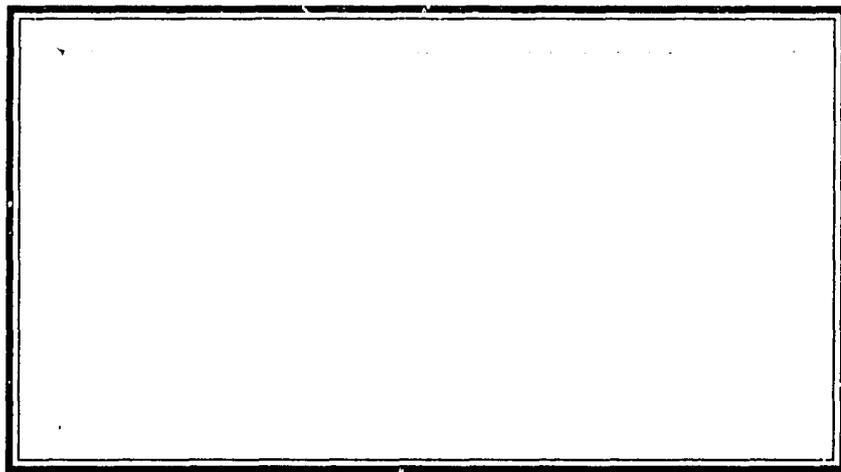


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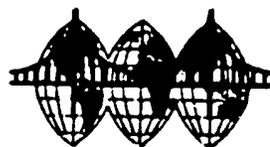
**AN ORGANIZATIONAL ANALYSIS OF THE
MINISTRY OF EDUCATION,
ARAB REPUBLIC OF EGYPT**

**The Production, Flow, and Use of Information
in the Decision-making Process**

James A. Toronto

**Development Discussion Paper No.346
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The Basic Research and Implementation in Developing Education Systems Project (BRIDGES) is directed by the Harvard Institute for International Development and the Harvard Graduate School of Education, under Cooperative Agreement No. DDP-5824-A-5076 with the Office of Education, Bureau for Science and Technology, United States Agency for International Development. Also participating in the Project are the Institute for International Research, the Research Triangle Institute, Texas Southern University and Michigan State University.

The BRIDGES Project includes educators, researchers, planners and policy makers committed to improving opportunity and quality in schools in Burundi, Egypt, Indonesia, Jordan, Pakistan, Sri Lanka and Thailand. The goal of their collaborative effort is to identify policy options that will increase children's access to schooling, reduce the frequency of early school leaving and repetition, improve the amount and quality of what is learned, and optimize the use of fiscal and educational resources.

The Education Development Discussion Papers are a collection of research reviews and original research papers. The ones written by BRIDGES researchers are prepared for educational policy-makers, planners, managers, and researchers. The ideas expressed in these papers are those of the authors alone and should not be taken to reflect the opinions of USAID officials and staff.

ABSTRACT¹

Each year a ministry of education must resolve a series of problems or issues; information is one of the elements that influences the particular resolutions that occur. The domains of problems that all ministries of education must resolve and that are analyzed in this study include: admission of students, selection and training of teachers and other personnel, construction of buildings and classrooms, supervision and management of schools, provision and management of schools, development of curriculum.

To facilitate the solution of these problems, each ministry develops an educational management information system (EMIS): a routine set of procedures for the generation of information needed to support operations and decision-making. The quality of the solutions that are developed is to some extent a function of the quantity and quality of the information that is produced, the timely distribution of that information, and the capacity of the various dependencies of the ministry to use it.

The present study focuses on the description of the process of information production, distribution, and utilization in the execution of these routine but central administrative tasks in the Ministry of Education in Egypt. The purpose of the research is to increase understanding of organizational factors in ministries of education that either contribute to or act against successful provision and use of information in the problem-solving cycle.

A number of methodologies were employed to collect data for this research: interviews with MOE officials (42 altogether), personal observation by the resident advisor, and analysis of newspaper articles, MOE publications, previous studies by USAID, and trip reports by BRIDGES consultants. The study presents a description of the structure and functions of the

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various levels of the MOE and a discussion of the major issues confronting educators in Egypt: overcrowded classrooms; an information system that has little impact on decision-making; the existence of a number of parallel data collection systems; the lack of viable educational planning practices; a rigid bureaucratic hierarchy and autocratic style of leadership; the compartmentalized nature of MOE departments that leads to poor communication; and the traditional problem in Egypt of isolation of rural areas from urban areas. The study concludes by proposing some approaches and possibilities for moving toward solution of these problems.

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AN ORGANIZATIONAL ANALYSIS OF THE MINISTRY OF EDUCATION, ARAB REPUBLIC OF EGYPT

The Production, Flow, and Use of Information in the Decision-making Process

I: INTRODUCTION

The Ministry of Education in Egypt faces a challenge that confronts educators in many countries today: how to provide equitable distribution of educational opportunity for all its citizens at a time of brisk population growth and increasingly constrained resources due to limited economic development. Egypt's educational system has witnessed significant progress in meeting this challenge. By emphasizing programs to expand coverage and access, the Ministry of Education has succeeded in providing school space to absorb most Egyptian children. The system serves nearly 11,000,000 students each year, kindergarten through university (Central Agency for Population Mobilization and Statistics [CAPMAS] Annual Report, 1988, p. 180). The student population comprises a comparatively high proportion of Egypt's total population: about 20 percent. Having made significant progress toward the national goal of providing universal educational opportunity, educational planners, policymakers, and administrators in Egypt now face an equally formidable task: how to maintain the quantity of educational resources while enhancing the quality.

From all indications, the issue of quantity will continue to overburden Egypt's educational system and consume most of its resources in the coming years. With a steadily increasing population growth rate (from 1.5 early in this century, to 2.5 in the 1950's, to 2.8 in 1986), brought on by a higher life expectancy rate (from 39 years in 1952, to 58 years in 1986), a lower death rate (from .025 in the 1940's, to .010 in the 1980's), and a robust birth rate (.0394 in 1986), the 1986 population of approximately 48 million is expected to reach 74 million by the turn of the century and 91 million by 2025, thus nearly doubling in a forty year period. Geographical idiosyncrasies complicate the problem further. Since Egypt is primarily composed of desert and arable land is scarce, 97% of the population live on only 4% of the land space. This means that nearly 47 million people are packed into the limited "green areas," mostly along the banks of the Nile River and the Suez Canal, that can support agriculture and commerce.

