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AUTHOR Cole, Henry P.; Herlihy, John G.

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ABSTRACT

This document presents an overview of a process-promcting curriculum, "Man: A Course of Study" (MACOS), developed by the Eastern Regional Institute for Education (ERIE). The ERIC project is designed to promote proper implementation of the curriculum and teacher commitment and competency in the practice and process of education. The campus team strategy was used to implement the program. After a summer workshop, campus teams were sent to participating institutions to conduct MACOS preservice and in-service training. Data collection instruments included administrator's, in-service education, and preservice education questionnaires; report forms for campus teams and core staff; MACOS familiarity tests for pupils, preservice and in-service teachers; familiarity inventory for preservice teachers; lesson reporting forms for in-service teachers; and semantic differentials for attitude assessment toward MACOS administered to preservice and in-service teachers. Data analysis indicated eleven positive results of the program including participant interaction; value of the project preservice and in-service education programs; facilitation of curriculum installations; and knowledge of adult samples concerning philosophy, theory, and design of MACOS. Additional areas of concern included the value and implications of the project. A review of the budget and a 30-item bibliography are included. (MJM)

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Report to National Science Foundation on a 1969-70 Grant awarded for "A program to establish preservice and inservice education for the effective installation and dissemination of Man: A Course of Study"

Product 007

IMPLEMENTATION OF A PROCESS CURRICULUM BY THE CAMPUS TEAM STRATEGY

Henry P. Cole
John G. Herlihy

February 4, 1971

Eastern Regional Institute for Education
635 James Street
Syracuse, New York

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ORIGIN OF THE PROJECT

In accordance with the General Policy Statement presented by the Board of Trustees of the Eastern Regional Institute for Education (ERIE) in August 1969, ERIE's goal is the promotion of process education in elementary schools. The Institute established a curriculum analysis and synthesis component whose primary task was to identify exemplary process promoting curricula. The identification of process-promoting curricula made it possible for ERIE to study process education techniques and observe how these techniques were applied to actual classroom settings. The analysis and synthesis component developed criteria for analyzing curricula and conducted an extensive search for existent process curricula. In all, about 400 different pieces of curricula were identified and screened against ERIE's selection criteria. The details of this effort are recorded in Analysis of Process Curricula (Cole & Seferian, 1970). About thirty curricula, already existing in a form that held some hope for exportation, were tentatively selected as being highly appropriate to process education. Several of the programs were installed in classroom settings for observation. This experience, coupled with the detailed analysis of ten selected programs, led to the development of a new set of criteria for chosing a curriculum for dissemination. The five

criteria were based on completeness of curriculum with respect to objectives, instructional materials, teacher education procedures and materials, pupil assessment procedures, and summative evaluation of general effectiveness. Plans were developed for the augmentation of programs along any one of these dimensions in which they might be deficient. This activity was reported in Curriculum Augmentation and Validation (Cole, 1970). Interactions with curriculum developers were central to the study, review and analysis of promising curricula.

One of the curricula ERIE considered highly satisfactory to the practice of process education was Man: A Course of Study (MACOS), developed by Education Development Center (EDC). At this time, EDC, supported by National Science Foundation (NSF), was establishing a series of regional centers for the dissemination and implementation of MACOS. MACOS was recommended by the analysis and synthesis component for wide scale implementation in a network of ERIE schools for the study and further promotion of process education. Aware of ERIE's interest in the curriculum, EDC informed ERIE of the opportunity to be a regional center for the dissemination and implementation of MACOS.

ERIE activity, at that point, was concerned with the further development, study, implementation and dissemination of process promoting curricula. The opportunity to

study the MACOS curriculum and its effects on teachers and pupils would greatly add to ERIE's program activity. Therefore, ERIE developed a proposal to implement and disseminate MACOS and submitted it to NSF in February 1969. That spring, NSF notified ERIE that the proposal was funded for the 1969-70 school year.

This paper reports on the first year's (1969-70) implementation of MACOS by the campus team strategy. A renewal grant from NSF has made continuation of the project in 1970-71 possible. The basic design of the project has been retained, but development of teacher workshops and refinement of the instrumentation were added in order to obtain more specific findings. The renewal called for the establishment of five new college centers and continuation of the five original sites. The 1970-71 network contains eleven colleges, thirty school districts, over 200 teachers, over 250 different classrooms, and approximately 7,000 pupils. (See Table 1 and Figure 1 for data on 1969-70 and 1970-71 network.)

In the fall of 1970, a request for a third year extension of the MACOS campus team strategy for 1971-72 was submitted to NSF. This expansion called for five new college sites in Ohio, Michigan and Indiana. The network would also service the eleven colleges established in 1969-70 and 1970-71 as well as interested public schools that wish to participate in ERIE activities. The third year (1971-72)

will allow for testing a refined workshop training package and conducting follow-up studies to verify the first two years' findings. In January 1971, NSF renewed support of ERIE's campus team strategy for the implementation of MACOS in 1971-72.

TABLE 1

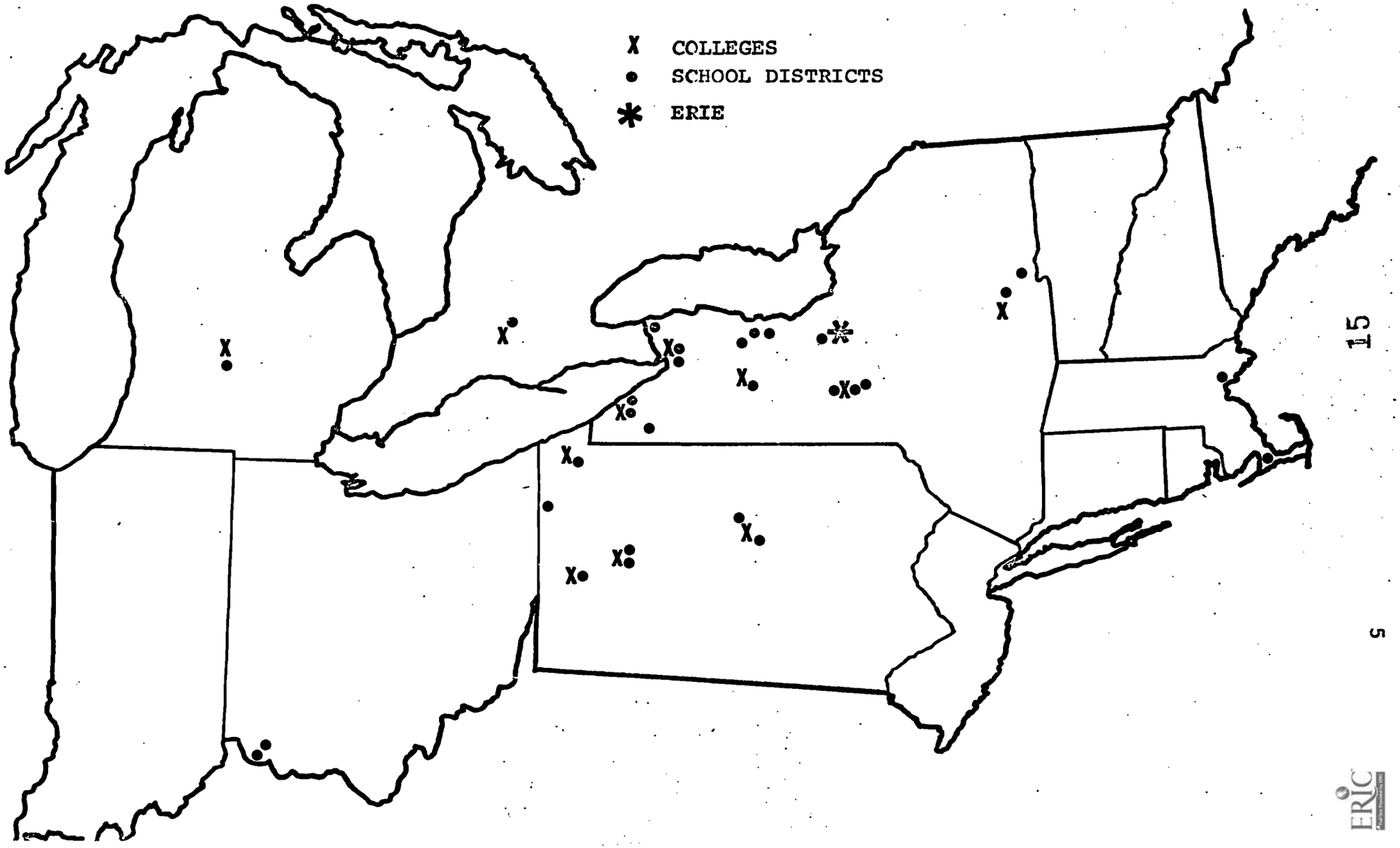
The ERIE 1969-70 and 1970-71 MACOS
NSF Supported and Non-NSF Supported Network

Year	Preservice		Inservice			
	Colleges	Students	School Districts	Teachers	Classrooms	Pupils
1969-70	5	500	11	70	80	2000
1970-71	11	1000*	30	200	250	7000

*Estimated number

FIGURE 1

1970-71 ERIE MACOS NETWORK



PROJECT DESIGN

GENERAL GOALS

The primary goals of the ERIE Man: A Course of Study project are (1) implementation and dissemination of the MACOS curriculum, (2) establishment of preservice and inservice teacher education programs designed to develop competency in the knowledge and skills central to the proper use of MACOS and, (3) study of the implementation-dissemination strategy developed for the project. An additional goal is the empirical study of MACOS as an exemplary process curriculum. It is expected that these goals would contribute additional knowledge central to ERIE's overall program.

The ERIE project is designed to promote both the proper implementation of the curriculum and teacher commitment and competency in the practice of process education. First, the project's implementation-dissemination strategy, which was one among several such strategies developed at the Institute, could be studied and tested for effectiveness. Second, the effectiveness of the MACOS curriculum and its related theory and methodology could be tested as a vehicle for preservice and inservice teacher education activities. It has been hypothesized at the Institute that a major value of the

curriculum might be its ulitity as an exemplar for teachers which could raise teacher aspirations and suggest general classroom practice improvements. Third, the implementation-dissemination strategy developed for MACOS was expected to widely publicize the curriculum throughout the project region. Fourth, observing MACOS in multiple school settings and engaging in related teacher education activities was expected to add to ERIE's knowledge of the properties and effects of process curricula.

PROJECT STRATEGY

Elements of Project Design

The MACOS campus team consists of a college professor involved in training preservice elementary social studies teachers and a campus or collaborative school teacher[1]. This team works in both college preservice training programs and in inservice activities at nearby public schools (satellite schools). The strategy also calls for a Core Staff of three special consultants and a Program Coordinator. The conditions of the proposal specified that the college preservice professor agree to emphasize the methodology, techniques, materials etc. of MACOS in his

[1] Collaborative school: A public school classroom used by a college that does not have a campus or laboratory school.

preservice course. The campus teacher must agree to use MACOS as the social studies curriculum for fifth or sixth grade pupils. Thus, preservice students study the theory and constructs of MACOS in their college class and observe and/or teach MACOS in the campus or collaborative class.

The campus team is also responsible for conducting a series of inservice classes for nearby public schools that wish to implement MACOS. The program includes a three-day orientation period for teachers before school opens in September and a series of twenty biweekly classes during the year. This program, conducted on a year-long basis, provides a support base for the implementation of MACOS in public schools.

The Program Coordinator, based at ERIE, is responsible for providing logistical support, helping evolve and record the application of the strategy used at each center, documenting activities and working with the public school and college administrators. The Program Coordinator is also responsible for conducting the MACOS regional center and supervising and directing ERIE activities in schools and colleges involved in MACOS.

The Core Staff assists in the general coordination and monitoring of each campus team. It is composed of expert consultants who contribute their academic or professional experience to the program. The concepts of

FIGURE 2

PLAN FOR ERIE 1969 SUMMER INSTITUTE ON MAN: A COURSE OF STUDY WITH PROFESSORS AND CAMPUS SCHOOL TEACHERS AS PARTICIPANTS

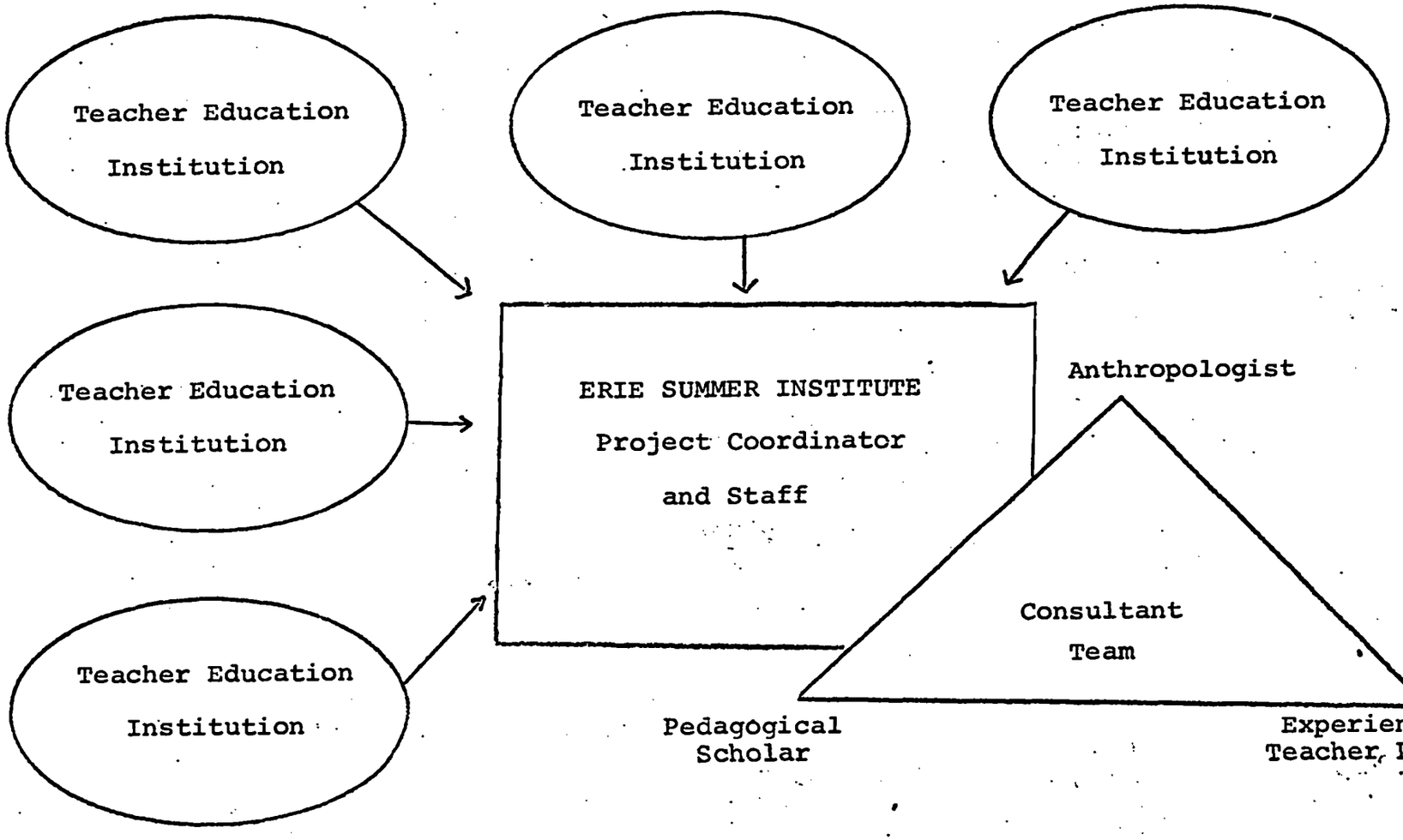
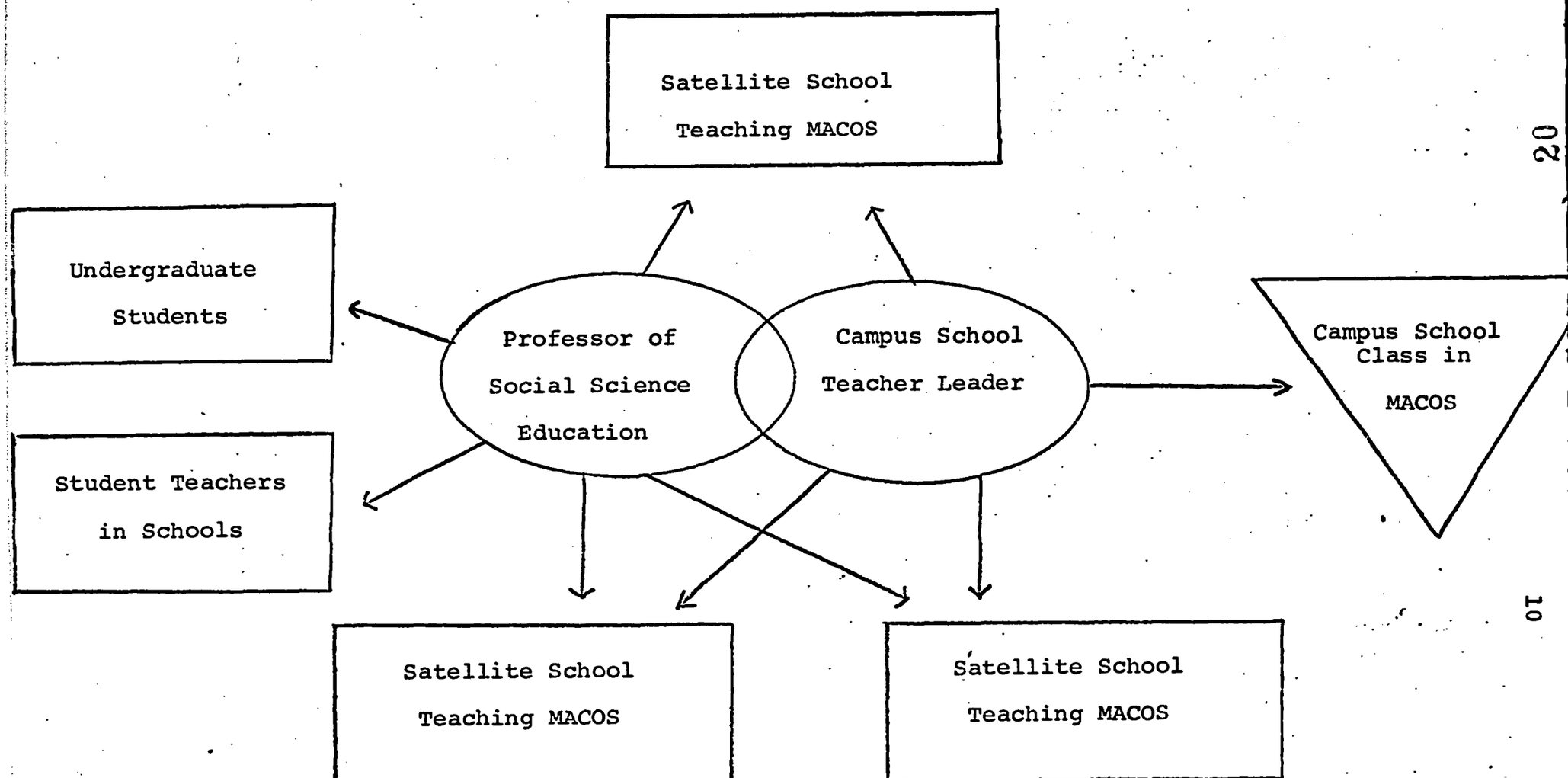


