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Describes a development project, conducted by MSU from 1968-1973, designed to establish a new central planning office within the Turkish Ministry of Education and provide graduate training at MSU for 20 Turkish students. Despite disagreements and delays, the objectives were attained.

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FINAL REPORT
on the
MICHIGAN STATE UNIVERSITY
TURKEY PROJECT
in
NATIONAL EDUCATION RESEARCH AND PLANNING
1968 - 1974

by

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August, 1973

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FINAL REPORT OF THE NERP PROJECT

CHAPTER ONE: INTRODUCTION

THE PROJECT EXPERIENCE

The purpose of this final report is to assess the cooperative interaction among the three agencies involved between 1968-1973 in carrying out the National Educational Research and Planning Project in Turkey (hereinafter referred to as NERP). The three agencies were (1) the National Ministry of Education in Turkey - hereinafter referred to as the MOE, (2) Michigan State University - MSU, and (3) AID, also referred to as AID/W when meaning the Washington offices, and USAID when meaning the Mission in Turkey.

This first chapter presents an overview of the project, setting forth its essential frames of reference and attempting to characterize the experience as a whole, including a summary of its objectives, achievements, and shortcomings. Subsequent chapters discuss various particular aspects in more depth. The project's Chief of Party, Dr. Ben A. Bohnhorst, was responsible for preparing the basic drafts of Chapters One, Two, and Six. Dr. Harry L. Case, Coordinator of NERP, wrote Chapters Three and Five, and Dr. Kenneth L. Neff, Human Resource Development Advisor and co-member of the project's field-team in Ankara, wrote Chapter Four. Dr. Case edited the whole into its final form.

The report is not intended as a recapitulation of the history of the project. A detailed record of NERP events has already been presented in the series of semi-annual project reports. Instead, the report is intended as a retrospective review for the purpose of identifying what we may have learned from the experience. The interest furthermore is in

future applications: (a) from the point of view of the MOE, how best to carry forward the work which NERP helped get started, (b) from the point of view of AID, what in the experience may be usable - or should be avoided - in future projects of this general sort, and (c) from the point of view of MSU, what have we learned from NERP that may be of general utility in understanding how better we may as a university assist developing nations with their educational development and planning problems.

The project had three main thrusts. One was to assist a new central planning agency to get itself established in the MOE. This agency ultimately came to be known as the Planlama, Arastirma, ve Koordinasyon Dairesi, which means the Planning, Research, and Coordination Office. Early in the game it was known as the Budget and Planning Department. Then for a while it was called the Research and Planning Office. But by 1970 it had acquired its full, formal title, and in the following pages the agency will be referred to as PAKD, regardless of whether the reference is to the agency before or after 1970. Chapter Two presents a review of the critical turning points which occurred between 1968-1973 in the development of PAKD as an agency.

The reader should distinguish between PAKD (the agency) and NERP (the project). NERP as such consisted of U.S. resources (advisory personnel and funds) which Turkish counterparts employed, plus the sequences of activities to which the resources were applied (training at MSU, and in Ankara those research and data systems development activities which were stimulated by the presence of U.S. NERP advisors). PAKD as such is strictly a Turkish entity. It is an agency which grew from a nucleus staff of

some twenty persons into an established facility which acquired buildings and equipment and employed in 1973 a staff of some two hundred persons. NERP trained twenty participants who became key members of the PAKD staff, but NERP was not responsible for the whole growth of PAKD - NERP only assisted PAKD. Furthermore, NERP was not responsible for the full scope of activities, functions, and responsibilities with which PAKD was involved or became involved. PAKD is an integral working unit within the structure of the MOE. NERP assisted by providing essential training for some of PAKD's key personnel and by advising PAKD on the development of some of its crucial planning and research procedures and facilities. NERP was important to PAKD, but PAKD was not NERP's entire creation, and PAKD did not choose to use all that NERP had to offer.

Whereas Chapter Two discusses the turning points in PAKD's overall evolution (which evolution NERP attempted to foster as one of its main thrusts), Chapters Three and Four focus on the other two main thrusts, viz. in Chapter Three on the programs of professional training provided to Turkish participants at MSU, and in Chapter Four on efforts exerted in Ankara to assist PAKD develop modern computerized data processing systems. The training programs were relatively more successful than the efforts to develop data systems. The reasons why this was so are imbedded to a large extent in the struggles PAKD had in establishing itself, as discussed in Chapter Two. These same struggles in Ankara also had their repercussions in modifying training at East Lansing. Therefore the overall evolution of PAKD is reviewed first, as a frame of reference for the discussions of training and data systems which follow.

The report concludes with a summary chapter on project administration (Chapter Five), plus Chapter Six which attempts to broaden the discussion

so as to embrace any generalizations which might be derived. From one point of view, NERP could easily be considered "small potatoes": a field team of only two advisors, no more than twenty participants over the five-year span, and annual U.S. inputs averaging less than \$200,000 per year. From another point of view, however, the minor magnitudes of the NERP experience may also be taken as a microcosm significantly representing many of the issues and relationships involved in the general effort of technical assistance to developing societies. This retrospective review of NERP is written from this latter point of view.

The crucial elements to be evaluated are the validity and utility of underlying concepts and models which NERP employed. In certain essential respects, NERP was a pioneering venture. Events conspired at several points to challenge the project's basic concepts, and several major readjustments had to be made. Chapter Six deals with these aspects of the NERP experience, and attempts to assess what we may have learned from its unique features.

With respect to what we have learned, the approach is open-ended. Whatever we believe we may have learned should almost surely not be taken as final or conclusive. The discussion will not strive therefore to arrive at conclusions. It will strive instead to arrive at suggested implications, at usefully formulated questions, at hopefully valuable statements of issues, and at definitions of possibly more viable alternatives - all of which should be subject to further exploration and experience.

The remainder of this initial chapter offers an introductory over-view of the project. But first some passing mention needs to be made of the elements of the experience which will not be dealt with at greater length

in which follows, important though the ingredients admittedly may be. There are two such ingredients: (a) the uncontrollable shifts in context which occurred over and beyond the manageable scope of project planning, and (b) the constellations of individual personalities who happened to be brought together into the matrix of the project and who had to be taken as "givens".

Many strongly contributing factors were not manageable. These were elements which had to be adapted to or adjusted to by postponing, scaling down, altering direction, foregoing, or extending horizons of time. For instance, the project was obviously in no position to manage the several major shifts which occurred in the political make-up of Turkey's central government. The organizational locus of project operations was immediately adjacent to and dependent upon the office of the Minister of Education. This office was occupied by five different men during the course of the project, plus a sixth who took over the reins of the Ministry three months before the project terminated. Each of these shifts was naturally a new departure of major significance to which the project necessarily had to adjust.

However, such transformations in basic context may well be a fairly common feature of technical assistance projects like NERP. Our interest therefore should be in the more or less manageable arrangements which might facilitate adjustment when such shifts do occur. We may have learned something from NERP about the process of adjustment.

Individual personality is another matter. The outcomes of many human enterprises may often largely be reducible to resultants generated by the interactions of individual personalities. NERP was no exception. It was a human enterprise, casting a variety of individuals into interaction with one another, each of whom was bound to have a variant view

of the undertaking and inject into it his or her own particular mix of insights and misapprehensions, skills and weaknesses, contributions and resistances, etc. Comprised of fallible human beings, the project was bound to fail in a lot of ways - and did so. Comprised of capable, intelligent, well-intentioned people, the project also was bound to succeed in a lot of ways - and did so.

The three cooperating agencies each contributed of course its own constellation of personalities. Mr. James Killen (now deceased) was the USAID Director when NERP began. Mr. Joseph Toner took over direction of the USAID in 1970 with a markedly different personality and different style of operation. In their different ways both men nevertheless were crucially instrumental in shaping NERP's adaptations and directions during their tenures. Similarly the personality of Mr. Bartlett Harvey was replaced by the personality of Dr. Kenneth Kauffman in the post of Deputy Director of the USAID. In 1971, the structure of the USAID was modified to incorporate an Assistant Director for Technical Assistance in the person of Miss Marjorie Belcher, who thus also became another significant factor in NERP's history. Personnel changed from time to time in the USAID's Program Office and in the Training Office and these changes had their effects. NERP operated in close conjunction with the USAID's Education Office, headed in the beginning by Dr. Harry Kerwin (now deceased), and then in order by Dr. Frank Price, by Dr. Kenneth Howe, and for the longest tenure by Mr. Leonard Pompa, who earlier from the Washington end also had been closely associated with NERP in its preliminary stages of inception. Each of these individuals contributed his or her own personally characteristic influence and impact on the flow of developments in NERP.

Michigan State University introduced another constellation of personalities, including a sequence of deans, faculty members who served as consultants and as professors for the Turkish trainees, and faculty members who played key staff roles in carrying out NERP operations. The latter included Dr. Cole Brembeck, Associate Dean and Director of MSU's Institute for International Studies in Education, who played a leadership role in getting the project launched by 1968 and served as Project Coordinator during the first year of operations. The personality, however, who provided the major portion of project direction was IISE's Dr. Harry Case, who took over from Dr. Brembeck the role of NERP Coordinator in 1969 and continued in that post through to NERP's termination in 1973. Dr. Ben Bohnhorst, Chief of Party, and Dr. Kenneth Neff, Human Resources Development Advisor, were the two faculty members assigned full-time to the field team in Ankara from 1968-1973. Reference to the constellation of MSU personalities would not be complete without mentioning Mrs. Wilma Hahn, Administrative Assistant to Dr. Case from 1969-1972, who among her many functions served as self-appointed "Jewish Mother" to all the Turkish participants sent by NERP to MSU. Each of these persons added their individual colorations also to the fabric.

The third constellation - the major one - included all the individual Turks of the Ministry of Education and of other cooperating agencies in the government and the universities who had an impact on or contributed to the work of NERP. Among this extensive group, certainly the personality of MOE General Undersecretary Nusret Karcioğlu was the main figure. He was the original head of the small nucleus group numbering

in 1968 fewer than twenty persons, which developed by 1973 into the MOE's Central Planning, Research and Coordination Office employing approximately 200 persons.

In 1972, Mr. Karcioglu was elevated to the position of Undersecretary for General Education. He thus moved his locus of operations away from the PAKD buildings situated on the west side of Ankara and into the central MOE offices which are situated among the Ministries clustering around the National Parliament Building in the south-central part of the city. His Deputy Director, Bedi Erdem, became the Acting Director of PAKD. Nevertheless, though Undersecretary Karcioglu's scope of responsibilities became enormously enlarged, he continued to hold on to the reins of PAKD's administration, working through Mr. Erdem, so that the PAKD might function within the framework of the MOE in a manner analogous to the way in which the State Planning Office functions for the nation as a whole. Two months before the end of the project, in May 1973, Mr. Karcioglu judged the time was ripe at last to relinquish his own personal direction of PAKD, and NERP-trained Dr. Nurettin Fidan was appointed head of the office.

The NERP project had its main impact on and operated chiefly through the twenty Turkish participants who were selected for advanced graduate-level training at MSU. Nine of these men - they were all men - pursued studies leading to doctors' degrees. The other eleven earned masters' degrees. They went to MSU in contingents at different times, in groups of two, or three, or four, and were phased back into the work of PAKD as they completed their training and returned to Turkey. Though the men were selected by an intensive screening, nevertheless each brought to the project and to his training experience his own unique syndrome of

interests, abilities, shortcomings, motives, patterns of response, etc., so that each also significantly imparted his own particular coloration to the fabric of developments. They earned an outstanding reputation for themselves as a group at MSU. One of them, Dr. Nurettin Fidan, established the highest academic record of any foreign graduate student in the history of the university.

The NERP project's fabric, therefore, was woven of many strands representing many interacting personalities, only some of whom are named above. For the purposes of this paper, however, the colorations which personality configurations lent to the fabric are taken as givens, basically beyond the scope of manipulation by management. We are not concerned here with the colorations of particular strands so to speak, so much as we are concerned with the nature of the loom and the developing patterns of the weave - that is to say, with the cooperative arrangements, project design, and processes of interaction to which deliberate management efforts were and could be applied. What we may have learned about these latter elements is the point of interest here.

Before leaving the matter of personalities, it should be observed that the NERP experience included what was probably a full representative gamut of personality contretemps. There were times of disagreement and strain between individuals, on occasion so intense as to erode confidence and raise alarms over the continuing viability of the project - for example, over a difference of view which developed early in 1972 between the two members of the MSU field team. (This issue was resolved in March of that year by Dr. Case's visit to Ankara and his consultations with USAID and MOE officials and the members of the field team.) One of the participants in the first contingent to go to MSU found himself ill-adapted

to the work involved, spent only one year abroad instead of two (during most of which time he enrolled in Indiana University rather than at MSU), and transferred out of PAKD and the NERP project soon after his return - thus becoming one of the project's first "failures", though he did earn a masters' degree and has since performed productive roles in other areas of education in Turkey. Another participant, by maneuvering to extend his stay at MSU beyond the two years provided under the terms of the project agreement, generated a quantity of exasperation in the USAID, in the MOE, in AID/W, in the U.S. Immigration and Naturalization Service, and at MSU. Many people "climbed the walls" over the case of Ali Arseven. He managed to wrest an undeserved extra five months of residence at MSU, which he nevertheless was persuaded he did deserve (indeed, taking the position that even so he was "discriminated against!"). A correlate of this clash of wills was the dismay generated on the part of USAID over the extent to which MSU appeared to them to abet the participant in his maneuverings, or to be "soft" in its dealings with him, to the subverting of project purposes.

So it went. There were some clashes of will and some jealousies within the PAKD from time to time, some of them deriving from the presence of NERP. One man was hospitalized briefly with a nervous breakdown. There were some frustrations among some of his subordinates over what Mr. Karcioğlu allegedly did, or allegedly failed to do, or allegedly was likely to do, or not do - a circumstance not unfamiliar to many a captain or quarterback. The Americans suffered acutely from time to time from impatience over postponements and delays. But all such elements of distress should probably legitimately be considered more or less "normal" correlates of human interaction among fallible human beings.

Through it all there developed a new central planning office within the MOE, increasingly capable of carrying out research, developing education sector plans, analyzing and processing timely and comprehensive masses of operational data, and preparing education sector budgets. The Ministry's data processing systems were upgraded in a number of ways and its previously underutilized existing data facilities were put into full operation. Moreover a new four-story wing was added to the PAKD offices to house a new data center capable of serving agencies on a government-wide basis, and a first generation of new equipment was to be ordered which would provide PAKD with far greater data processing capacity.

These were the concrete objectives of NERP. Through it all also many human resources were developed significantly. Nine men achieved or moved significantly forward toward the possession of a doctoral degree (which in Turkey confers very significant status - at the end of the project, three men possessed the degree, four more would receive theirs before the end of the year, and the remaining two others were within one year of completing theirs). Eleven men earned masters' degrees (the last three would be conferred in the Fall of 1973).

The professional advancement of NERP trainees included the selection of Sudi Bulbul as Deputy Undersecretary, the appointment of Nurettin Fidan first as Assistant Director and then as Director of PAKD, and the appointment of Galip Karagozogl̃u as PAKD's Director of Research. In April 1973, however, Karagozogl̃u left PAKD to take a responsible position with the Turkish Scientific and Technical Research Association, as Secretary of its Technical Manpower Development Section. His position at PAKD was filled by NERP trainee Mustafa Aydin. In May 1973, when Fidan was made head of PAKD, Kemal Gucluol and Husnu Cila were promoted also to positions as Assistant Directors.

Several of the men were selected to attend various international conferences (in London, Paris, Strassbourg, Malta, Washington, Bogota). Several were selected to give part-time instruction at Hacettepe University or at Ankara University. They formed effective professional working relationships with each other and with significant others in the MOE, State Planning Office, Ministry of Finance, and the universities. The outputs of the doctoral researches contributed to policy-making and planning within the MOE and SPO. NERP participants in the PAKD earned a reputation as a "brain trust", thus becoming a focus both for pride and suspicion. Educational researchers from the universities began to turn to PAKD for consultative and technical assistance, a phenomenon never before witnessed in the MOE.

Other offices in the MOE and the Turkish government also began turning to PAKD for help with technical problems which they could not solve by themselves. For example, the MOE Personnel Office asked PAKD to develop a basic computerized operational file of data on teaching personnel, an element absolutely essential to personnel administration. As another example, the State Statistical Institute entered into a cooperative agreement with PAKD for PAKD to help in processing SSI's growing backlog of school statistics from previous years. In addition, beginning in 1971, OECD-supported studies of central and provincial educational administration in Turkey were given to PAKD to implement. For all such reasons as these, Mr. Karcioğlu considered NERP to be the most important and valuable educational project ever carried out in Turkey.

A summary over-view of NERP may be provided by referring to the terms of the original Project Agreement (PRO/AG), the PROP and the subsequent PRO/AG that implemented it. Summarized, these were as follows:

(1) That MSU assign a field team of full-time advisors to Turkey. They would work with Mr. Karcioğlu and his group for specified purposes and targets. The MOE would provide them office facilities and staff assistance. The size of the team was expected to grow to five members (even more were projected in earlier documents). Two MSU staff arrived in 1968. The field team never grew beyond this number, and the original two men served for the duration.

(2) That the MOE select and designate qualified Turkish personnel for graduate training at MSU, which would equip them with competencies needed to staff PAKD. The MOE would cover international travel expenses and pay the participants' salaries during their two-year stay abroad. USAID would provide them per diem and cover their educational expenses. The original numbers projected were for twelve participants. This projection later was extended to twenty-two. Twenty men actually trained.

(3) That the MOE would utilize certain numbers of man-hours per year of short-term consultant help. Annual projections were budgeted for this sort of help, but PAKD made very little use of these resources.

(4) That project operations at MSU would be handled by varying portions of various staff members' time. The Institute for International Studies in Education in MSU's College of Education gave direct supervision to the project. Provisions were made for periodic visits of staff from campus to Ankara and from Ankara to campus. The IISE coordinated the training programs of the participants.

(5) That the project would develop a small library of reference works in educational research and planning. Some smaller items of data processing and duplication equipment also were acquired.

(6) That the project would be completed by 1971 at a cost to U.S. sources of more than one million dollars. The project actually continued into 1973, but at a cost of less than a million dollars. The MOE expended sums which were at least equivalent to U.S. dollar inputs.

One may in retrospect characterize the project's initial terms as unrealistically ambitious and over-optimistic. It proved to take much longer than anticipated to accomplish the goals originally targeted. Even so, some of the goals were only partially achieved, though the time frame was extended. In general, when the work encountered roadblocks and frustrations, the decisions were to extend the time and scale down the inputs. It was not a question of under-supporting the work, as evidenced by resources for short-term consultants which were always available but rarely utilized. Instead it was a question of scaling down projected resources to levels closer to what the work was able to absorb.

While to the Americans it may often have seemed that the project was disappointingly continually falling short of what had been projected, to the Turks involved the prospects were quite different. In Mr. Karcioğlu's view, for example, the project really started as early as 1965, from very small beginnings and in a not altogether hospitable environment, and from that point progressively grew and expanded into very significant proportions. His frame of reference would be in terms of what was achieved over what formerly had never been, rather than in terms of discrepancies between what one might say would or should happen and what actually did happen.

There were others among his Turkish colleagues who were dubious about the undertaking and resisted it. From their point of view, what actually happened was too much too fast. There were still others (in the SPO and among the participants) who, like the Americans, might have wished much more could have happened more quickly, but who nevertheless recognized that

what did happen was a significant stride forward over what had been.

Finally, there were others - one, for example, in the universities - who believing no good thing could ever come out of the MOE were skeptical that anything really significant at all had happened in establishing PAKD.

What then did happen? Why was the project characterized by extending time frames and corresponding down-scaling of inputs? Why was the project able to utilize only two full-time field team members when five or more had been projected? Why was there only a barely minimal use of part-time consultant help? An understanding of PAKD's evolution and its several turning points may help answer these questions. This is the subject of the next chapter.

CHAPTER TWO:

TURNING POINTS IN PAKD'S DEVELOPMENT

Turning Point No. 1: Launching the Project. The first turning point was in getting the project started. NERP was launched into the cross-currents of a particular situation. Its origins were as follows:

Turkey took an important step following its 1960 Revolution by instituting State Planning into the constitutional structure of its government. The State Planning Office (SPO) was organized in 1962, and Turkey's first Five-Year Plan covered the 1963-1968 interval. The SPO was organized as an executive secretariat under a Higher Planning Council, which Council is chaired by the Prime Minister and has as members certain of the Ministers from among several key Ministries. The SPO thus functions directly under the Prime Minister as a planning agency for the government as a whole. The Five-Year Plans which it prepares, and which are ultimately enacted into law by the Grand National Assembly, include developmental targets and programs for all sectors of national activity, including education.

After the SPO was established an additional felt-need emerged. The felt-need was to develop in each of the Ministries additional planning agencies for each of the specific sub-sectors, agencies to coordinate the planning activities of the particular Ministry on a Ministry-wide basis, and to serve as that Ministry's liaison with the SPO in developing new five-year plans and in coordinating within the

Ministry the implementations of the current five-year plan.

This felt-need was one of the main motives for launching NERP. By 1965, officials of the SPO, MOE, and the USAID Mission in Turkey had developed a common interest in the prospect of engaging in an AID-supported project to assist the MOE in establishing such a central planning agency. Since the idea included professional staff training at graduate levels, the prospect was to engage the services of a major U.S. university as a contract agency for the project. A two-man team (Professors Gross and Williams) came from MSU to make a feasibility study, and it rendered a favorable report in October 1965.

A considerable period of negotiation ensued, extending over the next two years. There were changes in key ministerial posts during this interval, entailing rethinking and reapproving the project idea by the MOE. There were exchanges between Washington and USAID Turkey to clarify and reshape ideas concerning the project from

AID's point of view. There was a search by MSU for personnel for the field team, and a preliminary marshalling of the university's resources.

The intention to proceed remained firm during this time, and from the Turkish side the MOE had already appointed Nusret Karcioğlu to head the new office, then designated the "Budget and Planning Department". He worked with a small nucleus Turkish staff and established initial operating procedures for the agency.

In the summer of 1967, Mr. Karcioğlu attended a conference at

MSU to learn how the university operated in relation to such international projects (in this case, the MSU-Thailand project, which was supported by AID and was closely analogous to the proposed Turkey project.) Mr. Pompa, then posted in Washington, accompanied Mr. Karcioğlu to MSU, where they met Dr. Neff (then a member of the MSU-Thailand project staff) and Dr. Bohnhorst (then general manager of an instructional television project located at Purdue University, who was being considered for the post of Chief of Party for the Turkish project). In the fall of 1967, Dr. Brembeck and Dr. Bohnhorst conferred with AID staff in Washington and visited Ankara to confer with USAID and MOE officials there. MSU entered into a formal contract for the project on January 9, 1968, and Dr. Bohnhorst was appointed to the MSU faculty as of that same date. He arrived in Ankara on January 30. Dr. Neff visited Ankara for a month's TDY from Thailand during May 1968 and joined the project on a full-time basis in August 1968.

Thus the project got under way. There were, however, other elements of background relevant to the launching of NERP. In addition to the interests relating to the SPO, there was a sequence of recent developments within Turkish education itself which bore significantly on the situation to which NERP was addressed.

In the first place, there was a long-standing felt need for educational reform, which became intensified by post-World War II demands. In the late 1950's, the Ford Foundation supported the formation

of a National Commission on Education and financed its activities for making a comprehensive study of the needs of Turkish education. The Commission's Report was published on June 5, 1960, six days after Turkey's May 29 Revolution. Its recommendations included the need to develop within the MOE facilities and services akin to the services which NERP aimed to help develop in PAKD.

In the two years between the 1960 Revolution and the organizing of the SPO, the National Commission's recommendations were the subject of considerable discussion and some controversy. In 1961, USAID supported the formation of a second study group, which came to be known as the "Committee of Eleven", to reevaluate the National Commission's recommendations and make additional recommendations of its own. The Committee of Eleven's recommendations also included a need to develop research and planning facilities within the MOE.

In 1963, USAID supported a project which was launched in the area of educational tests and measurements, and which was related also to this need. The project included the training of Turkish participants, at several different U.S. universities, in the fields of statistics, guidance, research, and educational measurement, so as to help staff a Bureau of Tests and Measurements, organized as a branch of the National Board of Education. The Board of Education is an advisory body to the Minister of Education, and is responsible for curriculum, program, and standards in the Turkish schools. The Tests and Measurements Project included the construction of office

facilities for the Bureau of Tests and Measurements, the purchase of a 1620 IBM computer and ancillary equipment, and the consultative help of educational researchers from the U.S. to assist in designing and carrying out several educational research projects. The Bureau undertook the planning of guidance services for Turkish schools, the development of standardized testing materials, and the processing on the 1620 of entrance examination results and graduation examination results for all of Turkey's lycee level and higher schools (but not including university level examinations beyond the entrance examinations).

The Tests and Measurements Project ended in 1965. When Mr. Karcioğlu was appointed head of the new Budget and Planning Department (now PAKD), his nucleus group was housed in a set of offices on a back hallway of the Bureau of Tests and Measurements building, from which position he and his group operated during the interval till 1968 when the NERP project got under way. One reason for housing Mr. Karcioğlu's group in the Bureau of Tests and Measurements was to give his group access to the IBM 1620.