Egypt, consequently, has one of the highest population densities in the world: more than 1,170 people per square kilometer of inhabited land. Moreover, almost half (43.9%, or 21.2 million) of all Egyptians live in urban areas, and nearly half of those (42.4%, or 9 million) are concentrated in only two cities, Cairo and Alexandria. Population density is particularly acute in Cairo, where the number of people has mushroomed during the past two decades. The 1986 census puts the population of Cairo at approximately 6.1 million, but sources usually cite figures in the range of 12 to 14 million for Greater Cairo which includes Giza. The Central Agency for Population Mobilization and Statistics (CAPMAS) calculates the resulting population density at an astonishing 27,258 people per square kilometer (CAPMAS Annual Report, 1988, pp. 9-20). The twin forces of industrialization and urbanization have also had a pervasive impact on Egyptian life, creating a pattern of migration from rural to urban areas that is expected to persist. Some estimate that the rate of migration into the greater Cairo area is 900 people per day. The resulting population growth has serious and far-reaching implications for all fields of development in Egypt. "The current average population growth is increasing at a rapid rate so that it obstructs efforts at national development and undermines the hopes of the people for improving the standard of living" (CAPMAS, 1988, p. 11).

Nowhere is this more true than in the field of education, especially in the basic education cycle (grades 1-8), which has had to bear the brunt of the influx of new entrants stemming from the rapid, sustained population growth. Between 1980/81 and 1985/86, the number of students increased by 26.4% in government elementary schools (grades 1-6) and by 65.1% in the al-Azhar (religious) elementary schools. At the preparatory level (grades 7-9), government school enrollments increased by 29.2% and Azhar school enrollments by 47.3% (CAPMAS figures, 1988). Unfortunately, financial and educational resources to accommodate the burgeoning student population have lagged behind, which in turn has led to severe overburdening of personnel and facilities. Class size averages about 45 students, but, in many urban schools, it reaches 60 or 70 students. Leading educators and Ministry of Education (MOE) officials repeatedly cite overcrowding--along with the related issues of double and

triple sessions, lack of suitable teaching materials, inadequate buildings, and private lessons-- as the most critical problem confronting the educational system today. As a primary means for improving the process of education in Egypt, highest priority has been placed on alleviating the pressure of overcrowded classrooms from kindergarten through university.

In order to accomplish this, the Ministry of Education has initiated a number of projects and reform initiatives. In cooperation with the United States Agency for International Development (USAID), the Basic Education Project, designed to strengthen compulsory education in grades 1-9, was launched in 1981. Under the auspices of this project, more than 800 new schools have been constructed, primarily in rural areas where the need for educational facilities is most acute. Another 700 are scheduled for construction and are being completed at the rate of one per day. Work Order Number Eight was instituted as a means to identify ways for improving the management and organization of the educational system. In February of 1988, Dr. Ahmad Fathi Sorour, Minister of Education, presented a new five-year plan for educational reform that includes projects for dealing with the problems of overcrowding and for improving the quality of all domains and all levels of the educational system--physical facilities, educational planning, curriculum, textbooks, instruction, and testing. During the past year, he has also implemented some innovative changes that were designed specifically to reduce the pressure on the system. They include cutting the compulsory cycle from nine to eight years and the elementary cycle from six to five years, forbidding schools to run triple sessions, emphasizing the importance and legitimacy of technical education as an alternative to the widely-preferred academic track, tightening examination standards for entrance into college in order to direct students to other types of schools and educational opportunities, and proposing the establishment of both an open university and a new private university.

In addition, in 1986, under Work Order Number Five, the MOE and USAID contracted the BRIDGES Project, directed by Harvard University, to work cooperatively with the MOE toward the development of educational planning, educational management information systems (EMIS), and policy research and analysis. As a crucial step in improving institutional capacity in these areas, the agreement stipulates that BRIDGES "assist the departments of Planning and

Statistics to complete a description of the organization, structure, and major planning and policy-making processes of the educational system of Egypt" (PIO/T, Annex II, p. 1). This study was conducted in fulfillment of that objective.

II. PURPOSE OF THE STUDY

Each year, the Ministry of Education must resolve a series of problems or issues. To facilitate the solution of these problems, each ministry develops an educational management information system (EMIS), a routine set of procedures for the generation of the information needed to support operations and decision-making. The quality of the solutions that are developed is, to some extent, a function of the quantity and quality of the information that is gathered, the distribution of that information, and the capacity of decision-makers in the Ministry to use it. An effective, successful EMIS is one that provides data that are relevant, timely, accurate, comprehensive, and easily accessible to those with information needs (Stowe, 1973).

Judged by these criteria, the current data collection and information system used by the MOE is largely inadequate. Although it provides useful data for some routine tasks of management and control, it lacks the capability to perform many critical administrative functions, to monitor system performance, to identify and support needed research, and to support planning and policy analysis. The current system is characterized by: manual collection, entry, and tabulation of data; inadequate, out-dated computing facilities in the MOE Statistics Department; and numerous parallel data collection systems, developed by various other departments to compensate for the lack of timely, reliable data from the official system. These factors contribute to make the process of data collection and distribution an overwhelming task, leaving planners and analysts little time to think strategically and creatively about the educational system. In order to relieve some of the pressure on the current system and to facilitate the development of an improved institutional capacity for planning, policy analysis, and research, MOE officials have sought the technical assistance of USAID and the BRIDGES Project for installing a new, automated data collection, storage, and retrieval system.

It was agreed that the technical process of designing, developing, and implementing a computerized information system must be preceded by the appropriate training of MOE personnel and by careful analysis of the conceptual and contextual components of the existing information system. Since the availability of sophisticated, powerful microcomputers first revolutionized the industry in the late 1970's, specialists have become increasingly aware that simply delivering a pre-packaged data system is ineffective and ultimately counter-productive. Without a structure of skilled personnel and an understanding of current decision-making processes, most EMIS development projects not only meet with failure, but can have a harmful impact in the broader organizational context. Cassidy (1987) has summed up the importance of shaping the technical design of EMIS to fit the challenges and requirements inherent in the existing structure:

In general, evaluations suggest that developments to date have been too technically oriented, often avoiding critical elements of the organizational environment and the specific styles of individual decision-makers. Future systems, to be effective, must strike a better balance among the technical, organizational, and social aspects of any information system.

Research in EMIS development indicates that a number of strategies can be adopted to help designers attain this critical "balance" between physical and conceptual components:

1. Greater involvement of all who will be affected by the introduction of computers, both those who use the computers and those who will use the output from the computers, helps to match the system to the organizational culture and to develop formats that will be familiar to the end-users of the system. This can be accomplished effectively through iterative, participatory design of EMIS prototypes, increased on-site training, and paying more attention to the development of the necessary analytical skills of decision-makers.
2. Focus on understanding and improving the existing information systems. Problems of the current system must be identified and defined; necessary data and procedures can be incorporated into the new system.

3. Use a more realistic introduction to the strengths and weaknesses of computer-based systems and a more conservative approach to the specific technologies introduced.
4. Pay attention to the need for reorganizing the reward systems.
5. Recognize that the introduction of computer-based information systems can involve significant change in an organization. The implementation of such systems must be viewed as a process of organizational change as well as technology transfer.

