposes as delineated are being followed in this discussion.

Primary Purpose I

ADMIRE proposes to demonstrate the feasibility of developing educational data processing services on a regional concept for the purpose of improving educational decision making in the region.

It is assumed that data described under the seven following subpurposes contributes to the facilitation of the above primary purpose statement.

Subpurpose 1 -- ADMIRE will provide for the administrative planning and supervisory arrangements and procedures for implementing the proposals as outlined.

ADMIRE has developed a highly effective management and leadership function for data processing services for the Lincoln system and for schools in Educational Service Unit 6 participating in the project. During the ADMIRE project, equipment has been updated and expanded to facilitate all regular data processing services introduced during the past three years. A very able technical staff has been developed. One of the great strengths of the data processing program is its competent staff and leadership. Evidence collected from the first-hand studies of the organization and administration of

the program as well as feedback from participating schools supports the conclusion that ADMIRE has been highly successful in fulfilling Subpurpose 1.

Subpurpose 2 -- ADMIRE will solicit the cooperation and involvement of school systems in Educational Service Unit 6 in a unified plan for collecting, storing, and retrieving and utilizing pupil personnel information through data processing systems.

A basic assumption of ADMIRE is that computerized pupil personnel records provide data which are readily available in an interrelated form adaptable in analyzing the individual needs of pupils. So it is assumed that as the plan becomes fully functioning, it will not only cost less than maintaining comparable records manually, but will also be much more useful in meeting individual needs.

ADMIRE realized good progress in soliciting the cooperation and involvement of school systems in Educational Service Unit 6 for the purpose of implementing the central purpose listed above. The Admire staff conducted regular meetings with superintendents, principals, and other groups for the purpose of orienting them to the potential uses of data processing in school systems. Committees consisting of personnel in Educational Service Unit 6 schools were formed and functioned during the program. The evaluation instruments revealed increased understanding of ADMIRE purposes as the project progressed.

While there continued to be those who considered the services uneconomical for their school size the number within this group appeared to decrease as the program progressed.

One type of evidence supporting the communication success of the ADMIRE staff is that school administrators in Educational Service Unit 6 continued to express strong positive feelings toward the ADMIRE staff throughout the

project. While respondents to questionnaires often expressed various types of confusion relative to the effectivness of the system, there were minimal criticisms of the ADMIRE staff role in the developing of the program.

Subpurpose 3 -- ADMIRE will develop and implement a data processing system for student scheduling, grade card reporting, standardized and teacher made test scoring and analysis, payroll, financial accounting, census and attendance files, inventory and annual supply orders.

There are two developmental phases of the ADMIRE area program. First, is the refinement and extension of the Lincoln Public Schools services and second is the adaptation of the feasible services to the area.

ADMIRE has made significant progress in developing services to the Lincoln Public Schools. At the beginning of the project, data processing services were being introduced in the Lincoln School System. Participation among schools in Lincoln was scattered and there was limited understanding of the potential of the services. The 1970 assessment reveals that the entire system has adapted a computerized system of general budget and accounting; food services; cost analysis and record keeping; attendance; census; and catalog ordering. Also nearly all schools participate in activity fund accounting and machine test scoring and analysis. Furthermore, all junior and senior high schools report that they now participate in scheduling and grade reporting.

The evaluation reports from the Lincoln Public School personnel indicate a medium to high understanding and acceptance of data processing services. However, there continues to be a significant minority who reflect doubt and resistance. It appears from systematic feedback data that the ADMIRE staff has been eminently successful in technical decisions, competency and performance. However, lesser emphasis has gone into programs to aid participating Lincoln schools in adapting to this major school innovation.

Administrator responses indicate considerable frustration with certain changes eminating from the new system. In Educational Service Unit 6 machine test scoring and analysis appears to be the most popular service. Sixteen schools (77% responding) indicate that they have participated in the testing service, eight say they have used ADMIRE student scheduling and four financial accounting. The educational service unit administrator reports that under a post ADMIRE plan in which schools pay their own costs, the number of schools planning to continue are fifteen in test scoring, five in student scheduling and one in budget and accounting.

It is difficult to asses what should be considered a successful program in Educational Service Unit 6. There are many possible reasons why more schools in the area either did not participate or do not plan to continue. Reasons often given are school size, cost of the service, and disinterest in changing old plans.

Again the ADMIRE staff demonstrated high data processing expertise. This fact was well recognized by participating respondents. Staff also did a good job with in-service activities but did not appear to be as successful in this respect. Many responses can be interpreted to reflect limited understanding of the potential of the data processing system. It is significant, however, that the responses from Educational Service Unit 6 administrators were all very positive toward the ADMIRE staff and the Lincoln Public Schools and their role in the data processing project in Educational Service Unit 6.

Subpurpose 4 -- ADMIRE will involve teachers and guidance counselors in utilizing data processing in meeting the needs of individual students.

ADMIRE's designers have stressed the use of computerized pupil personnel data by professional personnel, especially teachers and counselors, in helping students to meet their individual needs.