This arrangement appears to have entailed a number of questions and ambiguities which were differently construed in various people's minds. What was this new office? What was it going to become? Was it part of the Board of Education? Should it be? Was it a subsection of the Tests and Measurements Bureau? Or was it somehow an office related directly to the Minister? Or only to one of the Undersecretaries (not the Technical and Vocational Undersecretariat,

which was trying to set up its own planning office)? What was its proper scope and functions? Was it an outgrowth of the National Commission - Committee of Eleven - Tests and Measurements sequence? The Head of the Board of Education tended to entertain one set of surmises about these questions, the various Undersecretaries held different sets, and the SPO still different sets. Mr. Karcioğlu had his ideas, intentions, and expectations. USAID had its understandings and expectations. And the MSU field team members entered the situation with their different perceptions. It was interesting in the first stages of the project to observe the MOE organization charts which various offices issued. The position of the PAKD tended to move up and down the charts like a yo-yo, depending on which office designed the diagram.

In summary, the chief elements of the situation in 1968 consisted of (a) motives stemming from the Turkish determination to implement continuing development on the basis of systematic planning and research, as represented by the inauguration of state planning and the need to install planning agencies in each of the Ministries to work with the SPO; (b) motives within the education sector for reform and modernization, so as better to serve Turkish Post World War II needs and her rapidly expanding and shifting populations - in particular the MOE's urgent need for more timely and comprehensive analyses of operational data in support of educational decision-making; and (c) the designation of a very small and ambiguously situated nucleus

staff to try to take hold of these matters and at the same time try to gain acceptance within the MOE and establish itself as a viable agency.

The USAID had other projects already going when NERP began, and its expectations for NERP naturally included certain cross fertilizations with some of these. In particular at the time, the Turkish government was undertaking to transform its basic system of budget preparation from classical line-item procedures over to PPBS procedures. The USAID was supporting a project in cooperation with the Ministry of Finance for this purpose. The idea entailed getting one or more of the sectoral Ministries to pioneer with the Ministry of Finance on pilot budget transformations. The MOE was one chosen so to pioneer. And Mr. Karcioğlu's new little group also was given the task of coordinating this basic work. Therefore this factor needs too to be added to the picture of NERP's beginning.

One wondered if too much were being expected from such scanty initial resources so tenuously situated. Nevertheless, by 1968 the NERP project was formally under way and began to confront its challenges. The field team set to work with their Turkish colleagues, charting in 1968 the course ahead for the project. But they were not yet aware of all the rocks beneath the surface.

Turning Point No. 2: Authorizing Participants. The next turning point occurred in April 1969. By that time one of the project's basic assumptions was under severe strain - the question of whether

or not the MOE would in fact permit the selection of necessary participants.

In an eleventh-hour decision (indeed, some said the clock read 11:59), the question was favorably resolved, and Mr. Karcioğlu was permitted to proceed with the selection of additional men for graduate training at MSU. By this time, however, the projections of schedules and targets which had been generated in 1968 were seriously out of kilter. They had been predicated on the assumption that additional selectees would have been designated long before then. Moreover, in April 1969 all that was decided was that they could be selected - the actual designation of individuals still remained to be done. The April decision meant that the project would proceed, but it also meant that a total revamping of project plans had to be made.

By the time the field team arrived in Ankara in 1968, Mr. Karcioğlu had already designated six men as prospective participants (Fidan, Nalçici, Karagüzoğlu, Bülül, Güllüoğlu, and Akalin). These men were eager to depart immediately for the U.S. and expected to do so. The field team, and USAID, set to work to process these men, and the field team also set to work to define the full set of participant needs for the project, including job descriptions, training programs, schedules of departure and return, and project targets for parallel field work in Ankara. It was at this stage that a total slate of twenty-two participants was projected.

Already, however, the next step of obtaining the additional

sixteen individuals began to encounter resistance within the MOE. Mr. Karcioğlu remained confident that he would ultimately be allowed to proceed, but the making of the decision about the sixteen kept being postponed.

The first adjustment which NERP made in the face of the delay was to hold back on the processing of three of the already-designated participants. Nalcici and Fidan departed for MSU in June 1968 and Karagüzoğlu in September, but Bülbül's, Güçlüoğlu's, and Akalin's departures were postponed - first to January, 1969 and then, when the decision still was not forthcoming, to March 1969. They finally departed in June 1969, only after the April decision had finally been made.

The second adjustment was the revamping of project plans. The field team began this undertaking on an interim basis in the winter of 1968-69, when it became clear (a) that the key decision might still be some time in arriving, and (b) that the original set of plans were no longer workable. In particular, the scheduling of short-term consultants and additional full-time field team members was set back, in view of the fact that PAKD clearly had not developed a state of readiness to absorb them.

A conference was scheduled for April 18, 1969, to be held in the large meeting room of the State Statistical Institute, with USAID representatives, MOE General Directors, and MSU representatives attending. The purpose would be to evaluate NERP to date and to consider proposed

plans for the next two years. The interim revised plans would serve as the basis for this presentation. Dr. Brembeck would attend the conference from MSU.

By April 1, the MOE still had not decided whether to assign more participants to NERP. Dr. Brembeck arrived April 15, and there still was no decision. Nevertheless the conference was arranged and the hour set for the morning of April 18. The Ministry reached its decision on April 17 agreeing to the selection of sixteen more participants, much to the relief of the MSU team-members, who by now felt they were living a kind of "Perils of Pauline" existence. The MOE's decision was announced at the beginning of the conference. Mr. Killen indicated the next day that he was prepared to recommend extending support for NERP for two more years, and the project thus traversed Turning Point No. 2.

Turning Point No. 3: Selecting New Participants. Turning Point No. 3 occurred in September 1969. By that time the MOE had decided on fifteen additional participants (a sixteenth selectee - the only woman - subsequently withdrew herself). But only four of the fifteen knew enough English to pursue graduate studies!

This was without question a serious blow to project planning, and a sharp and disappointing surprise to the MSU field-team. After April they had consulted at length and on a nearly daily basis with Mr. Karcioğlu and his staff on the selection process. A list of criteria had been drawn up and (the team members believed) mutually

agreed to. Command of English was first and foremost among these. Nevertheless, eleven of the men chosen not only could not handle English at graduate levels, they could not speak English at all! The situation was impossible: in less than two years' time, eleven men obviously could not be brought from zero level English to graduate level competencies and then proceed with two years of graduate training. What had happened to produce this "bind"?

What had happened was that MSU and USAID expectations and projections had again collided with constraints imposed by the realities of MOE operations. The MOE required that the additional participants be selected on the basis of a nation-wide competitive examination open to any and all qualified Turkish education personnel. This examination was held July 4, 1969, and taken by more than one hundred applicants who came from many parts of Turkey. MOE regulations required that any selectee must already have served two years in Turkish education. In the face of increasing radical foment in Turkey in 1969, a new regulation stipulated that any selectee must be scrutinized by a full-scale security clearance, and indeed Mr. Karcioğlu was careful to make sure that the whole selection proceeding was conducted in utmost confidence.

The specifically proposed criterion of English competency had to give way in large measure to "political" considerations within the MOE. All of the first six participants chosen by Mr. Karcioğlu before 1968 had already been successful AID participants in one or another prior project in previous years, and thus had developed

their command of English. Within the MOE, potential participants for new projects who already could speak English would have to be drawn from this same universe of those who had already been participants abroad, almost exclusively in fact from among those who previously had been AID participants.

To have selected exclusively from among these people would have presented Mr. Karcioğlu too big a problem in justifying his action to his Turkish colleagues, especially to those who were resistant or hostile to his developing a strong PAKD. NERP was already vulnerable on this point in view of the fact that the first six men already sent to MSU were all former participants. Was this to be the way NERP would stack the deck for all its participants? Were no other, newer, younger, Turkish talents to be given a chance at this golden opportunity? Was this to be an American "closed shop" operation? In any case, Mr. Karcioğlu finally decided he had to give ground on applying the criterion of English competency. Four of the additional fifteen whom he finally chose in fact had also been former AID participants and did already possess command of English. The remaining eleven, however, were newer talents and did not speak English.

There were other criteria which Mr. Karcioğlu applied. These included measures of intelligence and relevant academic competence. They also included less tangible characteristics, such as character, commitment to Turkish educational development, and an eagerness to

innovate, for which qualities he used his own judgment as the measuring instrument through a series of intensive interviews with the applicants and through consultations among his staff and colleagues. No element of favoritism entered the picture. He knew it would be a shock to his MSU advisors that most of his selectees would not know English. Independently, he made what he considered the best choices available to him, and presented these to his American counterparts. Another major "turning point" had been reached.

There was thus again a valid basis for asking whether USAID should continue supporting the project any further. It was clear that additional time extensions would be required, that the building of a trained PAKD staff would take much longer, and that a readiness for using short-term consultants and the projected development of new data processing systems would be much delayed. There was a question of whether two full-time field advisors had been or could continue to be fully utilized, putting aside considerations of any additional full-time field-team members. There was the further serious question of whether indeed it would be possible to bring eleven non-English-speaking selectees up to graduate levels of competence within a feasible period of time. The project if continued would again need to make many basic readjustments.

It was determined to make the try and continue the project. The following main adjustments were adopted:

(a) The new designees would remain in Ankara during 1969-1970, becoming thoroughly oriented to the work and needs of PAKD. Special arrangements, however, would be made for the four English-speaking men in order to try to expedite their MSU training programs. Dr. Neff and Dr. Bohnhorst would conduct in Ankara a graduate level credit seminar with them on basic concepts of educational planning and development, which credit would apply to their programs once they reached MSU. This seminar was successfully carried out during the winter and spring, and the four men departed in the summer of 1970 to enter their doctoral level programs in the U.S.

(b) Special arrangements also would be made for the eleven non-English-speaking men to teach them English, and programs at the masters level would be designed for them at MSU. They would be assigned first to the MOE's language center at the Gazi Pedagogical Institute, daily from 9:00 a.m. to 3:00 p.m., and return to PAKD in the late afternoons for work assignments there. The native speaking teachers at Gazi consisted mainly of Peace Corps Volunteers. Unfortunately these same PCV's became a specific target of Turkey's increasingly obstreperous radical agitators. The PCV's were withdrawn from the Gazi center in the spring of 1970, and some other arrangements had to be made for NERP's trainees. USAID entered into special arrangements with the language teaching program at the Turkish American Association to provide them with intensive instruction and the men transferred to that center. Four of them were ready to depart in September 1970. The

remaining seven continued at TAA through 1970-71. One of them failed to develop sufficient competency to pass the qualifying examinations and dropped out of the program. Three were ready to depart in June 1971, and the last three left for MSU in September 1971. They still needed further language training when they got to MSU, but ultimately all of them did achieve the necessary competence and completed their master's programs creditably.

(c) An alternative approach in lieu of the use of short-term American consultants would be adopted to try to foster PAKD's data systems development. It was proposed that PAKD contract with a new agency known as SISAG (which stands for "Systems Research Development"). SISAG was associated with Hacettepe University in connection with the new data center being installed there. SISAG was organized under the aegis of the Hacettepe University Foundation for the purpose of stimulating computer data processing applications and for obtaining jobs for the Hacettepe Computer to perform until the university could make its own full uses of the facilities. It was proposed that PAKD utilize SISAG's services for designing PAKD systems and pilot projects until such time as PAKD's own staff and facilities should develop. PAKD and SISAG began negotiating with one another in 1969 and made some tentative efforts to work together in 1970, but this approach ultimately proved to be a blind alley and came to naught. The two agencies were not able to surmount (i) the difficulties of PAKD's lack of ability to specify its data processing objectives in terms SISAG could handle, (ii) SIGAG's lack of ability to maintain

good working relationships with PAKD personnel, and (iii) PAKD's hesitancy to surrender to SISAG elements of planning which PAKD considered properly its own. So considerable energy and time were expended fruitlessly on this departure. (See also references to SISAG in Chapter Four below.)

Thus NERP traversed its critical Turning Point No. 3 by means of adjustments some of which paid off, but others of which did not. However, September 1969 was the point at which the numbers on idealized projection charts representing participants were transformed into actual living persons. Even though the "fits" between the persons and the charts were far from perfect, the project now had a more tangible basis on which to operate. One now knew who the people were and could assess more realistically what kinds of training were needed; and one was also now confronted with the sobering facts of how long it might take. In short, the cadre of NERP professional trainees was now in hand.

Turning Point No. 4: Baptism of PAKD. The next turning point was perhaps the most crucial of all. It occurred in the Spring of 1970. Earlier stages of PAKD's developments might have been characterized as traumas of conception, gestation, birth, and infancy. Indeed, in these earlier stages, the agency was not yet formally known as PAKD, having first been titled the "Budget and Planning Department" and subsequently the "Research and Planning Office". The group was baptized with its formal title, "Planning, Research, and Coordination Office " (PAKD), in the Spring of 1970. More

importantly it was transformed from a nucleus, ambiguously-situated, small group into (a) a large organization, (b) equipped with buildings and facilities of its own, and (c) recognized by the Ministry as a separate, discrete entity in its own right - not as a sub-section of the Board of Education or of any Undersecretariat, but as the central planning, research, and budget coordination office for the Ministry as a whole. To be sure, there was much that was nebulous and confusing about the functions and operations of the agency now designated PAKD, but it had crossed an important divide. It was "baptized". It had acquired its true name. It no longer oscillated like a yo-yo up and down on the MOE organization charts. And it had been given muscle in the form of sizeable staff and facilities.

Specifically what occurred was: the staff and facilities of the Board's former Bureau of Tests and Measurement were removed from under the jurisdiction of the Board of Education, consolidated with Mr. Karcioğlu's group, designated the PAKD, and Mr. Karcioğlu took over direction of the combined organizations. The Minister authorized this move in March 1970 and it was accomplished by May.

Several factors contributed to this move. One was the simple fact that Mr. Karcioğlu's group since before 1968 had become increasingly effective in its work. Despite the crises of the 1969 decisions regarding NERP participants, his group was rendering increasingly valuable services: in liaison with the SPO, in coordinating and transforming MOE budget development procedures, and in

ordering, publishing, and distributing current operational data on Turkish education. Mr. Karcioğlu had developed what he called an effective "ready force", upon which the Minister had found he could rely.

A second factor was that the Tests and Measurement Bureau had become since 1965 less and less productive, its operations having devolved almost entirely to seasonal processing of examination results. Its 1620 IBM and other equipment remained idle for large parts of the year.

A third factor - no doubt the most crucial - was that one of the governmental shifts referred to in the introduction had occurred in the Fall of 1969, and a new Minister had taken office, Professor Orhan Oguz. A modernist in outlook, Professor Oguz recognized the potential significance of a strong central planning office equipped with modern data processing facilities. (He was the first to propose applying computer processes to personnel data files.) He therefore acted in firm support of the work and ordered the PAKD consolidation of resources. Not unnaturally, the Board of Education resisted; but Prof. Oguz insisted, and PAKD was baptized. Turning Point No. 4 had been traversed.

Many developments ensued from this turning point. The first NERP participants - Fidan and Karagüzoğlu - completed their academic training and returned from MSU in the summer of 1970 to pursue their doctoral research projects in Turkey. (Nalcici had returned in 1969, but he was the one referred to in the introduction who shortly transferred out of PAKD and made no significant contribution to the

was to come in 1971, when another major governmental shift occurred.

Turning Point No. 5: Responding to the Challenge of Reform.

March 12, 1971, is a significant date in Turkish history. On that date the military authorities issued a memorandum to the President, indicating that unless drastic civil measures were taken immediately to establish law and order and to proceed expeditiously with needed reforms, the military, as custodians of the Kemalist Revolution, would be compelled to take action on their own. On that date, the Prime Minister and his Cabinet, including Minister Oguz, resigned from office. Shortly thereafter a new "above party" administration and cabinet was formed under Prime Minister Nihat Erim, including Mr. Sinasi Orel as Minister of Education.

This shift was prompted by increasingly serious outbreaks during 1970-71 of violence generated by terrorists. It was also occasioned by the fact that the majority political party then in power, though it had won the 1969 elections by considerable margins, had subsequently split into factions, leaving it with too slim a majority in the National Assembly to deal forthrightly either with needed reforms or with the social disorders being fomented by the terrorists. After March 12, domestic order was restored by placing twelve key provinces under martial law. The new "above party" administration focussed its energies on dealing with reforms. In education, the reformist movement strove to develop new strategies, tactics, and programs. Minister Orel chose a "special assistant", Dr. Ilhan Üzdil, to execute the efforts. A committee was formed under the

chairmanship of Professor Necat Erder from Middle East Technical University to formulate basic new strategy. The committee published its report in the summer of 1971. "Task Force" committees were formed to work on tactics and programs in eight specific areas of education. These task forces worked through the fall of 1971 and winter of 1972. Their outputs served as a basis for drafting in 1972 new basic laws in education. The National Assembly enacted its new education laws during the 1972-73 sessions of parliament.

Though these new laws went through several political "sea changes" between their original drafts and the forms in which they were enacted, they nevertheless represented a culmination in 1973 of the reform efforts initiated in 1971. They included authorizations for Turkish education to move forward toward (a) an eight-year basic primary education program, extending the current five-year primary structure, (b) closer integration of technical-vocational programs and general education programs at middle school and upper secondary school levels, (c) greater access to higher education for students in technical-vocational areas, (d) more concentrated use of guidance programs in channeling students to productive destinations, (e) closer coordination in planning developments among the autonomous universities, and (f) development of "life-long", non-formal, community-need-centered, adult education programs, including basic literacy training.

The 1971-73 concern with new strategies was of course only one

among the many MOE preoccupations during the period - though it was a main concern, added onto the vast array of operations for which the Ministry is regularly responsible. There were other on-going activities also related to reform, including continuing efforts to transform budgeting procedures. Furthermore, the Ministry worked during this period under OECD-sponsored projects to study its needs for central and provincial administrative reorganization.

The reason for reviewing here these several reform efforts is simply to point out that they constituted a significant turn in the affairs of the Ministry, representing its responses to the basic challenges of reform. As such they also represented a "turning point" in the development of PAKD, since the members of PAKD's staff - and NERP-trained participants in particular - became deeply involved in the efforts. They made many contributions. They "tested" themselves and proved themselves worthy. If the March 1970 acquisition of facilities represented the "baptism" of PAKD, then its successful responses to the challenges and tasks following March 12, 1971, represented PAKD's "confirmation", as a viable, productive agency.

Mr. Karcioğlu was a member of the original strategy committee. NERP participants Fidan and Karagüzoğlu represented him and contributed extensively to the report which the committee published. Bülbul, Güçlüoğlu, and Akalın returned from MSU at the end of the summer of 1971 - (they had extended their stays three months in the U.S. in order to attend and observe PPBS budgeting procedures in Albany, New

York). They too became immediately involved in the "task force" committees which were just then getting organized. Bülül, for instance, arrived back in Ankara on a Sunday, and on Monday went actively to work on three of the task forces. PAKD in general served as a staff secretariat for the various committees, assembling data and preparing timely reports. They served well. Dr. Üzdil commented that he had felt very much "alone" at first as Minister Orel's special assistant, but in his associations with PAKD and the NERP trainees he found the kind of staff support and working relationships he was seeking.

So Turning Point No. 5 came to PAKD as a challenge and opportunity, in the form of an intrusion from above, when the government at large shifted its direction. PAKD traversed this turning point by rising to the challenges and performing creditably. The contributions of the NERP trainees were particularly notable.

To be sure, the outputs and outcomes of the 1971-73 reform efforts were far from perfect. In the proposals for change, toes got stepped on and some oxen got gored (the university oxen bellowed especially loud when they feared their precious autonomies might be curtailed). Many proposals were unrealistic (as a panel of OECD experts firmly tried to warn the Ministry at a conference held in November 1971). The new laws finally enacted left many persons disgruntled, including some of the NERP participants who had labored on them (but they had learned something about how intractable and resistant to change established institutions can be - change is the art of the possible).

During this period, Mr. Karcioğlu was elevated to the post of Undersecretary for General Education (in the Spring of 1972). His role as head of PAKD undoubtedly helped recommend him for the job, and his promotion promised further to insure PAKD's establishment as a viable MOE agency. He selected as his Deputy, Sudi Bülbul, who had been especially effective in working with the task forces.

Even so, sources of resistance still existed. The influential Head of the Board of Education, Mr. Zekai Baloğlu, had always maintained that PAKD's functions belonged under the Board's aegis and had never accepted as proper the separation of the Bureau of Tests and Measurements and its consolidation into PAKD. Mr. Baloğlu also had resisted the proceedings of the reform strategy committee, and as a result, Minister Orel had removed Mr. Baloğlu from office. But in late 1971 there was another overturn of the Turkish Cabinet, and in the Spring of 1972, soon after Mr. Karcioğlu's promotion to Undersecretary, there was still another change of government, when Professor Sabahattin Özbeck became Minister of Education under Prime Minister Ferid Melen. Professor Özbeck re-installed Mr. Baloğlu as Head of the Board of Education.

This meant in effect that PAKD's struggle for its separate identity would continue. Also Mr. Karcioğlu was now more removed from immediate day-to-day direction of the agency. He was therefore less able to deal with PAKD's own long-standing internal needs for organizational development, a number of which by 1973 had become

urgent. So PAKD still had its problems and would likely continue to have them for some time to come. But by traversing Turning Point No. 5 as it had done, PAKD had now established a record for itself and a backlog of experience as an agency for dealing with issues of change in the Ministry of Education.

Turning Point No. 6: Termination of NERP Assistance. Stresses and strains connected with this last turning point occurred chiefly between the American agencies - AID/W and the USAID, and MSU. PAKD and the MOE, though affected, did not become party to the struggles. The question was how the NERP project should be terminated. All parties anticipated NERP's termination. No one argued that it should be expanded or extended indefinitely. The issues and disagreements (and resulting frictions), turned on how best to phase out. The project traversed this turning point in March 1972 when Dr. Case's visit was able to produce understandings agreeable to all parties.

It is hard even in retrospect to nail down why the issue generated the stress that it did. Maybe some of the following factors figured. Maybe they all did. Maybe there were some others not expressed. One thing stands out clear: from the field team's point of view it was a very stressful time indeed. Let this report try to review the matter from the presumed points of view of each of the cooperating agencies.

Apparently the USAID, beginning in the Fall of 1971, determined

to take a "hard look" at NERP. Perhaps it felt the project had never really been so scrutinized and needed to be. Perhaps there was an inclination to phase the project out as quickly and cheaply as possible. Perhaps there was simply a desire to try to pin down the elements of the NERP operation as rigorously as possible in terms of the new "Logical Framework" for evaluation which AID was just then adopting on a world-wide basis.

In any case, the USAID did take a "hard look" - in fact a whole series of hard looks. The field team was invited to participate on a "Mission helpful" basis, and tried to do so, but apparently failed to communicate much if anything about NERP that was satisfying to the Mission. Many memos and alternative proposals were submitted for review. No version of any of these rang many bells. Two of the questions which were posed were: (a) What should the project look like if its budget had to be cut by 25%? A response was made to this question, but it turned out that the money involved was not the critical question. (b) How do you know that everything which has happened to date in PAKD would not have happened anyway without the services of MSU? References even to the training program on campus did not satisfy - the USAID itself could have sent participants abroad to one or more universities without MSU's intermediation or overhead charges.

It proved impossible to answer the USAID questions satisfactorily and in January 1972 USAID decided to solicit from PAKD its statement of its needs and to postpone further deliberations until

PAKD sent its reply. The USAID --field team discussions had narrowed down to two possible alternatives, presumably one or the other of which would be endorsed depending on PAKD's reply. Throughout all these deliberations, incidentally, USAID did not want inputs directly from campus - this was an "in-house" proceeding into which the field team had been invited to participate. Moreover, the field team was expressly requested not to advise PAKD in formulating its answers, and the field team refrained as requested, though it anticipated that PAKD was very unlikely to supply the kinds of specificity or carefully detailed arguments which the USAID apparently desired. The field team was correct in this anticipation.

The kinds of tensions these sessions generated were very effective in bringing to the surface all sorts of long-standing exasperations and frustrations, and they served to do so in the minds of the two field team members. Both men had borne the same burden of frustration over the many shortfalls and prolongations of the project work. They responded differently, however, with respect to how best to deal with these frustrations from January 1972 forward. Dr. Bohnhorst, being wrongly convinced that the USAID was disposed to curtail NERP funding, became persuaded that the best way to get the most mileage out of minimum funding would be to reduce the field team to one person through June 1974, plus the services of some never-till-then-used short-term consultant help. Dr. Neff was convinced that Bohnhorst was mistaken about the issue of funds (Neff was correct), and that

the MSU field team ought to fight for the proposition that both men should stay through 1974. Dr. Neff rejected the prospect of his going home in 1972 under a cloud of failure. Perhaps Bohnhorst felt that Neff was not facing realities. Perhaps Neff felt that Bohnhorst was being too submissive. Both men, whole-heartedly of course, wanted the work of the project to proceed if possible to conclusions satisfying to all, including AID. Each sincerely held to his point of view. They determined to agree to disagree and so presented their outlooks to USAID.

The USAID was distressed by the manifestation of a team that could not resolve its own differences. They were also no doubt distressed by a team that could not give them satisfactory answers. Their concern took the form of a worry that the project was floundering, for which they naturally held the Chief of Party responsible. Word went from AID/W to MSU that the project was "in trouble". There was even a concern, surprisingly, that the two field team members could not get along with one another, a record of four years of the closest possible kind of collaboration to the contrary notwithstanding.