In accordance with these research findings and in an effort to incorporate "technical, organizational, and social" elements into the design of the ministry's EMIS, this study was commissioned. Its purpose is to increase understanding of the organizational factors in the Ministries of Education that contribute to successful production, distribution, and utilization of information, and the factors that act against success. The objectives are:

1. To document and analyze the current data collection system of the MOE in terms of its structure, flow, and content as a basis for developing a design for a computer-based educational management information system (EMIS).
2. To support planning and policy analysis in the MOE through the identification of what information is required for current problems, tasks, and issues, how that information is produced and utilized, and how it moves about the system.
3. To identify educational data already available to decision-makers in the MOE.
4. To improve the capacity of the MOE staff to carry out organizational analyses of this kind.

This study seeks to address the following questions, which are all related to the general issue of how information needs are met within the MOE:

1. What are the major domains of tasks that the ministry must undertake each year?
2. Within each domain:

- a. Which issues or specific problems are most important at the central offices of the ministry? Which are primarily the responsibility of the governorate offices of education?
 - b. What offices and persons are involved?
 - c. What actions do they take, over what time period? What are the critical moments or periods in this cycle?
 - d. With what other offices or persons do they interact?
 - e. What resources are required?
 - f. What obstacles are there to success?
3. What information is produced by whom, how does it move through the system, and how is it stored, retrieved, and used?
 4. What are the major gaps between the goals and the actual performance of the system?

III. METHODOLOGY

In order to achieve these research objectives, procedures and instruments were designed for creating a model of the existing EMIS system as a basis for analysis. The primary method for collection of the data required for the model was personal interviews with officials in the MOE central offices, governorate education offices, and other relevant ministries. A total of 42 interviews were conducted: 20 in the central offices, 14 in the governorates, and 8 in related ministries and educational institutions (Table 1).

A systems approach was adopted for designing and scheduling these interviews, the premise being that the decision-making processes of complex organizations, such as the MOE, go beyond detailed, exhaustive analysis of each of the component parts. Instead, interviews with a sampling of key decision-makers, personal observation, and analysis of various documentation, were deemed a more effective means to provide the analyst with a general view of the organization as a system, its main structural divisions, its horizontal and vertical linkages, and the information needs in each domain.

Guided by this strategy, officials representing a cross-section of the ministry were identified and interviewed. Talking to first undersecretaries, undersecretaries, general directors, directors, and a headmaster provided a vertical perspective; meetings with the heads of each department in the Basic Education Central Directorate and with external agencies involved in the educational process provided a view of the horizontal structure. Interviews in the MOE Central Offices were concentrated on personnel of the Basic Education Department since basic education is the focus of the BRIDGES Project, but some officials in other relevant sectors, primarily Administration and Directorate Affairs, were also included. The governorates in which interviews would be conducted were selected to represent both the large, urban educational directorates of the "first level" MOE classification (Daqahliya) and the smaller, rural ones of the "second level" (Beni Suef and Qena). However, selection was restricted to those eight directorates in which computers had been installed and which contained Statistics Department and/or Planning Department people who had been trained by BRIDGES to participate in the design and development of the prototype EMIS currently underway.

The design of the instruments and procedures to be used for data collection evolved during the course of conducting dozens of interviews. The initial questionnaire of seven pages was reduced to two even before interviewing began; this questionnaire was abbreviated subsequently to one page, due to the constraints and sensitivities encountered during the interviewing process (Table 2 contains the final version of the interview format). Some interviews lasted as little as 20 minutes; others as much as two hours, depending upon the level of the official's position in the ministry, the size of the department, attitudes toward the need for educational change, and interest in the objectives of the BRIDGES project. In general, high-ranking officials (first undersecretary, undersecretaries, and most general directors) expressed enthusiasm and support for the development of the EMIS in the ministry, but were too busy and distracted to provide the precise, thoughtful responses required for these interviews. It was not unusual to spend several hours in their offices, but end up with only a few minutes of actual interview time. The most productive interviews were those with heads

of smaller departments in the MOE Central Offices and with officials in the rural directorates, where interruptions were kept to a minimum and sufficient time was set aside for a substantive discussion.

Since one of the objectives of this study was to train MOE staff to conduct their own organizational analyses in the future, an attempt was made to involve personnel from the Planning and Statistics Department in the process of research design and implementation. BRIDGES people and their MOE counterparts thoroughly discussed the interview format and procedures, amended them as needed, reviewed data from interviews after each session, and exchanged views about interpretations of the data. During interviews, the BRIDGES advisor was always accompanied by a member of the MOE Statistics staff, who made the appropriate introductions and described briefly the objectives of the BRIDGES Project and the purpose of the interview.

To help alleviate doubts and suspicions about how the interview results would be used, those interviewed were assured that the information they were providing would not be seen by their superiors. They were also assured that the information would assist in the development of a computerized information system serving the interests of every department in the ministry. All but a few of the interviews were conducted in Arabic; the interviewer directed the questions and follow-up responses, while his colleague took notes. As the BRIDGES advisor and his MOE counterparts speak both Arabic and English, the problems inherent in translation were eliminated. Answers were recorded in the first person voice in order to reflect the actual words of the respondent as accurately as possible. After interview notes had been typed and reviewed, follow-up visits were made to clarify information and validate interview results.

In the beginning, BRIDGES personnel took the lead in interviews, but, midway through the schedule, MOE staff members began to assume leadership, conducting the interviews themselves with minimal input from the BRIDGES representative. MOE personnel commented frequently that this was the first time they had participated in this kind of open dialogue and frank discussion with individuals from other departments in the ministry.

In order to supplement and validate the information acquired through interviews, other methods of data collection were employed. Personal observation proved an extremely valuable means for analyzing the existing system of decision-making and information flow. As the BRIDGES advisor spoke Arabic and was resident in the ministry for more than a year, he provided us an "inside view" of the educational bureaucracy and was able to observe first-hand, on a daily basis, the strengths and weaknesses of the problem-solving processes in the ministry. In addition, a file of news clippings about issues of educational reform in Egypt was compiled from four local newspapers: al-Ahram, al-Akhbar, al-Wafd, and The Egyptian Gazette. Other sources of relevant data included: Work Order Number Eight, a study of "The Organization and Management of Basic Education Units" in the MOE; trip reports by BRIDGES staff (Davis, McGinn, Cassidy), who conducted the preliminary analysis of the system; documents published by the MOE that describe its organizational structures and functions; and various documents published by non-MOE educational institutions.