At the close of the project's second year, the evaluator surveyed teachers and counselors indicated by school superintendents and principals in Educational Service Unit 6 as being most active in data processing services. This survey revealed a rather limited understanding and involvement in the program by teacher and counselor respondents. From this evidence plus data collected from principals and superintendents, it appears that knowledge of ADMIRE's data processing services has been relatively limited to administrative staff members in Educational Service Unit 6 schools.

Subpurpose 5 -- ADMIRE will organize training programs for aiding educational administrators to better meet student needs through data processing.

ADMIRE stresses the need to orient educational leaders in school districts to become sensitive to the potential decision making possibilities through the use of the information available from pupil personnel data. Therefore, the leadership training program is central to the project.

The three evaluation reports indicate a large number and range of in-service experiences for administrators in orienting them to the use of data processing to meet student needs. These range from individual visits in participant schools to a variety of group meetings and committee work.

Participants in the Lincoln Public Schools appear to recognize an improvement in in-service activities between the 1967-68 report and the 1969-70 report. In the 1967-68 report, seventeen respondents reports in-service activities as being good or excellent. However, eleven people rated them as poor or very poor. In the 1969-70 report, thirty-one rated in-service as excellent while only four rated it as poor.

Educational Service Unit 6 school respondents reported general support for in-service activities throughout all the years.

Subpurpose 6 -- ADMIRE will assist boards of education of participating school systems to use computerized pupil personnel data in establishing

of its program not only information to educational service unit administrators but must involve them in every way possible. A very important dimension of ADMIRE is not only to demonstrate the efficiency of data processing but to demonstrate the feasibility for similar types of programs in other educational service units.

The evaluator conducted a number of interviews annually with educational service unit administrators, members of the State Department of Education, and superintendents of schools outside of Educational Service Unit 6. Interviewees were questioned about their knowledge of the project and their judgment about the feasibility of the program in other educational service units or on some other regional approach. Respondents were generally well informed about ADMIRE and appeared to feel the project had merit and considerable potential for other state areas.

The State Department of Education has not rendered strong leadership in implementing data processing services. The Department has made very limited progress in converting to computerized recording procedures.

Some respondents believe that it will be necessary for the State Department of Education or the University to provide strong leadership in developing a state-wide pattern of data processing.

Primary Purpose II

ADMIRE will facilitate instructional programs for secondary school youth in participating schools.

The objectives of the student instruction program are "to extend student 'hands on' experience with card punch and sorter, to involve students in problem solving activities with teleprocessing terminals connected to the University of Nebraska 360-65 computer, and to extend the use of the Programma 101 tabletop computer."

personnel needs and financial support for educational programs.

It is recognized that boards of education must be directly involved in major educational innovations. Board members must be adequately acquainted with ADMIRE so that they can appreciate the decision making potential through a proven method of data analysis. Of course, the Board of Education in the Lincoln Public Schools has been constantly advised concerning the status and development of the data processing services in the Lincoln Public Schools and the role that ADMIRE has had in these services.

While there are some exceptions, the boards of education members in Educational Service Unit 6 have apparently had little active part in the program. Up until the last and final year, superintendent responses indicated that board of education members did not constitute a significant resistance to the project while six respondents indicated significant resistance from board of education members during the last year. This is believed to have resulted from proposals from superintendents to continue the services at some cost to the school system after the termination of the ADMIRE project. It appears that boards have a limited part in the service until requests for financial support were made during the final year. One point of view is that the project would have been more effective if schools had been asked to participate financially on a limited basis from the very beginning.

Subpurpose 7 -- ADMIRE will acquaint educational service unit administrators about the progress of the program and its possible implications for other area service units in the State of Nebraska.

ADMIRE is intended to demonstrate to educational service units how a system of pupil personnel data processing can be utilized in making better decisions in meeting individual needs in the various educational systems of Nebraska. If this subpurpose is to be met, ADMIRE must include as a part

Evaluation data were collected from school superintendents and principals in Educational Service Unit 6 in 1968-69 and from program instructors both in the Lincoln schools and Educational Service Unit schools in 1969 and 1970. The student instruction program has been very effective in most ways. Instructors are enthusiastic about the program and feel that it should be continued. Several thousand students have had some introduction to the process and potential of data processing while more than 2,000 have had systematic instruction in data processing and have had "hands on" experience with the equipment. In general students have developed a deep interest in computer science and a considerable number will vocationally pursue some branch of the science.

Respondents strongly support the ADMIRE staff. Many respondents commend the excellent supervisory work of Mr. Royce Holtgrewe. Instructors reported that he made frequent visits to their schools and was very helpful in assisting them with their instructional responsibilities.

Certain problems were revealed about the student instructional program. Problems of organizational arrangement to permit the students to get the maximum use of the equipment is one persistent problem. The orientation of personnel with little or no previous experience in data processing is another problem. Others said the limited use of equipment was a serious limiting factor in getting the most from the program.

While no definite arrangements have yet been determined for the continuation of the program in Educational Service Unit 6, schools are highly interested in continuing the "hands on" data processing program. The Educational Service Unit 6 administrator reports that he is investigating the possibilities for some type of cooperative arrangement among member schools.