So it was a stressful time. Perhaps the wisest, most objective view of the situation would be that probably there was ample justification for everyone's outlook and concern. It is important to realize what the particular state of affairs of PAKD was at the end of 1971 and early 1972. Mr. Karcioğlu had not yet been promoted to

Undersecretary and was still struggling (not too successfully by American standards) to make some organizational sense out of the hodge-podge of the consolidated PAKD. The five NERP participants who had so far returned had not yet made much headway with their research projects having been swept up in the reform efforts. The SISAG venture had petered out into a dead-end. The Turkish Cabinet had turned over once again (in December 1971), and it appeared that the enthusiasms for reform may be ebbing. The November 1971 OECD conference had reviewed a lot of Turkish reform proposals which were patently unrealistic. Under the scrutiny of a hard look, it was not especially easy for the field team to present honest answers about the project's impact which would satisfy the managerial values which the USAID was constrained to apply.

Incidentally, none of the members of the USAID evaluation panel had, in his or her present roles, lived through the 1968, 1969, or 1970 traumas of NERP. Of course they knew about them, but none had participated directly in them. But perhaps this point is not relevant.

Perhaps, therefore, the USAID was justified in perceiving the project as "floundering" and that the Chief of Party was accountable, though the floundering to which the USAID was responding may have had a broader base. And maybe it did appear that Dr. Bohnhorst and Dr. Neff could not get along, though both men were astonished to hear it. In any event, there was a need to remove the tensions and

to resolve the substantive issue of how best to phase out NERP. Dr. Case's visit to Ankara in March 1972 served these purposes.

It was determined that both field team members would continue in Ankara till June 1973, provided the two men could work peaceably together (this was the easiest task ever assigned to the project); that field support would end then; and that the project would be over when the last participants returned from training at MSU in September 1973. These terms were agreeable to all parties, including PAKD, though PAKD anticipated a need for some continuing short-term advice after September 1973, which it hoped the USAID might be willing to provide independent of NERP. The Neff family purchased a new home in East Lansing area and looked forward to their reentry to the U.S. in June 1973. Dr. Bohnhorst proposed to stay in Ankara till March 1974 under separate university auspices, to collaborate with Nurettin Fidan on a follow-up study of NERP research outcomes. Both PAKD and the USAID welcomed this idea, and the MOE took steps to arrange for his residency since he would no longer be in Turkey under USAID auspices.

The final year of the project was the most productive of all. Traumas did arise over extending the MSU training programs for Kazanci (deserved) and for Arseven (undeserved), but again the cooperating agencies surmounted these stresses - bloodied somewhat, but unbowed on all sides. Fidan and Karagüzoğlu received their doctor's degrees in September 1972. Arseven received his in June 1973.

Gucluol, Akalin, Bulbul, and Aydin expected to receive theirs in September 1973. Kazanci would complete his by September 1973 and Cila by June 1974. All of the eleven originally non-English-speaking participants completed their training on schedule and earned their masters' degrees. At least two of them (Baykul and Okcabol) revealed talents warranting further work on toward doctor's degrees. Under Akalin's direction and with the assistance of other NERP participants who returned in the Fall of 1972, the data systems work finally began to take shape. At last by November 1972 PAKD was ready to utilize the services of a consultant in the area of data systems development, and Professor Martin G. Keeney spent the month of December in Ankara advising Akalin and his colleagues. Professor Keeney's contribution would culminate in PAKD's ordering a new 370 IBM computer, which PAKD expected to have installed in its new wing by June 1974.

NERP-trained PAKD researchers completed two OECD-supported studies which promised to lead to useful administrative reforms in Turkish education. NERP doctoral studies also contributed directly to these efforts. The education sector budget for 1973 was prepared in PPBS form through PAKD efforts, and PAKD staff gave the Minister the back-stopping he required in getting the budget adopted in the National Assembly. Undersecretary Karcioğlu and his Deputy Sudi Bulbul continued in office in the central Ministry.

As of June 1973, PAKD was operating under the direction of Dr. Fidan and solving its internal organizational problems. Having been given authority to take charge, Fidan took steps to sharpen

definitions of staff responsibilities. He reorganized some sections of PAKD and began moving the agency forward on a "problem oriented" basis. As often happens when organizations change, some individuals became disaffected, especially those who had hoped they themselves might have been chosen by Karcioğlu to take over PAKD's direction. NERP-trainee Kamalettin Akalin was unfortunately among the disaffected, believing he had not been granted all the authority he should properly have been given to head up development of MOE data systems. Akalin was determined to pursue his important dissertation study to its completion but doubted he should continue his association with PAKD beyond that point.

In this way, PAKD traversed the trauma of NERP's termination. It did not become itself involved in the stresses and strains in the American camp, but it did encounter a few of its own. Prospects were bright, nevertheless, for PAKD's continuing viability and productivity.

This chapter has attempted to review the turning points in the evolution of PAKD as an agency. To try to foster this evolution was one of NERP's main thrusts at the Ankara end of operations. Most of the project's U.S. funds were expended, however, at the campus end, where twenty Turkish participants received advanced graduate training. The training effort was perhaps NERP's most significant thrust. In the next chapter the discussion turns to this topic.

CHAPTER THREE

THE ADVANCED TRAINING OF THE PAKD STAFF

1. Advanced training in the context of the objectives of NERP.

The objectives of NERP have been variously stated at various times. However, it was apparent from the beginning that the development of a cadre of professionally trained educational researchers and planners would be a critical element in the program; although possibly the importance of this element was not at first given as high a priority as was done later.

In the Second Semi-Annual Report (December 1968), the "overall objective" of the program was stated to be "to create an effective information management and utilization system--a systems approach to educational research and planning." The training of professional staff was then stated to be the "sixth subsystem" of seven subsystems identified in the Second Report.

In the First Paper (PROP), however, as drafted by the MSU team and approved by AID on January 15, 1969, "project goals and targets" for 1973 were defined under five headings, the first of which was "To be fully staffed with adequately trained professional personnel." Probably few would contest, in these last months of the program, that this target was properly placed first in the list of objectives to be achieved in the succeeding four years.

2. The Concepts of an Ankara-East Lansing Axis.

Probably the most important single policy decision in the history of the program was taken very early--that this was to be a training program with specific objectives related to the work that the staff members were doing, or would be doing in the future, as professional researchers and planners in the PAKD. This may seem elementary; but much foreign training of students

from the developing countries has been conducted as if foreign study were a kind of end in itself, a period of absence from the home country in which degrees were obtained in orthodox ways, and the question of the application of the learning so acquired would be a separate problem, to be faced when the trainee returned home.

The policy adopted in the NERP program, which has been quite consistently followed despite occasional aberrations, had several key elements, of which the most important were:

(1) That the training participants would be selected for employment in PAKD first, and that their training would follow from their employment, rather than vice versa.

(2) That one of the functions of the resident advisors would be to help the prospective trainees to get ready for the formal educational program.

(3) That the program at MSU would be tailored, to the extent possible within university academic requirements, to the future needs of the trainees as employees of PAKD.

(4) That, for doctoral candidates, the research and writing required for their dissertations would be on live subjects in contemporary Turkish education, and that the bulk of the research and writing would be done in Turkey. In order to make this feasible, it was planned that arrangements would be made for the oral examination of the dissertation to be given in Ankara.

Thus the program was conceived as an integrated whole, some aspects of which were to be conducted in Turkey and other aspects in the U.S. The several parts would be held together and coordinated by various devices, as to be discussed later the unfolding of this approach was anticipated as early as the spring of 1968, where we find (as reported in the First Semi-Annual Report) Dr. Brembeck, the first coordinator, pressing "upon

those of the staff who are planning to come later to MSU that their efforts for BPD (PAKD) should be exerted on problems which they proposed to study in depth at MSU. They may then return to Turkey as experts in their fields. In this sense their graduate work has already begun." (p.7)

Also in this spring, Dr. Brookover, the Program Analyst from Campus, visited Ankara and discussed with the future participants the staff requirements of PAKD as then seen, and the current thinking about the MSU graduate programs, as well as some tentative ideas about future research priorities.

"The research program of the Department", Dr. Brookover reported, "should, in my judgment, develop from problems that must be solved in order to effectively achieve the educational goals of the nation." ("Observations on Turkish Education for BPD," Appendix C, First Annual Report.)

3. The Selection of Participants and Scheduling of Programs.

As indicated previously, the training program was intended to be of employees of PAKD, for further service in PAKD at the completion - as it has turned out, before completion of their programs. PAKD was staffed first, and care was taken not to strip the agency of all of its talent in the interest of a speeded-up training program. The first group of three participants arrived at MSU during the summer of 1968 and the second group of three in the summer of 1969. All six were mature - ages 35 to 47; all had had substantial experience as educators in Turkey; all had had previous postgraduate experience in U.S. institutions; and four held U.S. master's degrees in education. In addition, by the time they had left for the U.S. they had had the benefit of working in Ankara with the two MSU advisors and of becoming acquainted in Ankara with Drs. Brembeck and Brookover, who held key positions in the program at MSU. Of this original group of six, one

dropped out after receiving his Master's degree in one year. This one participant, as the program finally ends in September 1973, will be the only one of the 20 selected for this program who will not have completed at least two full years of advanced training.

As the initial group of six experienced personnel prepared for and made their departures, PAKD made plans in the spring of 1969 for a nationwide recruitment program to strengthen the staff. More than 100 candidates took an examination on July 4, and 16 were selected for PAKD employment. A prerequisite for selection was possession of at least the bachelor's degree, so that they would qualify for postgraduate training in the NERP program. Two years of successful performance in the Ministry of Education were also required, and the original hope was that they might also possess competence in English--but this latter hope was thwarted, as explained in Chapter Two.

Of the 16 new appointees, four held Master's degrees from U.S. universities and were therefore qualified to enter doctoral programs directly. However, the staffing situation in PAKD did not permit sending them abroad until the following June (1970). Of the 12 with bachelor's degrees or the equivalent only, all but two were subsequently sent to MSU for a two-year Master's degree program.

4. The Pre-Departure Courses and Orientation.

The most important single factor in the preparation of the participants for their academic programs was no doubt, as discussed above, that they were employees of an organization for which the overseas training would be relevant, and that they constituted the beginnings of a team which it was expected

would play an important role in the future of Turkish education. The significance of this collegial relationship will be discussed further in this report.

Certain specific programs in the form of courses and seminars were developed in Ankara which are properly considered a part of the men's training. Thus in the spring of 1968 discussions were held with the director and staff of PAKD to arrive at some preliminary decisions on priority items for research, with the conclusion that first attention should be given to problems in secondary education relating to the flow of students into, through, among and out of the various types of schools at this level. Two sessions of a staff seminar were devoted to describing the scope and focus of such a study. Staff seminars were also devoted to a comprehensive review of the whole question of the existing system of educational data management, introducing staff members to systematic models and other analytical tools, and discussing overall data needs and approaches to data management. Staff members began a systematic study of school record forms and data collection forms used by the various data collection agencies. In the later part of 1968-1969, the three participants who were scheduled to depart in 1969 took graduate courses in economics at Hacettepe University.

During 1969 plans were developed for a much expanded program of course work in Ankara, with the objective of shortening the time required for study abroad, and not incidentally to make more effective use of the resident advisory team's professional resources. However, this approach was not acceptable to the State Planning Organization, which instead

suggested that such course work as might be offered in Ankara should be provided by Turkish universities. The NERP participants who worked at PAKD during 1969-1970 did enroll in various graduate courses, again at Hacettepe University.

The MSU field also organized a series of seminars to augment advance preparation of NERP's participants. In December 1969 a general orientation for all new staff was conducted, covering the following subjects: a review of the history and present functions of the PAKD and the NERP programs; introduction to the uses of electronic data processing in system analysis (with major assistance from SISAG at Hacettepe University); introduction to operations research; and introduction to Program Planning and Budget Systems (PPBS). Also in December a seminar was organized for the doctoral candidates who were to leave in 1970, covering mainly interdisciplinary planning concepts in the social sciences and data needs and procedures required for PPBS budgeting. In the judgment of the Chief of Party, this latter seminar was especially helpful in generating "a sense of unity, purpose and esprit" within the group participating. In the spring of 1970, Dr. Neff conducted a course in Fortran computer language for staff members.

5. The Special Problem of English.

The English language did not present a substantial problem with respect to the doctoral candidates who came to MSU first in the program because they had all studied in the U.S. and had in fact earned U.S. degrees. This does not mean that they did not need a good deal of help in the fine points of the language when it came to writing their dissertations, but this is a fact of life for most foreign students. For the Master's candidates the situation was quite different, since at the time

of their selection for PAKD none had sufficient competence in English to be prepared to study at an American university. They were therefore enrolled in language training programs at the Gazi Intensive Language Training Center. This program was supplemented by the resources available at PAKD for practice in the language. However, various difficulties were encountered. The Center had problems in obtaining instructors whose teaching content included the vocabularies of social science and education. Also considerable reliance had to be placed on Peace Corps Volunteers, who turned out to be uncertain reeds in the existing political climate. The first group of master's candidates to come to MSU (September 1970) were therefore poorly equipped in English. Their grades obtained at entrance into the MSU English Language Center averaged a poor 56, and it was necessary for them to devote the entire first quarter and parts of the second and third to English language courses. The program at Ankara was strengthened in the latter part of 1970, including arrangements with the Turkish American Association, which took responsibility for the language program and provided instructors with knowledge of more relevant vocabularies.

The second (June 1971) and third (September 1971) groups of master's candidates arrived at East Lansing, accordingly, with a better foundation in functional English, the second group averaging 70 in the MSU tests and the third group 71. These grades still reflected a seriously weak competence in the language, but these students were able to meet minimum MSU standards after one, or one and a fraction quarters of language instruction.

All participants were able to show substantial improvement in English during their language training at MSU as measured by the grades awarded by the Center. However, the members of the first group were "graduated" from the program only in the sense that the Center stated that "further English

training would be ineffective". The Center recommended that less than full-time academic loads be carried by these men initially. This same recommendation was made for one member of the second group also.

The language program at MSU, in the opinion of the writer, suffers some of the same defects mentioned above as applying to the Gazi Institute program, particularly in its overemphasis on a formalistic rather than a functional approach to the language. There does not seem to be any correlation between performance in the programs of the Language Center and the subsequent performance of the students once they get into substantive work.

6. The Doctoral Programs.

The nine doctoral candidates (the tenth dropped out of the program) were an impressive group of men. They were all mature, the median age on entering the university being 37; the oldest was 47 and the youngest 34. Seven of the nine had had administrative experience in the Turkish educational system, in a variety of positions including, but not mainly, in the central offices of the Ministry; e.g. provincial director of adult education, middle school principal, provincial elementary school supervisor, assistant director of teacher training school(2), director for planning in teacher training, head of central research division. The other two had served in responsible technical capacities of a non-administrative character. All had had teaching experience at various levels in the educational system, and in a range of subjects: e.g. literature, science, and vocational subjects. All but one held the master's degree from an American university, and the ninth was part way through a master's program, which he completed at MSU before enrolling for the doctorate.

All nine were admitted to the doctoral program in the College of Education, but one transferred to Teachers College, Columbia University, at the end of the first term. Six men majored in Comparative and International Education, and three in Educational Administration - including the one student at Teachers College. Since the program in Comparative and International Education does not involve per se a heavy course load, the candidates enrolled there were able to incorporate substantial amounts of course work in fields of their special interests and competences throughout the College, and to a limited extent in other colleges. Two took minors in sociology, two in educational research methodology, one in educational psychology and one in systems science.

Professor Brookover organized a special course for the Turkish participants, entitled Education and Development, in which a good deal of attention was given to planning the research which the candidates would later do for their dissertations. Other members of the faculty, no doubt partly because the group were talented and well-motivated students, devoted what was probably more than an average amount of time to the academic programs of one or more of the students. Notable among these, in addition to Dr. Brookover, were Drs. Brembeck, Gross, Heenan, McSweeney, Ignatovich, Ebel, Melby, and the Coordinator Dr. Case. In part to meet the needs of the Turkish students, the College's seminar in Educational Planning was activated in the winter of 1970 with Dr. Case as instructor. All of the doctoral candidates except one (also all of the master's candidates) took this seminar at one time or another.

The one doctoral candidate who did not take the seminar took a related seminar in Economics and Education offered in Spring 1973 with Dr. Case co-instructor with Dr. John Hanson.

The plan for all doctoral candidates to do the major part of their dissertation research and writing in Turkey was followed with two exceptions; the plan to have all dissertations on Turkey-related subjects was uniformly carried out. The two exceptions arose out of strong personal interests of the students. In one case, Osman Kazanci desired to major in Educational Psychology. His pursuit of a program in this field had to be abandoned because of his inability to meet the examination requirements of that department. He consequently transferred to and had to take additional course work in Comparative and International Education, and his program therefore extended beyond expiration of the normal two year stay at MSU. The other case was Ali Arseven who, mainly for family reasons, and facilitated by a willingness on the part of PAKD staff to assemble much of his needed research data in Ankara, extended his stay at MSU for five months and completed all his degree requirements before he returned to Turkey.

Brief statements on this subject content of the dissertations, completed and in process at the time of writing this report, have been prepared by Dr. Bohnhorst, and are attached as Appendix A.

All nine doctoral candidates have performed more than creditably in their course work at MSU. Dissertations completed to date, as well as performance in dissertation oral examinations, have been considered of high quality by their graduate committees. In fact Dean Goldhammer stated, after participating in Ankara as a member of the examining committee for

one candidate, that it was the finest performance he had seen in any of the Colleges of Education where he has taught.

What may be hoped for in doctoral programs is acquisition of competence and confidence in analysis of problems in collection of data, in organization of material, and in exposition of findings. In the judgment of this writer, who has seen a good deal of the work of the eight men at MSU, these objectives have been or are being met in every case. As for subject matter, no one individual, of course, comes out with a comprehensive knowledge of the whole field of education; though collectively - and they do constitute a team in a meaningful sense - the range of coverage is quite broad.

The median period of study under AID auspices for the doctoral candidates was 27 months. One man was supported for 37 months, due to a change in program, and the man who dropped out was at MSU 12 months. Three men continued for periods of time in East Lansing at their own expense - one for 7 months, one for 3.5 months, and one for one month. All of these men made return trips to East Lansing for this purpose. Two of these trips were determined largely by family considerations. The third, Mustafa Aydin returned to East Lansing in June 1973 to stand his oral examinations at MSU.

At the time of writing this report the problem of arranging for doctoral orals had still not been fully worked out. Three men had completed their orals in East Lansing - one before departing and two on return visits at their own expense. Three had been examined by Drs. Neff and Bohnhorst and a visiting faculty member from Campus: Dr. Brookover for the first two and Dean Goldhammer for the third. Another was hoping to be examined before returning to Ankara after his one-year extension.

The man enrolled at Teachers College will probably have to return to New York for his examination, since no members of Teachers College faculty will be available in Ankara. The ninth man, Sudi Bulbul, though he was one of the first group to come to MSU, will not be ready to be examined prior to June 30, 1973. He therefore will present a special case, since Dr. Neff will have left Ankara before he is ready. (Dr. Bohnhorst is remaining in Ankara until February 1974 under a MUCIA grant.) However, the Director of the School of Advanced Studies in the College of Education has assured the Coordinator that some method will be worked out, which may involve the use of Turkish faculty members, whereby every student enrolled at MSU will have had an opportunity to complete his doctoral program.

7. The Master's Programs

In many respects the programs for the more junior men, who were sent to MSU for a two-year period, and whose academic objective was the Master's degree, presented greater difficulties than did the programs for the doctoral candidates. In their recruitment considerable emphasis had been placed on getting personnel for what might be called the technical aspects of operating modernized data systems and the training program followed this general theme. Five of the 10 men had been teachers of mathematics, one a teacher of science, and one of electrical technology. One had had very limited experience, but had taken his undergraduate work in accounting. Of the other two, one had taught social science and one had taught literature.

PAKD's planning called for the five mathematics and the one science teacher to concentrate on "systems analysis"; the electrical technologist to concentrate in "computer science" and the three trained in social science, literature and business administration respectively all to concentrate on budgeting and finance.

It did not exactly work out that way, for various reasons. At the outset it was apparent that to put the men into specialized master's programs in the fields mentioned usually without suitable undergraduate preparation, and with only an elementary grasp of English would lead to extreme frustration and probable failure. In the second place, the University does not offer graduate programs in any of these fields, which are particularly relevant to PAKD needs or the PAKD situation, possibly excepting computer science.

It appeared to the Coordinator that what was needed was a program with considerable flexibility, supervised by someone who had a commitment to getting the most out of the program, which would come as close as possible to meeting the somewhat unpredictable needs of PAKD, and which would give the men a substantial exposure to educational theory and practice. These men had been carefully selected and presumably had (and in fact do have) considerable potential - some for further doctoral level graduate study in the field of education.

With these aims in view, the Coordinator arranged to have all 10 men entered in programs in Comparative and International Education. This program requires 30 credit hours in education, of which only about nine need be specifically in Comparative and International Education, and leaves substantial flexibility for concentrating in areas of special interest and competence. In general, the systems courses at MSU (given in the Department of Electrical Engineering) were pretty difficult going for most of the participants and not very specifically applicable to education. However, two of the men did substantial amounts of work in systems analysis, and did creditable work. The other three who had been recommended for systems concentration did actually concentrate in computer science and statistics, as did the one who had been recommended specifically for computer science.

The course work in computer science - a very popular subject presently - did not provide as much individualized instruction as would have been desirable. However, after his consultation visit to Ankara in November-December, 1972, Dr. Martin Keeney fortunately was able and willing to devote a good deal of personal supervision, including the organization of special courses in the spring and summer of 1973, for the four men who were concentrating on computer programming and operations. When it was learned that the Ministry of Education was definitely moving ahead in its plans to acquire an IBM-370 computer for PAKD, Dr. Keeney was able to direct this special course work even more specifically to the expected future work situation of these men. In May 1973 AID agreed to continue the programs of the two men scheduled to finish in June until August 20, thus making it possible for all four to gain maximum benefit from Dr. Keeney's personalized instruction. Dr. Keeney's strong interest in the program, and the willingness of AID to continue support, may therefore be expected to pay substantial dividends on the computer side of the NERP program.

In respect to the training in finance (and budgeting) which was recommended for three of the participants, there is very little course work in the university that is relevant either in the College of Business, which is naturally oriented toward the private sector in the U.S., or in Political Science, which presently has very little strength on the public management side. Recently a program in Public Management has been organized by the Department of Economics and Agricultural Economics jointly, but this has not up to the present taken a form that would be particularly useful to PAKD personnel.

These three men, therefore, who are the three not selected from a mathematics or technical background, have completed what might be called a general master's program in education, majoring in Comparative and International Education. Their programs, therefore, have been in principle, the same, though on a considerably less sophisticated level, as those of the doctoral candidates. Notably they have not had the discipline of the dissertation. Their academic performance in course work, however, has been quite good - above the average of all Turkish master's candidates - and it is reasonable to assume that they have gained competence and confidence in dealing with a variety of educational questions, in an environment in which such questions are discussed - though the problems of course are not answered - from a variety of points of view. This can also be said of those participants who have concentrated in systems analysis, computer science, and statistics, though these latter have had the advantage of some experience with research methodologies.

All of these men have impressed the Coordinator as men who are intelligent, industrious, and well-motivated. They will of course need to work under the direction of the more senior men on research projects. Some no doubt will wish to, and will qualify for further graduate training at a later date.

Six masters candidates were in East Lansing under AID support for 25 months; two for 26; and two for 27, the latter two having received extensions to complete the special program in computer science.

3. The Community of Turkish Scholars and their Families.

As has been mentioned earlier, the students in the program had, with some exceptions, become acquainted with each other as fellow employees in PAKD before they came to the U.S. All but one, who however was in East Lansing for the first three months of his program, were enrolled at MSU,

and all but three brought their wives and children with them. All were studying in the College of Education, and all were for the whole, or a substantial part of their programs, majoring in Comparative and International Education, taking many of the same courses. Their MSU home base was the office of the Institute for International Studies in Education - a small office where they were acquainted with the entire professional and administrative staff. The group was small enough too, so that there was a good deal of interaction within the Turkish group, including mutual help, especially as new participants arrived and had to make adjustments to the new life.

All of these considerations contributed to socialization of the group. Generalizations on the values derived from this socialization should be made with caution, but it is the writer's opinion that the values have been and will be considerable, and it would certainly be reasonable to expect that the relationships established will make it easier for these men to work together in the future in the common enterprise of developing Turkish education. It is worthy of note that after their return Bulbul and Gucluol gave considerable help to Arseven in collecting data for his research and that on his return, Arseven in turn was assisting Bulbul. These may appear to be small evidences, but in many of the developing countries the concept of collaboration is not well developed, and the lack of this is one of the problems in getting efficient administration. It is not to be expected that all of these men will remain indefinitely in PAKD - in fact one has already taken another position - but the habit of working together and talking to each other may turn out to be a valuable by-product of the training program, wherever in the educational system they may be employed.

9. Post-Return Assignment of Participants.

As anticipated, the returning participants resumed service in PAKD, and in many cases, though not all, were given responsible assignments almost immediately. As it happened, a Strategy and Reform Commission for the national education system was established by the Government in April, 1971, and those who had returned from the U.S. were quickly drawn into its service. Thus Fidan and Karagozoglu were assigned to work with the Ministry on overall reorganization needs within the Ministry; and also in role perception studies among MOE general directors.