FIGURE 3

PLAN FOR INSERVICE TRAINING AND UNDERGRADUATE EDUCATION
ON MAN: A COURSE OF STUDY 1969-70



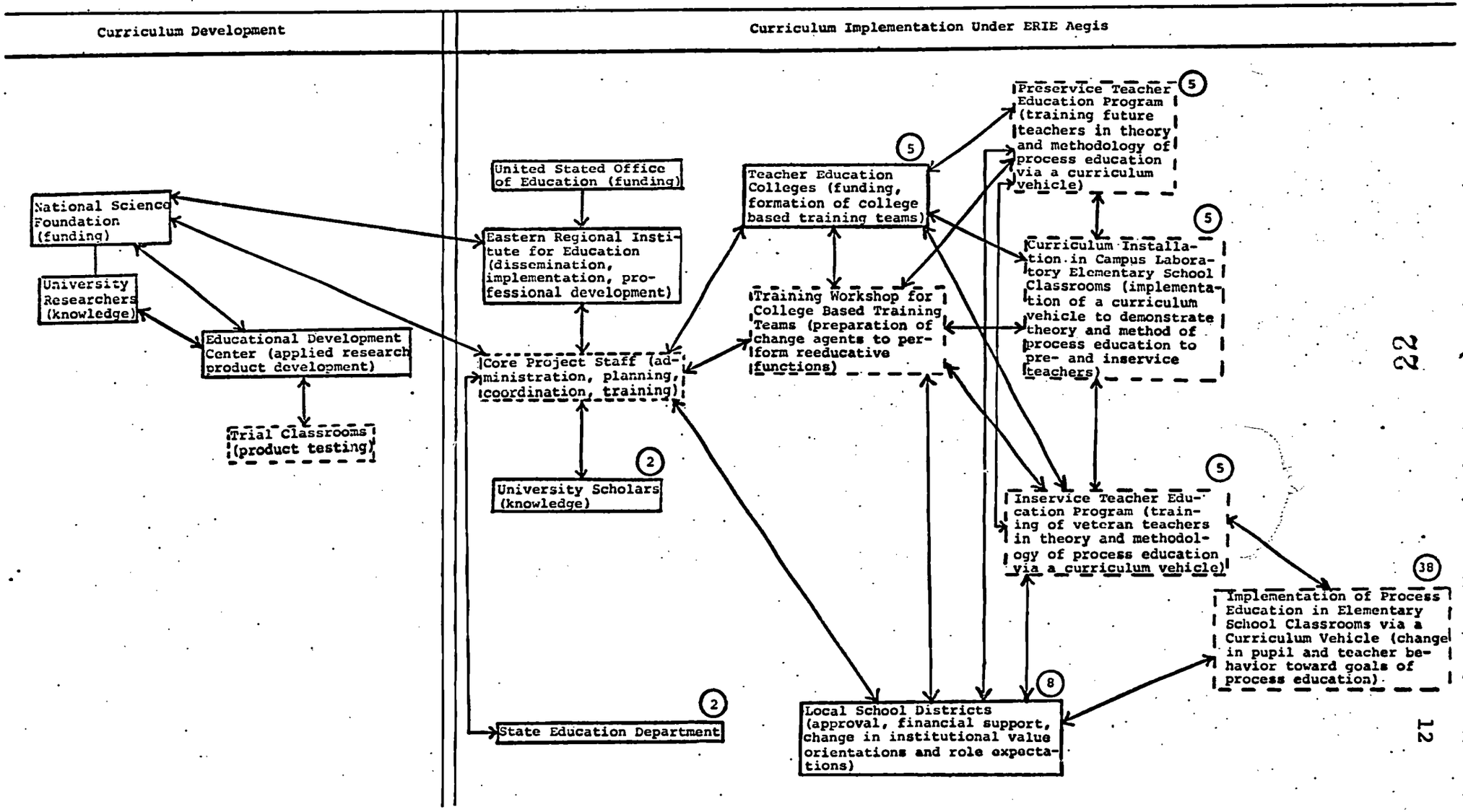
culture, social organization, child rearing etc. are central to the MACOS curriculum. Some anthropological assistance is needed in both the summer workshop and in the biweekly classes. Since MACOS calls for a theory, design and classroom operation different from those of traditional education, the inputs of a pedagogical scholar, able to analyze teacher-pupil behaviors, are necessary. The third member of the Core Staff, a social science supervisor, is a school oriented professional. He is not only knowledgeable in the social sciences, but also possesses a high degree of skill and experience in the problems and vicissitudes of implementing a new curriculum. These three, plus the Coordinator, compose the Core Staff.

Extent of the Project System

The extent of the project system established for the implementation and dissemination of the MACOS curriculum is shown in Figure 4. The portion to the left of the vertical double line shows the origin of the curriculum. The portion to the right of the vertical double line shows the implementation, dissemination, and teacher education network established by ERIE project staff. In the diagram, each temporary organization of individuals which is organized into a social system in order to achieve some particular function or objective is represented by a

FIGURE 4

AN EXTENDED PROJECT SYSTEM FOR INITIATION OF
PROCESS EDUCATION VIA THE CURRICULUM VEHICLE MACOS



Adapted from Process Education: An Emerging Rational Position by Henry P. Cole. Syracuse, New York: Eastern Regional Institute for Education, November 1970.

dotted rectangle. Permanent social systems such as school districts, state education departments and teacher colleges are represented by solid lines. The function of each social system is included in parentheses following the description of the social system. The double ended arrows between the temporary and permanent social systems represent the linkage patterns by which communication took place in the system for the implementation of project goals. The number of actual agencies or social systems involved in any particular function is shown in the circle at the right hand corner of each enclosure. Where only one social system was involved no number is shown. In total, 74 permanent and temporary social systems were involved in some aspect of the project during the 1969-70 contract year.

Table 2 (p. 23) shows participating districts and teacher education colleges.

Conditions and Requirements

One unique aspect of the program strategy is Conditions and Requirements, a set of preconditions for all project participants. These specifications clearly delineate the expectations of ERIE and the project staff and the duties and responsibilities of each participating group. An inspection of the Conditions and Requirements

reveals a clear statement of what performance criteria was expected in terms of MACOS course time requirements, feedback responsibilities, requisite class attendance, financial commitment etc.

Prior experience in implementation and dissemination has shown the necessity for clearly establishing the roles and expectations for all concerned parties BEFORE the project commences. The project preconditions were developed and communicated to all prospective participants to insure understanding of the aims and goals of the project prior to project implementation. This action prevents misunderstandings and misconceptions which could impede project goals.

Conditions and Requirements, accompanied by letters and a form, was sent to all prospective project participants in both colleges and public schools. The form was an agreement between the project participant and ERIE that the expected roles would be carried out by both parties. The agreements were signed and returned to ERIE by all campus team members and appropriate college and school district administrators.

Willingness and ability of colleges and public schools to comply with the preconditions were ERIE's primary criteria in selecting campus sites and affiliated local school districts.

Conditions and Requirements was also the basis for many common questions on the instruments which were to assess project effectiveness. That is, many portions of the instruments, such as the inservice and preservice questionnaires, were designed to determine whether or not particular conditions and requirements had been met.

The complete set of conditions and requirements for the project year are included in Appendix A.

SPECIFIC GOALS AND RATIONALES

A number of explicit project goals are central to the preconditions for participation and the design of the project. These goals and their rationale are given below.

Goal A: Communication and cooperation between the campus school teacher and the college methods professor in planning and conducting both the preservice and inservice teacher education program.

Rationale: Both members of the campus team have insights, skills, and training opportunities unique to thier roles. Cooperation between the campus school teacher and the college methods professor should blend the theoretical education of preservice students with the practical experience made available by the campus school teacher and his classroom. Currently, such cooperation between the campus school staff and professors at teachers colleges in the education of preservice students is atypical. This goal was intended to reverse this pattern.

Goal B: Establishment of an inservice teacher training program cooperatively developed and conducted by the campus team. This training program is to instruct local participating teachers in the theory, design, methodology, and utilization of the MACOS curriculum.

Rationale: MACOS is more than a set of curriculum materials. It is an instructional system which translates theory into an actual classroom design with instructional applications. As such, it represents a great instructional resource capable of illustrating in the classroom many commendable educational theories and goals. Such applied theoretic knowledge is vital to reeducating inservice teachers to new perceptions, skills, and competencies.

Goal C: Establishment of a preservice college course designed to instruct at least 60 future teachers each semester in the basic theory, design and methodology of the MACOS curriculum.

Rationale: The preservice program should become an appropriate and worthwhile part of a students course of study. It should not be viewed as some extra or temporary project in which college students are involved, but as a vital and central part of their education. It is anticipated that the college faculty and administration would come to recognize and value the project as a means by which theoretic knowledge could be taught through multiple "situational teaching experiences", (Smith, 1969, Chapter 5).

Goal D: Establish a campus school classroom (or other specified local classroom(s)) as a laboratory where the professor and preservice students could actually apply the philosophy, theory, and design underlying the MACOS curriculum.

Rationale: It is imperative that theoretic knowledge be imparted to future teachers. However, it has been well established that theoretic knowledge learned verbally does not generally effect changes in teaching

behavior (Smith, 1969; Shmuck, 1968). Both theoretic knowledge and clinical experience are needed to demonstrate how theory can improve performance in a classroom.

Goal E: Interaction between preservice and inservice teachers about the design, theory, utilization and problems of the MACOS curriculum.

Rationale: Experienced teachers have vast practical knowledge about instructional management and child behavior that is useful to beginning teachers. Beginning teachers have fresh insights, values and ideals important to instruction of children which have sometimes been overlooked by experienced teachers. Each group can have beneficial effects upon the other.

Goal F: Establishment of a regular inservice training program for participating teachers from local schools. These 20 biweekly sessions are cooperatively planned and conducted by the campus team. The team provides additional support and consulting services to local teachers when requested at times other than the regularly scheduled training sessions. Advising teachers on planning lessons and activities in managing MACOS materials and in grouping students for learning projects is a year long activity.

Rationale: When innovative curricula are implemented, it is customary to arrange for a brief summer workshop to instruct teachers in the management and use of the curriculum. Many problems arise later in the year when teachers actually begin using the curriculum. By this time the change agent is usually unavailable. A teacher education program throughout the first year of a project is necessary to insure proper curriculum implementation. The MACOS project is not only concerned with the implementation of the curriculum as a program in itself, but also with using the curriculum as a vehicle to change classroom instruction toward teacher and pupil behavior consistent with process education. Regular inservice

sessions throughout the year help teachers generalize the knowledge and experience encountered in MACOS to other areas of the school curriculum.

Goal G: Participating inservice teachers must agree to have their behavior and their pupils' behavior observed and to cooperate in testing pupils and completing questionnaires to determine the effect of the curriculum and the project. In addition, they are to report on each lesson on forms provided for them.

Rationale: Data on the effectiveness of the MACOS curriculum as a vehicle for changing pupil and teacher behavior is important to project continuation and improvement. Teachers were asked to participate in the necessary data collection in order to improve and refine the project and the curriculum. It is reasoned that when teachers feel they are contributing to the further refinement of a project or curriculum and they receive the results of the data studies, they are more likely to actively participate in the necessary evaluation activities.

Goal H: Participating local inservice teachers are to be compensated in some manner for their extensive involvement in the inservice training program. Compensation is to be in the form of (1) money paid to the teachers or, (2) college credit for inservice participation, or (3) local salary schedule credit.

Rationale: The inservice program is designed to increase the competence of teachers. They are, in addition to their normal daily activity, required to spend time studying and preparing to teach MACOS and participating in data collection. This contribution should be formally recognized by the school district. The additional training should be credited as legitimate professional development.

Goal I: Participating school districts are to substantially contribute to the cost of implementing the MACOS program.

Rationale: Earlier experiences in implementing curricula showed ERIE that if an outside agency bore total financial support for curriculum implementation, schools often did not meet the necessary commitment and involvement to carry out project plans and activities. One goal of the project is for each participating school district and college to financially contribute to the implementation of the MACOS curriculum by purchasing the necessary materials.

Goal K: Pupils using the MACOS curriculum should develop competency in the content of the curriculum.