IV. ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF EDUCATION (MOE)

In a government bureaucracy noted for its vastness and complexity, the Ministry of Education is the largest and most complex ministry. This is not surprising, given the immensity of the student clientele (nearly 11 million) and the myriad vital services it provides. The MOE oversees: the admission and evaluation of students; the recruitment, training, and placement of teachers; the development of curriculum; the preparation and distribution of textbooks and other teaching materials; the provision of buildings and equipment; the establishment of educational policies and practices; as well as daily supervision of schools and administrative offices. In such a complex organizational structure, massive numbers of employees and a sizeable budget are required in order to perform these tasks each year. Approximately 644,000 civil servants work in the MOE, 480,000 teachers and 164,000 staff members and administrators. Because of this large work force, the MOE has the largest Chapter One budget (salaries, benefits) of any ministry; regrettably, it also has a disproportionately small Chapter Two budget (operating and maintenance costs). A chapter, or

bab in Arabic, is one of the four main sections of the centralized accounting system of the national budget. Education receives 6% of the Annual Federal Budget, but manpower needs consume almost 95% of that total allotment.

The organization of the MOE consists of two main divisions: (1) the Central Offices (diwan), located in the ministry buildings in Cairo; and (2) the provincial governorates, each of which has a directorate (mudiriya) responsible for educational affairs (Figure 1). The diwan is divided into sectors, central directorates, and general directorates; the 26 educational directorates are supervised by the governors and local councils and are divided into districts, schools, and classrooms. In general, the Central Offices are responsible for the formulation of educational policies at the national level, while the mudiriyas and their sub-divisions are responsible for the implementation of those policies at the regional and local levels. MOE officials, when discussing the relationship between the diwan and the mudiriyas, are fond of quoting: "centralized planning, but decentralized implementation."

A: The Minister and the Central Offices

1: General Responsibilities

The minister and the various departments in the diwan, in addition to setting national policy, are primarily responsible for developing curriculum, hiring and assigning teachers to the various governorates, printing and distributing all textbooks, preparing and administering the national examination for students graduating from secondary schools, monitoring the system through the collection and distribution of data, and preparing and following up on the annual plan (bab three budget) for construction of new buildings and classrooms.

2: Organizational Structure

The current organizational structure and functions of the MOE diwan were formally approved by the Council of Sector and Central Directorate Heads in December 1985. They are based on the following decrees and laws: Law #47 (1978), "Organization of Civil Servants in the Nation;" Law #43 (1979), "Organization of Local Government;" Law #139 (1981),

"Education Law;" Ministerial Decree #25 (1985), "Regulation of the MOE Central Offices;" Ministerial Decree #66 (1985), "The Organization, Authority, and Responsibilities of the MOE Central Offices;" and Ministerial Decree #168 (12/23/85), "Distribution of Authority and Responsibilities in the MOE Central Offices."

The Central Offices of the MOE (Figure 2) have four main levels: (1) the Minister's Office and units reporting directly to him; (2) the three Sectors, each of which is headed by a First Undersecretary; (3) the ten Central Directorates, each headed by an Undersecretary; and (4) the various General Directorates, each headed by a General Director. The General Directorates are further divided into departments and sections.

Except for the minister, the men and women occupying these top positions are lifelong civil servants who possess "high qualifications" (a college degree) and have served previously in a variety of jobs within the MOE such as teacher, headmaster, head of a district section, or general director of a provincial directorate. Promotions are awarded almost exclusively on the basis of seniority--the number of years in the MOE--and relatively little attention is given to personal merit, job performance, or previous experience. It is not uncommon for an employee to receive a promotion leading to a transfer to another department or division, where the work is totally unrelated to the person's previous responsibilities and training. For example, a woman who had extensive experience and training in computers was recently promoted and transferred from the Central Statistics Office to supervise girls' schools in Giza, although the kind of technical skills she possesses are in desperately short supply in the ministry. The positive side of this practice is that most high-ranking officials have an impressive depth and breadth of experience by the time they assume these critical positions; on the negative side, they serve only a short term, one or two years, before retiring since they are in their late fifties by then (the mandatory retirement age in federal jobs is 60 years, except for graduates of the religious al-Azhar schools; for them the retirement age is 65 years).

Those officials who manage to attain the most prestigious titles of first undersecretary or undersecretary by circumventing the traditional route, as in the case of ministerial appointments from the academic community, arouse resentment and mistrust from "the sons of

the ministry" (abnaa' al-wizaara), the rank-and-file who have "paid their dues" by patiently working their way up the career ladder--normally over a 30 year period. Recently, for example, the minister brought in a man with impressive academic credentials and educational experience to be his chief advisor. But, because the new advisor came from outside the ranks of the ministry, MOE employees were critical of the appointment. Even a powerful first undersecretary talked openly and contemptuously with colleagues about the minister hiring a new and untried advisor, whose reputation for high living would be a disgrace to the ministry and to Islam.

There is an unofficial and subtle, but very discernible, protocol associated with moving up in the bureaucratic pecking order. For example, one general director, who had exchanged visits for years with a colleague holding the same title in another department, was recently promoted to undersecretary. The next day, he politely refused to walk to his friend's office in another building, insisting that from then on all meetings be held only in his office. The sudden shift in their relationship was accepted matter-of-factly by everyone, including his friend. Cultural protocol dictated that it was undignified and unacceptable for a higher ranking official to go to the office of a lower ranking official for a meeting; therefore, the general director would have to come to the undersecretary for all future meetings.

B: The Governorates and Educational Directorates

1: General Responsibilities

In addition to overseeing the implementation of national policies established by the diwan, the governors of each of the 26 provinces, working with the heads of the educational directorates, are primarily responsible for admitting students; placing teachers assigned by the diwan in specific schools; assigning graduates from the local Teacher Training Institutes to elementary schools; establishing the annual school calendar and examination schedule according to local circumstances; preparing and administering elementary and preparatory examinations; and expending the budget money allocated to them by the Ministry of Finance (bab one,

salaries, and bab two, operating costs) and the Ministry of Planning through MOE Planning (bab three, capital costs, including constructing and equipping new schools and classrooms).

2: Organizational Structure

The five main levels of the MOE organizational structure in the governorates are: (1) governorate, (2) educational directorate, (3) district, (4) school, and (5) classroom. In addition, Primary Departments in large urban districts are often divided further into Sectors and Sections, since student enrollment in elementary schools is much higher than in preparatory and secondary schools (please see Figure 3 in the Appendix).

3: Governorates

The current system of local government (el-Hukm el-Mahalli) was established by Law #124 in 1960 (with amendments in 1975, 1979, 1981, and 1988) in an effort to diffuse decision-making authority in the national government. Each of the 26 provinces is presided over by a governor (muhaafiz) appointed directly by the President of Egypt, and such an appointment is therefore considered to be equivalent to a cabinet-level position in prestige and importance. Each governorate (muhaafaza) is divided into various administrative directorates corresponding roughly to the ministries in the national government: education, health, agriculture, irrigation, transportation, electricity, industry, commerce, etc. The governor is considered the "minister" of each of these areas exercising the same authority at the regional and local levels that the cabinet ministers exercise at the national level. He is often called the "president of the province" just as President Mubarak is the President of the Republic.