Gucluol, Bulbul, and Akalin returned to Ankara in the Fall of 1971, after a three week extra observation experience in Albany, New York, learning about that State's PPBS budgeting system in education. But when they arrived in Ankara they too were thrust into leadership roles in the MOE's reform efforts.

Gucluol and Bulbul worked on various Strategy Commission task forces, and Akalin was assigned to the teacher education task force within PAKD. Akalin was placed in charge of data systems work, and Karagozoglu became acting director of the research section, in which Gucluol and Bulbul were also located. Fidan served as acting director of PAKD while Karcioğlu was on study leave in the U.S. in the fall of 1971.

These and other assignments to the returnees of course seriously slowed up their progress in doing the research and writing for their dissertations. On the other hand they gave a distinct touch of reality to the relevance of their studies to current national needs.

In the Spring of 1972, following Nusret Karcioğlu's appointment as Undersecretary of the Ministry of Education, Bulbul was appointed Deputy Undersecretary. In the Spring of 1973 Fidan was appointed Director of PAKD; and Gucluol and Cila were named Assistant Directors. Karagozolu was appointed in the Spring of 1973 to a position outside the Ministry of Education, the post of Secretary for Scientific and Professional Manpower Development on the staff of the Turkish Scientific and Technical Research Association, in which post he would be able to cooperate with PAKD in a number of productive ways.

10. Questionnaire Submitted to Participants

In the Spring of 1973 the Coordinator devised a questionnaire designed to obtain the opinions of the participants concerning the program and their experiences in it. Although Dr. Bohnhorst made several attempts with the returned participants in Ankara, and Dr. Case did like wise in East Lansing, they obtained only five responses from the 19 participants and former participants. This response is clearly not sufficient to warrant any generalizations. However, the following response from one of the doctoral candidates (whose major field is educational administration) deserves to be quoted in full because it presents a point of view that represents a critique of that presented in the early part of this Chapter.

1. The tasks to be performed at PAKD were stated in very general terms to be used as bases for academic training programs. Since tasks were not clearly defined the academic training programs were not based on the real needs of the MOE but the individual interests and the existing programs at Michigan State University.
2. The selection of participants was basically made on the basis of proficiency in the English language and training obtained in the U.S. not on the basis of the felt needs of the MOE or PAKD. The needs of PAKD should have been clearly identified and defined to be used as bases to design advanced training programs. The needed advanced training programs should have been used as determinants of the background of participants. English should have not been the main concern for selection.
3. The project did not seem to be determined and strict in conforming to the needs of PAKD even though they were broadly stated. There was flexibility in training programs which was not used to follow programs directed toward the needs of PAKD. Taking advantage of flexibility, participants followed easy ways to meet the requirements for a degree. They have taken similar and most of the time the same courses and as a result of this many people had training in one field and none in another.
4. It appears that the College of Education MSU did not examine itself regarding the advanced training programs which the project required. The College of Education was not ready to provide appropriate training for participants in certain fields. It tried to meet all the needs with its regular existing programs which were not adequate and sufficient.

MSU could have served as the headquarter of Turkey Project and send participants to different institutions to pursue appropriate training programs.

5. Administration was not consistent in its policies. It was too loose at one time and too rigid and strict at another and this created frictions among the people involved. This is one indicative of the fact that this project was not given deep thought at the beginning. Decisions were made daily and inconsistently.

6. PAKD did not prepare itself which was a function of the project to make use of participants upon their return and as a result of this some participants have left the office and even the MOE, and some are about to leave.

7. Despite everything the project has succeeded in making significant contributions indirectly to Turkish education.

* * * * *

These criticisms have much merit. They do not, in the opinion of the writer, refute the arguments made in this Chapter, though they certainly tend to discourage an over-optimism about the success of the policies pursued. On the other hand we may note the comment of the respondent on submitting his answers to the questionnaire: "I would not have known how to make this kind of criticism when I entered the program."

CHAPTER FOUR:

CRITICAL ISSUES IN PAKD'S CONTINUING INFORMATION SYSTEMS DEVELOPMENT

One major NERP project objective was the development of an information system adequate to support planning, research, budget and administrative decision-making in the Ministry of Education (MOE). This system was to be developed and applied specifically in the planning, research and budgeting office that the project was to help establish. USAID concurred in this aspect of the project but made it clear that USAID would not obligate funds for the acquisition of electronic data processing equipment as long as existing facilities in Turkey were not being used adequately according to USAID's criteria. Nusret Karcioğlu, then head of the planning office, proceeded therefore to reach agreement with the SPO for the provision of Turkish capital funds for acquiring new electronic data processing equipment when the need should arise. Planning went ahead on this basis.

Information systems development was modified by the sequence of "turning points" already described in Chapter 2. However, rather than retrace this vector's progress through those points, this chapter will identify certain critical issues which impacted information systems development (as well as other aspects of the project), relating these developments where appropriate to the turning points already described. The "critical issues" presented here represent the author's personal assessments of underlying causes for events and they are thus posed as informed points of view rather than sheerly objective fact.

Original Objectives in the Information Systems Area

Recognizing the need for an adequate data base (in terms of accuracy, aptness and timeliness) for an effective planning, research and budgeting activity, NERP proposed to:

1. Study the existing situation in terms of:
 - a. categories of data collecting;
 - b. reasons for collecting them;
 - c. frequency and timing of collection;
 - d. who collects them;
 - e. methods used for collection;
 - f. capability of the records system in the schools to provide the information requested; and
 - g. felt needs for additional information.
2. Make specific proposals for future development of an information system in view of the information gained from the study of existing practice;
3. Obtain, by about mid-1969, "critical decisions" from the Minister or other competent authority authorizing a program of systematic information systems development in PAKD; and
4. Implement these decisions gradually over a 1½-year period.

The specifics of the above outline can be found in early project documents, particularly in the PROP and the Second Semi-Annual Report. Briefly summarized, it was proposed (through a program of personnel recruitment, training, systems design, and administrative reform) to establish within a 4-year period an information system capable of providing the MOE with an informational base adequate to support its research, planning and budgeting operations.

The first two of the four objectives listed above were relatively straightforward and easy to accomplish. Because of postponements and oppositions referred to in Chapter Two, Objective Three was far more difficult and elusive. As a result, only limited progress has been made toward the implementations intended in Objective Four. There is every likelihood, however, of future success with implementing the needed systems. These objectives continue as targets for PAKD.

To perceive this aspect of the NERP project as initiating and establishing a "new" system would be incorrect. The task really has been to achieve a transition from an existing inadequate system to a modernized system. Two types of change have been taking place simultaneously: 1) revisions of the old system in an effort better to meet increasing demands for information services; and 2) designing of the new system which should one day replace the old. Given the demands of administrative operations, one can never realistically expect to completely "drop" an old system and pick up a new one overnight. It is a process of gradually phasing in the new and phasing out the old. In the case of the proposed PAKD system, the operational initiation of the new system may prove to be relatively dramatic, because of the tremendous gap between the sophistication of existing and eventually-to-be-acquired electronic data processing equipment. However, with adequate support by the equipment vendor, this phase of the transition also can be accomplished smoothly.

The PAKD Information System as of Mid-1973

At the closing of the NERP Project in mid-1973, the development of specific systems was taking place in the following areas:

1. Teacher Supply and Demand Assessment. This system was designed by Kemalettin Akalin and is presented in his Ph.D. thesis, the final draft of which is now nearing completion. Use of the system will require far more sophisticated equipment than the present PAKD computer and thus can only become operational when PAKD has guaranteed access to more modern equipment. The model was tested through a pilot study of Eskisehir Province data using the CDC 6500 on the MSU campus.
2. Personnel Data System. The principal architect of this system has been Ibrahim Aksu, PAKD's Chief Programmer. Considerable progress has been made in implementing the system, but the existing PAKD computer is so unsuitable for performing this type of "high data volume" function that the full potential of this system cannot be realized until new equipment is acquired. The scope of the system is universal (within the Ministry of Education) and the scale is very large, since the MOE employs approximately one-fourth of the Turkish civil servants. For the first stage of development, record size was limited to 100 characters per teacher, requiring a total storage space of 27.5 million characters. IBM disk storage is being used and more than 12 disk packs will be required to hold the data for the first stage. Notoriously slow on the input-output side, the 1620 can read from the disks almost as fast as a more modern machine can read cards, taking approximately 25 minutes to read 20,000 (80 column) card records from the disk. Though this is

a considerable improvement over the card reading speed of the 1620, it is still so slow that it makes it a machine of extremely limited value for handling such large quantities of data. One specific program which has been run on both the 1620 at PAKD and the IBM 360/40 at Middle East Technical University showed the 360/40 to be more than 145 times as fast: a 17-hour job on the 1620 ran in 7 minutes on the 360/40.

As of 1 June 1973, most of the records of secondary school teachers had been checked and stored on disk. The records of the primary school teachers were in the process of being coded and are targeted to be completed about 31 July.

It now appears that much of the work already done will have to be redone because an altogether new questionnaire was sent in May 1973 to all Turkish Government personnel, including educational personnel (through the Office of the Prime Minister). When completed, this new form will provide adequate information for a complete personnel record for every person. Casual examination of the new form produces an estimate of a basic record size in the neighborhood of 500 characters per person, or close to 140 million characters for the complete file. Analyzing and updating such a file every four months as required by the new personnel law is not within the capability of the 1620, if the machine is to be used to produce outputs other than promotion lists for personnel.

3. Assumption of Responsibility for Educational Statistics from SIS.

Transfer to PAKD of responsibility for collecting basic statistical data on education in Turkey was initially requested by the SIS. A protocol has been signed between SIS and the MOE which indicates the intent to delegate this responsibility, and broadly outlines the procedures for attaining this objective. The Statistical Unit in PAKD, headed by Mutlu Can, has been primarily responsible for designing new instruments which provide the data needed both by the MOE and SIS. Because of illness of key personnel and the pressure of census work at SIS, the work of this group is behind schedule. It had been planned, optimistically, to complete form design and a pilot study (for the complete system) by June 1973. In fact, the design of forms for the collection of primary school data was nearing completion and some work had been completed on secondary level school forms by this deadline date. However, once the pressures of census deadlines in the SIS have eased, it is planned to forge ahead.

Since the forms being designed by PAKD are essentially new and are intended to be used to collect all data required by both the MOE and SIS, major problem areas have arisen where new data are being requested. This is particularly true in the case of financial data needed for the new Program Budgeting System.

Very little systems programming has been done for the storing, updating and utilizing of these data. The work needed to be done in this area is substantial and will be "first-time" work for the most part. Programs, coding and storage schemes at SIS had all been geared to the single purpose of eventually preparing a statistical report for publication. These are not likely to be very helpful to PAKD programmers who must develop a system of current and historical data files capable of continuous use in support of MOE's research, planning, budgeting and other operations.

4. Historical Data Recovery. This activity is actually a part of the "transfer" from SIS, since the historical data are being recovered from SIS records. Though this aspect of the work should have been completed long ago, it is still hovering "on the verge" of completion. A copy of the description of the system and its current status is appended to this report, along with recommendations for ways and means of completing it.
5. Storage and Retrieval Systems Design. The tasks outlined above, especially the personnel data files and historical data retrieval, have required considerable work in the designing of storage and retrieval systems. This work has proceeded informally through personal communications between the persons involved. As yet there has been no sustained, systematic study producing a workable system. There are a number of coding systems being used for different purposes, but none of them seem to be ideally suited for use as a universal educational information systems

code. The use of a coding consultant in the near future would probably prove to be very useful before different elements of the system develop too far, each with internally logical coding systems, but which might conflict with one another.

6. Upgrading the Processing System. This is the major bottle-neck of the PAKD information systems development effort. As references earlier in this chapter have indicated, the IBM 1620 is not a suitable machine for supporting PAKD and the MOE. Furthermore, it is quite an old machine and is becoming increasingly less dependable for even routine jobs. It is doubtful that PAKD can continue much longer to depend upon it for processing. Because its operating system is highly inefficient and not compatible with new generations of machines, practically all the systems development work that can be done on it (and there is not a great deal that can be done) will have to be redone once new computing equipment has been acquired. Furthermore, because it is so inefficient, processing and storage costs are exceedingly high, even though the original investment in the CPU has long since been amortized. From the point of view of efficiency and output per man-hour, PAKD is losing money every day because it has not yet acquired a new computer. Considering rental charges alone, a new machine with from five to ten times the 1620's processing capability could be rented for only about \$3,000 or \$4,000 more than the existing installation is presently costing the Turkish Government.

Critical Issues

The PAKD Information System has not developed in the way that it was planned. What have been the important factors which have influenced the way that it has developed? What are the major problem areas that must be dealt with effectively if PAKD's systems development effort is to succeed?

It should be stressed that most of what the NERP project proposed to do in Turkey had to do with a qualitative improvement upon what was already occurring rather than the introduction of a "package" of completely new ideas or functions. Long before NERP arrived on the scene the Turkish Government had been budgeting, making development plans and conducting "research". The teachers were teaching, the students were learning, teachers were being trained, new schools were being constructed, and information concerning operational details of the system were being collected and published--in brief, a system was operating. However, it was apparently felt by the Turkish Government that a number of on-going activities were not producing outputs of sufficient development value and that steps should be taken to enhance the development value of these activities. The NERP project was an attempt to achieve better planning, better budgeting, better research and better administration, all to be applied to the task of providing better education. Admittedly, it may have not been altogether obvious from the Turkish point of view that qualitative improvement might require the adoption of different concepts, new methods, and the rewarding of behavior within the bureaucracy according to more developmentally constructive criteria. At the same time, it is doubtful that the Americans (both AID and MSU) always fully appreciated the stresses and strains that their proposed standards of behavior exerted on the existing system in Turkey.

PAKD's development has already been traced through a series of "turning points" in Chapter 2. One can also identify a number of "critical issues" that have impacted PAKD at virtually all stages of its development. Overall, these critical issues can be classified into three major inter-related groupings: 1) relationships with the environment; 2) the need for crucially important decisions; and 3) rewards, incentives and expectations.

Relationships with the Environment. Three aspects of this problem have cropped up from time to time to impact PAKD's development; 1) the Turkish Government's relations with its environment, particularly with professionally competent individuals and organizations; 2) PAKD's relationships with the MOE environment; and 3) NERP's relationships with the PAKD environment. As the subsequent discussion will reveal, these are interlocking issues.

Apparently there are certain cultural traditions in Turkey that attach a negative value to Government reliance upon outside advice and consultation (whether the outsider be Turkish or foreign). One example in the NERP experience was the abortive attempt to make use of SISAG, a Turkish systems development consultant firm, to assist in PAKD's systems development. Earlier reports document the various stages through which this effort proceeded. An examination of this record makes it clear that normal Turkish bureaucratic procedures at best inhibit, at worst prohibit, this sort of activity. It simply seems not to be the way things are done in Turkey. Further evidence is the behavior of the actors involved, none of whom seemed to be comfortable in his role, either as advisor or advised. Perhaps the NERP experience is not an adequate basis to support this generalization, but this does appear to be a definite problem with multiple roots, among which the tap root may well be a kind of underlying

complacency on the part of the Turkish bureaucracy.

The complacency of the typical, "arrived" Turkish civil servant can be somewhat unnerving to the newly arrived advisor. Having survived and reached a position near the top in his own system, it becomes very difficult to effectively communicate to such a civil servant the fact that there are some things that he simply might not know. Some of them may point with pride to the number of books that have been published in their name--when the question is raised as to how "good" or "valuable" these books might have been, it is treated almost as an irrelevant question. But because they are among those who have succeeded and who have performed a number of tasks in the system ranging from teacher through high-level bureaucrat, it seems never to occur to them that they might be in need of assistance or advice as to how best to tackle a problem.

At the same time, one must realize that these administrators have been conditioned by their environment -- they are attempting to survive under a traditional system which their experience has taught them to understand. They are trying to succeed the way they have seen others succeed and they consider it to be "unfair practice" to suddenly change the "rules" and introduce new criteria for advancement and recognition like "specific area of qualification", "relative scarcity of persons with such qualifications" and "on-the-job performance". The fact that (from the system's point of view) very junior personnel can command salaries in the open market which exceed even that of the Minister, is disturbing to say the least. No matter how well-informed the administrator might be concerning these trends, he still does not take a great deal of comfort in contemplating the payment to these junior personnel of salaries at a level beyond his own.

However, if wages at least comparable to these market prices are not paid, the PAKD data system will be doomed to fail because it cannot command the specialized personnel resources necessary to sustain it.

The syndrome described above has affected the NERP project in many ways:

1. It has virtually eliminated the use of the rather substantial resource of "short-term" advisors available under the contract;
2. It has, thus far, made it virtually impossible effectively to utilize Turkish consultant resources like SISAG;
3. It has made it virtually impossible for NERP to utilize on-going work requirements as an integral part of its training program--incoming requests for information services have been treated by certain bureaucrats as the sort of thing they are quite capable of providing without giving a thought to ways and means of providing better and more useful information by using methods that they might be unfamiliar with; and
4. It has resisted the application of more developmentally relevant criteria for personnel advancement and has produced disrupting personnel tensions in situations where an attempt has been made to apply more rational criteria for personnel promotion.

PAKD's relations with its MOE environment have also generated problems similar to those described above. PAKD's behavioral role in the MOE system is quite analogous to the role of the young, well-trained, scarce professional resource within PAKD. A cockoo in the nest! An organization that seeks to be evaluated on the basis of the developmental value and professional quality of its contribution rather than the seniority and bureaucratic power of its leadership.

Briefly summarized, these relationships with one's environment have a great deal to do with "rewarding desired behavior". The environment rewards desired behavior when it appears. The definition of "desired" is the thorn. In Turkey, there are forces which (quite unconsciously, perhaps) seek either to squelch development producing behavior, or attempt to make it appear to be no more valuable than much of the work that has been done by countless senior civil servants for any number of years. This unwillingness to admit that there may be some important things in life and development which are not now known by senior bureaucrats is a serious obstacle to Turkey's national development.

The Need for Crucially Important Decisions. Chapter 2 of this report has already drawn attention to the fact that both PAKD's and NERP's futures often depended upon key decisions being made, the most obvious being the decision to commit adequate personnel resources to the project. In a number of cases, the decisions lacking were the ones that would have enabled one to initiate specific action -- there may have been broad general decisions, for example to have a modern information system, but the subsequent, essential decisions required for implementation did not follow.

In other cases, quite the opposite has been true -- the decision to acquire a new computer is a case in point. Until the decision is made to acquire a specific configuration of new equipment, a host of other extremely important decisions must await their turn. Acquiring a new piece of equipment is a major step and the effectiveness with which it will be used will depend upon the administrative, managerial, communications, and personnel systems which constitute its environment. From this

consultant's point of view, previous PAKD leadership perhaps has avoided making a decision to acquire a specific configuration of equipment, not because they fear that they might select the wrong piece of equipment, but because, once that decision is made, many other, more difficult decisions concerning the administrative, professional, technical and personnel environment will have to be made. It seems that the latter are the decisions that the leadership has feared to make. It is for this reason that the equipment-acquisition decision is considered to be so important -- once new equipment has been ordered and is scheduled to arrive on a specific date, other deadlines fall into place. Administrative and personnel decisions have to be made and the environmental system must be designed and operative by the time the equipment arrives.

The systems development, or design, efforts of PAKD have also been plagued with indecisiveness. Fear of making a magnificent blunder may have been an important factor here. Meeting after meeting was held over a period of five years in an effort to decide what the needs of the MOE were in terms of data. Each group seemed to falter when it reached the point of having to decide from among many alternatives what the actual data content of the system should be.

Rewards, Incentives and Expectations. PAKD's ultimate success will depend heavily upon how effectively it mobilizes its personnel resources. Incentives must be adequate to attract top quality personnel, and economic and professional rewards should be adequate to retain them. Their personal and professional expectations should be consciously related to the building and strengthening of PAKD -- they should be encouraged to feel that they are strengthening and building their own futures through their contributions to

PAKD's success. Clear job descriptions, well-defined promotional procedures and competitive salaries are definite needs.

Recent Progress.

PAKD and NERP have dealt with the above critical issues for more than five years. Though many problems remain in the information systems development area, progress has been substantial in spite of the difficulties. PAKD has steadily matured and shown increased competence in dealing with its environmental problems. A continuous effort has been made to improve salaries, better define jobs and responsibilities, and reward expectations. PAKD and NERP have survived through the administrations of six different Ministers of Education, and seem to have fared a little better with each successive change.

New leadership is now in control and measures and methods being considered show great promise for continued success. The information system is developing; not in the way that it had been planned to anticipate the Ministry's information needs, but in direct response to defined needs that have already arisen. The personnel data files are being designed and used because the old system became overtaxed and could not perform the tasks required by the new personnel law. SIS is delegating its responsibility to the MOE for collecting and analyzing educational statistics because SIS was no longer able to meet the Government of Turkey's needs in so many ways. PAKD has accepted the challenge and is in the process of developing a system capable of meeting these and additional responsibilities. Continuing consultant help will be needed and the PAKD leadership has indicated that it plans to make use of both Turkish and foreign resources as needed.

CHAPTER FIVE:
ADMINISTRATION

Personnel on Campus

From the beginning (January 11, 1968) Dean Cole Brembeck at MSU has been generally responsible for project planning and administration. Dr. Brembeck also was on the project payroll as Campus Coordinator until March 1970, at which point Dr. Harry L. Case became Coordinator, serving until June 30, 1973. Dr. Kenneth L. Neff, on his return from Turkey, became Coordinator for the remaining life of the project.

Dr. Wilbur Brookover was Program Analyst from April 1968 to December 1972. Dr. Carl Bentz served as the first Administrative Assistant devoting the major part of his time to project coordination and administration under Dr. Brembeck's general supervision. Mrs. Wilma Hahn served the project from April 1968 to September 1972, taking over the duties of Administrative Assistant from Dr. Benz in March 1970. Mrs. Kay Hatfield acted as Administrative Assistant from December 1972 to May 1973, and Mrs. Beth Rohrabacher served in this capacity from June 1973 until project end.

Secretaries who served the project at various times have been Ms. Ayten Sindiren, Betty White, Mary Dombroski, Kathy Jackson, and Ruth Hefflebower. None of the Campus employees named above served the project on a full-time basis except Dr. Bentz who was full-time from September 1968 to August 1969.

MSU Personnel in Ankara

Dr. Ben A. Bohnhorst served as Chief of Party from January 1968 to 30 June 1973. He remained in Ankara on a MUCIA grant to do research and writing in the field of Turkish education until February 28, 1974. Dr. Kenneth L. Neff served as Education Advisor from July 1968 to 12 June 1973.

Consultants

Since the resident advisory team was to be of minimum size, original plans called for rather liberal use of short-term consultants to advise PAKD on specialized problems. Several man-months of consultant time were consistently budgeted from 1968 on in an effort to assure that these resources would be available when and if needed.

During the time that participants for the project were being recruited by the MOE, plans were being made for the orientation and training of these personnel. Since it was deemed advisable that all new personnel spend several months on the job in PAKD before going abroad for study, NERP planned to utilize short-term consultant resources to:

- a. Conduct in Ankara MSU credit-courses for the soon-to-depart participants in at least three subject areas: statistics, research design, and the multi-disciplinary concepts of planning;
- b. Assist in the orientation of new personnel to the professional demands of their new jobs; and
- c. Provide other advice and consultation as needed.

This plan became impractical when the MOE was able to recruit only four technically qualified persons with a command of English adequate to participate in the program. Only one of the courses was offered by a member of the NERP field staff.

PAKD planned an in-service training program in statistical concepts for research assistants in provincial offices of the MOE to be conducted in the summer of 1971. An MSU consultant was to be used, but plans fell through when MOE funds for travel and per-diem were not available.

Later, the MOE requested a consultant in personnel administration from USAID Turkey and MSU proposed a candidate to be funded by the NERP project. However, USAID elected to utilize a U.S. civil servant from Washington.

Thus, although a good deal of preliminary planning took place concerning the use of consultants in one or another field, the time never seemed to be quite ripe. There are a number of considerations which might explain this gap between intentions and performance:

- (1) The Turks, as it developed, did not want a great deal of help on substantive questions of educational policy, either from the resident advisors or from consultants.
- (2) Once they became acquainted with Drs. Bohnhorst and Neff, they were very comfortable with them but for political reasons they were not anxious to have a conspicuous American presence in the Ministry.
- (3) The original plan contemplated using consultants in a dual role: as advisors on special problems, and as members of doctoral examining committees. Because the training program got off to a slow start, and for other reasons the need to have examining committees in Ankara was postponed and in some cases eliminated.

One MSU consultant was used -- Dr. Martin G. Keeney in November-December 1972. He was highly effective in advising PAKD on data processing problems. His consulting report is included in Appendix B. Dr. Keeney also devoted considerable time and effort to organizing and offering special courses in computer science for the Turks on Campus in the Spring and Summer of 1973.

Budget and Expenditures

The overall budget and expenditure amounts shown below present a picture of the extent to which actual expenditures always fell short of planned expenditures: for the dollar costs under the contract are as follows:

Budget Period	Budget	Expenditures
1/9/68 - 6/30/69	\$404,623.	\$181,258
7/1/69 - 3/31/70	150,900.	94,130
4/1/70 - 3/31/71	209,037	164,074
4/1/71 - 3/31/72	249,901	198,933
4/1/72 - 3/31/73	216,407	173,858
4/1/73 - 6/30/74	<u>76,139</u>	(to 6/30/73) <u>7,634</u>
TOTAL	1,307,007	819,887.