Rationale: The content of the MACOS curriculum is central to emerging knowledge in anthropology, psychology and other social-behavioral sciences. This is in accord with Jerome Bruner's view of the importance of structuring the content of curricula around "knowledge" which is in the process of being formulated by contemporary scholars. The acquisition of such information by pupils is important to their ability to understand current and future explorations in the social and biological sciences.

Goal L: Pupils should become active learners and inquirers, and should begin to develop new ideas, attitudes, and roles in the classroom. These new behaviors should reflect an active quest to learn, structure knowledge and make meaning.

Rationale: Children are active seekers of knowledge. They create, explore, actively structure and manipulate environmental variables. Work and play are usually directed toward such ends. However, the school often stifles this active quest. Learning in school frequently results in passively following the teacher's or textbook's initiative. Learning roles which allow pupils to be active seekers, questioners, inquirers and meaning makers are frequently inhibited by the structure of learning materials, the school and the classroom and the expectations of administrators and teachers for pupil behavior. By the proper implemen-

tation of the MACOS curriculum, inservice teachers are able to encourage pupils to become more spontaneous, active, meaningfully involved, motivated and curious in their classroom learning activity.

OPERATIONALIZING THE CAMPUS TEAM STRATEGY

ORGANIZING THE PROGRAM

Prior to formal notification of funding in May, steps were taken to make the project functional and operational.

In the spring of 1969, an introductory letter was sent to all state teacher's colleges in New York and Pennsylvania. This letter asked if they wished to participate in the campus team implementation program and invited representatives to attend an informational meeting at ERIE in Syracuse. Eight institutions expressed interest, seven of which attended the meeting in April, 1969.

During the course of the meeting, it became clear that the college representatives were extremely pessimistic about recruiting the necessary public schools. New York State was especially hard hit since the state aid formula had been reduced and the state aid schedule to schools altered. As a result, ERIE made a financial commitment to underwrite the first years' payment of a two-year option for participating public schools (about 50%). The schools, however, had to make a financial commitment of five hundred dollars to pay for a super 8mm projector and a supplementary classroom library. Colleges

were notified of these agreements immediately after the April meeting.

The lateness of the school year made it necessary to secure written commitments from the participating colleges and public schools. It must be noted that this action was taken before NSF's formal notification of funding.

At this time Dr. Henry P. Cole was designing and organizing the project while continuing to serve as Director of the curriculum analysis and synthesis component at ERIE. Recruiting for the Coordinator of the MACOS project began before a formal commitment to fund the project was made by NSF. A full time project coordinator to assume directorship of MACOS would allow Dr. Cole to return to his other ERIE program responsibilities. Early in April, Dr. John G. Herlihy was hired to assume major responsibility for the project which was scheduled to start July 1, 1969. In the intervening time, although Dr. Herlihy was available for limited help, Dr. Cole continuted to organize and administer the project.

From June 1 on, Dr. Herlihy assumed major responsibility for the project. Dr. Cole, because of his contribution to the project design and early implementation, continued to provide limited assistance to Dr. Herlihy in project administration until September 1969. Thereafter, although Dr. Cole was named by NSF as the formal project director, Dr. Herlihy assumed full

responsibility for the project. Throughout the project year, Dr. Cole continued to provide leadership in the design of project evaluation instruments and procedures as well as the organization and interpretation of data. This arrangement, reinforced by an extremely cooperative relationship between Drs. Cole and Herlihy, made for an orderly transition of the project leadership.

Final negotiations and selection of the five centers was not completed until early June. Four of the centers ulitized campus schools. The fifth employed a collaborative school. The five sites and 37 satellite classes are listed in Table 2.

TABLE 2

1969-70 MACOS Campus Team Network

Colleges	Public Schools	Number of Classes
SUC Buffalo	Williamsville Public Schools	7
SUC Cortland	Homer Central Schools	5
	Cortland City Schools	2
SUC Fredonia	Fredonia Central Schools	5
	Jamestown City Schools	5
SUC Geneseo	Gates-Chili Central Schools	8
Lock Haven State College	Lock Haven Area Joint Schools	5
		37

Each college differed in its use of the campus team model. The MACOS curriculum was implemented in different courses for different education programs and for different undergraduate populations.

The recruitment and selection of consultants for the Core Staff was another task to be completed before the upcoming summer workshop. Dr. Richard Ripple of Cornell University was chosen as the pedagogical scholar. Dr. Ripple had taken part in previous ERIE activities and was highly regarded by the Institute. Dr. Frederick Gearing, Director of the Anthropology and Education Project, Washington, D.C., was chosen as the anthropological scholar. Dr. Gearing was familiar with MACOS and had previous contact with both EDC and NSF.
Mr. Martin Coyle, teacher at East Falmouth Public Schools, East Falmouth, Massachusetts, was chosen as the experienced teacher. Mr. Coyle had attended a MACOS workshop directed by EDC in the summer of 1968 and was the team leader in the implementation of MACOS in East Falmouth in 1968-69. EDC recommended Mr. Coyle to ERIE.

The training workshop took place at the campus school at SUC Cortland. Arrangements were made for about twenty fifth or sixth grade pupils to attend the campus school during the last three weeks of the workshop. Since the facilities of the college were also available to the project, Cortland campus school was established as the headquarters for the 1969 summer training session.

In late June, Dr. Herlihy, Dr. Cole, Mr. Albert Seferian, assistant to Dr. Cole, and the three Core Staff consultants attended a planning session at ERIE. The purpose of the meeting was to bring together the Core Staff, establish objectives for the workshop, plan in detail the first few days and make a general outline for the total workshop. While more time would have been helpful and desirous, the difficulty of dove-tailing six busy schedules was too much to overcome on short notice.

Prior to the workshop, a great many logictical details had to be met: Preparing a directory of participants; ordering materials; scheduling inservice classes; scheduling campus teams and Core Staff; designing and ordering a supplementary library and preparing for the workshop. Plans for gathering data, constructing the necessary instruments and preparing report forms also had to be completed.

The summer workshop was held from July 6 - August 8, 1969. The Core Staff established six objectives for this five-week period. They were: (1) familiarity with MACOS materails, (2) understanding the theory and rationale behind the course, (3) developing an understanding of process education, (4) stressing the importance of ERIE's research and documentation activities, (5) developing a preservice program, and (6) developing an inservice program.

A questionnaire (see Appendix B) was designed to obtain some data on the background and expectations of the workshop participants. Both the questionnaire and first-day activities showed that most of the campus teams had not known each other or had no more than a passing acquaintanceship (only in one center was that not true). Generally, two divisions of a college preservice training program in the same educational institution did not have knowledge of each other, much less have developed cooperative working relationships.

TRAINING THE CAMPUS TEAM

A record of the summer training workshop is found in the documentation of NSF-ERIE Installation and Dissemination Workshop on Man: A Course of Study (see Appendix C). ERIE staff, Core Staff, college representatives, public school administrators and teachers are listed with addresses and telephone numbers. The report also includes the daily schedule and physical arrangements at SUC Cortland plus a topical outline of the workshop. The Core Staff kept a daily record of each lesson and a daily reaction sheet. Reactions toward the workshop were highly favorable. However, this feedback procedures needs review and revision.

Two questionnaires (see Appendix D and E) designed

to evaluate the workshop were administered on the last day. One of these was a modified form of the questionnaire administered at the opening session. As expected, the view of MACOS as a curriculum and the role of teachers and pupils in MACOS were stated more clearly and broadly than in the first questionnaire. In a six-item ranking, only "material and media" and "management and instructional methodology" were transposed in the two administrations. "Management and instructional methodology" went from second to fourth place and "material and media" went from fourth to second place.

The other questionnaire asked participants to rank the functional aspects of the workshop on a seven point scale. Questions related to administration of the workshop, workshop facilities, instructional performance and views toward MACOS received a positive reaction. Recreation facilities and organization of instructors were the only items which received a negative response.

One afternoon each of the campus teams developed a set of three-day orientation programs. Another afternoon was spent in discussing the rationale and organization of each campus center's 20 biweekly inservice programs. This pooling and sharing of ideas gave each team added input in designing and organizing its program. Appendix F includes a copy of each of the orientation plans.

A third afternoon was profitably spent in discussing the preservice arrangements at each center. Many preservice programs quickly emerged. Even in a relatively homogeneous group (four of the five campuses were in the New York State University system) arrangements and organization were different. The differing nature of the course taught to each undergraduate level of differing education populations added to the diversity and variety of plans.

One tangible result of the five-week experience and of designing and planning both the preservice and inservice programs was the development of confidence and trust within each team. Each group did, in fact, become a team and developed ways of involving each member in a number of preservice activities.

In reviewing the summer workshop, some mechanical and operational aspects should be recounted. Since the workshop was designed to prepare the teams not only to deal with MACOS but also to engage in implementation activities, the leadership must display and engage in team building and mutually supportive behavior. Organizing a Core Staff while the workshop is underway mitigates against these goals. It is also important that consultants engage in these behaviors while the workshop is in progress. Because of previous experiences, high-powered, quality consultants usually do not employ team behaviors.

Their own expertise and experience has placed them in a position of overt leadership. This posture sometimes created a number of problems in maintaining the spirit of mutual involvement among all workshop participants.

CONDUCTING THE CAMPUS TEAM PROGRAM

A three day orientation period for inservice teachers was scheduled before the opening of school. One center was unable to complete arrangements for this orientation period. In an effort to have the inservice program offered for credit, some college restrictions concerning class scheduling came to the fore. Thus, this center replaced the three day orientation period with a series of Saturday meetings in September.

This arrangement, while promoting the institutionalization of the inservice course for graduate credit, did create some other problems. Six half-day inservice classes to compensate for the three day orientation placed a time burden on the teachers. Teachers were just organizing their classes. When the all day preschool orientation was conducted, there were no school encumbrances. Also, orientation activities were underway when teachers were already teaching MACOS. Teacher reactions confirmed the inefficiency of this modified program. Therefore, it

is recommended that this option not be employed in the future.

The Conditions and Requirements were the main focus of the Coordinator and Core Staff in their monitoring and coordinating activities. Each of the three consultants visited the five centers twice during the year. The Project Coordinator visited each of the campus centers approximately once a month. Thus, the project staff made over seventy "on site" visits during the course of the year. Each of these visits is recorded on a Core Staff Report Form (see Appendix G) designed to investigate participants' adherence to the Conditions and Requirements. Each Core Staff member received a Xeroxed copy of the others' reports. The Coordinator set up a notebook divided into various headings for each center. This made it possible for each Core Staff member to have a record of the observations of other members and an indication of the problems, troubles and actions taken. This communications system kept project staff informed of developments at each center and provided the Coordinator with a record of the total project. This, plus numerous telephone and letter contacts, maintained a steady flow of information and personal contact.

Campus teams submitted a report form for each inservice lesson. This form was designed to relate the activities of each class and to record problems, questions

or concerns. A similar procedure was developed for preservice classes. However, because conditions of the preservice classes were so different, this report was completed on a quarterly basis.

The constant emphasis on field operations and the cooperation of multi-disciplined consultants promoted extremely valuable rapport among colleges, schools, administrators, campus teams, teachers, and MACOS Core Staff.

A meeting of all MACOS staff, college and core, was held in Syracuse, January 9-10, 1970. The purpose of this gathering was to take stock of events up to mid-year to obtain feedback from the field and to develop new foci for the future. Unfortunately, a severe winter storm prevented all participants from attending. It is recommended that this type of recharging and refocusing activity be continued in the future. A complete report on the meeting is found in Appendix H.

Implementation of the Campus Team Strategy

The Conditions and Requirements were also used as the basis for designing numerous questionnaires. The Project Coordinator directed the designing,

printing, distributing, collecting, scoring, and analyzing of the questionnaires in an effort to obtain data from participants and to determine if this data was congruent with information from the Coordinator, Core Staff and campus teams.

Preservice teachers were questioned about the kind and extent of their contact with MACOS course materials, with MACOS instructional settings with pupils, with campus and satellite schools etc. Results of this and other studies are included in the Specific Results section. Some difficulties arose in administering this questionnaire because class schedules and school calendars are different at each institution. In addition, problems of designing and completing the questionnaire in an administrable form caused a time delay that prevented total administration at mid-year. The turmoil at colleges in early May, after the Cambodian and Kent State incidents, made total administration difficult at that time. However there is more than sufficient evidence from the questionnaires that were administered that all centers followed the strategy or even expanded it.

In one center, the college professor had to take a half-year leave for medical reasons. Her replacement was not trained to conduct MACOS preservice training and therefore, there are no results from that center for the

spring of 1970.

The same procedure, including many of the same questions, was followed with the inservice teachers and public school administrators. A detailed analysis of the data from these three instruments is provided later. It is sufficient to report that all populations were knowledgeable about the campus team strategy and that the Conditions and Requirements had been carried out. The three instruments are contained in the report as Appendices I, J, K.

Effectiveness of the Campus Team Strategy

Data on the preservice aspect of the project was obtained both directly and indirectly. One direct source was the preservice questionnaire already discussed in the implementation section. This questionnaire contained a series of items about the perceptions of preservice students in their MACOS experiences. This college student population was asked, on a point scale, their concept of the curriculum, the role of the teacher, the role of the pupil, the influence of the MACOS curriculum on their thinking etc. Another series of questions dealt specifically with items related to preservice education: student opinions of MACOS as a preservice program; the intergration of preservice education with classroom teaching; and a general evaluation of students' preservice experience

with MACOS.

This questionnaire was administered in both December-January and April-May to two different preservice populations at each of the five colleges. Unfortunately, due to problems described previously, complete data was not obtained from each college. However, the results of both periods clearly showed that preservice teachers were highly motivated and impressed with their involvement in the MACOS campus team installation strategy.

Two other questionnaries were designed for administration to preservice teachers: a General Familiarity Test on MACOS and a Semantic Differential Attitude Scale. Based on the mid-year experience, both of these instruments were revised for the second administration. The results of both tests indicated clearly that preservice teachers were familiar with the basic concepts of the curriculum and had a strong positive affect toward it. These three questionnaires are included as Appendices I, K, and M. An analysis of these questionnaires and their data is found in the Specific Results section.

Data from the Coordinator, the Core Staff, campus teams and administrators clearly indicated that preservice pupils were deeply involved in MACOS both in the college class and the campus or satellite schools.

The fact that not one of the five college centers involved in 1969-70 withdrew participation in 1970-71 is

significant. In order to continue, each institution had to allocate $890 for the second year of a three-year lease purchase agreement for the media. In three of the five institutions, the number of MACOS campus school classes increased. In the other two, expansion was not possible; one was a one-unit building and the other, using the collaborative option, had its professor on leave. However, the collaborative school from that center is installing another MACOS class in 1970-71.

All preservice classes at participating institutions have been retained and most colleges have increased the number of classes. In every institution, formal ties between methods classes and campus schools have been institutionalized. Since there was also a rise in the number of campus school classes at most colleges, even further growth and development of the campus team preservice education program is likely to follow. It must be noted that this was achieved in spite of the fact that one professor was on sick leave for half a year and another will be on leave for 1970-71. Clearly, college administrations have seen some advantages of being involved in the cooperative program.

The inservice program is less elusive and involves two separate organizations, colleges and schools. Two questionnaires were designed to obtain data from inser-

vice teachers and public school administrators. Many of the questions on the preservice questionnaire were reasked. The purpose of this was to design some common denominators across all three populations. On items related to the curriculum, to the campus team inservice classes, to the use of college preservice teachers etc., the results from teachers and administrators were basically the same as the results from preservice teachers. As will be shown later in the results section, all of these populations were strongly impressed with the campus team model as an aid in helping their staff to become familiar with and confident in teaching the new curriculum.