In order to assist the governor in the administration of local government matters, a local council (maglis mahalli) is elected from candidates who represent the various political parties. Elections are held every four years and council members serve for a term of four years, receiving a small stipend to supplement their regular earnings. The local council collaborates with the governor in the initiation, implementation, and administration of programs that conform to national policy regulations. The system is designed to be one of review and

consultation, a relationship of give-and-take cooperation. This depends, however, on the governor's willingness to share power. Most of the time the governor makes decisions and proposes projects for the approval of the council; on other occasions the council initiates ideas and programs for the governor's approval. The councils are sub-divided into various committees which review the activities of each directorate. Councils similar in structure and function to the governorate-level councils are also elected at the city and village levels, which further decentralizes decision-making.

An example from the field of education illustrates the relationship among the national, regional, and local levels in the government decision-making process. In February 1988, the Minister of Education, Dr. Fathi Sorour, in an attempt to increase instructional time and relieve pressure on teachers and physical facilities, issued a decree mandating the abolition of triple sessions beginning with the 1988-89 school year. The task of implementing this policy within six months was a daunting one for educational leaders in the four metropolitan governorates holding triple sessions: Cairo, Giza, Alexandria, Qaliubiya. They had to figure out how to find space in two sessions or less per day for thousands of students and teachers who had barely been accommodated in the previous system of three sessions. For example, the director general of Shubra el-Khaima district in Qaliubiya directorate had 25 buildings holding three sessions, or schools, making a total of 75 schools. The minister's new policy required that he reduce the number of schools to 50, or two per building. He prepared a plan that proposed several strategies for accommodating the other 25 schools. Additional buildings were located to house twelve of the schools. Thirteen others were "handled like chess," reducing the number of school days per week from six to five and then scheduling the 28 class periods on a flexible, rotating basis to attain maximum utilization of the classroom space. He submitted his plan first to the MOE diwan for approval, then to the education committee of the local council in the governorate, and finally, to the education committee of the city council supervising his district. At each level of the approval process--national, regional, and local--the plan was discussed and changes made. The implementation process began only after this process was complete.

4: Educational Directorates

Each governorate has a directorate (mudiriva) that is responsible for all educational affairs at the regional level. These educational directorates form the administrative backbone of the educational system, answering both to the Ministry of Education and to the governor and local council through the education committee. The members of the education committee work with the director of the mudiriva, making suggestions about and approving matters affecting the operation of the schools: admission of students, annual budget preparation, matters related to new school and classroom construction (site location, school design, local donations, contractor problems, etc.), appointment of teachers from the local teacher training institutes, placement of teachers assigned by the Ministry of Manpower, setting the annual school calendar and examination schedule, and, in theory, adapting the curriculum in the textbooks to fit local circumstances.

The role of the mudiriva includes collecting and transmitting school data to the Central Offices for generation of routine annual reports and budgets, distributing to schools the textbooks printed in Cairo, supervising instruction of the curriculum prepared by the various MOE departments, and attempting to implement national policies and ministerial decrees as they are issued. The mudirivas are essentially an information service for the diwan and have little substantive involvement in the decision-making process. The flow of information is bottom-up while communication and decision-making are top-down; school data move up the pipeline to the top levels of the ministry, and decisions and policies come down to the regional level for implementation. The lack of a unified, comprehensive data base to serve the needs of the entire ministry has led to the development of numerous parallel information systems, each having its own rigid and often duplicative data requirements. Mudiriva officials have little flexibility in collecting information, as each general directorate in the diwan determines its data needs and dictates to counterparts in the directorates what to collect and when. At the mudiriva level, data are collected primarily to meet the information needs of the national offices; educational data required for regional and local decision-making, if not available from the national census, and they often are not, are collected on an ad hoc basis.

A frequent criticism made by officials in the mudirivas, and even in the MOE central departments, is that they are not consulted when policies affecting their part of the educational system are being formulated. They feel that their views and expertise are not valued by senior policy-makers. The minister and other top policy-makers, on the other hand, have complained that some officials in the governorates are too autonomous and independent, often ignoring directives from ministry headquarters or making half-hearted efforts to carry them out. One official cited the words of former Minister of Education Mansour Hussein to illustrate the problem: "The central people don't trust locals to make decisions. Local civil servants are afraid to make even simple decisions about admitting students for which they might be blamed." Mudiriva officials also complain that they never see reports of the information they compile and send to the diwan, due to a one-direction flow of information and communication. The director of the statistics department in Beni Suef directorate offered this cynical observation: "But even if the diwan did send us copies of the reports, they would be useless because they come out six months after we need them!"

Each of the mudirivas is classified into one of three categories on the basis of size: "distinguished," "first level," or "second level" (Table 3 in the Appendix). The administrative structure of each mudiriva and district is more or less identical, but the classification of the mudiriva determines the actual title of officials within that structure and their prominence within the ministry. For example, Cairo and Alexandria mudirivas are the only two classified as "distinguished" (mutamayyiz); their directors have the title of first undersecretary, deputy directors are undersecretaries, and department heads are general directors. In Daqahliya mudiriva, classified as "first level" (mustawwa awwal), the director is an undersecretary, the deputy director is a general director, and department heads are directors. In all "second level" (mustawwa thani) mudirivas, such as Beni Suef, the director is a general director and the others are directors and section heads. These are all official government titles and their bestowal is closely supervised by the Central Agency for Organization and Administration (CAOA), a unit of the federal government outside the MOE. In theory at least, each title

carries the same power, prestige, and benefits, whether the official serves in the Central Offices or in a mudiriva. The first undersecretary who is the director of the Cairo mudiriva, for example, should have equal status with the three first undersecretaries in the diwan; the undersecretary directing the Daqahliya mudiriva should command the same respect as the ten undersecretaries in the diwan. But, in practice, career bureaucrats in the MOE attach greater significance and prestige to a promotion involving service in the national offices.

5: District, Sector, Section, School, and Classroom

The district (idaara) is the next level of the regional organizational structure. The number of districts in a mudiriva varies from one governorate to another depending upon the size of the population and the structure of the local government. The administrative framework of the district is almost identical to that of the mudiriva, with size and classification determining the title of the director and other officials. A large district would be headed by a general director, a smaller district by a director. Each department collaborates with its corresponding departments in the mudiriva and the diwan in the collection, verification, and transmission of data, in supervising the teaching of the national curriculum, and in overseeing the implementation of educational policies prescribed by the national offices and the governorate. District directors, like their colleagues at the mudiriva level who report to the governor and local council, work with an education committee and officials of the city, town, or village councils. In the two "distinguished" mudirivas, Cairo and Alexandria, the 18 districts send their statistical reports directly to the MOE Statistics Department, as the volume of data from one of these districts exceeds that of most mudirivas. For this reason there are 42 total reporting units during the annual MOE census: 24 mudirivas, 12 Cairo districts, and 6 Alexandria districts (Table 3).