Budgets and expenditures have been consistently rather far apart. The more than 50 percent under-run for the first year is due largely to the fact that the project was originally conceived as a much larger one with a much larger full-time MSU presence in the field. The under-run in the second budget period was also extra large due to postponements in the training program due to recruiting and English language training problems. The roughly 20 percent under-run for the other periods is largely the result of non-utilization of funds budgeted for short-term consultants.

In addition to the U.S. dollar budget, substantial Turkish Lira funds were expended on the project. These lira funds are from three different sources: the "Special Projects Fund" (administered by the Turkish Ministry of Finance under budgets jointly proposed by NERP and PAKD, endorsed by USAID Turkey, and finally authorized by the Ministry of Finance); a "Trust Fund" (administered by USAID Turkey); and the budget of the Ministry of Education. Table 1 shows total direct costs of the program in both dollars and lira (actual expenditures to June 30, 1973, projections beyond that date). Funds coming from the MOE budget, are pure estimates and some items are excluded. Such excluded funds include but are not limited to, the rental cost of office space used to house NERP field staff,

Table 1 Expenditures on NERP Project in U.S. Dollars and Collar Equivalents.

ITEM	Dollar Budget	Trust Fund	Special Project Fund	MOE* Budget Est.	TOTAL	PERCENT
<u>Personnel</u>						
A. Salaries	\$388,100.	2,900.	54,800.	n.e.	445,800.	17%
B. Allowances	-	457,100.	-	-	457,100.	17%
<u>Travel</u>	6,100.	375,300.	1,000.	20,000	402,400.	15%
<u>Overhead</u>	162,100.	-	-	n.e.	162,100.	6%
<u>Training</u>	236,400.	-	-	94,500.	330,900.	13%
<u>Equip & Supplies</u>	4,400	70,500.	-	472,200.	547,100.	21%
<u>Communications</u>	**	8,800.	-	**	8,800.	***
<u>Transportation of Things</u>	-	47,400.	-	-	47,400.	2%
<u>Other Costs</u>	57,400.	800.	13,800.	175,000.	247,000	9%
TOTALS	854,500.	962,800.	69,600.	761,700	2,648,600.	100%
Percent	32%	36%	3%	29%	100%	

NOTE: Exchange rates used to arrive at the above dollar equivalents for Trust Fund, Special Projects Fund and M.O.E. Budget estimates were: T.L. 14:\$1 from 1971 onward and T.L. 9:\$1 prior to the 1971 devaluation.

All figures rounded to nearest \$100. (Some slight errors in totals due to rounding.

n.e. = not estimated

* M.O.E. expenditures estimated in East Lansing: PRO/AG figures were used for Equipment & Supplies and for Other Costs; Training and Travel were calculated on the basis of the number of months in training status times the monthly salary of the participants plus \$1,000 round-trip travel cost per participant.

** Included in "Other Costs"

*** Less than .5 percent

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supplies consumed, and the construction cost of the new building to house the computer, data center and provide office space for new personnel.

Formal reporting was provided through a system of both quarterly and semi-annual reporting. Nine quarterly reports were submitted from the Ankara office between March 1968 and March 1970; and 10 semi-annual reports from June 1968 to December 1972. Up to the ninth and tenth semi-annual reports all reporting was from the Ankara office, with no reports being prepared covering activities in East Lansing, This omission was corrected in the ninth and tenth reports.

Correspondence between the Chief of Party and the Campus Coordinator office was not especially heavy, the file for the five years occupying not more than five inches. The frequency was increased somewhat in the Spring of 1972, when the Chief of Party and the Coordinator agreed that a weekly letter from Ankara would be helpful. With a few gaps this practice has been maintained since that date, and the Coordinator has usually replied to the weekly letters. The practice has been helpful in maintaining communications.

Telephoning and cabling have been kept to a minimum. Telephone connections were usually quite satisfactory on the infrequent occasions when they were made.

Personal contacts between the field team and Campus representatives were relatively frequent, as shown in the following listing. All such contacts were from a week to ten days.

		<u>Interval</u>
Brookover in Ankara	April 1968	
Brembeck in Ankara	June 1968	2 months
Brookover in Ankara.	October 1968	4 months
Brembeck in Ankara	April 1969	6 months
Case in Ankara	March 1970	11 months

Bohnhorst and Neff in East Lansing	July 1970	4 months
Case in Ankara	March 1971	8 months
Brembeck in Ankara	July 1971	4 months
Case in Ankara	March 1972	8 months*
Smuckler in Ankara	May 1972	2 months*
Brookover in Ankara	July 1972	2 months
Bohnhorst in East Lansing	August 1972	1 month*
Brembeck in Ankara	October 1972	2 months*
Keeney in Ankara	December 1972	2 months
Goldhammer in Ankara	February 1973	2 months*

The heavy concentration of contacts in the first year of the project was natural and necessary in getting the program underway. The concentration in 1972 to early 1973 is explained by (1) the need for administering examinations to doctoral candidates in Ankara; (2) the fact that Dr. Brembeck and Deans Smuckler and Goldhammer had non-project travel scheduled in Europe and/or Asia; and (3) the need for a consultant in computer science, which came later in the program than had been anticipated. In view of the frequency of these visits, AID did not authorize a final visit to Ankara by the Coordinator in 1973.

Advisory Committee

An Advisory Committee of some 16 faculty members, with Dr. Brookover as Chairman, was created in the Spring of 1968. This Committee had its first meeting on May 9, 1968, at which time the First Quarterly Report was discussed, along with the draft plans for the remaining first year of the project.

As far as the record shows, only one other meeting of the Advisory Committee was held--on June 15, 1970, at which time Dr. Bohnhorst made a progress report in person. After this meeting Dr. Case permitted the Committee to die a natural death. No friends of the deceased were ever heard from.

* Travel financed mainly from non-project funds.

CHAPTER SIX:
SOME POSSIBLE LESSONS FROM NERP

The purpose of this chapter is to give tentative formulation to some ideas which may be deduced from the NERP experience. The pervious chapters have already provided several of these. This final chapter aims at similar discussions of some further aspects. The discussion is presented under the following three headings:

1. Adjusting to Unmanageable Change.
2. NERP'S Chief Distinguishing Features.
3. The Problem of Language Ability.

1. Adjusting to Unmanageable Change. Without trying to dramatize NERP beyond its modest scope one looks back over the experience nevertheless with some astonishment at the way it managed somehow calmly to hold together and persevere, though all hell frequently was breaking loose in very near proximity to the team stationed in Ankara.

For example, NERP was a project in Turkish education in which Americans were involved. During the terrorist upheavals of 1969-1971, American influence on Turkish education was one key target of the agitators. The Peace Corps was in effect driven out of Turkey (and this did have the effect of retarding the progress of NERP participants in learning English, as mentioned above.) One saw the slogan, "Damn America!", scrawled on walls of education buildings. From one's office windows in the PAKD buildings, one gazed left toward a dormitory of the Men's Higher Technical Teacher Training Institute, where terrorists had tortured a student and flung him to his death from a second-story window. One gazed right toward the buildings of the Ankara Academy of Economic and Commercial Sciences,

where MSU's College of Business had been engaged in a contemporaneous USAID-supported project, until in 1970 one of the MSU professors was forcibly prevented from entering the building. That same professor had one evening found a homemade bomb set to explode under the gastank of his automobile.

But, fortunately NERP itself experienced no direct intrusions of this sort in any way. Mr. Karcioğlu saw fit one day to move the field team's PAKD offices from their first floor locations to new locations on the second floor, with the thought that a bomber might be deterred from trying to throw explosives through a second--story window. Whether or not for reason of Mr. Karcioğlu's thoughtful precaution, no such attempt was ever made, and the upheavals disrupting Turkish education prior to March 1971 never really fazed the NERP project in any significant way.

But NERP's span of years unquestionably coincided with a time of stress in Turkey's history. The stresses which did impinge directly on the course of project events came in the form of internal Ministerial and governmental struggles. The project was continually challenged by the necessity of adjusting to the sequence of changes, new departures, and new directions with which the Turkish leadership responded to its larger situation.

We have characterized PAKD's slender, tenuous, and ambiguous origins, and its locus of operations as being situated immediately adjacent to the office of a Cabinet Minister. PAKD therefore was perhaps somewhat more exposed than most project settings to feeling immediately the effects of intra-Ministerial struggles as well as the effects of overall shifts in government policies and the appointment of new persons to the post of Minister. It is even possible that PAKD's initial tenuousness, lack of definition, and slightness of resources lent a kind of fluidity,

flexibility, and "light cavalry" mobility to its early operations, all of which may have helped PAKD to stay alive and to acquire some maturity as an effective "ready force" service arm for the decision-makers.

However all this may be, the point is that the situation in which the project operated was not particularly conducive to neat, orderly, rational, systematic planning and management. The AID system of operations requires the advance spelling out and specification of targets and schedules. (How else may a project be "managed"; how else may justifications be laid before Congressional committees in Washington?) The American field team members worked with their Turkish counterparts to lay out targets and schedules. Their Turkish counterparts participated willingly, freely -- all the while knowing better: Things will not work out this way, but why not say that they will...They could work out this way, so let's go ahead and say so...We do not know how they will work out, so let's suppose this way.

The differences between the resulting two sets of attitudes were very marked: "Good heavens!" exclaimed the Americans (or at least the less profane among them said, "Good heavens!"), "Things are not turning out at all as we said they would -- how far short of our targets we are falling!" "Tabii! (of course!)" exclaimed the Turks, "We did not really expect anything more -- in fact, this is better than we hoped!" So actual outcomes tended consistently to fall somewhere between the two sets of hopes and expectations, with the Turks consistently experiencing a sense of gratification, and the Americans continuously frustrated.

Again the point is that the Americans, knowing no better way to carry out project operations, kept working at the job of formulating advance targets and schedules. Once such a set had been formulated, day-to-day operations were carried

out in that framework. But each time a framework got set up, subsequent day-to-day experience began indicating that it was not going to work. Cooperating parties would try to make it work, and would hold on to the existing framework sometimes even longer than good sense might dictate, until finally all parties had to face up to the unrealities of existing targets, scrap them, and set up a new framework.

NERP went through this entire traumatic sequence at least three times:

a) in early 1969 in the face of delays in authorizing the selection of participants, b) in late 1969 and early 1970, adjusting to the lack of English competence among selected new participant candidates, and c) in late 1971 and early 1972, as a result of "hard look" evaluations of the project. One sometimes wondered if this recasting of project plans were not some kind of game which sports-loving Americans insisted on playing from time to time.

More seriously, it was apparent in the case of NERP that there was a very loose, elastic connection between project planning and project operations. The distance between objectives and performance often grew to very large proportions, and in the three instances cited above the gap became a hiatus, and revised sets of performance-objective relationships had to be formulated. Each time the connections snapped, the Americans suffered pain and anguish. Similar sufferings were never manifest among their Turkish counterparts.

Perhaps much more might have been achieved by NERP had these loosely elastic relationships been more closely, carefully, rigorously reined to one another. The point we want to underscore here is that some of the main reasons why large gaps kept occurring between plans and operations were the changes, alarms, and excursions occurring in the larger matrix in which PAKD was so sensitively but tenuously

embedded. These changes typically were beyond the scope of project management. They were usually unpredictable. They also tended more often to deflect or retard (and thus to separate actual performance from stated targets and schedules) than they did to accelerate or expedite progress toward project goals.

Forward-moving "breakthroughs" did occur: in 1970 when Minister Oguz authorized the consolidation of resources, in PAKD; in 1971, when PAKD became centrally involved in major educational reform efforts; in 1972, when Mr. Karcioğlu became Undersecretary and Bülbül his Deputy; and in 1973, when Karcioğlu judged he could relinquish his personal direct control of PAKD and put Fidan in charge. Otherwise, though the project's progress was almost always discernibly forward, shifting contexts usually generated retardations or detours. (The Chief of Party once thought to characterize the NERP experience in a single sentence as follows: NERP consistently floundered forward behind schedule.)

What therefore did we learn from NERP about this problem of adjusting to disruptive shifts? Not much perhaps, beyond what USAID already knows. The very concerned but always generous and constructive responses which USAID made to NERP's series of unexpected developments all add up to an admirable record of responsible project support. Perhaps the series of choices which NERP presented as to whether or not the work should be continued beyond a given point is the sort of thing with which AID deals all the time around the world -- though of course, each project is unique and demands particular ad hoc considerations. NERP nevertheless was consistently fortunate in the inputs it received from the USAID in terms of level and quality of staff concern and deliberation. The following comments, therefore, may be worth little more than a small hamper of coal brought to a large, industrious Newcastle.

To begin with, one wonders if the crucial element of time might not be somewhat differently considered in the frameworks of cooperative projects of this sort. Would it be possible to consider time in such a way that when unanticipatable delays or detours should occur, they should not be encountered as such dismaying or traumatic experiences?

NERP's early disruptions of 1968 (no decision on participants) and 1969 (selection of non-English speaking candidates) twice so effectively discombobulated project schedules that they had to be scrapped and done over. When the MSU field team tackled their third major effort of project planning, they tried to place their plans within a somewhat different, less time-bound framework. There may be some useful aspects of this approach.

They employed as their key terms the concepts of "phases" (i.e., major lines of activity, such as training, data systems development, etc.) and "stages" (e.g., preliminary design, initial implementation, fully operational, etc.). These "phases" and "stages" could be laid out in grid-fashion, with phases listed on the left and stages extending to the right. Operational indicators could be cited as to when the Phase I activity had completed Stage I and was entering Stage II, etc. It would then be possible at any given point in time to specify which stage any given phase had reached, without necessarily making any reference to being "behind" or "ahead" of schedule.

Indeed it would be possible, without altering the substance of the grid, to project alternative calendars. For example, an "optimum" calendar would presumably witness the several phases passing through their various stages usually with the least expenditure of time (so long, that is, as we are not talking about the aging of good wine). Similarly an "adequate" calendar, with a presumably longer total time span, could be projected for the same grid, as well as a "minimally acceptable" calendar of developments, which would be the longest one could tolerate.

The simple four-square grid which NERP developed along these lines (see, for instance, the project's Fifth Semi-Annual Report) was probably overly simple -- too simple perhaps for direct application to operations of other projects. On the other hand, the extensive lay-outs involved in most PERT analyses are usually too elaborate to serve as operational guidelines for many if not most cooperating counterparts. There is a kinship, however, between the admittedly simplistic NERP approach and a PERT analysis, in that both try to lay out sequences of developmental activities which distinguish between the parts of the sequences in terms of change in the nature of the activities. Such an analysis need not be so time-bound as the more usual setting of targets and target dates.

USAID also developed its Logical Analysis Framework during the NERP project period, and the Mission first applied it to NERP in the later months of 1971. A Logical Framework ("if-then") analysis would not appear to be incompatible with a NERP-type "phase-stage" analysis. In the AID framework, the "if-then" analysis attempts to link inputs, outputs, purposes, and goals into a rigorous structure. A "phase-stage" analysis presumable could function within the AID framework as one further way to track developmental flows of input output relationships.*

* See Appendix D for a Further Discussion
of AID's Logical Analysis Framework.

The game-playing approach discussed in Appendix D might go a long ways towards reducing certain problems to which NERP-type projects may be susceptible. 1) It might allow better advance definition of end-of-project conditions -- i.e., how shall we know when this game is over? 2) It might allow more effective specification of activities for purposes of preparing project agreements and implementation orders -- specifications more precise at least then the terms of the documentation upon which NERP operated (and to which MOE officials regularly affixed their signatures without being really as clear as they should have been as to what they were committing themselves to). 3) It should also provide a basis for calling "time out", which would be understood in advance, and which could be utilized without causing trauma, strain, or fear of dishonor among cooperating parties.

On this last point, it did not appear to be possible in NERP to blow the whistle and call time out. In 1970, for example, the PAR report judged the progress of the project to be "unsatisfactory". The Chief of Party thereupon urged that joint top-level sessions among project representatives be held to diagnose the problems and to determine subsequent tactics and strategies. However, this opportunity was not taken advantage of: neither campus, nor the USAID nor AID/W, nor the Turkish counterparts desired it. We simply suggest that at least one of the reasons why this opportunity was avoided was that the "rules of the game" (both tacit and explicit) under which NERP actually operated made no adequate provision for "time out" periods of conference and rule adjusting.

So much for what we may have learned about adjusting to unmanageable change. In summary, we suggest: that such changes generally result in discombobulating postponements and delays; that they are generally unpredictable but not uncommon; that under present time-bound rules of the game the task of facing up to and

recasting schedules unnecessarily generates trauma, specifically among the American elements; and that better rules less locked to target dates might be generated -- in advance and jointly -- so as specifically to allow for calling time out and reconsidering the rules.

2. NERP's Chief Distinguishing Features. Chapter Three has already discussed at some length the field-campus-field pattern of relationships, upon which NERP's training program was based, and which constituted the chief distinguishing features of the NERP project. As reported there, this was basically a strong and successful approach. The concept was: a) to identify promising mid-career or early-career leaders to whom more advanced training should be given; b) before sending them to the U.S., to employ them first in Ankara directly in the work of PAKD, for significant pre-training periods, for the purpose of involving them ahead of training in the actual problems of planning and development in Turkey; c) to send them to MSU (or to another university - Cila trained at Columbia) to pursue graduate programs deliberately designed to prepare them for their work in PAKD when they should return; d) for the nine participants training for research at doctoral levels, who would be expected to carry out and direct research when they returned to Turkey, to require that they select their research problems from among real problems confronting PAKD and Turkish educational development; and e) then to require the doctoral researchers actually to carry out their research projects in Turkey, working with PAKD research staff and facilities, and working on real Turkish data collected by themselves on the scene from real Turkish settings.

As previously stated, the idea was to anchor the training in Turkish realities. Of the concept's five elements listed above, items b), d), and e) -- plus their

articulation in the sequence a) through e) -- constitute the chief distinguishing features of the NERP project. Chapter Three reports that our experience unquestionably confirms the validity of this concept. To be sure, we experienced some distortions or perversions of the idea as it worked out in practice. But, the NERP experience in general adds up to demonstrating the feasibility and value of the concept. The purpose of the following additional comments is not to duplicate Chapter Three but to suggest two ways in which future applications of the approach might be made even more effective:

a. The first suggestion would be to proceed with any future use of the concept with greater confidence. NERP experimented with the approach. Hence, a certain element of tentativeness understandably entered in. It may be that the experimental tentativeness made the project less able to "hold the line" with certain individuals (e.g., Arseven) who managed to bend the rules or distort the scheme in ways which better suited their own purposes. Rules, of course, should always be flexible -- but they need not always be tentative. Future uses of the NERP approach to training for research may be more firmly applied with confidence.

This increase in firmness, incidentally, should entail more widespread and intensive advance orientation among participating faculty at the university, so that they might be less prone subsequently to being divided and conquered by an ardently persuasive student. It appears that Arseven employed this tactic successfully, so that he wrestled an extra undeserved stay at MSU, did not return to perform his research on the scene in Turkey, but completed his doctoral study at MSU before his return (albeit using Turkish data collected for him by his colleagues in Ankara). Future firmer applications of the NERP scheme should protect against this divide and conquer maneuver.

b. The second suggestion would be to consider more carefully and to plan in more exact detail the carrying through of doctoral research projects to their conclusions. Emphasis here is on the concluding of the studies. NERP did not prepare as well for these conclusions as it needed to have done.

Orienting the researchers initially to the real work and problems at home is a good idea. Gearing advanced training to these problems, and insisting that research projects be selected from among them, also are good ideas. Sending the researcher home to do his research on the actual scene is the best idea of all (if he succeeds, he is most likely to carry out subsequent research there successfully ... in the process, he best develops the needed facilities for research on his home ground....etc.) These are the essential features of the idea.

But how under the circumstances should a given doctoral study best be wrapped up and brought to its end point? NERP's plan was to send examining faculty to Turkey, to examine the candidate in the field when he was ready, expecting to confer his degree in absentia. The plan was followed in the case of three scholars. Dr. Brookover traveled to Ankara in June and July 1972 and (with Profs. Neff and Bohnhorst) examined Fidan and Karagozogl^u. Dean Goldhammer traveled to Ankara in February 1973 to examine Gucluol^u (again with Neff and Bohnhorst). Thus, three out of the nine candidates concluded their projects according to concept. They at least proved that the plan could work.

Four of the researchers, however, would travel back to the U.S. after their returns to Turkey and after they had carried out their research on the scene. Akalin traveled back to MSU in 1972 and Aydin in May and June 1973. Bulbul would return later in 1973, and Cila would travel back to Columbia in 1974. These

"second trips" were never contemplated as part of project plans and would be carried out largely at the candidates' own expense. Finally, two of the researchers - Kazanci and Arseven - would stay on at MSU and complete their studies there, without making the return trip to do their research at home. Arseven completed his degree in 1973, and Kazanci expected to finish later in the same year.

One may recall that the very first documents on NERP (e.g., the 1965 feasibility study by Gross and Williams) contemplated a field team in Ankara of several more than just two professors. Had a team of five or more actually materialized, presumably the task of organizing examining committees in the field would have been easy, simply using faculty who were already there. Since only two professors were there, they had to be augmented with at least one more faculty member. On the other hand, when Brookover and Goldhammer did travel to Ankara, they also provided many other valuable consultative services to the project besides sitting on the examining committees.

Another plan, which was proposed but never implemented, was to augment Bohnhorst and Neff with Turkish colleagues from Turkish universities in order to form the examining committees. To be sure, Dr. ^{" "}Husnu Arici, from Hacettepe University, was invited and did sit on Nurettin Fidan's committee, thus making a very valuable contribution and demonstrating that it could be done. He was, however, considered to be a fourth (extra) member added to a basic three-man committee, for which Dr. Brookover, visiting from MSU, was considered to be the essential additional third person. Except for Dr. Arici's extra assistance, NERP made no use of Turkish faculty examiners.

The Mission was sorry about this, because it believed using Turkish examiners was entirely feasible and would help build important bridges between PAKD and the universities. Dean Goldhammer, when he was in Ankara, also readily assumed that

using Turkish faculty would be feasible, and this could probably have been worked out if other alternatives failed. However, (with the exception of Fidan) those Turkish participants who were asked to contemplate the prospect of their being examined by Turkish professors very strongly demurred. They felt that unless they were examined by at least one representative of their campus advisory committees, their degrees would be looked down upon by others in the Turkish intellectual community.

Therefore, granting the virtue of requiring a future researcher to carry out his doctoral research in the same scene wherein he will be expected to do further research, the alternatives deriving from NERP's experience for rounding out the doctoral study appear to be as follows:

i. Be examined in the field by faculty from the alma mater - either those already on the scene, or others traveling to the field for the purpose, or both. Expect to receive degree in absentia. This is a feasible alternative.

ii. Be examined in the field by whatever faculty from the alma mater may be available, plus other essential examiners drawn from faculties of universities in the field. In order for this alternative to be accepted by either the researcher or his alma mater's faculty, it should be firmly built in the approved in advance as part of the project design.

iii. Return to the alma mater after completing field research, to be duly examined at the university by the members of one's full doctoral committee. This is standard university procedure and therefore entirely feasible. If adopted by future projects as part of the plan, funds surely should be allocated to cover the travel costs of the researcher's second trip to the university. Throughout the course of the project, Galip Karagozöglu ardently advocated this alternative for NERP.

iv. Stay at the university until all hurdles are over, doing the research, so to speak, in absentia. Left to their own choices, most if not all participants would probably prefer this alternative, since it seems the most certain and secure way to be sure of getting the degree. This alternative is not feasible, however, unless someone is available in the home country to assemble the data, which would rarely be the case -- though it was done for Arseven. But in any case, it is less desirable than having the researcher collect his own data.

In summary, any one of these alternatives will work for rounding out project doctoral-research studies. Whichever alternative is to be selected, it would be well to build it explicitly into the project design from the outset, so that all parties -- especially the researchers and their prospective faculty advisors -- should understand what the plan is to be. Probably alternative (iv) is the least productive approach, even though it is the most usual and may seem to the researcher the safest way to his degree. Probably alternative (ii) could be the most productive approach, even though it is presently the least palatable both to the researcher and to the faculties of their alma maters. Alternative (ii) is therefore the least feasible, and it would likely require a good deal of careful advance planning in order for a future project to make it work effectively.

Alternative (iii) might after all prove to be the optimal plan, as Karagozogl^u claimed from the beginning. It certainly would be palatable to both the researcher and their alma mater's faculty. And the cost of sending a researcher back to the university for a second trip of approximately one month to six weeks in order to round out his study should not be more expensive than bringing faculty to the field.

3. The Problem of Language Ability. There surely must be universal agreement on the crucial importance of the language ability problem. Moreover, there is probably

no agency in the world more experienced or intimately involved with it than AID. Certainly NERP made no new major discoveries on this fundamental issue. Nevertheless, one or two fruitful suggestions may be briefly derived from NERP's trauma of bringing ten participants in four years' time or less from zero-level English through to successful completion of their graduate-level masters' degrees.

One fact is that it can be done. It is not easy, but it is possible. A second is that the threshold to adequate competency was crossed by these men only after they had spent many months at MSU immersed in the university's linguistic community. To be sure, under the pressures to which NERP was peculiarly subjected, the project's masters' candidates were allowed to go to MSU with marginal TOEFL scores. Even so, in varying but relatively brief periods of time (from approximately six months) after their arrivals, the participants were forging ahead toward adequate levels of mastery of English.