The Semantic Differential and General Familiarity instruments, already mentioned, were administered at mid-year to inservice teachers. The results were generally the same as for preservice teachers. They showed a strong positive impression of the course and a demonstrable knowledge of the curriculum. All of the data collaborates the fact that teachers and administrators saw MACOS and the project strategy as a positive asset in giving functional help in teacher education programs and implementing a new curriculum.

This view was further substantiated by the overwhelming vote by teachers and administrators to continue the program in 1970-71 with local funds. Although no further NSF or ERIE funds were allocated to the existent colleges

or public school classrooms, the 37 MACOS classrooms in 1969-70 have grown to eighty-nine classrooms in 1970-71. The new inservice arrangements in all schools are based on the campus team strategy or a modified version of the strategy. As a result of the demonstration and dissemination efforts of the 1969-70 centers, approximately fifty new classrooms will be using MACOS in 1970-71.

Colleges also have reacted positively to their involvements with public schools. Three of the five colleges are offering a MACOS based implementation course for graduate credit as part of their published offerings. Of the two not offering graduate credit, one has no graduate program and the other has its professor on sick leave. That college is willing to institute a graduate course if a trained replacement can be found. The colleges also have demonstrated, by overt action and dollar allocation, their endorsement of the campus team strategy.

Two MACOS pupil tests (see Appendices N and O) were designed and administered. Although no direct attempt was made to collect data, vis-à-vis the model, a few questions were designed to determine if public school students were aware of supportive efforts in the implementation of MACOS. Other items were designed to determine pupils' feelings about MACOS. The results of these ques-

tions, at both the mid-year and end of the year tests, indicated that the pupils enjoyed taking the tests and felt comfortable about their contents and information. This data added substance to the competency and security of their teachers in dealing with a new curriculum. A report on these two tests will be contained in a later section of the report.

Curriculum Effect on Attitude and Behavioral Change

Elementary Pupils

The MACOS campus team program dealt directly with colleges and public schools through inservice and preservice education programs, not through elementary-age pupils. Therefore, the study of effect on pupils' attitudes and behavior was reflected primarily by those directly involved. However, two MACOS pupil tests were devised and administered to over 2,000 pupils at mid-year and end-year. On the affective questions, students' responses reflected a commitment to the open-endedness and inquiry modes of the MACOS curriculum.

Teachers, in reporting on each individual lesson (see Appendix P) reported that pupils have a very strong liking for MACOS. On a five point scale, almost all lessons received a rating of 3.5 or more with most in the 4 point range. In their written comments, teachers stated that there was a visible change in pupils' questioning

techniques, group work, critical thinking skills, oral reporting, creative writing and role playing. Teachers' comments and anecdotes show that both students and teachers are struggling with the problems of making a class dialectic, open-ended and self-directed. A reading of Teacher Experiences with Man: A Course of Study, 1969-70 in ERIE Research Network (see Appendix Q), a compilation of reports by MACOS teachers on individual lessons, shows the struggles, frustrations and rewards in working with the MACOS curriculum.

The questions related to attitude and behavior on the inservice, preservice and administrator questionnaires clearly indicated that attitudinal and behavioral changes were taking place in elementary pupils. The rankings indicated that pupils were more in control of their own learning and were interacting more often with their peers. A documentation of this aspect of the study is found in the Specific Results Section.

The monitoring and coordination by the Project Coordinator, Core Staff and the campus teams also confirmed the teacher, administration and pupil data. Regular informal discussions with campus teams and public school administrators reinforced the other sources of information. The Specific Results section contains a study of this aspect of the program.

Preservice Students

Data from the preservice questionnaire and two General Familiarity instruments (see Appendix R) indicated that preservice teachers demonstrated an awareness of the elements involved in a teaching-learning situation and expressed a desire to become teachers in the MACOS mode. This attitude appears to have been communicated to college administrators who have committed financial and personnel resources to continuing the MACOS project.

Inservice Teachers

Inservice teachers have the responsibility of translating the year-long campus team implementation into functional classroom practice. These teachers strongly endorsed the campus team strategy as an effective method of teaching a new curriculum. In over a half dozen sets of questions on the Inservice Questionnaire, teacher responses showed that MACOS had an impact in curriculum, the roles of the teacher and the pupil and classroom environment.

The Teacher Experiences documents contains many statements about the teacher's role in "new curriculum", involving children in learning, and making pupils responsible for their own learning. In the Comments and Anecdotes section of that document, there are innumerable statements

such as: "I wish I could stay out of the discussions more"; "I wish the students wouldn't look to me for answers"; "I notice improvement in their questions"; "The students are finally able to do group work" etc. Almost every report contained an awareness of change in viewing students, the classroom setting, curriculum and the teacher himself. The reports from the Coordinator, Core Staff and campus teams substantiated this view.

One example of changing practice concerns the ever-recurring problem of evaluation. MACOS teachers were puzzled about how to use traditional grades to report pupil progress in social studies. The principal was delighted that the question of grades resulted from participating in the MACOS project. Grading procedures were an area where this principal had made little progress, especially in a middle school. The administrator "reluctantly" discussed the problem with MACOS teachers and agreed to insert a comment sheet in lieu of a traditional letter grade.

Campus Team Inservice Reports (see Appendix S) and Campus Team Final Reports (see Appendix T) contained many statements that clearly demonstrated the impact of the campus team and MACOS on attitudinal change. For instance, the reports contained such teacher statements as: "The children are glad to see the social studies period coming"; "There is more independent work going on"; "Children are making observations for the first time"; "A child asked

me "Why am I the least dominant male'"; "My small group work is actually more effective and better organized."

Campus Team

The Campus Team Inservice Reports and the Campus Team Final Reports, as already demonstrated, contained a raft of teacher statements about how MACOS had encouraged them to re-examine their teaching attitudes and behaviors. The role of the campus team, utilizing both theory and practice in the inservice classes, enabled teachers to promote a high level of interaction and rapport. One comment on these meetings was,"...MACOS provides a refreshing break from the traditional patterns found in school. I think it lets the teacher reaffirm her faith in the students as human beings and her hope in them as future responsible citizens."

The fact that the colleges have made a financial commitment to continue the inservice program and institutionalize it shows that the campus team has a worthwhile effect in colleges.

Public School Administrators

The Campus Team Inservice Reports, Final Reports by campus teams and the on-site visits by Core Staff and the

Coordinator show that public school administrators utilized MACOS and the campus team strategy to effect change in attitude and behavior. As one administrator put it, "Our teachers have had a very rewarding year in the area of sixth grade social studies.". "MACOS was a breath of fresh air", as one staff member put it. Another reported, "Children and teachers are active members in the lesson. Children do not become a factory of tests." Their responses to items in the Administrator Questionnaire also indicated that they view MACOS as an attitudinal and behavioral change agent. A report on this aspect of the project is found in the Specific Results section.

DATA GATHERING PROCEDURES AND ACTIVITES

In recording and documenting the 1969-70 NSF/ERIE MACOS Installation and Dissemination Network, over twenty different forms, inventories, tests, reports and questionnaires were designed, revised, produced, distributed, administered, collected, scored and analyzed. These instruments and their uses are listed on the following page:

1. Implementation of the Campus Team Model

   Inservice Education Questionnaire
   Preservice Education Questionnaire
   Administrator's Questionnaire, 1969-70
   ERIE-MACOS Network

   Campus Team Biweekly Report Form -
   Man: A Course of Study
   Campus Team Preservice Report Form

   Core Staff Report Form
   Campus Team Final Report

2. Effectiveness of the Campus Team Model

   Satellite School Lesson Reporting Form-
   Man: A Course of Study
   Teacher Experiences with Man: A Course
   of Study in the ERIE Research Net-
   work 1969-70 Books I, II and III
   Campus Team Biweekly Report Form

   Inservice Education Questionnaire
   Preservice Education Questionnaire

   Core Staff Report Form
   Campus Team Final Report

   MACOS Pupil Test I - Man and Animals
   MACOS Pupil Test II - What Makes Man Human
   The Netsilik Eskimos

3. Curriculum Effect on Attitude and Behavior Change

   Pupils

   Satellite School Lesson Reporting Form
   Teacher Experiences with Man: A Course
   of Study in the ERIE Research Net-
   work 1969-70, Books I, II, and III
   MACOS Pupil Test I - Man and Animals
   MACOS Pupil Test II - What Makes Man Human
   The Netsilik Eskimos

   Preservice

   Preservice Education Questionnaire
   General Familiarity Test for the Man:
   A Course of Study Curriculum
   General Familiarity Inventory for the
   Man: A Course of Study Curriculum

Semantic Differential for Attitude Assessment toward the Man: a Course of Study Curriculum - Man and Animals
Semantic Differential for Attitude Assessment toward the Man: A Course of Study Curriculum - Eskimo Units
Campus Team Preservice Report Form

Inservice

Semantic Differential for Attitude Assessment toward the Man: A Course of Study Curriculum - Man and Animals
General Familiarity Test for the Man: A Course of Study Curriculum
Campus Team Biweekly Report Form

Core Staff Report Form
Campus Team Final Report

Data collection across four samples by means of the same or similar sets of items served as a method to cross check the observations of those who participated in the program. The questions dealt with three areas of study: implementation of the campus team model, effectiveness of the campus team model, and curriculum effect on attitude and behavior change. Table 3 enumerates questions that were used in all three questionnaires with the four adult samples.

TABLE 3

COMMON QUESTIONS IN PRESERVICE,
INSERVICE AND ADMINISTRATOR QUESTIONNAIRES

Topic	Item Numbers In Preservice Questionnaire	Item Numbers In Inservice Questionnaire	Item Numbers In Administrator Questionnaire
Knowledge of the Campus Team Projects and its purposes	#1 and 2	#8 and 9	#8
Time allocation for MACOS instruction	#3	#7	#7
Purpose or objectives of the MACOS curriculum	#33	#23	#18
Assessment of the Campus Team model	#34, a-f	#24, a-f #33, a, b	
Assessment of the MACOS Curriculum	#35, a-c #36 #39, a-n	#25, a-c; #27-30 #31, a-n; #39, a-c #40, a-b; #42, a-f #41, a-d	#19, a-b #21, a-l #22, a, b

SPECIFIC RESULTS FROM DATA ANALYSIS

The results show that the campus team strategy was generally successful in implementing MACOS goals. All five campus teams filed reports on the orientation program and on each of the twenty inservice classes. In addition, each team submitted a Final Report on the year's activities. Over 100 biweekly Inservice Class Reports and five Final Reports are filed in the Project Office.

The Project Coordinator and staff made over seventy on-site visits to the five campus sites to collect data on the preservice and/or inservice classes. A report was filed after each visit.

Participating satellite teachers completed a report on each lesson they taught in the MACOS curriculum. Data from the Satellite School Lesson Reporting Forms has been collected and compiled into eleven categories. Thirty-eight teachers provided data on each of the eleven categories. An analysis of these reports was the basis of a lesson by lesson study of the curriculum. The results have been compiled in Teacher Experiences with Man: A Course of Study in the ERIE Research Network 1969-70, Book I, Man and Animals, Book II, Netsilik Eskimos, and Book III, Netsilik Eskimos, (Herlihy & Herlihy, 1970a, 1970b, 1971).

During the project year, twenty different tests, questionnaires, reports and other instruments were administered to samples from various MACOS populations. Table 4 provides a listing of the instruments and reports used to evaluate the project. Table 5 contains a list of reports and documents resulting from the first year project activity. The results contained in this report and many of these documents substantiate the fact that the individuals involved contributed to the successful implementation of the curriculum and the realization of project goals. For the convenience of the reader an overview of the specific results is provided in the next section. A detailed examination of main effects follows the overview.

OVERVIEW OF RESULTS

Data analysis indicates that: (1) the project strategy was successfully implemented; (2) this produced a great amount of interaction among college professors, preservice teachers, experienced teachers and elementary school pupils; (3) the content of preservice and inservice education programs was judged as more interesting, appropriate and useful than conventional programs by participants; (4) the proper implementation and use of the MACOS curriculum was greatly aided by the collaboration among the various populations; (5) the adult populations developed both a good knowledge of the theory and instructional methodology central to MACOS and other process curricula; (6) all populations

TABLE 4

DATA COLLECTION INSTRUMENTS

Instruments	Administered To	n	
Administrator's Questionnaire, 1969-70 ERIE MACOS Network	administrators	7	
Campus Team Biweekly Report Form Man: A Course of Study	campus team reports on inservice course	105	21 for each c 5 team
Campus Team Final Report	campus team final reports on project activities	5	
Campus Team Preservice Report Form	campus team reports on preservice classes	10	
Core Staff Report Form	reports on campus visits by core staff and director	70	
General Familiarity Test for the Man: A Course of Study Curriculum December 23, 1969	inservice teachers preservice teachers (fall)	94 91	
General Familiarity Inventory for the Man: A Course of Study Curriculum, April 30, 1970	preservice teachers (spring)	59	
Inservice Education Questionnaire	inservice teachers	30	
MACOS Pupil Test I - Man & Animals	elementary students (fall)	2322	
MACOS Pupil Test II - What Makes Man Human? The Netsilik Eskimos	elementary students (spring)	2192	
Preservice Education Questionnaire	preservice teachers (fall) (spring)	87 122	
Satellite School Lesson Reporting Form - Man: A Course of Study	Inservice MACOS teachers for each of 65 lessons	varies with lesson	
Semantic Differential for Attitude Assessment toward the Man: A Course of Study Curriculum - Man & Animals	inservice teachers and preservice teachers (fall)	185	
Semantic Differential for Attitude Assessment toward the Man: A Course of Study Curriculum - Eskimo Units	preservice teachers (spring)		

TABLE 5

CHRONOLOGICAL SEQUENCE OF DOCUMENTS AND REPORTS RESULTING FROM THE FIRST YEAR PROJECT ACTIVITY

Document	Description
A Program to Establish Preservice and Inservice Education for the Effective Installation and Dissemination of Man: A Course of Study	Funded proposal to National Science Foundation under which the work reported for the first project year was completed
Objectives and MACOS	Inservice lesson materials which examine MACOS and the topic of behavioral objectives
Information Release and MACOS	Inservice lesson materials which examine the "programmed" release of information in MACOS materials as an aid to inquiry
ERIE Presentation of Man: A Course of Study	An audio-visual presentation designed to communicate to lay audiences the objectives and content of MACOS
A Campus Based Installation Strategy for Man: A Course of Study	A proposal to NSF for renewal and extension of the ERIE-MACOS project for a second year in 1970-71
Elementary Social Studies Process Education	A description for creation of a new college course using MACOS and other process curricula as a vehicle for teacher education
Report on Man: A Course of Study-Staff Conference	A report of a mid-year conference of the MACOS project staff and campus teams
An Investigation of an Instrument Battery Related to the Expectancies for Student-Centered Teaching Behaviors in Man: A Course of Study	A report of a preliminary study of specific behaviors of teachers and pupils using MACOS.
Teacher Experiences with Man: A Course of Study in the ERIE Research Network 1969-70. Book I Man and Animals, Book II Netsilik Eskimos, Book III Netsilik Eskimos Section	These three books are a compilation and interpretation of the data obtained from the Satellite School Lesson Reporting Forms. Information on the use of the MACOS Curriculum in classrooms is provided for each lesson
Final 1969-70 Project Year Reports for Each of the Five College Sites	Five reports prepared by each of the campus teams. The reports document the inservice and preservice programs and activities developed at each center during the first project year.
Expansion of the Campus Team Man: A Course of Study Network	A proposal to NSF for renewal and extension of the ERIE-MACOS project for a third year in 1971-72.
Guidelines for Project Design, Implementation, Monitoring and Evaluation	A set of materials developed from the ERIE-MACOS project design and evaluation activities used in a leadership training workshop at the January 17-20, 1971 OASCD Curriculum Research Institute, and as an action laboratory at the National 1971 ASCD meeting in St. Louis.
Implementation of a Process Curriculum by the Campus Team Strategy	Report prepared for National Science Foundation grantor for 1969-70 project activity
The Campus Team - A Change Strategy for Preservice and Inservice Teacher Education	Research report on the results of the first project year delivered at AERA, February 1971

All the documents in this table are referenced at the end of this report.

and agencies involved judged the project to be valuable; (7) staff and administrative personnel of the participating colleges and elementary schools have further expanded the project with their own monies; (8) all participating teacher colleges have institutionalized the project in their preservice education programs; (9) indirect measures indicate that most classroom teachers have become more dialectic and inquiry oriented; (10) pupils have achieved a proficiency in the content of the MACOS curriculum; and (11) pupils have become more active inquirers and learners.