At the primary education level, districts are further divided in order to facilitate the supervision of massive numbers of students, teachers, and buildings. The administrative sub-

divisions are: sector (qitaa'), directed by a sector chief (ra'ees qitaa'); section (qism), supervised by a section head (muwaggih); school (madrasa), with a headmaster (nazir madrasa) and a deputy headmaster (wakeel madrasa); and classroom (fasl), supervised by a head teacher (mudarris awwal) or teacher (mudarris) (Figure 3). The number of units in each of these subdivisions varies from one district to another according to the density of the student population. While district offices are normally located in a separate, administrative building, sector and section offices are, in most cases, located in school buildings.

The headmaster, with the help of the deputy headmaster and first teachers, is responsible for the day-to-day operation of the school. They implement the curriculum and provide school-level data for the section, sector, district, or directorate, depending on the size of the governorate. In some of the small, "second-level" directorates, such as Beni Suef, headmasters deal directly with statistics personnel in the mudiriva, rather than the seven districts in the collection and tabulation of their data for the national report. The headmaster and first teachers, working with the school inspectors, also have the responsibility of supervising and evaluating teacher performance. Their report on performance becomes the basis for promotions, raises, and secondment in teaching positions abroad.

V: EDUCATIONAL TASK

The Ministry of Education in Egypt is confronted each year with a series of tasks or issues which must be resolved in order to provide basic educational services. The interviews conducted for this study indicate that the major domains of tasks facing MOE officials are the following:

- . enrollment of students;
- . recruitment and placement of new teachers;
- . construction of new buildings and classrooms;
- . development of curriculum;

- . provision of books and other instructional materials;
- . supervision and evaluation of the school system;
- . collection and publication of school information.

Following is a description, based on interview data, of each major domain of educational issues discussed in terms of the annual cycle of tasks, key actors and offices with their linkages to others, data required to perform these functions, and issues and obstacles hindering decision-making and implementation.

A: Enrollment of Students

Egypt's constitution grants assure that every citizen has the right to obtain a free education from public educational institutions, kindergarten through university. While the MOE has made tremendous strides in the past thirty years to meet the increasingly heavy demand for education, a shortage of school buildings and rapid population growth have made it impossible for the system to accommodate all school-age children. Some officials claim that all children who seek admission to school are enrolled and, in fact, this may be true in some mudiriyas. The director of elementary education in Daqahliya Directorate, for instance, asserts that all children from six to eight years of age have been admitted to school and some below that age are taken on a space-available basis. However, other officials claim that six year olds in many areas are routinely turned away due to lack of space but that before age eight all students are admitted. The newspapers, especially the opposition press, often carry stories about parents whose children were refused admission because of overcrowding.

Primary responsibility for determining admissions policy and dealing with the real problems of student enrollment lies with the governorates. National policy stipulates that grade one of the elementary cycle enrolls all students beginning at age six and that kindergarten enrolls students between four and six years of age. Beyond that, the director of the mudiriya, in consultation with the head of elementary education, the education committee, and the

governor, has considerable latitude in establishing actual enrollment procedures and requirements.

1: Enrollment Data

In March or April, approximately six months before the start of the new school year, the head of elementary education in each mudiriya begins the process of estimating the number of new entrants for the coming year. This is most frequently done by applying a simple mathematical formula: current grade one enrollment X 1.05. The figure of 5% annual increase is apparently a standard established by the MOE Central Offices for use "if/when exact data is not available" [Maher, Aswan]. Since exact data are rarely available, the application of this formula has become standard procedure in nearly all mudiriyas. In many cases, officials explained that enrollment projections are deliberately inflated beyond 5% in order to improve the bargaining position of the governorate when the national budget is distributed each year. (See following section on construction of buildings under bab three of the national budget.) Migration is not routinely considered in projecting new entrants and student enrollment. In some of the smaller, rural mudiriyas, however, officials supplement their enrollment calculations by personally visiting kindergartens, village officials and health clinics and writing letters to parents in order to obtain a more realistic estimate of the number of children ages five to six [Gawwad, Beni Suef, p. 1]. Presumably this kind of first-hand data gathering, though unsystematic, takes some account of migration into and out of the catchment area.

Mudiriyas collect enrollment data from schools and districts twice annually: during the second week of school for the "preliminary report," and on November 15 for the "permanent report". In smaller mudiriyas the statistics department collects these data, often directly from the schools, and then makes them available to the other mudiriya departments. In larger mudiriyas, where the laborious process of data collection and processing takes more time and

causes long delays in providing reports required for budget preparation, the various departments have devised their own reporting systems. These data are then sent to the ministry offices in Cairo --Primary Education, Preparatory Education, Secondary Education, Planning and Follow-up, and Statistics--which aggregate them and prepare national-level reports. The Al-Azhar (religious) schools and the universities collect their annual enrollment figures and send them to MOE statistics for reporting. The Central Agency for Population Mobilization and Statistics (CAPMAS) annually publishes a statistical yearbook that includes an abbreviated version of the MOE report. CAPMAS also prepares a report of enrollment in non-formal education in schools, training centers, and institutes operated by non-MOE establishments, public and private.

2: Admission

Using the enrollment projections, primary school officials establish an admission age for students in all of the districts in the mudiriya. This is done by the end of August so enrollment applications can be processed and students admitted as school opens in late September or early October. National policy notwithstanding, space constraints often determine local admissions policy. In Beni Suef, for example, the director general consults with the governor and the local council in order to establish the age of new entrants according to the availability of space. "We start with the older students entering the system for the first time--six, seven, and eight year olds--and continue admitting younger students until we reach capacity. Then we close off admissions" [Ikram, p. 2]. Capacity, in this case, is defined by local policy as being 45 students per classroom multiplied by the total number of classrooms available at the start of the year. In other governorates the definition of capacity that determines admissions policy varies according to the population density and the availability of classroom space. Despite a ministerial decree prohibiting the enrollment of students below age six, some schools and governorates continue to admit them. As noted earlier, the elementary

system in Daqahliya currently has the capacity to enroll all six to eight year olds as well as some below age six.

In MOE kindergartens, that number 665 and enroll 135,000 students, the procedures and problems are much the same. Although MOE policy allows attendance for children aged four to six and mandates a limit of 36 students per class, many applicants are refused admission and class sizes range from 38 to 45 due to the lack of buildings. The kindergarten enrollment process begins in June, when the MOE publishes announcements in newspapers and begins accepting applications from families with children who will be four or more in October. As with primary schools, each kindergarten starts by accepting the oldest children (closest to six years in this case), works down in age until capacity is reached, and then cuts off admission. Since government kindergartens are a much cheaper alternative than day-care arrangements, the social demand for enrollment in these schools is unusually intense, especially in urban areas such as Cairo and Alexandria, where many women are employed. Consequently, the formal admissions process turns many people away each year and desperate parents are forced to resort to other "informal" means to enroll their children in kindergarten. Several informants reported that they gained admission for their children because they knew the right person in the ministry or because they were willing to pay something extra.