A third conclusion is that the "standard" curricular materials for teaching English as a foreign language -- both in Turkey and at MSU -- leave a great deal to be desired. Out of the NERP experience come indications that once intermediate level skills are achieved, the better kinds of instructional materials (for reading, discussing, interpreting, analyzing structures, building vocabulary, etc.) are materials directly related to the professional concerns of the students -- in NERP's case, materials on educational planning and development. When the Peace Corps departed Turkey, the language program at TAA which USAID and NERP developed was based on such practical materials and worked well.

Concluding Statement. As noted at the outset, NERP was a project which failed in some ways and succeeded in a number of other ways. The purpose of this report has been to consider both the shortfalls and the successes, with a view to seeing

what we may have learned from both, and how in the future we might circumvent the former and strengthen the latter. This report is submitted in the hope that the discussions above may have served this purpose.

APPENDIX A: SUMMARIES OF NERP DOCTORAL STUDIES

- (1) Nurettin Fidan studied the central issue of equality of educational opportunity in Turkey. Turkey had had a long tradition of elitism, stretching several centuries before the reign of Suleiman the Magnificent. In principle -- and to a remarkable extent in practice too -- the Kemalist Revolution of 1923 broke that tradition. But patterns of practice may shift more slowly than shifts in espousals of principles. The education system which Turkey has created -- essentially from scratch in 1923 -- has been consistently dedicated to the principle of equality of opportunity, but it has not yet fully achieved that ideal. At primary levels, rates of participation in education are significantly lower (a) in the east as compared with the west of Turkey, (b) among rural as compared with city dwellers and (c) especially in the rural east, among girls as compared with boys. At secondary levels, education is not yet compulsory in Turkey and patterns of elitism in participation rates are even more pronounced at these levels. Nevertheless, between 1960-1970, as Fidan has shown, progress has been made at all levels and in all regions of Turkey at implementing the spread of opportunities and increasing balanced participation rates among the various categories of the population. He documents these developments and by means of multiple covariate analyses of data from provinces and regions compares the relative distributions of various educational and socio-economic factors to rates of development. He also gathered data on socio-economic backgrounds of 1970 secondary students to compare with similar data presented in Kazamias' 1958 study.
- (2) Galip Karagözoglu studied supervision of education at secondary levels. Secondary supervision in Turkey is administered differently (centrally from Ankara) from supervision at primary levels (which is administered by the 67 provincial offices of education). Karagözoglu's study represents a pioneering in-depth investigation of the role of the secondary supervisors in Turkey: tracing the historical development of the position in Turkish education, analyzing its current administrative and operational patterns, and comparing and contrasting role expectations and role perceptions concerning the office of the supervisor as perceived by secondary teachers and as perceived by the supervisors themselves. The study reveals many facets of operation which would appear to call for review and reform, including a basic conflict in role between on the one hand the supervisor's responsibilities for helping teachers improve their teaching - learning situation and on the other hand their responsibilities for inspectorial - investigative - prosecutive activities.
- (3) Husnu Cila's study, which is currently in progress, is roughly analogous to Karagözoglu's study in that it is investigating the role of primary level supervisors. Since that position is administered from the provincial level, Cila's study promises to provide interesting contrasts in findings from Karagözoglu's study.

- (4) Kemal Gucluol's study, also currently in progress, investigates the role of the provincial Directors of Education. This office represents the chief administrative authority for education in each of the provinces. Gucluol's study promises to reveal large areas of discrepancy between the Director's vast and growing responsibilities and his limited authority for carrying them out. Turkey's national system of education is highly centralized in Ankara (indeed, as one Undersecretary characterized it, it is "absolutely centralized"). Gucluol's study will show that as the society (and education) have undergone rapid and drastic changes, especially since 1960, the evolution of the office of the provincial Directors has not kept pace. More and more responsibilities have been heaped upon the provinces from Ankara, but delegations of authority and provisions of additional staff, facilities, and resources have remained essentially static, causing the office to devolve into routine transmissions of directives from Ankara and of reports to Ankara. In principle, the Director is supposed to function as an important assistant administrator to the Governor of the province. Gucluol's study focuses (a) on role perceptions among the Governor, the Directors, and the Assistant Directors of Education regarding the administration problems and proposed solutions to problems connected with educational administration at that level.
- (5) Sudi Bulbul's study (in progress) is a pioneering pilot investigation of student flows into, through, and out of the "middle school" (junior high school) in Turkey. For the purposes of his study, he is investigating a sample of middle schools in one province (Usak) to gather data for generating hypotheses as to causes of failure, drop-out, and success at the crucial middle-school stage. Primary education is compulsory in Turkey. A large reduction in participation rates, however, occurs between primary and middle-school levels where attendance is not compulsory. Among those who do enter middle school, large proportions never complete the cycle and drop out. Many others who manage to persevere through the middle school nevertheless are retarded in their progress by high rates of failure in particular courses and the need to repeat classes and grade levels. Another strong factor of selection operates on those who finally graduate from middle school -- only a proportion continue on the higher secondary level education. Processes involved in these "rites of passage" are no doubt complex, but prior to Bulbul's study they have never been intensely investigated. He is initiating an examination of some of the possible socio-economic correlates of the processes of selection. His findings promise to have important ramifications for the question of productivity in Turkish education.
- (6) Ali Arseven's study (in progress) also investigates important dimensions of student flow through the middle school. It happens that Turkey is currently experiencing a significant demographic shift in its population from rural communities to metropolitan communities. Immigrants to the city tend to cluster in districts according to a pattern which appears to be relatively unique to Turkey -- in districts known as "gece kondu" (overnight houses). That is, small, hastily built forms of housing are erected on otherwise unoccupied, public land, and as soon as they are occupied the occupants cannot be evicted. These Turkish "gece kondu" districts do not, however, display the characteristics of disorder typical

of today's metropolitan slums in other countries. On the contrary, they appear to be relatively well-organized, locally-planned communities of former provincial fellow-countrymen who deliberately prepare for the advent of new immigrants. Their mushrooming growth, however, does place a severe burden on metropolitan community services, including schools. The "gece konu" are crowded areas of rural people beginning to make the transition to city life. They bring their rural life-styles with them. Their children throng to over-crowded "city" schools. Arseven is comparing patterns of motivation, educational aspiration, and self-concept among children attending Ankara "gece konu" neighborhood middle schools with similar patterns found among children attending middle schools located in "upper class" neighborhoods in Ankara. His findings may have important implications for possible differentiation in school practices and programs. His study, like others in the NERP program, is another "first-of-its kind" study in Turkey.

- (7) The preparation and supply of teachers is a crucial issue in Turkey's expanding school system. The need for trained professional leadership personnel is a correlate issue, since to this point there have been next to no programs of professional leadership training in Turkey (except for occasional short-term summer workshops for principals). Mustafa Aydin's study (in progress) touches on both these issues, in that he is investigating the roles of principals of normal schools (primary teacher training schools). He is using as his instrument of investigation an adaptation of the Leadership Behavior Description Questionnaire (LBDQ) which has recently been widely used in the U.S. to investigate patterns of leadership behavior in many different sorts of human organizations. Aydin anticipates that his study (a) will uncover a number of relationships which should aid in strengthening the operations of normal schools in particular, (b) will suggest patterns which -- subject to further research -- will probably be generalized to leadership behavior in other sorts of Turkish schools, and (c) will indicate and document needs for professional leadership training to prepare principals for effective school leadership.
- (8) Kemalettin Akalin is completing a study (in progress) which is a demonstration of an application of systems analysis to problems of education in Turkey. The supply of general upper secondary school teachers -- which is perhaps Turkey's currently most crucial educational issues -- is the problem to which Akalin is making his applied demonstration. As a result, this particular application should produce a number of direct, practical outcomes (e.g., in identifying key decision points at which present bottle-necks in supply might be alleviated). In the long run, however, his study should prove much more valuable as a general model for applying systems analysis as a mode of thinking and analysing to other crucial problems. Indeed, his study might well set style and guidelines for an on-going long-range educational research program.
- (9) Osman Kazanci is undertaking a study (in progress) of modes of testing and evaluating student progress. This question is especially signifi-

cant in Turkey, where educational practice places great reliance on test performance -- for graduation, for admission to higher schools, and for passing or failing a given course or grade level. Kazanci's study entails experimental evaluation of a more advanced mode of measuring student progress -- one which transforms the testing experience into a productive learning experience for the student and supplants the frequent arbitrariness of more typical, so-called "objective" procedures. Kazanci's study aims at introducing these more advanced procedures and evaluating their effects, meanwhile estimating their feasibility for general use in Turkish educational contexts.

APPENDIX B: PAKD INFORMATION SYSTEMS DEVELOPMENT NEEDS

OVERVIEW

I. The Consultant's Role

During the past month the consultant to PAKD on data systems engaged in the following activities:

- Conferred with key individuals at PAKD and the MOE, at SIS and SPO, at METU and Hacettepe Universities, and with representatives of equipment manufacturers.
- Participated in task force and seminar work groups at PAKD advising on plans and current data development work.
- Consulted with Mr. Kemal Akalin on his research, which applies a systems approach to analyzing the problem of teacher supply.
- Conferred with NERP team members on the question of the need for continuing technical assistance to PAKD on data systems development from now until the NERP project concludes in June, as well as thereafter.

The past four weeks have proved to be too brief to permit the consultant to obtain as firm a grasp as he would like of the complexities of the work that has been accomplished to date, of the work currently under way and the directions it is taking or should be taking, and most importantly, of the human environment of PAKD and its network of relationships with other agencies. This report will nevertheless record a variety of observations, perceptions, guiding principles, guiding questions, and recommendations in an effort to be as helpful as possible to PAKD in its continuing efforts. The consultant is very aware that these are based on what is so far only a partial grasp of the situation. In this connection, the consultant is prepared to offer his continuing assistance to PAKD--in the short range, and possibly over the long range as well--if this is deemed desirable.

II. Summary Observations

The following summary observations can be made based on the above experiences:

- PAKD is struggling with a number of basic problems. Some appear to be easy to resolve; others may be very difficult. However, all of them are typical of organizations attempting to improve and modernize their data management systems, and none of them can be solved by a data processing consultant coming in from the outside and waving his magic wand over the situation. Probably the best help a technical advisor can provide is to raise useful questions. This is one of the purposes of this report. PAKD, however, must work out its own answers.

- The question of acquiring additional computer facilities will almost certainly be the easiest problem to resolve, from a strictly mechanical point of view. Current and presently planned PAKD operations cannot be supported adequately with existing data processing facilities at PAKD. The keys to new equipment acquisition in the present environment lie in making sure that adequate training, servicing, staffing and maintenance will be provided, and in making sure that new equipment configurations allow for continuing expansion in the future. Given these conditions, there are several alternative forward steps which PAKD might take, and the least expensive may be the best initial choice. The need for PAKD to take such a step is clear.

- Questions of organization and staffing--and of definitions of functions, purposes, and jobs--are much more crucial and much more difficult to answer. This is true of most organizations like PAKD. Moreover, they are typically enduring problems. Some of them will take a long time to solve. Some, notably those in the areas of inter- and intra-office politics, may never be finally resolved and a series of optimal compromises is the best one can expect. Others also change in nature from time to time and both the problems and their solutions must continuously be redefined. In short, the task of data systems development is a long-term, evolutionary undertaking. No system is ever "finished." It is forever expanding and modifying its services. The aim at each stage is to make significant incremental progress.

- It is useful to distinguish between "machine" problems and problems of "logic"--logic in system design, in defining outputs, in defining the functional relationships involved in collecting, storing, processing, communicating, and using information. One of the most expensive and difficult jobs in trying to use a computer effectively is the job of getting present data transformed into machine-readable form, and this job involves "logic." Though there are a number of data processing activities underway in PAKD, these activities do not yet appear to be effectively interrelated in these areas of logic. It is hoped that this report may serve to formulate some useful questions in these areas which may guide PAKD productively in the months ahead.

- The important thing is to get started, even if the over-all design may not yet be will developed. Usually, enough is known about future data needs that a start can be made on computer records before system design work is completed. Initial records can subsequently be brought into line with the design--the key point being that, at the time, the necessary data conversion can be accomplished by the computer, rather than manually. Even divergent formats, missing or incorrect data, and sub-optimal coding are easier to rectify once a start has been made on transcribing manual records to computer records. If one delays the task of converting data until the design is "complete" (and it is never fully complete), then he will be faced at that time with a massive job of manual conversion or, more likely, he will be faced with having to do without data which might have been collected in the meantime. PAKD has

already made its start. Two important projects are already under way: to retrieve ten years of previous data; and to convert teacher personnel records into machine-readable form. Other projects are approaching readiness for development: assuming SIS's responsibility for educational data collection; applying systems analysis techniques to the problem of teacher supply (Akalin's research), which may serve as a proto-type for similar applications to other problems; and developing cost data in machine-readable form for use in PPBS budgeting. All of these are promising starts and have effectively drawn PAKD into direct involvement with the full range of data system development problems.

III. Need for Increased Computer Capacity in PAKD to Serve the MOE

Present and indicated activities of PAKD are believed to be important. There is clearly a need for computer assistance (a) to help collect data, (b) to support certain offices in maintaining operating record files, (c) to support planning, research and budgeting activities with scientifically analyzed data, and, (d) to maintain repository archives of data to support long-range planning and with projections and trend analyses. With sufficient computer power and supporting staff, additional uses will develop in future years that can assist in continuing the improvement of education. The education system is a complex structure having obviously important relationships with other elements of the society and it may be necessary to provide these other elements with some support also, or at least to exchange data with them, and computer requirements will increase for this reason (the dissertation in preparation by Kemal Akalin attempts to show some of these relationships).

At the present time, however, there are some 42,000 secondary school teachers, 150,000+ primary teachers, and corresponding numbers of schools, students, and courses existing within a reasonably complex structure of school types and administrative procedures which depend to quite an extent on the governmental structure with its 67 provinces, each having from six to ten districts. Processing only a minimal amount of the operational data implied by these numbers is difficult, and there is evidence that the data now collected are not as complete and current as desired; but as more accurate and up-to-date records and more data elements for each record are developed, additional computer assistance will be needed.

PAKD is now engaged in several projects which utilize existing computer equipment and which are running in near its full capability during at least a major part of the year. These are described later under the heading "PAKD Projects." It is also moving forward with projects which will soon create demands beyond its present capacity. Fortunately, a building stands ready to house additional facilities, and there are indications that the MOE is prepared to finance their acquisition. Staffing and organization is another matter, about which more will be said below. First, however, a few general recommendations and some guiding principles.

IV. Guiding Principles

Data systems are a continuing and evolutionary product, not a new development. Long before computers were available, operational records were kept. However the computer opens up so many possibilities, because its increase in speed is so great over manual methods, and because increased possibilities for data analysis as well as for providing more current and accurate records. Unfortunately, many expect the computer to perform a given job for less money when in fact it often costs more. The real pay-off is often forgotten or overlooked (and is often difficult to illustrate): so much more can be done with greater accuracy and in less time, plus the fact that some "impossible" manual tasks become feasible. Manufacturers and so-called computer specialists have not helped the cause of understanding with their over-sell and their inability to describe what computer systems, data banks, etc., really are.

PAKD and the MOE should anticipate having to hire more data processing staff, having to pay them higher salaries, and having to invest more in higher capacity facilities. They should also anticipate that initial developments will take appreciable amounts of time before a significant amount of momentum becomes apparent. They may be assured however that the pay-offs will be real and increasingly valuable.

The data system needed by the Ministry of Education is likely to take shape as a large, complex structure extending beyond the bounds of the Ministry. PAKD should realize from the outset that the notion of a "data bank" which physically exists on one computer and can answer all question is of course false. Even when restricted to a single ministry, such a "data bank" would be too large to be feasible. A better concept is to imagine the "data bank" as being composed of many files and computers which need not be physically connected, but which require some human intervention to answer questions (and not "all question" even then)--the design provides for an integrated system. Thus, physically separate files in various administratively separate offices can be interrelated through human intervention to answer questions which could not be answered by any of the files individually. It then becomes less important who maintains the data or where, though coordination and cooperation (the operation of the system) are important--indeed essential. The logical design of a system may be comparatively easy to accomplish, but the implementation is likely to be difficult because of political and managerial obstacles. A proper design must take these latter items into account. Given the information output requirements, it is relatively easy to specify a computer which will do the job, but whether that machine will work in a given human environment is not at all assured.

The following guiding principles and suggestions are offered for PAKD's consideration:

- Systems approach is an attitude--physical integration is not as important as logical integration. Some classes of anticipated questions may be answered by a physical implementation very directly and rapidly. Not all questions can be anticipated, but even unanticipated questions can be answered if the system has been logically well designed and integrated (even though parts of the system are not physically integrated).

- Design and implementation must take place in parallel.
- System design must account for organizational and political vagaries-- if these are not adequately understood before planning the operation, efficiency and effectiveness will be impaired.
- Build on the experience of others. WICHE (now NCHEMS) has provided a forum in the U.S. for establishing information collection, processing and communication standards for educational management purposes and the development of an underlying data structure which can be implemented on a computer. Some NCHEMS steps can now be directly implemented; many require additional work and local tailoring. Nevertheless, PAKD could follow the guidelines stated and the products suggested with confidence. Greater inefficiency is likely to result from delaying action than from building on NCHEM's findings.
- The law of supply and demand in the technical manpower market requires that computer support personnel be paid higher salaries than PAKD now offers at least for the near future (5 - 10 years).
- Better statements of goals are needed: from the top levels of the MOE down through the internal offices of PAKD and along with this, the organization of PAKD, especially with respect to data processing, needs to be specified.
- Computer selection hinges on the scope of activity envisioned by the MOE. If it is to serve only PAKD, the requirements are less than if one envisions serving the entire MOE, including services to individual schools or districts, perhaps even other ministries.
- There is a "critical mass" below which a computer staff is not able to sustain itself. This size is larger in Turkey where the staff must operate more independently and with less immediate access than is possible in some countries to other facilities and to other personnel with areas of expertise. Access to other resources in the U.S., for example, may range from mere minutes by telephone to no more than a few days for air shipment.

REFERENCES AND OUTLINE FOR THE REMAINDER OF THIS REPORT

Three papers should be considered as background material: 1) Building the PAKD Information System--Next Steps in which items 1, 3, 5, and 8 are especially appropriate, 2) The NERP Research Program (K.L. Neff, November 1971), and 3) PAKD/NERP Information Systems Design in which the Historical Data Recovery project and the Personnel Record file are partially documented.

Nine topics have been classified into five major headings in the following discussion. The present status, computer implications, questions and suggested activities, alternative possibilities, and successive implementation steps will be given, as appropriate, for each topic. If additional consulting visits are desirable, these questions and suggestions can form the basis for further work.

RECOMMENDATIONS AND QUESTIONS

I. Organization and Goals

The most critical problem facing the personnel of PAKD is to have a clear statement of the status of PAKD within the Ministry of Education, together with the goals and functions of PAKD. Even the size and capability of a computer hinges on this. (There is an opportunity to install a good computer system with a competent staff to serve all the needs of the MOE, perhaps certain related functions in other ministries, and to provide a resource to help other government agencies develop their own computing ability. At the other extreme, a very minimal computational facility could be provided.) A clear statement of goals would also allow capable personnel to proceed on their own initiative when other work is completed. Once determined, an organizational structure is needed which can permit effective work toward these goals. The following questions appear to be inadequately answered vis-a-vis PAKD; some of the answers may have to come from the upper levels of the MOE, but there are PAKD staff with adequate training and experience to provide most of the answers:

1. What is the status of PAKD in the MOE organization?
2. What are the goals of PAKD?
3. List the current and foreseeable functions of PAKD.
4. Develop a viable organizational structure for PAKD; delineate line and staff responsibilities and describe job functions.
5. Is it realistic to envision a computer system to serve all MOE needs?
6. What is the relationship between PAKD and the Board of Education?
7. How will project priorities be determined within PAKD?
8. Can ways be found to provide pay levels which will attract and retain competent personnel, including computer personnel?
9. How will coordination between education information personnel and computer personnel be assured?
10. What is a realistic budget for a computer-supported information system--equipment and personnel--and how will it be determined?

II. PAKD Projects

A. Testing

The testing activity consists of collecting test papers from students in the schools, transcribing the answers to computer cards, processing these cards to determine the scores, then producing reports of scores and certain statistical summaries. This is an operational, or transactional process, which means that the educational system depends on this processing to carry out its operations, namely scoring and recording the progress of students in the school system. Therefore, this process must be continued from an operational point of view, and the computer is, to all intents and purposes, a necessity. Furthermore, there is information already in these data (and additional data which could be gathered through the examination process) which would be valuable in analyzing parts of the educational system, if and when the PAKD staff is able to develop the procedures. An adequate computer is essential for this activity.

The testing operation is apparently looked upon by many as a task that is independent of other PAKD projects, even outside the scope of proper PAKD activities, and expect it to diminish in size in the future. However, it apparently meets an operational need and contains useful data, plus a being a mechanism for acquiring additional data which could be helpful in future research projects. Some of the information may even become a part of a Student Record File.

The testing process imposes a sizeable computer load between February and August with a peak load period in June and July which limits the processing of other jobs and will continue to do so until a larger computer is available. Note:

1. Suggestions presented in the "Information System Design" section for the documentation of PAKD projects should be completed for the testing operation.
2. The response to the consultant's request for a description and estimates of current work load produced a good start toward systematically defining the testing operation. Considerable time and effort will be required, but this description should be completed both to document the testing operation and, more important, to serve as an example for the documentation of other PAKD projects as the need arises.
3. How many students are covered in this testing process?
4. Will the volume of work be reduced in the future for some (what?) reason?

B. Educational Statistics

The educational statistics project appears to be evolving from two needs. The first is a government requirement that certain educational statistics be

periodically gathered and reported, and the second is a need for these and other data for research and planning purposes. There is a considerable overlap in these requirements. The responsibility for collecting certain educational statistics is being delegated to PAKD by the State Institution for Statistics. PAKD is now attempting to meet both SIS and MOE data needs through a single system. Though some parts of this job can be taken on now, the requirements that are being developed exceed the capacity of the present PAKD computer and computer staff. SIS has agreed to provide computer support for processing the data until PAKD has the equipment capacity and the staff capacity to effect a complete transfer.

The data for this project result from a survey, or information request, rather than from an operational requirement, and so they are not as critical for day-to-day operations of the MOE, though their collection may be required by law. (By way of contrast, a payroll record must be current and accurate enough to serve the employee; if it is not, employee protest will prompt accurate updating). An important segment of the educational statistics project is the translation of existing historical information (for the past 10 years) into machine-readable form. This segment is virtually completed and once accomplished, will permit a start toward meaningful trend analyses. The following tasks and questions should help document requirements for the further development of this project:

1. What data elements must be collected to meet SIS requirements?
2. What data elements must be collected to meet MOE requirements?
3. Indicate which elements are common and carefully define all of them. Be sure that information that is needed can be processed from these definitions.
4. Document the collection and processing procedures following the general suggestions in the "Information System Design" section of this report.
5. Determine how long data must be saved to meet SIS and MOE purposes.

Over the next year or two, most of this work will have to be done using the SIS equipment. Plans should be formulated for converting the load to PAKD equipment as it becomes available. Compatible programs, probably in a standard FORTRAN language should be developed and used to facilitate this transfer.

C. Personnel Records

The development of personnel record files is the third major data processing activity now underway in PAKD. These records are presently maintained in a manual file where it is difficult to locate quickly individual records according to characteristics other than by name and civil service number.

Using the present manual system, the preparation of promotion and retirement lists and/or the detection of incorrect personnel actions is a monumental task, especially when one considers the fact that the MOE employs virtually one-fourth of Turkey's civilian government employees.

A pilot project is now underway which will place up to 80 characters of information in a record for each secondary school teacher. If this effort succeeds, PAKD will eventually be able to support the General Directorate of Personnel with an operational file capable of carrying out the MOE's day-to-day responsibilities for personnel actions. This pilot project has progressed to a point where the operation appears to be feasible. However, even though new peripheral equipment has already been ordered for existing equipment, this function will impose a near-capacity load on the present computer and computer staff. Both will have to be increased if the personnel file is to have operational reliability and be able to do such things as quickly update records because of retirement, transfers and promotions. The record will eventually have to be expanded so that manual files can be discarded and the computer will have to maintain up-to-date records and produce certain standard reports. At a still later time, it may be feasible to provide direct access to the file so that an individual record can be displayed within a matter of seconds to answer a specific question. Note:

1. The complete process, including all manual and computer procedures should be carefully documented showing responsible administrative units at each point, cut-off dates for updating, content and distributions of listings and reports, turn-around times for producing selected and updated reports, etc.
2. Estimate the record growth due to adding primary teachers, other education personnel, school population growth, increased rate of school attendance, and other reasons for expansion for record length.
3. Prepare documentation according to suggestions in the Information System Design section, especially the timing chart with regard to the critical time between the availability of data after the start of school in the fall and the need for information to prepare the budget.

The first phase of this project is well underway. Useful catalogs can be produced to assist the Personnel Office in looking up individual records, and the number, sorting order, format and production time for these should be established. One critical point that should be investigated appears to be during June and July when the testing operation is making heavy demands on the present computer. The feasibility of linking this file with payroll records should be explored.

Extension of the file should follow, to include first primary teachers, then all education personnel followed by, possibly, more frequent updates and reports, and ultimately direct access to the file. The timing and the order in which these are accomplished will be dependent upon the size of the computer and staff. These expansions will probably cover a period of 2 to 10 years.