INTERACTION AMONG PROJECT PARTICIPANTS

A major project goal was fostering interaction among campus teams, preservice teachers, inservice teachers, public school administrators and elementary school pupils.

Interaction Among Inservice and Preservice Teachers

Three primary sources produced evidence of interaction among preservice and inservice teachers about the MACOS curriculum, its philosophy, and design. Table 6 shows the extent of preservice teacher involvement with experienced inservice teachers and their classes. Table 7 shows the activities in which preservice teachers engaged in the classroom. Both Tables 6 and 7 are based on responses from preservice teachers.

TABLE 6

INTERACTION AMONG PRESERVICE AND INSERVICE TEACHERS AS REPORTED BY TWO PRESERVICE SAMPLES

Interaction Reported	Amount of Interaction	
	Preservice I (n=87)	Preservice II (n=122)
Percent of preservice sample aware of opportunity for interaction with inservice teachers and their classrooms	100.0	91.8
Percent of preservice teachers visiting classrooms of inservice teachers	86.2	44.3
Percent of preservice teachers meeting with campus school teachers	49.4	50.6
Percent of preservice teachers meeting with non-campus school teachers	28.7	71.3
Mean number of visits by each preservice teacher to elementary classrooms	6.23	2.20
Mean number of visits by each preservice teacher to non-campus elementary classrooms	4.52	1.13

TABLE 7

TYPES OF ACTIVITIES IN WHICH PRESERVICE STUDENTS REPORT BEING ENGAGED IN THE CLASSROOMS OF INSERVICE TEACHERS

Activity Reported	Amount of Interaction*	
	Preservice I (n=87)	Preservice II (n=122)
Observation	88.5	11.5
Assisting in a non-instructional capacity	35.6	64.4
Instructing small groups of students in portions of lessons	34.5	65.5
Instructing small groups of students in entire lessons	19.5	80.5
Instructing entire classrooms of students in portions of lessons	18.4	81.6
Instructing an entire classroom in whole lessons	14.9	85.1

* Reported in percent of preservice teachers involved in the activity.

Inservice teachers reported a high degree of interaction with preservice teachers. This interaction is shown in Table 8. Table 9 combines the interaction of the inservice sample with both preservice samples I and II. It displays the activities of visiting preservice teachers in MACOS inservice classrooms. Table 10 shows the number of student teachers trained by inservice teachers during the project year and their involvement in the MACOS project.

Local school administrators also assessed aspects of the interaction among preservice and inservice teachers. Although the sample of administrators consisted of only seven individuals, their reports generally substantiate the independent reports of inservice and preservice teachers.

Some interaction also occurred between preservice and inservice teachers during the regular biweekly inservice training sessions conducted by the campus teams. Biweekly inservice training reports show that preservice teachers from the college campus were frequently in attendance at these sessions.

Interaction Among Inservice Teachers and the Campus Team

The campus team, consisting of a college professor and a campus laboratory school teacher, was responsible for planning and conducting an initial three day orientation

TABLE 8

INTERACTION AMONG PRESERVICE AND INSERVICE TEACHERS AS REPORTED BY INSERVICE TEACHERS (n=30)

Interaction Reported	Amount of Interaction
Percent of inservice teachers visited in their classrooms by preservice teachers	47
Mean number of preservice individuals visiting each inservice teacher's classroom	1.43
Percent of inservice teachers visiting preservice college students classes at the campus sites	40

TABLE 9

TYPES OF PRESERVICE TEACHER CLASSROOM ACTIVITY
REPORTED BY INSERVICE TEACHERS
(n=30)

Activity Reported	Amount of Interaction*
Observation	50
Assisting in a non-instructional capacity	27
Instructing small groups of students in portions of lessons	30
Instructing small groups of students in entire lessons	20
Instructing entire classrooms of students in portions of lessons	27
Instructing an entire classroom in whole lessons	30

* Reported in percent of preservice teachers involved in the activity.

TABLE 10

INTERACTION AMONG PRE- AND INSERVICE TEACHERS THROUGH STUDENT TEACHING AS REPORTED BY INSERVICE TEACHERS (n=30)

Interaction Reported	Percent
Teachers having student teachers during project year	77
Inservice teachers assisted in teaching MACOS by their student teachers	63
Student teachers assisting in teaching MACOS while also being trained in college MACOS program	13

program for all participating teachers and administrators. Following this orientation session the team planned and conducted 20 biweekly inservice sessions. The Biweekly Inservice Report forms, filed by each campus team, indicate that both campus teams and inservice teachers regularly attended the sessions.

In addition to conducting regular biweekly inservice sessions, members of the campus team consulted inservice teachers on special problems which arose. The biweekly report forms filed by each campus team show that a great deal of interaction occurred between members of the campus teams and inservice teachers outside the regularly scheduled sessions. The campus team was frequently called upon to assist and advise in the use and management of the curriculum. Forty-seven percent of the inservice teachers reported assistance from members of the campus teams outside the regular training session. In addition, twenty-seven percent of the participating inservice teachers reported that a member of the campus team had visited their classrooms while they were actually teaching MACOS (See Table 11). Table 12 shows the number of meetings, in addition to the twenty inservice sessions which occurred between 47 percent of the inservice teachers and members of the campus teams.

TABLE 11

INTERACTION AMONG INSERVICE TEACHERS AND THE CAMPUS TEAM IN ADDITION TO THE TWENTY REGULAR TRAINING SESSIONS AS REPORTED BY INSERVICE TEACHERS (n=30)

Interaction Reported	Amount of Interaction*
Meetings between inservice teachers and a member of the campus team in addition to regular inservice sessions	47
Visits by a member of the campus team to classrooms of inservice teachers during instruction of MACOS	27
Visits by inservice teachers to the classroom of a campus school teacher during instruction of MACOS	27
Inservice teachers participating in the preservice college courses of professors at local colleges	40

* Reported in percent of inservice teachers involved in the activity.

TABLE 12

NUMBER OF MEETINGS REPORTED BY INSERVICE TEACHERS WITH MEMBERS OF THE CAMPUS TEAM IN ADDITION TO THE TWENTY REGULAR INSERVICE TRAINING SESSIONS (n=30)

Number of Additional Meetings Reported	Percent of Total Sample*
0-3	17
4-6	20
7-9	3
10-12	3
13-15	3

*From Table 11 it is apparent that 47% of the inservice teachers met with a member of a campus team outside regularly scheduled sessions. This table shows the distribution of this 47% of the sample across numbers of meetings.

Interaction Among Participating Inservice Teachers and Other Members of the Local School Community

One of the goals of the project was to foster awareness and interest in the MACOS curriculum and its philosophy and methodology among educators, administrators and other individuals from the local communities who were not directly involved in the project. Many inservice teachers participating in the project met with their local school colleagues who were not involved directly in the project to describe and explain the MACOS curriculum. Table 13

TABLE 13

MEETINGS AMONG PROJECT INSERVICE TEACHERS AND OTHER EDUCATORS IN THEIR SCHOOLS AND DISTRICTS TO DISCUSS THE MACOS CURRICULUM

Personnel Involved in the Meeting	Percent of Inservice Teachers Reporting Meetings (n=30)
Principals	83
Other Teachers	83
Librarians	27
Art Teachers	37
Music Teachers	23
Non-project teachers at the same grade level	3
Other teachers in the building	20
Other teachers or principals in the district	30

shows the school personnel with whom MACOS inservice teachers interacted. Table 14 shows the number of explanations and/or demonstrations by MACOS inservice teachers to other educators and groups.

Interaction Among Preservice Teachers and the Campus Team

A specific goal of this project was to utilize the resources of campus school classrooms and teachers in the instruction of preservice teachers in the "situational

TABLE 14

NUMBER OF DEMONSTRATIONS AND EXPLANATIONS OF THE MACOS CURRICULUM BY PARTICIPATING INSERVICE TEACHERS TO OTHER EDUCATORS AND INDIVIDUALS

Personnel for Whom Demonstration/ Explanation Was Conducted	Number of Demonstrations/ Explanations Presented by Inservice Teachers (n=30)*				
	1-3	4-6	7-9	10-12	13-15
Other educators in the local school	37	13	3	10	17
Other educators in the local school district	30	10	3	7	17
Educators in other school districts	33	3	3	3	10
Local PTA	43	10	0	0	0
Local Board of Education	27	0	0	0	0

* Results reported in percent of inservice teachers who conducted a given number of Demonstrations/ Explanations.

teaching of theoretical knowledge" (Smith, 1969, Chapter 5). It was expected that the campus school teacher and his classroom would provide insight into how the philosophy and theory underlying MACOS could be applied. Simultaneously, the professor was expected to provide the preservice teachers with insight into the basic philosophy and design of the curriculum.

All preservice teachers in both samples participated

in a formal study of the MACOS curriculum. The study of the MACOS curriculum and its philosophy, theory, design, and content did not constitute an entire semester of work at most campus sites. In accordance with the Conditions and Requirements, MACOS did constitute a major portion of the content of the courses involved.

Interaction Among the Campus Team and Other Educators

The campus team report forms for the biweekly inservice sessions established that members of the team frequently discussed, explained, and demonstrated the MACOS curriculum to other individuals and educators in their region. Each team became a local source of information and expertise about the curriculum, its design, philosophy and operation. Although the official project year has ended, members of the campus team continue to provide leadership and assistance in disseminating the MACOS curriculum within their locale. In addition, a number of the team members have begun developing college courses in process education and serving as consultants for local teacher education programs promoting process educational practices. Members of the campus team report that their involvement in the project has had a significant and beneficial effect upon their college teacher education programs.

VALUE OF THE PROJECT PRESERVICE AND INSERVICE EDUCATION PROGRAMS

Participants judged the content of MACOS centered preservice and inservice education programs more interesting, appropriate and useful than conventional teacher education programs.

Preservice and inservice teachers were asked a series of questions about their respective programs. Table 15 indicates that a mean exceeding 4.00 on a 5 point scale was recorded in eleven of the eighteen items which dealt with this topic. This data is a strong indication that the groups perceived the project extremely worthwhile. The only item (c) which did not exhibit a high mean for all populations concerned class time. The distribution of responses indicate that much variation existed across groups and individuals as to the amount of time required by course activity.

On questions related to the value of studying the theory and pedagogy of MACOS, the mean scores of all four groups were uniformly high. An examination of Table 16 indicates that means on all three items for all samples exceeded 4.26. The data show that all inservice and preservice samples felt that the study of the MACOS curriculum, its philosophy, theory, design, and pedagogy had

TABLE 15

ASSESSMENT OF THE WORTH AND RELEVANCE OF THE CAMPUS TEAM CONDUCTED PRESERVICE/INSERVICE PROGRAM EXPRESSED IN MEANS* BY THREE PROJECT SAMPLES

Question	Sample		
Do you feel the involvement of a professor and campus school teacher in this MACOS project has:	Pres. I n = 87	Pres. II n = 122	Inservice n = 30
a) Caused your (college) (inservice) class to be more relevant than its typical counterpart?	4.07	4.13	3.80
b) Caused your (college) (inservice) class to be more interesting than its typical counterpart?	4.39	4.47	4.00
c) Provided the opportunity to learn more than in the typical (college) (inservice) class about recent developments in curriculum and instruction?	4.44	4.20	3.87
d) Provided you with more than the typical opportunity to interact with (experienced elementary school teachers in your campus and/or local schools) (other teachers)?	3.61	3.09	4.33
e) Caused your (college) (inservice) class to be more time-consuming than its typical counterpart?	2.30	2.16	3.00
f) Been sufficiently worthwhile to be continued in the future?	4.44	4.31	4.13

*Means reported in raw score units on a 1-5 scale where: 1=definitely not, 2=probably not, 3=unsure, 4=probably yes, 5=definitely yes.

TABLE 16

IMPACT OF THE STUDY OF THE MACOS CURRICULUM IN PRESERVICE AND INSERVICE EDUCATION COURSES UPON TEACHER PERCEPTIONS, KNOWLEDGE AND SKILLS AS JUDGED BY FOUR SAMPLES

Question	Sample			
Do you feel exposure to this curriculum and its related theory, organization and pedagogy has:	Pres. I n=87	Pres. II n=122	Inservice n=30	Adminis. n=7
a) Influenced your thinking about what constitutes a good curriculum?	4.43	4.42	4.47	4.57
b) Provided you with knowledge or skill which can be applied to elementary teaching and curriculum in general?	4.26	4.49	4.67	--
c) Influenced your thinking about how teachers should instruct children?	4.45	4.53	4.53	4.71

*Means reported in raw score units on a 1-5 scale where: 1=definitely not, 2=probably not, 3=unsure, 4=probably yes, 5=definitely yes.

influenced their thinking about what constitutes a good curriculum. The samples also felt that the curriculum provided them with useful knowledge and skills which could be applied to teaching generally, and that it had influenced their thinking about the teacher-pupil role in classroom instruction. These results are also reflected in the campus team inservice report forms and by the observations and conversations of the Core Staff on their on-site visits.

The inservice program and the campus team proved to be very valuable in insuring the proper and efficient implementation of the complex MACOS curriculum in local participating schools. One team, in their Final Report, stated,

> It seems that the installation strategy has worked out rather well, particularly with regard to the inservice seminars. Several participants have said that they didn't feel they could possibly have coped adequately with MACOS without the insights and support provided by the seminar. They felt that the volume of material and the unfamiliar non-directiveness[1] would have been too difficult to carry out without the realization that all the others had the same problems, and without the opportunity to discuss various solutions to them.

Another measure of the worth of the preservice and inservice education programs was the expansion of MACOS related teacher education activities in both colleges and public schools. This vote of confidence and satisfaction in using MACOS as a vehicle for the continuation and expansion of teacher education activities through the campus team strategy demonstrates the appropriateness and utility of both the preservice and inservice programs established by the project.

FACILITATION OF MACOS IMPLEMENTATION THROUGH BENEFICIAL PARTICIPANT INTERACTION

The proper implementation and use of the MACOS

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[1]Refers to the non-directive role of the teacher which is required by MACOS in many pupil learning activities.

curriculum was greatly aided by collaboration among the various groups involved in the project. As has been noted in the previous section, the inservice education programs conducted by the campus teams proved useful to the proper and efficient installation of the MACOS curriculum. The extensive interaction which occurred among the campus team and inservice teachers both within and outside the regular scheduled 20 inservice sessions has been documented in Tables 11 and 12 in the previous section. Table 17 shows that inservice teachers judged this interaction to be helpful and efficient in the implementation of the curriculum.

TABLE 17

ASSESSMENT BY INSERVICE TEACHERS OF THE VALUE OF THE CAMPUS TEAM STRATEGY IN THE INSTALLATION OF MACOS (n=30)

Question	Mean	S.D.	Skewness	Frequency of Response (%) #					
				N.R. (0)	D.N. (1)	P.N. (2)	U (3)	P.Y. (4)	D.Y. (5)
Has the campus team strategy been helpful to you in installing MACOS?	3.97	1.63	-3.36**	10	0	7	10	13	60
Has the campus team strategy been an efficient procedure in the installation of MACOS?	3.50	1.72	-2.00*	10	7	10	10	23	40

= Response Code: 0=no response, 1=definitely not, 2=probably not, 3=unsure, 4=probably not, 5=definitely yes.