3: Issues

Interview data suggest that the main obstacle impeding the process of student enrollment is the lack of adequate classroom space to accommodate the demand for education. The director of primary education in Beni Suef summed up the problem for his schools as follows: "Our main concern and difficulty is procuring enough school buildings and classroom space to eliminate the double and triple sessions we currently have. Overcrowding is the major obstacle we face, and inadequate, old facilities" [Gawwad, p. 2]. Nearly every official interviewed cited overcrowding and inadequate facilities as the major problems that had the

most immediate impact on the MOE's ability to fulfill the constitutional mandate to provide all Egyptians free access to educational opportunity. Of course, shortage of school buildings is not the only factor inhibiting universal enrollment of school-age children, but it was consistently identified by Egyptian educators as the most critical and fundamental deficiency.

Another issue of concern to decision-makers is how to obtain accurate data about student enrollment, especially figures for the number of school-age children in order to project the number of new entrants into the system. Officials acknowledge that the current practice of applying set mathematical formulas yields unreliable results and that the method of making personal contacts with individual families and village leaders is excessively time-consuming and impractical, even in the mudiriyas small enough to employ it. Interviews revealed that decision-makers lack reliable data about repeaters and dropouts, a serious drawback in projecting student enrollment.

B: Recruitment and Placement of New Teachers

Teachers for the educational system come from three sources: (1) graduates of teacher training institutes (TTI), five-year programs that prepare preparatory school graduates to teach in primary schools; (2) graduates of departments of education in the national universities who teach in preparatory and secondary schools; and (3) university graduates of departments other than education. This latter category consists of those who are either hired each year by the MOE to fill teaching shortages after TTI and education department graduates have been placed, or are assigned by the Ministry of Manpower to government jobs because they are unable to find other employment. Beginning with the 1988-89 school year, no new students will be admitted to the TTIs, as the minister has recently mandated the closure of these institutes over the next five years. After 1992, all teachers, primary and secondary, must be university graduates.

At the national level, primary responsibility for the recruitment and placement of teachers lies with the MOE Coordination Offices in the diwan (one each for the Basic, Secondary, and Technical Education Departments) in collaboration with the diwan Personnel Department and the Ministry of Manpower. At the governorate level the director of primary education, working with the director of the mudiriva and the education committee of the local council, is charged with assigning graduates of the two or three local TTIs usually found in each governorate to local primary schools. The mudiriva Coordination Department cooperates with the national Coordination Offices to place university graduates in the preparatory and secondary schools.

1: Graduates of Teacher Training Institutes (TTI)

The planning cycle for primary education begins on November 15, when the mudiriva Coordination Offices compile reports on forms provided by the diwan Primary Education Coordination Office. They report on the current teaching staff and projected teacher needs for the next year by school, grade, and subject. Teacher needs for grade one are calculated on the basis of projected new entrants according to the formula: current grade one enrollment X 1.05. This figure is divided by a standard number of students per classroom, usually 40, to determine classroom needs. The resulting figure is multiplied by a standard number of teachers per classroom, usually 1.4, to derive an estimate of the number of teachers needed. Teacher needs for the grades two through nine for the following year are projected on the basis of an inventory of existing classrooms and a projection of the number of classrooms to be added by the completion of capital projects. The total teacher needs for these grades are projected using guidelines set by the MOE: for every x number of classrooms, x classroom teachers, x Arabic teachers, x English teachers, are needed. The actual current needs are calculated by subtracting the existing inventory of teachers from the projected total need; the results are reported to the coordination office of the mudiriva on November 15.

Officially by January 1, but frequently only after long delays, these reports are sent to the diwan, where they are aggregated. By the end of February, a report is compiled that shows surpluses and shortages of teacher by subject fields at both the national and regional levels. In June, after examination results are available, the TTIs in each directorate send their files of graduates to the Primary Education Coordination Office in that mudiriya for assignment to schools. This is done by the director of primary education in collaboration with the director of the mudiriya and the local education committee. A copy of the TTI graduates report also goes to the diwan Coordination Office so they will know how many new teachers are available in each directorate. Minister Sorour's new decree mandates the closure of all TTIs after the 1988-89 entrants graduate in five years. After that, teachers entering the school system at all three levels will be required to hold a college degree. In order to prevent a potential shortage of elementary teachers when the TTIs close for good in 1992, the MOE Planning and Coordination Office has been meeting with the departments of education in universities to determine the number of students who should be admitted.

Efforts are made to fill all primary-level teacher needs from the teacher training institutes located within the same governorate but, when this is not possible, the national Coordination Office is responsible for arranging the transfer of teachers from another governorate. Teachers are transferred on the basis of their wishes and according to shortages and surpluses in the system. To request a transfer, teachers fill out applications after the November 15 census and submit them to the Coordination Office in the mudiriya. These are collected and sent to the diwan Coordination Offices by the end of April each year. Using figures from the November 15 report for the existing number of teachers and from the June TTI report for the number of TTI graduates, they are able to establish the proper number of transfers to be made each year. By the beginning of July, after graduation exams are completed and all TTI graduates are placed, transfer lists are drawn up and sent to the diwan Personnel Office, which notifies the mudiriya Personnel Offices of new assignments. In

addition to the normal cycle of teacher transfers, the diwan Coordination Office handles special requests for transfer throughout the school year. Also, if a TTI graduate wants to work in a governorate other than the one in which he/she graduated, he/she must send his/her application to diwan Coordination for inclusion with annual transfer requests. In this case, both directorates involved must approve the transfer and it is the graduate's responsibility to obtain the dual approval.

2: Education Department Graduates of Universities

When the national budget is approved--officially on July 1, the beginning of the fiscal year, but normally not until September or October--the ministries receive their formal budget allocations. At that point, the diwan Coordination Offices make final decisions about assignment of the education graduates from the university, all of whom receive jobs each year due to the lack of qualified teachers in secondary schools. The colleges of education, in coordination with the Ministry of Manpower, send the numbers and names of their graduates to MOE Personnel, which submits them to the Secondary and Preparatory Coordination Offices in the diwan for distribution to the governorates according to the surpluses and shortages reported in the November 15 census. Once the assignment lists are prepared by the diwan Coordination Offices, they inform the diwan Personnel Office, which sends authorized teacher placement lists, called "executive orders," to the mudiriyas. After consultation with the mudiriya director and the education committee of the local council, the Coordination Offices assign teachers to districts and schools. The Personnel officials in the mudiriya then contact the teachers assigned to them, officially notifying them of their appointment to a specific school.

3: University Graduates from Other Departments

Since the number of education graduates from universities is insufficient to supply teacher needs in preparatory and secondary schools, the MOE annually appoints thousands of

graduates from non-education departments of universities to teach at these levels. The MOE announces job openings by subject area in the newspapers each year.