D. Future Requirements

The need for additional operating and research procedures will constitute a "wish list." It should consist of a list of future files and processing requirements. For each item, specify the need as completely as possible, computer and staff requirements, and timing. Establish a priority for each item and periodically (at least annually) review the list and priorities.

III. Information System Design

The development of a communication and information system among the various offices in the provinces and schools is just starting to get some special attention, with the idea that better information about the educational system will assist administrators at all levels to improve the education process. To develop such a process:

1. Written procedures are needed for each PAKD project and product. They should answer the following questions: Who requests What to be done to (and/or for) Whom, How, Where, When, and Why? (Who = source, responsibility; What = name and description; to Whom = recipient; for Whom = beneficiary; How = process; Where = collection and distribution; When = frequency and timing; and Why = purpose).
2. Identify and describe the communication network through which data can be collected and information disbursed.
3. The system must make it easier for administrators, not more difficult. (Don't send the same blank forms to be filled out every year; supply the source with existing information from your files and ask only for updating of that information and new information).
4. The beginning of the Fiscal Year (March 1) and the school year (October) are two important dates. Are there others?
5. Consider the possibility of constructing and implementing a model of the Turkish education system. While projections made directly from such a model cannot be realistically expected for at least five years, the work of designing it and trying to implement it would lead almost immediately to an improved and understanding of the education system and more meaningful interpretations of the data that are gathered.
6. Describe the process of coordinating information systems development with computer implementation, functionally and administratively.
7. A data bank should be visualized as a rather broad collection of data, not all of which is maintained in any one office or on any one computer. (Some parts may not be on any computer). One function of PAKD might be to provide the overall coordination (especially insuring standard definitions and file linkages), leaving operation processes to the appropriate agencies. However, at least some data collection will be a necessary adjunct of PAKD, whether or not it is explicitly part of the PAKD name and mission.

8. Differentiate between the logical and physical (computer record) organization of the data. System design and implementation can proceed in parallel if the work is well coordinated.
9. Utilize the products and continuing work coming from the National Center for Higher Education Management Systems (NCHEMS, developed from WICHE; write to NCHEMS, Boulder, Colorado). This material can be used with confidence that subsequent system design will not cause undue difficulty when integrating previous implementations.
10. Examine the "Brown Book" material from the MSU Office of Institutional Research for suggestions on types of information that might be useful as components of the system. (Don't follow it too closely, it's not that good.)
11. Data definitions are crucial parts of documentation procedures.
12. Utilize operational record files where possible to avoid duplication and to have a more accurate and up-to-date data source.

IV. The Processing System

A. Staff

A group has been educated to develop a research and planning office for the MOE. This group will need to rely on a computer and programming group for the implementation and support of its projects. The computer group is not large enough even to support the present computer, as evidenced by the projects now awaiting programming assistance. Some of the trainees now employed by PAKD cannot be considered as full-time or permanent employees since they are still going to school. In the past, most of the personnel employed on this basis have left PAKD once their education was completed. While such employees can be useful for some types of PAKD projects, they will not be satisfactory for supporting a larger system since the turn-over rate will preclude building an experienced group. Low pay for a scarce resource contributes to this problem; for these personnel, the ratio between private sector and government pay scales is on the order of 3 or 4 to 1. Given such a difference, government computer installations seldom can retain top-flight personnel. PAKD should:

1. Prepare at least one individual who can and will deal effectively and intelligently with computer manufacturers on hardware and software problems.
2. Improve pay rates for competent personnel. There are tests for computer competence provided by Data Processing Management Association (DPMA), IBM, and Brandon Institute which could be utilized to help define a competence level and guard against "friendly" promotions (but they do have some shortcomings, so some care should be exercised). PAKD's investment in training and education needs to be protected.

3. Develop a permanent computer staff of full-time personnel. This can be supplemented with part-time personnel (much like those now being trained) if they are well managed, but an experienced staff must be maintained to effectively support new equipment. The shortage of competent computer personnel may partly explain why some people felt that computers presently installed are underutilized. Computer staff development should be started very soon so that good applications programmers become available to support PAKD work and to release present personnel to start training on the systems capability that will be needed with the next computer. There is a nucleus of personnel in PAKD capable of learning how to operate a computer system of the sophistication that a new PAKD machine should have.
4. Estimate staff needs for 1-, 2-, and 3-shift operation. One method that should be utilized is observation of existing systems of corresponding size.

The programming load is now almost entirely one-time jobs, but with additional staff a subroutine library could be developed and an estimated 60% of the programming requirements could be met with such subroutines. Library documentation is important, but presently weak. It also deserves some staff support.

B. Computer

It is estimated that the present computer runs an average of 1½ shifts per day with a peak load period in June and July when it may run almost continuously. The testing operation now consumes up to 70% of computer time, but two very sizeable applications are being developed and they promise to fill any available time within the next year.

The present card reader is a source of considerable system inefficiency. Some 20% of the computer work must be rerun because of defective components in the reading mechanism. Also, an estimated average of 3 to 6 hours per week possible computer operating time are lost due to power failure, most often associated with electrical faults within the building itself. The view by some that computers in Turkey are inefficiently used may be due in large part to the way in which computer time is reported--it being the actual time the computing unit is running, excluding the time it takes an operator to load and unload card readers, magnetic tapes and printers while the machine must wait. In newer computers, this operator time is utilized by the machine to perform other tasks.

Four computer manufacturer's representatives were interviewed and several alternatives for equipment selection emerged as worth pursuing.

The following steps are suggested:

1. A top-priority project should be improving the performance of the card reader, unless all possible means have already been exhausted. This equipment will be required to support PAKD for at least a year and it can only get worse. In machine time alone, it may now represent a loss of TL 8,000 per month.

2. Electrical service to the computer should be improved. This is a deplorable situation. If this is indicative of the support that would be given to a new machine, PAKD should drop all plans for acquiring a new machine. Perhaps documentation of actual power failures can be prepared from the operating log to indicate the seriousness of the situation.
3. Utilize equipment to which PAKD has access in other locations--perhaps with new applications. Several benefits would accrue (at some cost, but less so than a new machine) including:
 - a) relief of some of the load on the present computer;
 - b) staff training and familiarization with other systems;
 - c) a comparison of the present machine with what can be expected of a new one;
 - and d) gradual conversion to a new computer. This work should be done in a high level language (See #13 below), which will make programs developed as portable as possible--thus "long-range efficient," even if "short-range inefficient."
4. Describe the procurement procedures that are required to obtain a new computer. Estimate the time required for the various steps.
5. Develop a picture of computer needs from at least two points of view: a) the applications that require a computer, and b) the operation of a computer system. Estimate record volume, processing procedures required, historical storage volume, peak load periods, and critical deadlines.
6. Acquire the OECD publication on survey of computer installations in Turkey.
7. Characterize computer needs quickly and secure configuration proposals from all viable manufacturers. Use rough approximations with emphasis on projects now underway.
8. Pursue manufacturers' representatives in the U.S. for proposals as a check against information obtained in Turkey.
9. Examine financing and other considerations influencing the decision to lease or purchase new equipment.
10. Commence proceedings (items 4 and 7, for example) to sign a contract with a manufacturer for delivery of a computer. Delivery time is long and it will be more advantageous to negotiate changes in the contract at a later date than to wait too long to initiate the order. As a guess, it appears that the smallest configuration possible in a line which can be expanded later to meet PAKD's developing needs would be preferable.
11. Develop a computer program library.
12. Develop a library of project and product documentation.
13. Write and maintain all applications programs in a high level language and even then only use highly standardized features to facili-

tate the transfer of programs from one computer (or one version of compiler) to another. Programs will also be easier to document this way. Commonly used procedures may be written in assembly language and called from the main program to achieve some efficiency, but overall, long-range efficiency will best be served by using the high level languages. A new computer will be used in a much different mode of operation than the present one; the programmer will be relieved of much of the burden of squeezing a program into a small amount of space and can use more memory in exchange for an increase in processing speed. Numeric coding will not be as essential as before because programmed sort procedures will work as effectively on alphabetic characters. It will be more important to get many programs into production than to try to save computer time on fewer programs. This will be especially true in the early stages of a new system when computer capacity will exceed needs.

V. Miscellaneous

A number of ideas have arisen during this work which do not fit in the above outline and may not be directly related to the purpose of this consultantship, but which may be of some help:

A. Publications Procurement

Subscriptions to professional journals are most often acquired by joining to professional society that publishes the journal. Individual memberships in professional associations are relatively quite expensive (especially when one considers the salary levels in PAKD), and since libraries can often obtain publications at a reduced rate, the PAKD library should purchase and make available certain key publications.

In the computer area, publications should at least include those of the Association of Computing Machinery (ACM) (Journal (6 per year), Communications (monthly), and Computing Surveys (a tutorial quarterly with some excellent material for PAKD personnel)). Also from ACM, but separate from the subscription, is ACM Algorithms--a compendium of computing procedures written in ALGOL, though now including ASA FORTRAN and COBOL. In the education applications area, all publications of the WICHE project, now known as NCHEMS, should be procured (see attached summaries). Other publications could be suggested, but the above have material that can quickly repay their subscription costs in PAKD products.

Middle East Technical University has been recommended as having good material in its library. Perhaps a subset could be included in the PAKD library. This would also encourage the continuing education of PAKD personnel.

B. Requirements for Further Assistance

If PAKD can see areas where further help from NERP, AID or an occasional consultant could be of assistance, it would be helpful to have a specific, detailed request to that effect as soon as possible.

C. MSU Campus Training

There are some informal arrangements and several areas of activity on the MSU campus with which past NERP participants have not become sufficiently well acquainted. An effort will be made to introduce the participants now at MSU to the Office of Institutional Research, to computer programming, operating and maintenance personnel in both the Data Processing Department and the Computer Laboratory, and perhaps to manufacturers' (IBM and Control Data) personnel on campus. Also a review of their academic programs with the background provided by this consultantship would be helpful in rounding out their experience, in the light of their PAKD duties and the needs of that office. The extent of this type of activity may be somewhat limited without the assistance of AID and the support of PAKD.

APPENDIX C: HISTORICAL DATA RECOVERY

Historical data files are essential for an information system of the type contemplated by PAKD. Their more obvious uses are in the areas of trend analysis, projections, and factor analysis which are needed to support long-term planning.

Though planned to take place early in the NERP project, historical data recovery efforts have been sporadic and have produced very little until this last year. Substantial progress has now been made and with concentrated effort, the project could be completed within the next 4 to 6 months. One of the principal bottlenecks at the present time is that of obtaining enough computer time on a machine sophisticated enough to do the job. That State Institute of Statistics (SIS) has been most cooperative and willing to assist PAKD in this area, but two major problems have arisen: 1) The SIS Univac computer has been down so much of the time that they are far behind their own processing schedule and cannot make the machine available; and 2) Even if SIS were now on schedule, explorations have revealed that it is now likely that they could give PAKD the "sole use for long periods of time" that the processing of MOE data requires, i.e., sole use of the machine for several 10 to 14 hour periods. Similarly, METU's computer center has indicated a willingness to cooperate, but their machine is already the most heavily used in Turkey and it is extremely difficult to arrange for these several long time blocks when the machine could only be used by PAKD personnel. The IBM Service Center has the most suitable machine but rental charges are very high. However, if PAKD should order an IBM computer, it is understood that considerable machine time at the Service Center might be made available free of charge as a part of the contract training time provided by IBM. Thus, this time could be used productively for operator training, systems development, and systems output all at the same time. This avenue appears worth exploring.

Current Status

Historical data have been recovered, or are in a state of being recovered, from three sources: 1) SIS publications from 1960-61 through 1966-67; 2) SIS data files from 1967-68 through 1969-70; and 3) SIS punched cards for primary school data from 1967-68 through 1971-72. The SIS publications provided data for all types of schools for the period indicated. SIS punched cards contain data on primary schools only, and SIS data files were used to locate data for all schools at the secondary level for the years indicated. Data for Orta schools throughout the 10-year period have been recovered only as provincial aggregates, though they could be recovered on a school-by-school basis.

Primary school data from 1960 through 1966-67 are provincial aggregates (though they could have been recovered as sub-provincial aggregates) and the data on SIS punched cards for primary schools are on a school-by-school basis, though the identification of individual schools will be impossible for any but the last year because the only school record identi-

fication code used was the number of the questionnaire form filled out-- this number changed every year for each school and the old questionnaires were not retained. Therefore, the retention of these old school records is bound to be of marginal value for some of PAKD's purposes, though it can still serve a number of research and planning purposes. New data collections should utilize a systematic school identification code.

Data for all upper secondary schools throughout the 10-year period were recovered on a school-by-school basis, but some of the schools identified in the SIS publications and record files could not be matched with old PAKD secondary school identification codes. The PAKD punched cards for such schools have the code columns blank. Additional work is needed in this coding area--perhaps a new coding system making use of codes now being developed for the MOE personnel files along with new elements could be used. Then, new code designations could be made for all schools.

The PAKD-punched data cards have not been checked for accuracy. It is suggested that a 5% manual check from computer printout (comparing it to data source, not to the coded data forms) be effected to determine the percent of data error and the percent of card error. All errors found should then be checked with the code sheets to determine the percent of transfer error and the percent of punch error.

Figure 1 is a flow chart representing the process of recovering historical data showing the parallel lines of activity. The vector to the left of the figure actually combines data recovery from both SIS publications and SIS data files. At mid-June 1973, work had progressed up to the "list" operation in the left-hand vector. Actual work had not progressed beyond the first block of the right-hand vector, but many meetings with SIS and METU personnel had produced agreed-upon methods for executing subsequent steps and only the formal bureaucratic procedures remained to be finalized. In brief, the procedural steps generally agreed upon in preliminary discussions were as follows:

1. Five years of primary school data on SIS's punched cards are to be read onto magnetic tape (1967-68, 1968-69, 1969-70, 1970-71 1971-72.)
2. METU has informally agreed that this can be done on their machine, though a formal request should be made through the Rector and a price agreed upon--it was suggested that some sort of "special price" might be possible.
3. Mrs. Ayhan Mutlu, Head of the Data Processing Center at SIS has already given instructions that SIS cards be segregated by year so that the task of transfer can be implemented one year at a time. It is not likely that the METU computer would ever be available for a period of time long enough to transfer more than one year at a time.

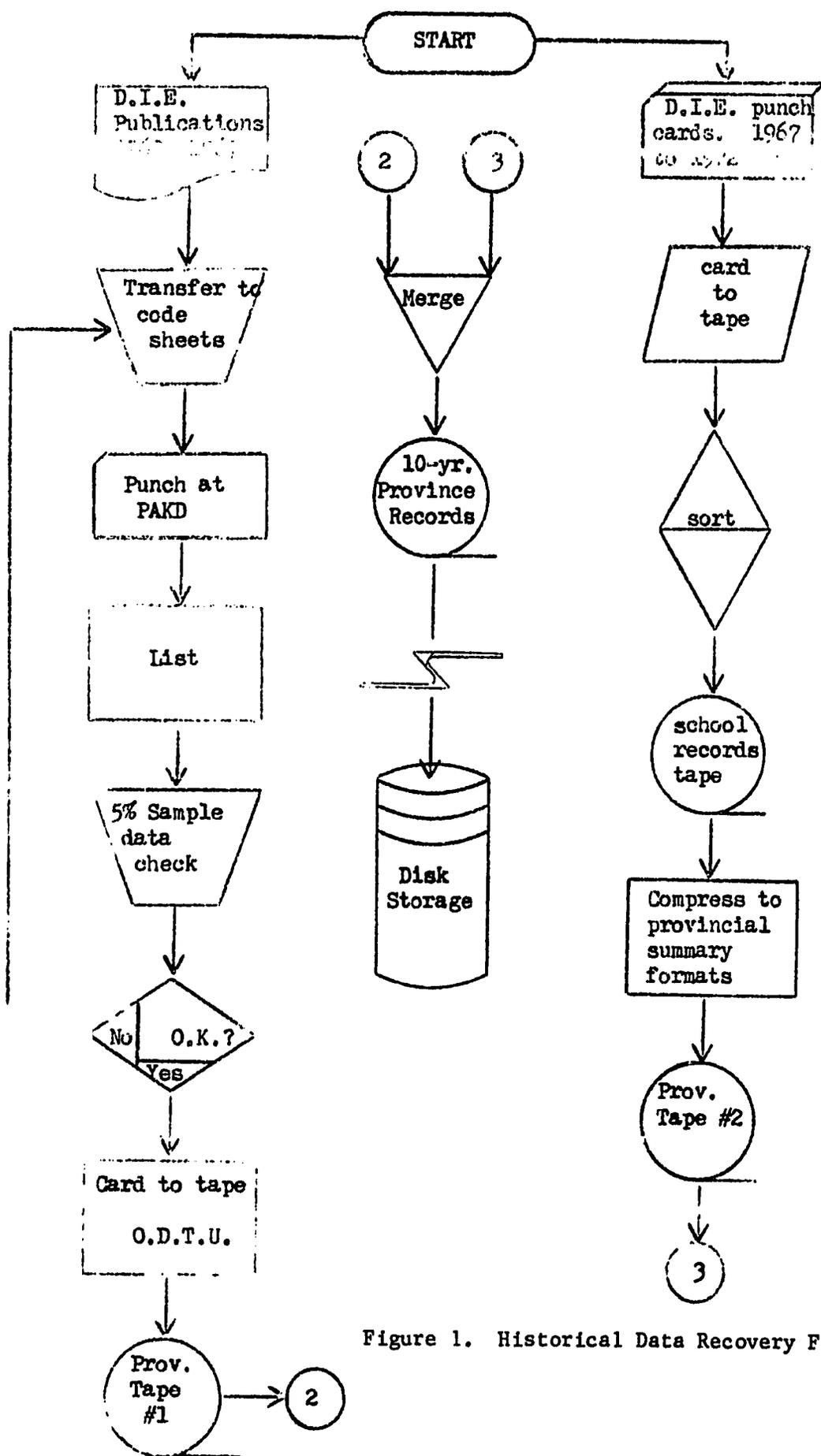


Figure 1. Historical Data Recovery Flow Chart

TABLE

4. METU has indicated that its machine will probably not be available during periods at either the close of a semester (examinations) or the beginning of a semester (registration). METU would inform PAKD in advance that it could use the machine for an overnight period on a specific date.
5. Once informed, PAKD would arrange with SIS (Mrs. Mutlu) for a PAKD vehicle to pick up the SIS cards at about 17:00. At least one PAKD operator-programmer would remain with the cards during the data transfer and supervise the operation. The cards would be returned to SIS the following morning.
6. Five 10 to 12-hour time blocks should be sufficient to complete the transfer provided there are no difficulties. However, there are a number of unknowns that could influence this estimate, particularly in the sorting area. The SIS cards are not sorted and these data will have to be sorted according to province (il) and subprovince (ilce) as well as by school. Record size varies for each school between a minimum of 10 cards and a maximum of 16.
 - a. The most efficient method for completing the operation would be to read from card to disk, conduct a disk sort and spool onto tape. Whether or not this method can be used will depend upon the efficiency of the sort program. It may not be possible to read, sort and spool approximately 500,000 cards in 12 hours.
 - b. If time will not permit the above approach, utility programs should be used to transfer the data from card to tape and the sort programs will have to be run from tape to tape at a later date. This may require considerably more time.
7. After the card to tape (plus sort) data transfer has been completed, tabulation programs will have to be written and executed to compress the data into the formats used for historical data storage. These formats are discussed below. In order to complete the present time dimension of the historical data block, only three of the five years of transferred data need be compressed, though the other two years will have to be compressed as soon as data for other schools for the same years have been punched.
8. Once a new machine has been ordered, work should begin on transferring these data to disk storage.

Proposed Historical Data Storage System

A matrix storage system has been proposed from among the alternative ways of handling the recovered historical data. There are several reasons for this, but most important are those of ease of programming and ease of comprehension and communication. By breaking the provincial records up into matrix blocks that resemble statistical tables, it is much easier to communicate concepts from the departing advisor to the programmers and other PAKD staff who will be responsible for completing the project. This matrix system has already been discussed with Mr. Ibrahim Aksu

(PAKD's Chief Programmer) and the following pages are submitted to amplify these earlier discussions and to give more substance to the tabular representations of the various matrices.

Before discussing the matrices themselves, it should be noted that matrix storage can provide a base for a direct access addressing system by converting the multiple dimension address to a single dimension address to serve as a pointer in the direct access record. While on the subject of dimensions, it should be noted that the use of these specific matrices requires a computer capable of handling at least 5 dimensions. This factor should be considered in ordering a new machine.

The question may be raised, 'Why was a particular Matrix or data element included?' In general, the advisor tried not to pre-judge the value of data and opted to include rather than exclude in most cases. It will be much easier to omit data deemed not essential by PAKD staff, than to try to once again recover data that had initially been left out by the advisor.

MATRIX 00 -- Number of Political Subdivisions and Land Area.

(5,10) = 50 locations, 200 bytes. This matrix is less important at the present time than it will be in the future when it will be essential if data are to be stored on direct access disk files in school record form. Provincial data files will be of varying length because of differing numbers of subdivisions and schools. The data in this MATRIX plus that in MATRIX 02 can be used to determine the size of a provincial record. Though readily available, the data for this matrix have not been specifically collected and coded for the historical data files.

MATRIX 01 -- Population and School-age Population by Sex, and Total and Schoolless Villages.

(2,5,10) = 100 words, 400 bytes. These data are needed for a number of ratios useful in research and planning. These data have not yet been coded in the historical data though they should appear on form #1.

MATRIX 02 -- Basic School Data by Type of School.

(6,-70,10) = -4,200 words, 16,800 bytes. This matrix should be expanded in future years -- eventually it should be replaced by a number of matrices. Right now, it represents just about all of the data on school plant systematically collected over the past 10 years. Even so, some categories now in the matrix were collected only for some types of schools and/or only for some of the years, and data on the "number of school buildings" have apparently never been collected. As already mentioned above, once PAKD goes to individual school records as the basic record unit in a direct access system, the data in this matrix become very important in the addressing system in order to specify record length. Schools with more buildings require more space; political units with more schools and more different types of schools also require more space.

Historical Data Storage: MATRIX 00 -- Basic Provincial Data, Number of Political Subdivisions and Land Area

	1960- 1961	1961- 1962	1962- 1963	1963- 1964	1964- 1965	1965- 1966	1966- 1967	1967- 1968	1968- 1969	1969- 1970
Number of İLÇE										
Number of BÜGE										
Number of KÖY										
Number of BELEDİYE										
Land Area in KM ²										

Historical Data Storage: MATRIX 01 -- Provincial Population and School-Age Population by Sex, Plus Number of School-less Villages

Year	P o p u l a t i o n								N o . o f V i l l a g e s	
	T o t a l		A g e d 6--12		A g e d 13--15		A g e d 16--18		Total	School-less
	M	F	M	F	M	F	M	F		
1960--61										
1961--62										
1962--63										
1963--64										
1964--65										
1965--66										
1 966--67										
1967--68										
1968--69										
1969--70										

Historical Data Storage: MATRIX 02 -- Basic School Data

Year	School Type Code	Number of Schools			Number of School Buildings	Number of Classrooms	Number of Class Sections
		Total	Newly Opened This Year	Newly Closed This Year			
1969/70	11G						
	81G						
	11F						
	.						
	.						
.	.						
.	.						
1969/70	11G						
	81G						
	11F						
	.						
	.						
452							

MATRIX 03 -- Primary School Enrollment by Sex, Grade Level, Age, and Location of School.

(2,6,10,2,10) = 2,400 words, 9,600 bytes. The "total" vector in the third dimension of this matrix can be eliminated one day when ten years of data have been collected by age. However, primary enrollment data prior to the 1967-68 school year did not have the age dimension and the "total" vector is added to accommodate those years. The "City/Total" dimension could be expanded later to include other types of primary schools, particularly the 8-year primary schools as they come into existence.

MATRIX 04 -- Primary School Examination Results by Sex, Grade Level, and Location of School.

(2,5,2,10) = 200 words, 800 bytes.

MATRIX 05 -- Primary School leavers by Sex, Reason for leaving, and Location of School.

(2,7,2,10) = 280 words, 1,120 bytes.

MATRIX 06 -- Primary Schools by Number of Class Sections per Grade, by Location of School.

(4,5,2,10) = 400 words, 1,600 bytes. The value of this tabulation which appeared in all of the annual statistical reports is not immediately apparent. It might be a good idea to check whether anyone has ever used it for anything.

MATRIX 07 -- Number of Primary Schools by Size of Enrollment and Location of School.

(10,2,10) = 200 words, 800 bytes.

MATRIX 08 -- Primary School Teachers by Sex, Age, and Type of Teacher, by Location of School.

(2,9,7,2,10) = 2,520 words, 10,080 bytes. Much of the data supplied in this table is redundant -- the teaching personnel records should also contain it. However, data on the military teachers, part-time and substitute teachers is not likely to appear in Ministry personnel record files and for this reason these data are included.

MATRIX 09 -- Primary School Teachers by Sex, Type of Teacher, School from Which Graduated, and by Location of School in Which Now Teaching.

(2,8,7,2,10) = 2,240 words, 8,960 bytes. Same comments apply as for MATRIX 08.