**Statistically significant skewness at .01 level

*Statistically significant skewness at .05 level

In addition, public school administrators reported that they considered the campus team "necessary" in order to properly implement MACOS. This indicates that continuing and expanding the MACOS curriculum through the campus team strategy is judged to be valuable by project participants.

Teacher activities, as reported in the Satellite School Lesson Reporting Forms and as compiled and analyzed in the Teacher Experiences documents (Herlihy & Herlihy, 1970a, 1970b, 1971), clearly show that the basic theoretical constructs as well as the instructional management procedures and techniques central to MACOS were well understood by participating inservice teachers. Teachers' responses to particular items on questionnaires, the General Familiarity Test and other instruments indicate that they understand the basic theory and pedagogy of the curriculum. Pupil and administrator perceptions of teacher behavior, as well as statements by teachers themselves, indicate that this understanding resulted in appropriate patterns of teaching behavior. The formal study of the curriculum, under the direction of the campus teams in the local inservice programs, appears to have been largely responsible for these behaviors and perceptions.

Although not all preservice teachers were directly involved in the implementation of MACOS, a large number did assist the campus school teachers and inservice teachers

in using the curriculum. The amount and variety of interaction among inservice and preservice teachers has previously been noted in Tables 6, 7, 8 and 9. It may be recalled that the interaction between these groups occurred both in the actual use of MACOS in the classroom as well as in the study of characteristics of the MACOS curriculum in inservice and preservice courses. Preservice teachers whose primary involvement in the project dealt with the study of the theory, design, organization and other characteristice of the curriculum may have shared some of their experiences with inservice teachers.

It seems likely that the basic knowledge gained by inservice teachers concerning the important theoretical and practical aspects of the curriculum through their interaction with the campus teams and preservice teachers contributed to the successful implementation of the program. The Final Reports of the campus teams reinforce this perception. As one team reported, the project design functioned as an "excellent" implementation plan. .

KNOWLEDGE OF ADULT SAMPLES CONCERNING THE PHILOSOPHY, THEORY, AND DESIGN OF MACOS

The adult samples involved in the project developed a good knowledge of the theory and instructional methodology central to MACOS and other process curricula.

Knowledge Exhibited by the Preservice Groups

During the first half of the project year a 26 item General Familiarity Test was designed. All items were multiple choice questions with five alternatives. The purpose of the test was to probe preservice and inservice teachers' understanding of the basic theory, philosophy, objectives, organization, methodological and structural characteristics underlying the MACOS curriculum. Each of the 26 items dealt with some particular characteristics of the curriculum.

The test was administered to the Preservice I sample following their involvement with the preservice MACOS oriented college courses. The results in Table 18 show that the observed mean exceeds the chance score to be expected by a factor of 3. Unfortunately, the instrument was not administered to a control group. However, there is no reason to suspect a control group would exceed the expected chance score.

TABLE 18

RESULTS OF ADMINISTRATION OF THE GENERAL FAMILIARITY TEST TO THE PRESERVICE I SAMPLE (n=91)

Number of Items	Chance Score	Observed Mean Score	Standard Deviation	$p <$	Generalizability Coefficient
26	5.20	16.2	2.86	.01	0.45

The generalizability coefficient for the test was lower than desirable. Therefore, the test was redesigned. In its new form it became the General Familiarity Inventory. This instrument had the same basic structure as the original instrument but required subjects to rate, on a 1 to 7 scale, the appropriateness of each of the five options to each of 25 items. This revised instrument was administered to the Preservice II sample at the end of the second semester. The generalizability coefficient was computed as .94 for the 25 categories of 125 items. These results are found in Table 19. There was no "correct" response to any particular category or item. Rather, examination of responses to individual items indicate whether or not the subject is knowledgeable about important characteristics of the curriculum.

TABLE 19

RESULTS OF ADMINISTRATION OF THE GENERAL FAMILIARITY INVENTORY TO THE PRESERVICE II SAMPLE (n=59)*

Number of Items	Mean**	Standard Deviation	Generalizability Coefficient
125	554.44	62.20	0.94

* The sample is small because many preservice students were striking classes during the administration of the instrument following the Kent State incident and the entry of American military forces into Cambodia.

** The mean reported is the average sum of ratings by subjects on each of the 125 items on a seven point scale. It has no logical significance since the scales for some items were deliberately reversed. It is reported with the standard deviation in the same units only to provide information relative to the generalizability coefficient reported.

A meaningful total score which represents the overall performance of subjects on the inventory has not yet been computed. However, the performance of subjects on each individual item has been computed. Portions of Table 20 show a sample of some particularly important items which represent critical positive aspects of the MACOS curriculum. The knowledgeable response to these items would be on the high end of the seven point scale. Other portions of Table 20 show a sample of some particularly important items which represent critical negative aspects of the MACOS curriculum. The knowledgeable response for these items would be on the low end of the seven point scale. Examination of Table 20 shows that the preservice sample scored in the direction of the informed and knowledgeable response on each set of items. A complete tabulation of responses to all 125 items may be obtained from the project office.

Knowledge Exhibited by Inservice Teachers

Since the inservice teachers involved in the early development of the General Familiarity Inventory were not naive subjects, it was inappropriate to administer the revised inventory to them again. Data on the knowledge exhibited by the inservice teachers was gathered from other sources. As noted earlier, the response of the teachers on the Satellite School Lesson Reporting Forms established that teachers became knowledgeable in the basic theory and practice of MACOS (Herlihy & Herlihy, 1970a, 1970b, 1971).

TABLE 20

JUDGMENT OF PRESERVICE II SUBJECTS RELATIVE TO THE APPROPRIATENESS OR INAPPROPRIATENESS OF STATEMENTS CONCERNING BASIC THEORY AND METHODOLOGY OF MACOS

Item #	Statement	K.R.+	Mean	S.D.	Skewness	Frequency of Response (%) ǂ							
						N.R. (0)	V.I. (1)	I (2)	M.I. (3)	U (4)	M.A. (5)	A (6)	V.A. (7)
8	A skill emphasized by MACOS is formulation of generalizations based on observations	7	5.92	1.33	-4.66**	0	0	3	7	2	12	36	41
16	The range and variety of media and materials in the MACOS curriculum promotes optimal student motivation and learning	7	5.95	1.07	-3.38**	0	0	0	5	3	19	37	36
19	The range and variety of media and materials in the MACOS curriculum promote direct experience not accessable to the classroom	7	6.03	.89	-2.53*	0	0	0	2	2	22	41	34
31	A basic assumption of the MACOS curriculum is that the child learns when he can freely interact, exchange ideas and cooperate in problem solving	7	6.27	.93	-6.30**	0	0	2	0	2	10	39	47
93	The teacher's role in the MACOS curriculum is to raise questions that promote student interest in the issues and topics of the curriculum	7	5.85	1.40	-7.13**	2	2	0	5	0	14	46	32
119	A critical pupil behavior in MACOS is the ability of children to apply generalizations to complex statements	7	5.20	1.51	-5.21**	3	0	2	8	5	29	41	12
32	A basic assumption of the MACOS curriculum is that instruction should be programmed and students should be monitored	1	2.44	1.48	3.92**	0	29	36	17	8	3	5	2
35	A basic assumption of the MACOS curriculum is that the social interaction of children is helpful socially, but does not promote learning	1	2.37	1.36	5.17**	0	22	49	15	5	2	5	2
63	MACOS films have little or no narration because their use is basically motivational in nature	1	2.78	1.76	2.50**	2	25	27	20	3	12	7	3

ǂ Response Code: 0=no response, 1=very inappropriate, 2=inappropriate, 3=moderately inappropriate, 4=uncertain, 5=moderately appropriate, 6=appropriate, 7=very appropriate.

* Statistically significant skewness at .05 level

** Statistically significant skewness at .01 level

\+ Knowledgeable Response

The Inservice Questionnaire asked inservice teachers five direct questions dealing with important aspects of the appropriate pupil-teacher role for the MACOS curriculum. These items and results are shown in Table 21. The results demonstrate that inservice teacher knowledge about critical dimensions of the MACOS curriculum are very congruent with course goals. Independent pupil ratings of teacher behavior are presented in Table 26. They substantiate the fact that most teachers allowed discussions and did not behave in a highly directive manner.

Knowledge Exhibited by Public School Administrators

On another questionnaire, administrators were asked to rate two of the statements that had earlier been presented to inservice teachers (Table 21). These results are shown in Table 22. No significance test for skewness of the distribution of responses was computed because of the extremely small sample. However, it is clear that both administrators and teachers rejected the role of the teacher as the communicator of the major concepts and themes in the curriculum to the pupils. Both groups accepted the non-directive instructional role which calls for the teacher to guide learning based upon pupil experience and activity.

Knowledge Exhibited by the Campus Team

It may be recalled that both inservice and preservice

TABLE 21

JUDGMENT OF INSERVICE TEACHERS RELATIVE TO THE IMPORTANCE OF PARTICULAR STATEMENTS WHICH ARE SUPPORTIVE OR CONTRARY TO APPROPRIATE TEACHER-PUPIL ROLES WITHIN THE MACOS CURRICULUM

(n=30)

Statement or Question	Ideal or Knowledgeable Response	Observed Mean	S.D.	Skewness	Frequency of Response (%) ‡					
					N.R. (0)	D.N. (1)	P.N. (2)	U (3)	P.Y. (4)	D.Y. (5)
In teaching MACOS emphasis should be placed upon pupil activity and communication among pupils	5	4.90	0.31	-5.95**	0	0	0	0	10	90
The teacher should use his knowledge and skill to directly communicate to pupils the major concepts and themes of MACOS	1-2	2.10	1.15	2.56**	3	37	40	3	0	17
The teacher should do very little directive teaching but rather guide pupil learning resulting from experience with films, booklets, role playing, discussion and other classroom activities	4-5	4.63	0.96	-8.73**	3	0	0	0	20	77
As you have actually taught MACOS have you placed much emphasis upon pupil activity?	5	4.83	0.38	-3.99**	0	0	0	0	17	83
As you have actually taught MACOS have you placed much emphasis upon pupil activity?	5	4.67	1.15	-7.65**	3	3	0	0	3	90

‡Response Code: No response=0, Definitely not=1, Probably not=2, Unsure=3, Probably yes-4, Definitely yes=5.

**Statistically significant skewness at the .01 level.

TABLE 22

JUDGMENT OF PUBLIC SCHOOL ADMINISTRATORS RELATIVE TO STATEMENTS SUPPORTIVE AND CONTRARY TO APPROPRIATE TEACHER-PUPIL ROLES WITH THE MACOS CURRICULUM
(n=7)

Statement	Ideal or Knowledgeable Response	Observed Mean	S.D.	Frequency of Response* (Individuals)					
				N.R. (0)	D.N. (1)	P.N. (2)	U (3)	P.Y. (4)	D.Y. (5)
The teacher should use his knowledge and skill to communicate to pupils the major concepts and themes of MACOS	1-2	1.43	1.13	0	6	0	0	1	0
The teacher should do very little directive teaching but rather guide pupil learning resulting from experience with films, booklets, role playing, discussion, and other classroom activities	4-5	5.00	0.00	0	0	0	0	0	7

* Response Code: 0=no response, 1=definitely not, 2=probably not, 3=unsure, 4=probably yes, 5=definitely yes.

teachers judged their MACOS courses to be more useful and relevant than typical teacher education programs (See Table 15). Both groups also reported that the campus team was very effective in aiding the implementation of the MACOS curriculum (See Table 17). Therefore, it is reasonable to assume that the campus teams had a good grasp of the theoretical and practical characteristics of the

curriculum and that they were effective in communicating much of this information to participating groups.

PERCEIVED VALUE OF THE CURRICULUM AND THE PROJECT TO AGENCIES AND INDIVIDUALS INVOLVED

All agencies and populations involved in MACOS judged the project to be valuable. As was previously reported, preservice teachers, inservice teachers and administrators all reported their involvement with the project and the MACOS curriculum as a positive experience. The interaction of the campus team with these groups in the study and actual use of the MACOS curriculum was valued as a relevant and worthwhile experience by these groups (See Tables 15, 16, and 17). Table 23 shows that both inservice teachers and their administrators were greatly in favor of continuing and expanding the use of the MACOS curriculum itself within their districts. They also expressed a strong interest in implementing additional process curricula. In another questionnaire preservice teachers were asked if they would like to use the MACOS curriculum when they became teachers. The mean response on a five point scale from "definitely no" (1) to "definitely yes" (5) was 4.30 for Preservice Sample I (January) and 4.00 for the Preservice Sample II (May).

TABLE 23

PERCEIVED VALUE OF MACOS AND OTHER PROCESS CURRICULA AS EXPRESSED BY INSERVICE TEACHERS AND THEIR ADMINISTRATORS

Question	Inservice Mean* (n=30)	Administrative Mean* (n=7)
Should the MACOS curriculum be used for another year in your district?	4.47	5.00
Would you recommend the expansion of the MACOS curriculum within your district?	4.43	4.71
Would you recommend the use of other process curricula in your district?	4.47	5.00

*Means are reported in raw score units on a 1-5 scale where: 1=definitely not, 2=probably not, 3=unsure, 4=probably yes, 5=definitely yes.

Continuation and Expansion of MACOS Installation by School Districts

A most important criterion for judging the perceived value of the project to participating public schools concerns the continuation and expansion of the project beyond 1969-70 without NSF or ERIE financial support. As is pointed out in Table 23, both inservice teachers and administrators from project schools did wish to expand MACOS.

School districts payed $500 for supplementary books and A-V equipment during 1969-70. Half of the total cost of materials of the first year was borne by ERIE. Financing MACOS in the future was the total responsibility of the school districts if they wished to continue and expand the project in 1970-71. (See p. 36-37) The NSF grant provided funds for conducting the inservice training program for 1969-70. To continue with the MACOS curriculum in subsequent years, school districts had to assume responsibility for all costs incurred by the requisite inservice program.

In spite of these two additional cost expenditures, not one school dropped out of the program. In fact, most expanded their efforts, and some even involved other districts in implementing MACOS. Table 24 shows the expansion of the 1969-70 efforts into 1970-71.

Continuation and Expansion of the MACOS Curriculum at College Campus Schools

The monies granted to the project by NSF were to support the implementation of MACOS in campus school classrooms for 1969-70 only. Resources for continuation of the curriculum in campus schools were to come from the colleges involved in the 1969-70 project. NSF paid for 1/3 of the cost of the media materials to be used in campus classrooms. Colleges were to pay the remaining 2/3 of the cost of the media materials in two yearly installments

TABLE 24

CONTINUATION AND EXPANSION OF PUBLIC SCHOOL MACOS CLASSROOMS WITH LOCAL SCHOOL DISTRICT FUNDS*

Center	Number of Classrooms*	
	1969-70	1970-71
Buffalo	7	11
Cortland	7	13
Fredonia	10	25
Geneseo	7	20
Lock Haven	7	20
Totals	38	89
GRAND TOTAL campus & public school classrooms	44	103

*Because of departmentalization, team teaching and other arrangements, there are more MACOS classrooms than teachers.

under a lease purchase arrangement. Not only have all colleges met the necessary costs to continue the curriculum in their campus schools in 1970-71, but most have purchased additional sets of materials as well. Table 25 shows there has been a growth from six campus classrooms in 1969-70 to fourteen in 1970-71. This is an increase of nearly 150%.

The college preservice methods classes also were responsible for purchasing materials for the campus classrooms. Generally, budgets from at least two departments

TABLE 25

CONTINUATION AND EXPANSION OF MACOS IMPLEMENTATION IN CAMPUS SCHOOL CLASSROOMS AT LOCAL COLLEGE EXPENSE*

College Site	Number of Campus Classrooms	
	1969-70	1970-71
Buffalo	2	4
Cortland	1	3
Fredonia*	1	2
Geneseo	1	4
Lock Haven	1	1
Totals	6	14

*Because of departmentalization, team teaching, and other arrangements, there are more MACOS classrooms than teachers.