Historical Data Storage: MATRIX 03 -- Primary School Enrollment by Sex, by Age, by Grade, by Location of School

Year	Schl. loc.	Age	New Enrollment		Enrollment by grade-level and sex										
			M	F	I		II		III		IV		V		
					M	F	M	F	M	F	M	F	M	F	
1960/1961	CITY SCHOOLS	6													
		7													
		8													
		9													
		10													
		11													
		12													
		13													
	14+														
	Total														
	ALL SCHOOLS	6													
		7													
		8													
		9													
10															
11															
12															
13															
14+															
Total															
1961/1962	CITY SCHOOLS	6													
		7													
		8													
		9													
		10													
		11													
		12													
		13													
14+															
Total															

Historical Data Storage: MATRIX 04 -- Primary School Examination Results

Year	School Location	Number of Students Passing									
		1 to 2		2 to 3		3 to 4		4 to 5		Diplomas	
		M	F	M	F	M	F	M	F	M	F
1960-	City Schools										
1961	All Schools										
1961-	City Schools										
1962	All Schools										
1962-	City Schools										
1963	All Schools										
1963-	City Schools										
1964	All Schools										
1964-	City Schools										
1965	All Schools										
1965-	City Schools										
1966	All Schools										
1966-	City Schools										
1967	All Schools										
1967-	City Schools										
1968	All Schools										
1968-	City Schools										
1969	All Schools										
1969-	City Schools										
1970	All Schools										

Historical Data Storage: MATRIX 05 -- Primary School Leavers by Reason for Leaving and by Sex

Year	School Location	Number of Children Leaving School													
		Total		Death		Illness		marriage		over-age		expelled		Other	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F
1960-1961	City Schools														
	All Schools														
1961-1962	City Schools														
	All Schools														
1962-1963	City Schools														
	All Schools														
1963-1964	City Schools														
	All Schools														
1964-1965	City Schools														
	All Schools														
1965-1966	City Schools														
	All Schools														
1966-1967	City Schools														
	All Schools														
1967-1968	City Schools														
	All Schools														
1968-1969	City Schools														
	All Schools														
1969-1970	City Schools														
	All Schools														

Historical Data Storage: MATRIX 06 -- Number of Primary Schools by Number of Class Sections per Grade

Year	Location of Schl	Number of Schools by Grade																				
		I				II				III				IV				V				
		by class-section				by class-section				by class-section				by class-section				by class-section				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
1960-	City																					
1961	All																					
1961-	City																					
1962	All																					
1962-	City																					
1963	All																					
1963-	City																					
1964	All																					
1964-	City																					
1965	All																					
1965-	City																					
1966	All																					
1966-	City																					
1967	All																					
1967-	City																					
1968	All																					
1968-	City																					
1969	All																					
1969-	City																					
1970	All																					

Historical Data Storage: MATRIX 07 -- Number of Primary Schools by Size of Enrollment

Year	School Location	Number of Students									
		1-50	51-100	101-150	151-200	201-300	301-400	401-500	501-600	601-700	701+
1960-	City Schools										
1961	All Schools										
1961-	City Schools										
1962	All Schools										
1962-	City Schools										
1963	All Schools										
1963-	City Schools										
1964	All Schools										
1964-	City Schools										
1965	All Schools										
1965-	City Schools										
1966	All Schools										
1966-	City Schools										
1967	All Schools										
1967-	City Schools										
1968	All Schools										
1968-	City Schools										
1969	All Schools										
1969-	City Schools										
1970	All Schools										

Historical Data Storage: MATRIX 08 -- Primary School Teachers by Type, by Sex, by Age

Year	School Location	Type of Teacher	Age Categories																	
			24		25-29		30-34		35-39		40-44		45-49		50-54		55-59		60+	
			M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1960 / 1961	City Schools	1. Asil																		
		2. Stajyer																		
		3. Y. Sibay Teachers																		
		4. Teachers, Y.S.																		
		5. Egitmen																		
		6. Temporary																		
		7. Vekil																		
	All Schools	1.																		
		2.																		
		3.																		
		4.																		
		5.																		
		6.																		
		7.																		
1961 / 1962	City Schools	1.																		
		2.																		
		3.																		
		4.																		
		5.																		
		6.																		
		7.																		
	All Schools	1.																		
		2.																		
		3.																		
		4.																		
		5.																		
		6.																		
		7.																		

Historical Data Storage: MATRIX 09 -- Primary School Teachers by Sex and Type of School from which Graduated

Year	Type Teacher & School Location	Type of School from which Graduated																
		Total		University		Ilk Teach'g Trng. Schl.		Lise		Technical		Middle		Primary		None		
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
1960 /	City	1																
		2																
		3																
		4																
		5																
		6																
		7																
1961	All	1																
		2																
		3																
		4																
		5																
		6																
		7																
1961 /	City	1																
		2																
		3																
		4																
		5																
		6																
		7																
1962	All	1																
		2																
		3																
		4																
		5																
		6																
		7																

MATRIX 10 -- Primary School Teachers by Sex and Teaching Load, by Location of School.

(2,10,2,10) = 400 words, 1,600 bytes.

MATRIX 11 -- Primary Schools by Number of Teachers and Number of Classrooms, by Location of School.

(9,6,2,10) = 1,080 words, 4,320 bytes. This matrix combines two tabulations in the SIS publications -- therefore, "total" vectors are used in both the first and second dimensions to accommodate data for the years prior to the 1967-68 school year. When data are transferred from SIS punched cards, the entire matrix can be filled out. "Total" vectors can be omitted once this overlap is gone.

MATRIX 12 -- Middle School Level Enrollment by Sex, Grade and Type of School.

(2,6,30,10) = 3,600 words, 14,400 bytes. If plans for 8-year primary education are implemented, the need for a separate middle-school level set of matrices will likely disappear. Even now, the picture at this level is confused by the fact that some middle schools are connected to (related to) upper-secondary level schools and thus share plant, equipment and teaching resources; other middle schools are related to primary schools (some schools like colleges have all three levels in one school) as in the case of regional boarding schools. Much of this confusion should disappear once 8-year primary schools are a reality. These comments apply to all of the subsequent "middle school level" matrices.

MATRIX 13 -- Middle School Level Students Passing Examinations by Sex, Grade Level, Time of Year and Type of Pass, and by Type of School.

(2,5,3,30,10) = 9,000 words, 36,000 bytes. Tabulated data in the SIS publications produced a matrix of such size that almost no computer in Turkey could handle it. Therefore, examination results were broken up into two matrices: Those passing and those failing.

MATRIX 14 -- Middle School Level Students Failing Examinations by Sex, Grade Level and by Type of School.

(2,5,30,10) = 3,000 words, 12,000 bytes.

MATRIX 15 -- Middle School Level Boarding Students, Enrollment by Foreign Language Studied, Diplomas Awarded, and School Leavers, all by Sex and by Type of School.

(2,7,30,10) = 4,200 words, 16,800 bytes. These varied categories of data could have been broken up into four separate small matrices, but were combined here in the interest of compactness. If programming difficulties should arise, perhaps they should be separated.

Historical Data Storage: MATRIX 10 -- Primary School Teachers by Sex and Teaching Load

Year	School Location	Number of Teachers According to the Number of Class-Sections (Sube) Taught												Extra Classes Taught				Nutrition and Adult Education			
		0		1		2		3		4		5		Ilk School		Orta School		Extra Duties		Teach Classes	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1960-	City																				
1961	All																				
1961-	City																				
1962	All																				
1962-	City																				
1963	All																				
1963-	City																				
1964	All																				
.																					
.																					
1969-	City																				
1970	All																				

Historical Data Storage; MATRIX 11 -- Primary Schools by Number of Teachers and Classrooms

Year	School Location	Number of Classrooms	Total Number of Schools	Number of Schools According to Size of Teaching Staff							
				1	2	3	4	5	6	7	8+
1960-	City Schools	1									
		2									
		3									
		4									
		5									
		Total									
1961	All Schools	1									
		2									
		3									
		4									
		5									
		Total									
1961 / 1962	City Schools	1									
		2									
		3									
		4									
		5									
		Total									
		1									
		2									
		3									
		4									
		5									
		Total									

Historical Data Storage: MATRIX 12 -- Middle School Level Enrollment by Sex, by Grade, by Type of School

Year	School Type Code	New Enrol.		Middle-School Grade-Level										
		M	F	Preparatory		1		2		3		Night School 4		
				M	F	M	F	M	F	M	F	M	F	
1960/61	213													
	223													
	263													
	271													
	281													
	673													
.	.													
.	.													
.	.													
1969/70	213													
	223													
	263													
	271													
	281													
	673													

• Historical Data Storage: MATRIX 13 -- Middle School Students Passing Examinations by Sex, by Grade, by Type School

Year	School Type Code	Examination Results	Middle-School Grade-Level										
			Preparatory		1		2		3		Night Schl 4		
			M	F	M	F	M	F	M	F	M	F	
1 9 6 0 / 6 1	213	Passed Yaz											
		Passed Güz											
		Passed -1											
	271	Passed Yaz											
		Passed Güz											
		Passed -1											
	272	etc.											
ETC.													
• • •	• • •	• • •											
1 9 6 9 / 7 0	213	Passed Yaz											
		passed Güz											
		Passed -1											
	223	Passed Yaz											
		Passed Güz											
		Passed -1											
	• • •	• • •	• • •										
673	Passed Yaz												
	Passed Güz												
	Passed -1												

Historical Data Storage: MATRIX 14 -- Middle School Students Failing Examinations by Sex, by Grade, by Type School

Year	Schec Type Code	Middle School Grade Level									
		Preparatory		1		2		3		Night School 4	
		M	F	M	F	M	F	M	F	M	F
1 9 6 0 / 6 1 : :	213										
	223										
	263										
	271										
	281										
	.										
1 9 6 9 / 7 0	213										
	223										
	263										
	271										
	281										
	.										

Historical Data Storage: MATRIX 15 -- Middle School Level Boarding Students, Enrollment by Foreign Language Studied, Diplomas Awarded, and School Leavers by Sex, by Type of School

Year	School Type Code	Diplomas Awarded		Foreign Language Studied						Boarding Students				School Leavers	
				German		French		English		Free		Paying			
		M	F	M	F	M	F	M	F	M	F	M	F		
1960/61	213														
	223														
	263														
	271														
	281														
	673														
•	•														
•	•														
•	•														
1969/70	213														
	223														
	263														
	271														
	281														
	673														

MATRIX 16 -- Middle School Level Teachers by Sex, Type of Teacher, and by Type of School.

(2,3,30,10) = 1,800 words, 7,200 bytes. The "related" middle schools cited earlier usually have incomplete data in this matrix -- their teachers being reported by the upper-secondary school with which they are related. Systems designers might give some thought to a separate set of matrices for the "combined" schools.

MATRIX 17 -- Upper Secondary Level Enrollment by Sex, Grade Level, Branch of Study, and by Type of School.

(2,8,30,10) = 4,800 words, 19,200 bytes. The upper secondary matrices, like the middle school matrices, provide for an additional grade level to accommodate the night schools which customarily have four-year programs rather than the usual three. The "branch of study" dimension uses only "total" and "science" to accommodate those upper secondary schools where the curriculum is not divided into science and arts; enrollment for the latter schools will appear only in the "total" category. There is also the alternative of storing the data by school record, rather than provincial aggregates of school types. This would take considerably more storage space and would require some sort of "virtual memory" capability in the computer for efficient processing. However, the data have been collected and are now punched by school, so no additional work would be required on that front.

MATRIX 18 -- Upper Secondary Level Students Passing Examinations by Sex, Grade Level, Time of Year and Type of Pass, and by Type of School.

(2,7,3,30,10) = 12,600 words, 50,400 bytes. This matrix is too large for any computer in Turkey, save perhaps the IBM Service Center machine. However, with a "virtual memory" type machine it should prove to be no problem. In the meantime, it might best be divided into two matrices.

MATRIX 19 -- Upper Secondary Level Students Failing Examinations by Sex, Grade Level, and by Type of School.

(2,7,30,10) = 4,200 words, 16,800 bytes.

MATRIX 20 -- Upper Secondary Level Boarding Students, Enrollment by Foreign Language Studied, Diplomas Awarded, and School Leavers, all by Sex and Type of School.

(2,7,30,10) = 4,200 words, 16,800 bytes. The same comments apply to this matrix as those made for MATRIX 15.

MATRIX 21 -- Upper Secondary Level Teachers by Sex, Type of Teacher and by Type of School.

(2,3,30,10) = 1,800 words, 7,200 bytes. As noted earlier, this matrix may contain middle school teachers in cases where the school is a secondary

Historical Data Storage: MATRIX 16 -- Middle School Level Teachers by Sex, by Type of Teacher and by Type of School.

Year	School Type Code	Number of Teachers					
		Asil		Stajyer		Ucretli	
		M	F	M	F	M	F
1960/61	213						
	223						
	263						
	271						
	281						
	.	.					
1969/70	213						
	223						
	263						
	271						
	281						
	.	.					

Historical Data Storage: MATRIX 17 -- Upper-Secondary Level School Enrollment by Sex, by Grade, by Type of School

Year	School Type Code	New Enrollment		Upper-Secondary-School Grade Level															
				1		2		3				4							
				Total		Total		Science		Total		Science		Total		Science			
M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F				
1	313																		
9	316																		
6	323																		
0	326																		
/	353																		
6	354																		
1	.																		
.	.																		
.	773																		
1	313																		
9	316																		
6	323																		
9	326																		
/	353																		
7	354																		
0	.																		
.	.																		
.	773																		

Historical Data Storage: MATRIX 18 -- Upper-Secondary Level Students Passing Examinations by Sex, by Grade, by Type of School

Year	School Type Code	Results of Examinations	Upper-Secondary-School Grade Level													
			1		2				3				4			
			Total		Total		Science		Total		Science		Total		Science	
			M	F	M	F	M	F	M	F	M	F	M	F	M	F
1 9 6 0 / 6 1 : : :	313	Passed Yaz														
		Passed Güz														
		Passed -1														
	316	Passed Yaz														
		Passed Güz														
		Passed -1														
	: : 773	Passed Yaz														
		Passed Güz														
		Passed -1														
: : : 1 9 6 9 / 7 0	313	Passed Yaz														
		Passed Güz														
		Passed -1														
	316	Passed Yaz														
		Passed Güz														
		Passed -1														
	: : 773	Passed Yaz														
		Passed Güz														
		Passed -1														

Historical Data Storage: MATRIX 19 -- Upper-Secondary Level Students Failing Examinations by Sex, by Grade, by Type of School

Year	School Type Code	Upper-Secondary-School Grade Level													
		1		2				3				4			
		Total		Total		Science		Total		Science		Total		Science	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F
1	313														
9	316														
6	323														
0	326														
/	353														
6	354														
1	.														
	.														
	.														
	773														
.	.														
.	.														
.	.														
1	313														
9	316														
6	323														
9	326														
/	353														
7	354														
0	.														
	.														
	.														
	773														

Historical Data Storage: MATRIX 21 -- Upper-Secondary Level School Teachers by Sex, by Type of Teacher, by Type of School.

Year	School Type Code	Number of Teachers					
		Asil		Stajyer		Ücretli	
		M	F	M	F	M	F
1960/61	313						
	316						
	323						
	326						
	353						
	354						
	.						
.							
.	773						
.	.						
.	.						
.	.						
1969/70	313						
	316						
	323						
	326						
	353						
	354						
	.						
.							
.	773						

school offering programs at both the first and second levels of secondary schooling. The data in this matrix are minimal and, with the possible exception of the "ucretli" teacher, they are likely to be duplicated in the MOE personnel files. Systems designers should take a careful look at the problem of how best to store teacher data in historical files.

MATRIX 22 -- Provincial Educational Data Summary.

(2,5,70,10) = 7,000 words, 28,000 bytes. This matrix includes most of the data now published in PAKD's annual summary of educational data for the 67 provinces. Its chief value will be that of providing a quick reference to provincial aggregate data where additional detail is not required.

Summary of Dimension Information.

As now designed, storage requirements for the above 22 matrices for a single province are 70,270 words or 281,080 bytes. For all 67 provinces plus national totals, the requirements are 4,778,360 words or 19,113,440 bytes. Thus, the 10-year time block of historical data for all of Turkey should fit on a single magnetic tape.

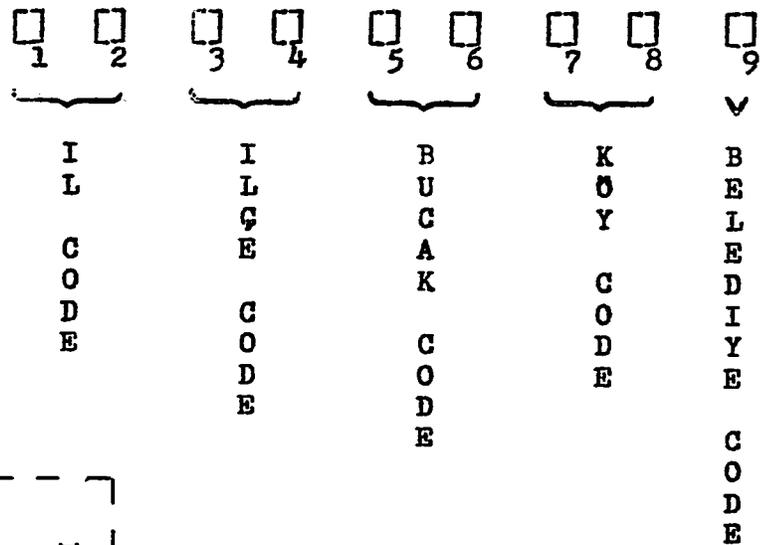
Coding Needs for Information Systems Development

A good deal of work remains to be done in the area of developing codes suitable for on-line storage and retrieval in PAKD's information system. Existing codes were designed to meet specific needs in the areas of tests and measurements and simple statistical data gathering. Figure 2 represents one effort to tackle the problem, but should not be considered definitive by any means. It makes use of the computer's hexadecimal capability for greater versatility.

Historical Data Storage: MATRIX 22 -- Provincial Educational Data Summary

Year	School Type Code	Summary Educational Data									
		School Plant		New Enrollment		Enrollment		Diplomas		Teachers	
		No. Schls	No. Clrms	M	F	M	F	M	F	M	F
1960 / 1961	10C										
	70C										
	203										
	803										
	303										
	903										
	913										
	913										
	933										
	3D4										
	355										
	354										
	361										
	362										
etc.											
1969 / 1970	10C										
	70C										
	203										
	803										
	303										
	903										
	313										
	913										
	933										
	ETC										

PAKD Educational Data Files: Suggested Coding Scheme -- Option #1.



Note: The codes to be used are:
IL Code = Devlet Statistik Ins.
ILCE Code = Devlet Statistik Ins.
BUCAK Code = PAKD Personnel codes
KOY Code = PAKD Personnel codes
BELEDIYE Code = See page 2 of attachment
SCHOOL TYPE Code = See page 1 of attach.
SCHOOL IDENTIFICATION Number = Numbers assigned serially to identify schools within a province (in conjunction with school type code). The number "00" indicates all schools of a type identified by the school type code.

Figure 2.

PAKD Educational Data Files: Suggested Coding Scheme (cont'd)

School Type Code: Hexadecimal -- Columns 10, 11 and 12.

Control	Level			
	I	II	III	IV
Government Min of Ed.	1	2	3	4
Government other Min.	5	6	7	
Private	8	9	A	
Minority & Foreign	B	C	D	

Column 10 -- Level of institution and control.

I = Primary school
 II = Lower secondary level
 III = Upper secondary level
 IV = Higher education level

O = IL Ministry of Ed. Office
 F = ILGE Ministry of Ed. Office

Program	Relations	
	Bagimsiz	Bagimli
General Academic	1	2
Kolejler	3	4
Teacher Training	5	6
Vocational & Technical	7	8
Business & Commerce	9	A
Religious	B	C
Special Education	D	E

Column 11 -- Type of program and relationship with other schools. The even-numbered schools are "tied" or jointly administered with another school; the other columns will show type & level. The identification number of all the component schools will be the same. Thus, 223 01 and 323 01 would identify a co-ed orta and lise linked together, whereas 123 02 and 223 02 would show an orta school linked with a primary school, eg. a regional boarding school, if column 12 were 6 instead of 3.

	Boys ^a	Girls ^c	Co-Ed
Regular Day School	1	2	3
Regular Boarding School	4	5	6
Night School	7	8	9
5-Year Primary School	A	B	C
8-year Primary School	D	E	F

Column 12 -- Special Details

Figure 2 (continued)

PAKD Educational Data Files: Suggested Coding Scheme (cont'd)

Belediye Code; Decimal --- Column 9

I. Present system used for Personnel Files:

- 1 = No Belediye
- 2 = With Belediye

II. Suggested for future use:

- 1 = No Belediye
- 2 = with own Belediye
- 3 = Member of #1 Belediye having more than one Kby or Bucak.
- 4 = " " #2 " " " " " " " "
- 5 = " " #3 " " " " " " " "

Figure 2 (continued)

APPENDIX D: AID'S LOGICAL ANALYSIS FRAMEWORK: SOME OBSERVATIONS

In connection with AID's new Logical Analysis Framework, we wish to offer one or two further types of questioning comments. The aim here is to ask about certain aspects of the analysis, with a hope of drawing attention to possible opportunities for strengthening what obviously represents a very significant effort, by AID, in trying to rationalize project designs, evaluations, and management.

The first type of question is whether the Logical Framework is in fact as logically rigorous and tight as it could be. Fundamental to the framework are the several levels of "if-then" relationships which are posited. But do the possibly misleadingly simple words, "if-then", mean the same thing or things at each level? Should they? Or, if they may be allowed to shift their meanings from level to level, then should not the project leaders who are working with the framework be explicitly conscious of these shifts in meaning, so as not to be misled by them?

In raising these questions, we do not pretend to pose as certified logicians, but it does seem clear that the words "if-then" do shift their meanings in the framework. "If input, then output," posits some kind (or kinds) of cause-effect relationships. "If output, then purpose", on the other hand, implies some kind (or kinds) of semantic, definitional, "this-is-the-way-we-intend-to-use-our-terms" relationships. And "if purpose, then goal", embraces another set of semantic relationships which, it would seem, might vary all the way from a sheer tautology at one extreme to a sheerly pious expression of hope at the other. The point here is that conscious controls over these logical shifts might be crucial to continuously effective use of the framework. At least, where a staff might be having difficulties applying the framework, it might be worth the trouble to inquire carefully into what kinds of "if-then" thinking they are using at the different levels.

The second type of question about the framework really arises from a kind of anxiety about its utility vis-a-vis host country counterparts. The framework explicitly is intended not to include their thinking. Perhaps that is wise. Probably at this stage it is advisable not to involve them, in the sense that non-Western counterparts are typically not committed to the edifice of logic which Western society has built. Though the edifice stands as one of the Western world's crowning achievements, non-Western counterparts may often be unprepared to recognize, appreciate, accept, or adopt its fundamental importance. They may be unpredictably unprepared to perform the kinds of modifications in behavior which a logically consistent set of prepositions seems clearly to imply. One supposes, indeed, that this basic difference in the apprehension of logic as an instrument in pragmatic problem solving is a major element in the often noted cultural hiatus between East and West.

So when AID goes to considerable lengths to develop a rigorously logical framework for analyzing technical assistance projects, it is perhaps not surprising at this juncture of world cultural history that the framework should be intended essentially as an "in-house" tool: to help the USAID staff and their U.S. contract agents try to get their own thinking straight at least, whether or not their counterparts, who may not be so committed to logical frameworks, have got their thinking straightened out in the same way. To insist on including them in would only likely serve to confuse the issue -- rather like inviting your counterpart to play a game of chess with you and hear him say, "Fine -- let's begin -- where are the dice?!"

It may still be a good idea nevertheless for the American elements of a project to try to get their own thinking aligned in a common framework. At the same time it may also be a good idea to try to employ some kind of workable analytical device in conjunction with one's host country counterparts. It might be good if a device could be used which on the one hand would lay down a common set of "rules of the game" for all parties to the project, and on the other hand could also be rigorously geared to a logical framework of the sort which AID is developing.

We go into all this for the purpose of suggesting that a "phase-stage" analysis of a sort kindred to the simple approach developed by NERP may be useful as a joint instrument of planning, which could provide an operational analysis of a sequence of developmental activities not intrinsically bound to a particular time schedule. This could be related to the input-output hypotheses of the Logical Analysis Framework. A "phase-stage" analysis could very well utilize the joint thinking of hosts and U.S. change agents. And the placing of such an analysis against three alternate sets of calendars, as suggested above, could very well establish effective "rules of the game" to which all parties could commit themselves.

Thus the "object of the game" would be to move n phases (jointly agreed upon) through j stages (with operational definitions of stages jointly determined). Assuming the game might be finished in t_0 (optimum time), a minimum total dollar input would probably be required from the U.S., but at a probably maximum rate of expenditure. Plan A would estimate inputs and schedules to play the game ("complete" the project) in t_0 time.

If it should turn out that the game (project) might only be finished in a longer period of time, then probably the rate of U.S. inputs would have to be reduced, so that the total input might remain at approximately the same level. Plan B would show a feasible way to play the game within an adequate period of time, t_a .

But t_a would have limits. Increasing t_a (by allowing too many postponements or delays to occur) would tend to have the effect of demanding increases in U.S. dollar inputs without promising additional outputs. Plan C would indicate the outer limits of time for each stage of each phase beyond which the U.S. would no longer be willing to continue playing the game. As any one of these limits were approached, the U. S. would insist on calling "time-out" for a conference among officials to consider whether the game should be called off or continued under a changed set of rules.