(campus school and elementary education) in the same college have been used to continue and expand the project. It must be noted that this kind of mutual cooperation, including budgetary allocation between these divisions in teacher colleges is an unusual event. The perceived value of the curriculum and its use as a vehicle for teacher education encouraged the leadership in both departments to cooperate in order to continue the project.

Institutionalization of College Preservice Programs

All participating teacher colleges have institutionalized

the MACOS preservice teacher education programs. The results reported in the preceding section offer concrete evidence of the attempts made by college administrators to continue the campus team strategy as the basis of preservice education courses for college students.

EFFECTS OF MACOS AND THE CAMPUS TEAM STRATEGY UPON TEACHER BEHAVIOR

Indirect measures indicate that most classroom teachers have become more dialectic and inquiry oriented. The Teacher Experiences documents (Herlihy & Herlihy, 1970a, 1970b, 1971) give concrete evidence of the many ways teachers have used the MACOS curriculum to promote pupil inquiry behavior. In preparing a report on MACOS to their administrators and Board of Education, one group of teachers from a satellite school stated:

> The techniques which the teacher must use are, of course, important. The teacher has to refrain from lecturing and giving answers and must guide his students in discovering answers to questions and in posing new questions. The teacher works with the process of learning and not necessarily the content.
>
> As the teacher works with his students, he realizes MACOS is not a teacher-centered curriculum. The class with its discussions and lessons no longer revolves around a teacher. It now includes everyone working together. The teacher must be able to sit with his students, discuss ideas and encourage his students to question more.

Perhaps the most revealing data relative to the teachers' classroom performance appropriate to MACOS was the

response made by more than 2000 elementary pupils to item 17 on the MACOS Pupil Test II. This item asked pupils to rate certain aspects of their teacher's classroom behavior. Both the statements and their ratings are presented in Table 26. Options 1 and 3 could be expected to have a high frequency of pupil selection in classrooms of teachers with a dialectical and inquiry orientation. Options 2 and 4 could be expected to have a high frequency of pupil selection in classrooms with didactic, authoritative or directive teachers. Approximately 81 percent of the elementary students chose options 1 and 3 over options 2 and 4. This strongly indicates that pupils judged their MACOS teachers' behavior as being dialectical and inquiry oriented. It appears that teachers were adopting, as well as acknowledging, the appropriate MACOS teaching roles.

PUPIL PROFICIENCY IN THE CONTENT OF MACOS

During the course of the project year two tests were designed and administered to a pupil sample. The test items were designed to assess pupil proficiency in MACOS content. Items on both tests were prepared in accordance with the categories of the Taxonomy of Educational Objectives Handbook I: Cognitive Domain (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956). MACOS Pupil Test I dealt with the man and animal units taught during the first

TABLE 26

PUPIL RATING OF TEACHER BEHAVIORS
IN MACOS LESSONS*
(n=2192)

Response Option	Statement	Frequency of Response (Percent)
1	We had lively discussion on most questions, but for many of them we did not reach a final answer.	23
2	Our teacher was very good at telling us most of the answers.	8
3	For most questions, we found answers in the booklets, films and through study projects	58
4	Each student found answers from reading and from taking notes when the teacher talked to the class.	10

* Pupils were asked to select the one response from among the four which best described how they typically sought and found answers to questions encountered in the use of MACOS.

semester. MACOS Pupil Test II dealt with Netsilik Eskimo units covered during the second semester.

The results of the two tests are shown in Table 27. The results for MACOS Pupil Test I are shown for two samples of pupils. One sample of pupils was instructed by teachers trained by the campus teams under ERIE's direction. The other sample consisted of pupils instructed by

TABLE 27

RESULTS OF ADMINISTRATION OF PUPIL TESTS I AND II
TO SAMPLES OF ELEMENTARY SCHOOL STUDENTS USING MACOS IN ERIE PROJECT
AND NON-PROJECT SCHOOLS

Test	Number of Items	Sample	Sample Size	Expected Chance Mean	Observed Mean	Standard Deviation	Difference Between Observed and Chance Mean	p<	Generalizability Coefficient
MACOS Pupil Test I	36	MACOS Pupils from ERIE Project Schools	1171	11.17	23.85	5.16	12.68	.05	0.77
		MACOS Pupils from ERIE Non-Project Schools	1151	11.17	22.00	5.56	10.83*	N.S.	0.79
MACOS Pupil Test II	42	All MACOS Pupils from ERIE Project and Non-Project Schools	2192	10.83	27.45	6.20	16.62	.01	0.82

* Significance at .05 level requires a value of 10.90.

leaders who attended an earlier EDC sponsored summer workshop. This second sample and their teachers were not involved in the year-long inservice phase of the ERIE project. The results for Pupil Test II are reported for the total pooled sample of pupils from both groups. From Table 27 it is apparent that two samples scored significantly higher than could be expected by chance. The difference between the third sample observed mean and expected chance mean very closely approached statistical significance. It seems reasonable to conclude, since the content of both tests is MACOS specific, that pupils did indeed master much of the curriculum content.

CHANGES IN PUPIL CLASSROOM ATTITUDES AND BEHAVIOR

It would have been desirable for independent observers to observe teacher-pupil classroom behavior. Time and money constraints prevented such a procedure. However, as an alternative to documenting changes in pupil behavior, the adults who had opportunities to observe MACOS classrooms were asked a series of questions concerning patterns of pupil behavior promoted by the curriculum. The results of four adult samples are reported in Table 28. There is agreement among all four samples that the MACOS curriculum operationally promotes some of the desired behavior patterns which are terminal goals not only for MACOS but for any process curriculum.

TABLE 28

INDEPENDENT ASSESSMENT OF THE EFFECT OF THE MACOS CURRICULUM ON PUPIL BEHAVIOR BY FOUR SAMPLES OF ADULT OBSERVERS

Pupil Behavior Dimension	Mean* Ratings by Each Sample			
	Pres. I (n=87)	Pres. II (n=122)	Inservice (n=30)	Adminis. (n=7)
Elementary pupils learn much from MACOS	4.29	3.84	4.50	4.18
The MACOS curriculum promotes much student-student interaction	4.56	4.19	4.57	5.00
The MACOS curriculum stimulates more and better pupil questions	4.60	4.19	4.67	4.86
MACOS helps children to better perceive their social and physical environment	4.36	4.01	4.63	4.71
Children apply MACOS process skills to other curriculum areas	4.32	4.00	4.20	--
MACOS promotes process skills more than typical elementary curricula	4.49	3.84	4.43	5.00

* Means reported in raw score units where: 1=definitely not, 2=probably not, 3=unsure, 4=probably yes, 5=definitely yes.

Statements from teachers, campus teams and Final Reports also demonstrate that the MACOS curriculum has had an impact on the behavior and attitudes of elementary students. In his Final Report, one campus school teacher listed seventeen "positive changes in children's behavior." Included on the list were:

> Grouping, in small groups and partnerships, was effective in helping the children learn to work together in sharing ideas.
>
> Research and reporting techniques improved.
>
> Reading, with critical thinking skills, was enhanced.
>
> Oral reporting improved.
>
> Composition writing improved.
>
> Creative writing ideas improved.
>
> Ability to ask questions improved.
>
> Ability to compare and contrast improved.
>
> Child to child interaction was great.
>
> Cause and effect relationships, in a natural setting, increased critical thinking ability.

This, along with numerous other teacher and campus team observations tends to indicate that the MACOS curriculum can be an effective vehicle for promoting patterns of pupil behavior consistent with self guided learning and inquiry.

IMPLICATIONS OF THE MACOS CAMPUS TEAM PROGRAM

STRENGTHS AND WEAKNESSES OF THE PROJECT

This section of the report offers a brief series of statements on the factors that promoted or inhibited the success of the campus team implementation strategy.

Strengths

1. Both inservice teachers and administrators report that the curriculum could not have been implemented without the campus team strategy. The year long support of the campus team provided the impetus to develop "new" patterns of teacher and pupil behavior. These reports are substantiated by the investment of local professional time and money in the expansion of the curriculum in both schools and colleges.

2. MACOS and the campus team strategy are excellent vehicles for developing and supporting new models of teacher and pupil behavior. The year long support feature of the strategy keeps this aim paramount and also promotes a continuous review of these behavior. This procedure encourages "risk taking" by both teachers and administrators in the client districts. Also, since one of the consultants (campus team) is a teacher, he lends legitimacy and practicality to the new project.

3. By placing both preservice and inservice education together in one program, these groups have tended to reinforce each other. It appears that since both populations are engaged in the same training situation, they perceive each other in a supportive situation, not in the traditional "master-apprentice" role. Whenever preservice and inservice classes have been placed in this joint situation, both populations report (and are observed) to be highly involved in instructional tasks and/or in follow up feedback discussions. This arrangement has powerful applications for preservice education by providing actual classroom situations in which students are able to interact with interested professionals.

4. Preservice teachers have been exposed in the campus schools to the instructional management schemas found in MACOS or other process education curricula. As a result, teachers welcome these preservice teachers because they can exhibit appropriate behaviors with pupils. The college professor is also welcomed into the school as a valuable support person by both teachers and administrators.

5. The nature of the curriculum and the dual nature of the campus team have fused a number of traditionally separate parts of the university into one program. The campus team approach has built bridges between the obvious subdivisions at colleges. It has involved the Learning

Resources Center, elementary and secondary education departments, curriculum and instruction methods classes and campus school classrooms in the program. This mutual effect has brought more resources to bear on preservice education.

Another significant impact has been the involvement of non-education departments or divisions of the universities. Personnel from anthropology, biology and social psychology have expressed interest in MACOS. These cross overs take place through formal as well as informal contracts. As one of the MACOS professors remarked, "It's worth a few beers to get some anthropologists to my house to watch the MACOS movies." A few of these academicians have been involved in inservice classes. This experience has been enlightening to them in two ways, first, in seeing the difficulties of designing and carrying out a dynamic inservice class; second, in trying to change teacher behavior from 4 to 6 in the afternoon after the participants have completed a teaching day. It is not easy to denigrate the efforts of people in the education department, if you had a part in the same venture. These efforts, however small and halting, have brought people from the liberal arts and education together to see each other's problems and expectations.

6. The campus team strategy has had an impact. The 1969-70 network involved thirty-seven teachers and

forty classrooms; the 1970-71 efforts in the same campus centers involve about sixty teachers in over eighty classrooms. Similar data regarding expansion in college preservice classes is offered in the Operationalizing and Specific Results sections of this report.

7. NSF, ERIE, various colleges, public schools, Title III centers and Board of Cooperative Education Services (BOCES) organizations have supported the goals and interests of the participants. There are dangers and pitfalls in any operation involving so many agencies. The existence of the preset Conditions and Requirements mitigate against the danger, but they do not remove it. If accomplished, the mutual support of a number of agencies involved in educational change would be beneficial to the program.

8. The campus team strategy effects the role and expectations of the college consultant. He is not an expert who dispenses authoritative knowledge, but rather he is a co-worker in the attempt to improve education. The inservice classes or workshops are active pupil (teacher) centered, focusing on instructional situations, not on didactic lectures. This different role does create some initial problems until the pupils (teachers) realize that they must be actively involved in their own learning experiences and not sit passively taking the word of an authority figure.

9. Designing a team operation has created a division of labor between its members. Not all possible divisions of labor were perceived before the project began. For instance, it quickly became apparent that the non-teaching member of the team was an observer who could contribute feedback. This non-involved leader could readily observe the non-verbal cues, the points needing more clarification, and the effective entry points into a discussion to re-direct or refocus issues and questions. The "observer" leader can also collect data on an inservice class and effectively conduct a feedback session, so that teachers can functionally see this instructional technique in operation. Since this role is interchangeable, more than one model is presented. This was an unexpected but positive result from the campus team strategy.

Weaknesses

1. The many facets of the campus team strategy place the professor and campus school teacher in the position of interacting with the hierarchy of college education departments and local schools. Other professionals in preservice education single out the campus team's position for special praise and recognition. This condition is further intensified when preservice teachers ask for dynamic and active classes concerning MACOS rather than for

more lecture classes. Thus, there have been some estranged feelings expressed covertly (among faculty members) and overtly (at faculty meetings), about "deviations" from the normal preservice sequence. Candidates in the campus team strategy need to be screened carefully before selection in order to get participants who can withstand this kind of pressure. These participants must also receive administrative reinforcement and support before the program commences.

2. The welding together of preservice and inservice education programs in the field was harder to achieve than to conceptualize. The number of schools, logistics, time and placement problems worked against implementation of this aspect of the strategy. Scheduling arrangements for junior observers and student teachers are needed in the spring of the preceding year. Thus it was impossible to fully carry out these portions of the program during the first semester.

3. Joint classes of preservice and inservice populations were arranged or held, but not to the extent envisioned at the outset of the program or anticipated by the campus teams themselves. In order to have more joint activities, the student teacher placement director must be involved. This necessary extra step takes time and much verbal reinforcement. Another year will tell if

this aspect is viable, or if a reduced schedule is the best alternative.

4. The number of preservice teachers was also a problem in carrying out the design of the campus team strategy. Preservice college classes numbered about fifty per semester, but there were only five satellite classes and the campus school. Simple arithmetic shows that it is physically impossible for all preservice teachers to have extensive experience in teaching MACOS. The problem is further compounded if the needs and requests of three of four other preservice professors are considered. Perhaps as the number of MACOS classes expands, this problem will dissipate, but for the first few years the factor is real.

Other Comments

1. The cooperation between preservice and inservice education makes a number of arrangements for the continuation or extension of the inservice program possible. For instance, the credit slips given a teacher for accepting a student teacher can be utilized for granting college credit. Thus a school's dollar contribution for the inservice class and the college's academic credit and staff contributions can and have made a favorable match of interests and services for both educational institutions involved in the project.

2. The strengths and weaknesses sections indicate that the mutual cooperation of a number of education agencies and sub-groups within these agencies are necessary for success. These arrangements are at the same time BOTH a strength and a weakness. As long as both parties profit from this mutual cooperation, the total is greater than the sum of its parts. However, if this cooperation begins to degenerate into selfish interests and sniping, disintegration takes place almost immediately.

The Program Coordinator must have an immediate pipe line to both institutions, so whenever a "brush fire" is threatening, he can respond immediately. It must be reported that this response facility has included hand holding backsliders and back patting the timid. These activities were key ingredients in promoting and establishing success patterns that will insure the emergence of the self perpetuating features of the campus team strategy.

3. The presence of trained preservice teachers in public schools encourages administrators to use this resource. For instance, on inservice days one center used the whole MACOS (thirty pupils) preservice class to cover the five teachers for the last hour of the school day. Thus the inservice class was conducted half during school time and half after school. The arrange-

ment was acceptable to schools because of the number of preservice teachers involved, to the college because the students had real responsibility for instruction, and to the teachers because they were assured that productive work would be conducted during their absence.

4. The three day preschool orientation period has proved to be a very important ingredient in the inservice program. These all day sessions were useful in establishing a basis for MACOS and for the campus team. One unusual situation was that during this time period a number of non-content classroom norms were established - pupil - teacher responsibilities, the tone of the classes and mutually conducted activities. A climate was established where everyone, including the campus team, was on a first name basis. The professor and campus teacher were not outside experts but integral members of the group.

5. One of the Conditions and Requirements established for the project network called for serious research in curriculum and project effectiveness. ERIE developed and administered approximately twenty instruments to collect data on teachers, pupils, administrators, the curriculum and the campus team implementation strategy. Other researchers used the network for a feasibility study. Members of the campus team conducted studies of pupil attitudes toward the MACOS curriculum. This experience

shows that schools and colleges can be utilized for serious research and this effort will be accepted and assisted by all parties. Further efforts in this area are underway for 1970-71.

INSIGHTS ON IMPLEMENTATION OF NEW CURRICULA

This section of the report presents some generalizations and working arrangements that have been beneficial to conducting implementation activities. These insights, while somewhat specific to the MACOS campus team effort, do have wide spread applicability. These generalizations are the result of over forty on-site visits by the Program Coordinator, thirty visits by Core Staff, over one hundred inservice report forms, five Final Reports and discussions with the campus teams.

1. The establishment of preset Conditions and Requirements (see appendix A) is a key ingredient in the success of a venture designed to promote cooperative activity among a group of institutions. The Conditions and Requirements present clear role delineations and task responsibilities for all populations in the project. All parties knew and subscribed to these preconditions for participation. Therefore, during the program year, there were few discussions or misunderstandings of role, duties, and responsibilities. Not only did they provide ERIE with a vehicle to carry out the terms of the project, but they also acted as a defense line for misunderstandings which occurred in both colleges and schools. The Conditions and Requirements were a bulwark against which forces

resisting change foundered. It is strongly recommended that Conditions and Requirements be a part of any proposal in order to clearly explicate the duties and responsibilities of all parties involved. This step will not eliminate problems, but it will go a long way toward diminishing their number. Conditions and Requirements also helps resolve problems when they do appear. Few administrators can stand up to "backing out" on NSF, ERIE, and other change agencies.

2. Involvement and commitment to the project goals is necessary for success. Someone has to assume responsibility for day by day operations and serve as the coordinator and problem solver. That party must have access to the supporting agencies in order to operationalize and continue the program. This party is not known by title or position, since conditions and arrangements at every institution are different. A non-teacher (administrator or supervisor) must be committed to the success of the program or chances for success are markedly diminished.

3. At the same time, the day by day problems of conducting a new program require an immediate response. This resource is usually a key teacher with delegated or assumed power. Success, however, requires that someone assume responsibility for the audio-visual equipment, its scheduling, ordering materials, etc. The

external change agent must identify this person, reinforce his activities, and encourage the school district to recognize his efforts.

Curriculum decision makers and supporting agencies must be constantly kept informed on the progress of the project. This feedback system keeps the goal of the project alive and, more importantly, creates a focus of responsibility. This responsibility means someone, or group, has made a public commitment to work for the project. Their professional status and personal integrity are on the line. This type of commitment enables the top of the hierarchy to support the project without a loss of face if it fails, or to enjoy the benefits and rewards if it is successful. The interesting feature of this aspect of implementation is its amorphousness. There is no handle or guideline for identifying the emerging leaders either by job, title or rank. Yet, these leaders can be identified by visitng the schools implementing the curriculum. The continuous on-site visitation phase of implementation is essential for any external change agent.

4. A key element in involving all components in implementing a new curriculum practice, etc. is the external consultant. In the recurring visits, he keeps the preset Conditions and Requirements visible. He asks

questions that those within the "system" cannot or dare not ask. These questions must be given a response that is consistent with the goals of the program. The consultant can, if it becomes necessary, exercise his access to the top of the institutions hierarchy. Rarely is it necessary to traverse this route, but its existence is a potent factor.

The external change agent or consultant can also provide valuable support both within and without the framework of the project. For instance, writing proposals for funding, writing course descriptions, institutionalizing the course for credit (particularly the inservice classes) are services that appear peripheral, but establish the consultant as an asset to client institutions. The consultant can also provide immediate or on the spot services to support the project. These services might consist of obtaining a projector bulb when supplies are limited, contacting course developers or fellow project personnel, and through his own resources, dealing immediately with a situation or problem. The consultant must also provide other services in order to reinforce his position as knowledgeable, responsive and in contact with the classroom. A key insight promoting success is the consultant's knowledge of these wide responsibilities and tasks and his ability to effectively respond to these multiple and diverse requests. If this factor is missing the credi-

bility of the consultant is seriously jeopardized.

5. The Man: A Course of Study curriculum has utility as a teacher education program. The classroom management schemas and teacher-pupil roles and expectations represent good educational practice. Many questions on classroom practice and instructional methodologies and techniques are posed in both the inservice and preservice classes. College students and teachers deal with these issues and problems on a continuing basis, not in a single contrived teaching situation. Methods professors report that they can achieve all the objectives of the social studies methods course and achieve a high degree of student motivation by using MACOS materials. As a result, the second semester classes tended to use MACOS materials almost exclusively. An episode involving reporting systems stated on page 41 is but one illustration of how the inservice classes have functionally raised many questions on current school practices.

EFFECTS OF THE CAMPUS TEAM STRATEGY

This section provides an overview of dissemination, installation, teacher education and assessment/evaluation. Since most of the findings have already been discussed in prior sections, the descriptive statements about the findings will be brief.

Dissemination

1. "Success breeds success" is an old adage that has strong relevance for curriculum implementation. The reward system comes into effect immediately if the curriculum implementation is beneficial to teachers, pupils or the community at large. The mechanics of diffusion are many and varied, formal and informal. If the program has had an impact, it is reinforced strongly by those who wish to ride the crest of success. Strong efforts must be made to make school districts aware of the year long program by giving them specific examples of teacher and pupil reaction. The visible aspects of the curriculum, especially the variety of student work, clearly demonstrated in MACOS classrooms, is an important factor in promoting dissemination of the MACOS curriculum and the campus team strategy. This factor is also true in intra-district as well as inter-district impact.

2. The number of preservice teachers coming in contact with the curriculum and the change strategy has had a powerful influence on the dissemination of the curriculum. Preservice teachers have informed other districts and people about the program in their student teacher placement. Numerous requests for additional information and presentations have come through contacts made by preservice teachers.

As the program continues, growth in the number of professionals and campus school classes should result in the involvement of even more preservice teachers. News of the project is also being carried back to non-MACOS collegiate institutions by student teachers placed in MACOS schools.

3. The continuing service that is available from each MACOS college center adds a multiplier effect to dissemination activities, at no extra cost. Once a center is established, through a number of strategies already discussed, training can be offered to new schools at a reasonable cost. This has been the case in most of the original five centers established in 1969-70.

Installation

1. The campus team strategy has been an effective way to implement MACOS because of the non-traditional nature of the course and its cost. The materials are packaged with five sets of written materials and one

media set. One or two Pilot Program Packages, as the total group is called, is designed for an inservice class of five or ten people. This small number, composed usually of volunteers, makes for a manageable instructional group. The inservice class can usually be client oriented yet still directed to include those instruction schemas, practices and exercises that effect change. The success of this pilot group has created a demand for continuation and expansion. In this time of teacher demands for curricula control, it is an effective strategy to test a new curriculum before a large scale, district-wide implementation is attempted. Thus, teachers can be actively involved in requesting curriculum change.

2. The year long support system built into the campus team strategy has been an effective tool in implementing change.

3. The mutual support aspect of the strategy is an effective mechanism, for it unites the skills of many agencies to provide a strong base of support.

4. An important factor is the establishment of preset Conditions and Requirements which establish parameters for the project before it becomes operative. As stated previously, while this action does not eliminate problems, it certainly removes many and aids in solving others.

5. The support servies of the change agent are an important ingredient in continuing efforts to sustain change. Not only are the coordinating and monitoring functions important, but also the service aspect. The questionnaires, reports, tests etc. designed by the change agent also serve as a feedback system to keep all participants informed about the project and provided information to justify its cost and support future extension.

6. The support of an administrator or supervisor is necessary to the success of any change venture. The experience of the 1969-70 campus team strategy reinforces this view. In the schools where the greatest impact on teacher behavior occurred, an administrator or supervisor was the potent force in securing money and support for expansion.

7. The preschool orientation period appears to be an important item in the support system. This orientation serves not only to familiarize participants with the content and curriculum, but also establishes the norms that are expected to be followed through the year. This orientation period, free of school concerns, seems to produce positive results.

Teacher Education

1. The project has shown that the behaviors and expectations of MACOS form a sound base for organizing

and conducting a teacher education program. Tables 9 and 11 provide ample evidence that teachers have been influenced by the MACOS curriculum. The continuation and expansion of college preservice programs offers still more evidence. Participating public school administrators, by continuing and expanding the curriculum at their own expense, demonstrate their belief that MACOS has a beneficial impact in their schools.

2. Both preservice and inservice teachers have demonstrated their knowledge of MACOS theory and practice. The next step is to build a set of instructional modules that will enable these behaviors to be more fully developed and practiced. A teacher's perception of his classroom instruction is not sufficient. Communications systems through interaction analysis systems, microteaching, or even experience in simple observation activities are necessary in order to demonstrate and practice strategies or methodologies to improve teacher comfort and competence with new roles and behaviors. This aspect of teacher education must be stressed in both inservice and preservice programs in order to maximize the effect of process curricula like MACOS.

3. Knowledge of MACOS content will not in and of itself create a MACOS classroom. The curriculum requires considerable emphasis in intergroup relations, group dynamics, interpersonal communication, questioning tech-

niques, role play, evaluation strategies, value inquiry, and social science methodology. Therefore, the training package for MACOS must indicate alternate skills and procedures in order to implement most of the above topics. The workshop training (3T) must provide a role model for these behaviors, so that other trainers (2T) or teachers (T) can observe these skills in operation. These factors portend a long hard but necessary role in teacher reeducation.

4. The team approach to teacher training offers many possibilities. The built in advantages in planning and teaching are obvious. However, the teaching-observation model, with its own intra-team and inter-team feedback, provides a dimension rarely found in teacher training. Also the division of labor between theorist (college professor) and practitioner (campus school teacher) provides another avenue to learning. The teacher member of the team offers legitimacy and reality to teacher reeducation. Even from these few examples, the utilization of a team approach offers many advantages to a teacher education program.

5. Student teacher placement is scheduled in the preceding spring for the fall semester. Therefore, chance was the only factor in placing MACOS preservice teachers in MACOS classes for the first semester.

Although some easing of this problem was found in the spring semester, geographic location and the number of MACOS classrooms still presented problems in providing preservice teachers with MACOS field experiences. Continuing dialogue with student teacher placement officers will lessen, but not remove the problem. The cooperation and assistance of this college official is a critical factor in making the campus team strategy a success.

6. The program serves the practical and functional needs of preservice and inservice education. Public schools can rely upon a readily available and knowledgeable source of outside expertise in order to make extensive inroads in changing teacher and student behaviors. Both college and school officials perceive the campus team strategy as filling this critical need. The public schools have actively cooperated in making arrangements with preservice teachers and professors to promote the implementation of a new curriculum. College supervisors are now not considered to be outside distractors, but rather service resources to the schools. The long term establishment of this concept will serve the interests of both participating groups.

Assessment and/or Evaluation

1. Although over twenty different instruments were designed and administered to the various populations

involved in the project, little direct observational data was collected on classroom behavior. The instruments represent a considerable effort to design and implement new models and forms to assess teacher and pupil behavior. However, a real need remains to collect objective data on what is happening in the classroom based on direct observation by independent and impartial observers. The subjective response of participants, while important, is not sufficient.

2. MACOS, as a prime example of process education, should provide for individualized instruction. Satellite Teacher Lesson Report Forms show a great variety of teacher initiated lessons consistent with the design of the curriculum. However, there is the need for more documentation to show the importance of individualized work and how MACOS can provide this individualization in educational practice.

QUESTIONS FOR FURTHER STUDY

1. Preservice teachers report that MACOS has made a marked impression on them, on their view of teaching, on the role of teachers and students, and on instructional methodologies and techniques. A follow-up study is needed to discern if the teaching behavior of preservice teachers had also changed after the MACOS experience. Does a MACOS trained preservice teacher behave differently in the classroom? Does he seek a position where he can operate in a role appropriate to MACOS?

2. The reported "changes" in the perceptions and behaviors of preservice and inservice populations need verification by direct classroom observation to determine if the change is operational as well as verbal and to discover if the classroom operations are congruent with the goals of process education. Another question would be directed toward ascertaining the extent or existence of the Hawthorne effect of college, ERIE staff, and the campus team on preservice and inservice populations. Studies utilizing instruments such as Vincent's Signs of Good Teaching or Deever et. al. Instrument for the Observation of Teaching Activities are necessary in order to more fully substantiate significant teacher and pupil behavioral change resulting from the MACOS experience.

This step is necessary in order to win both financial and moral support for continued efforts in ongoing curricula review at the local level.

3. Does the MACOS experience result in a transfer of teacher and pupil process skills? A resolution of this question would be highly informative and useful.

4. Pupils and teachers report increased interest and performance in reading as a result of using the MACOS curriculum. Does MACOS, in reality, have a positive effect on reading level and motivation? Does the format and style of MACOS materials encourage students to become better readers? Do students engage in more self directed reading as a result of the MACOS curriculum? Subjective statements made by project participants indicate that MACOS is beneficial to developing reading ability.

5. Further study and examination is needed to determine and refine success criteria. This report expresses quantifiable criteria indicating that various populations view the project as a success. However, what should determine "success?" What other key criteria should be tested, or are expansions and allocations of resources sufficient in themselves?

6. There is a need for long term study and follow up of the inservice population. Has a behavioral change taken place as teachers themselves report? What is the

time dimension of the change? Will the behavior still be exhibited in two to five years? What is different in the practitioners' classroom after this time interval?

7. The school populations in the project were basically volunteers or from districts that were willing to be early "riskers". To what extent does this factor skew the findings? How replicable are the results to more conservative schools?

8. Preliminary studies using the Activities Index, Organizational Climate Index, and Purdue Teacher Opinionnaires Scale indicate that the MACOS inservice sample was highly motivated, intellectually aware, and assertive. Data analysis has shown that MACOS teachers score significantly higher on these items than normative samples of other ERIE network teachers involved in the installation of another process curriculum by another implementation strategy. Because the MACOS sample is small, this does not provide a sound base for comparison. It could be hypothesized that the impact or effect of MACOS was responsible for the differences, or that these teachers were attracted to the MACOS curriculum because of their personality characterisitcs. This question is one that should be pursued further to determine if MACOS is a major factor in producing changes in teacher behavior, or if teachers with these personality characteristics are attracted to the curriculum.

BUDGET

Grant Budget and Fiscal Report
Eastern Regional Institute for Education
635 James Street
Syracuse, New York 13203

Dr. Richard C. Wallace, Jr.,
Institute Director

Grant GW 4513

Receipts:

From: National Science Foundation	84,100.00
ERIE (Host Institution)	11,872.13
Participating Schools	3,150.00
Total Receipts	99,122.13

Expenditures Reported:	Available Funding	Expenditures	Balance
A. Participant Support			
Stipends	21,500.00	21,425.00	75.00
Travel Allowances	5,880.00	5,947.96	(67.96)
Materials for University Team	7,650.00	7,619.82	30.18
Total Participant Support	35,030.00	34,992.78	37.22
B. Operational Costs			
Director	14,000.00	14,000.00	-
Secretarial	5,000.00	5,500.00	(500.00)
Assistants & Others	7,900.00	7,248.64	651.36
Retirement	3,420.00	3,108.98	311.02
Travel for Institute	5,456.00	6,169.48	(713.48)
Sub Total--Staff	35,776.00	36,027.10	(251.10)
Other Direct Costs			
Office Supplies, Comm., etc.		55.44	(55.44)
Cost of Lab Materials	18,522.13*	18,734.28	(212.15)
Misc. Direct Costs		322.98	(322.98)
Total Direct Operational Costs	54,298.13	55,139.80	(841.67)
Less Non NSF Funds Applied to Direct Costs	(15,022.13)	(15,022.13)	-0-
Net Direct Operational Costs		40,117.67	
Indirect Cost Recovery: 40,117.67 x 25%	9,794.00	8,989.55**	804.45
Total Grant	84,100.00		
Total Expenditures Reported		84,100.00	
Balance			-0-

* Includes 15,022.13 of funds from other than NSF sources.
**Represents maximum indirect cost recovery funds available in grant.

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