Another source of teachers are the unemployed graduates placed in government posts each year by the Ministry of Manpower. According to the national policy, dating from President Nasr's era of socialist reform in the 1960s, the government guarantees employment for every citizen holding "high qualifications" (a college degree) or "middle qualifications" (a three or five year diploma). Graduates of general secondary high schools who do not obtain a university degree are considered unqualified and, therefore, not eligible for this employment privilege.

Faced with an increasing number of university graduates each year and an economy that is unable to absorb them in private sector jobs, the government has attempted to meet its obligation by funneling the maximum possible number of graduates into the public sector, regardless of actual needs. As a result, the ranks of government employees have swelled over the years, creating a massive organization that is overstaffed by bureaucrats who have very little meaningful work to do, receive a minuscule salary (the average base is about LE 60, or \$25, per month), and exhibit little initiative or enthusiasm in the workplace. These issues are the subject of constant debate and criticism in the press; there are frequent calls to reform the bureaucracy, reduce the burden of the public sector on the economy, and modify, if not eliminate, the policy of guaranteed employment.

In spite of the drawbacks and controversy, in addition to the fact that many government workers are forced to find second and third jobs to support their families, employment in the bureaucracy remains a prime objective for most graduates, since it offers a steady income and a modicum of security. Consequently, the Ministry of Manpower currently has a six-year backlog of graduates, called "residuals," who are left unemployed each year. As soon as all those eligible from one year have jobs, they begin placing the next year's "residuals"; they are currently working on the class of 1982.

Each year, after March 1, the lists of teacher surplus and shortage for each governorate, compiled by the MOE Coordination and Personnel Offices, are sent to the Ministry of Manpower on forms provided by MOMP. The MOMP then compiles a report of each ministry's employment needs by number and specialty and submits it to the Higher Committee for Policies. This cabinet-level committee gives final approval to the annual national budget, including allocation of manpower to the government bureaucracy. After the national budget is finalized each year, and after the actual number of TTI graduates, education department graduates of universities, and transfers is known, the MOMP places announcements in the newspapers that they will accept applications from "residuals" of a certain graduating class who possess specified qualifications for all public sector positions. Those who still need and want employment present their applications. The MOMP uses data provided by MOE Statistics and the universities to verify examination scores, qualifications, and grades of applicants. This information is always available on time because of the six-year lag in appointing graduates. The MOMP Planning Department determines market needs for various categories of skills, knowledge, and training; it notifies the Higher Council of Universities of the number of students who should be enrolled in each department, according to their manpower projections. MOMP sometimes uses statistics produced by MOE to produce these manpower estimates.

After reviewing and verifying the information on the applications, the MOMP prepares appointment lists that are sent directly to each educational directorate, by passing the MOE diwan. The head of each educational level in the directorate, working with the coordination office, the director general, and the education committee of the local council, is responsible for assigning these teachers to specific districts and schools.

4: Planning

Data to inform the process of decision-making for teacher recruitment and placement at the primary level comes mainly from MOE Planning and Coordination, which has its own

system for gathering the required statistics. Planning personnel rarely go to the MOE Statistics Department, except for occasional ad hoc requests and then only to verify or supplement their own numbers. For example, the director general of MOE Coordination stated that Minister Sorour recently asked him for a report on the number of teachers who would be needed in 1992 when the TTIs close. The report required cooperation with the departments of Teacher Training, Primary Education, Planning, and Statistics in order to verify his work. During the interview, a member of his staff came in to say that she had just returned from visiting one of the Cairo school districts in order to obtain numbers for the report to Minister Sorour. The director general explained that all of their data for arranging teacher transfers during the year are registered on cards and filed in the Coordination Office. Although the system employed by MOE Coordination relies on cumbersome manual data entry and personal contacts for data gathering, it is still more efficient in providing timely, relevant statistics than the official MOE system.

The money for the new teachers appointed each year is obtained through the Ministry of Finance. The MOE diwan or the directorate Finance Office then presents the lists to the Ministry of Finance for funding. The budget for new teachers is not prepared only on the basis of projected needs; it is based on primarily actual, after-the-fact appointments. The money to cover salaries and expenses of newly-appointed personnel comes from a special Ministry of Finance fund, which is not included in the regular budget until the following fiscal year. Transfers from one governorate to another are also not reflected in the budget until the next fiscal year.

5: Issues

Interview data revealed a number of problems in providing the required number and types of teachers to service. The main problem appeared to be the government's policy of

guaranteed employment for all college graduates and the resulting practice of forcing each sector to absorb whatever the university system produces, regardless of actual needs. This means that the numbers and qualifications of teachers employed by the MOE are determined, to a large extent, by the number of graduates of the TTIs and departments of education. Teachers are routinely assigned to schools and disciplines in which they are not needed because the MOMP's annual assignment lists exceed the manpower requirements in the mudiriyas. The deputy director general of Beni Suef directorate observed: "I once asked for 40 teachers based on our calculations and, instead, they [MOMP] sent me 400 and told me to distribute them any way I want. This of course was a big headache for me--what to do with all those extra teachers."

Another problem is that many of the teachers placed each year lack the training and academic qualifications required by the curriculum needs of the school district. The director general of Beni Suef lamented the fact that "the colleges of education never produce sufficient numbers, so we end up with many teachers lacking knowledge of learning and pedagogy." The director of Planning and Organization in the diwan Preparatory Education Department discussing the problem of imbalances in matching teacher supply to curriculum needs, noted:

We have some problems with the number of teachers. We have a surplus in science and mathematics teachers. Last year we had 10,400 teachers too many in science and mathematics. This happens because we have 32 faculties of teacher training. They say they have staff and laboratories for science and math, but not for training teachers in Arabic and English.

Aswan's director general reported a surplus of teachers, especially at the primary level, in all areas except science, in which a serious shortage exists. The director of primary education in Beni Suef added that another problems is finding teachers willing to accept an assignment to remote areas:

Teachers are often assigned to us who are not specialized to teach their subjects. The assignments from the MOE, especially religion and Arabic teachers, frequently are not suitable--not well-prepared. We also have a problem of teachers assigned to us but who don't want to come to Beni Suef or a village school. Therefore, it is important to encourage youth

from Beni Suef governorate to go to university in Fayoum, our local university, and not in Cairo.

The problem, then, is not one of quantity, as the MOE has more than enough teachers available to staff the system (exceptions are Arabic and English language, art, and technical education). Egypt annually "exports" thousands of MOE employees--primarily teachers, but also planners, statisticians, etc.--to the oil-rich but manpower-deficient countries of the Gulf. The problem is, rather, one of quality and of effective planning and distribution of human resources: how to supply teachers who are trained to teach, whose qualifications match the curriculum needs of the school districts, and who are willing to relocate to rural areas where the teacher shortages currently exist.

Another set of problems results from the system of teacher promotion, transfer, and distribution. Several officials described the "teacher squeeze" that takes place at the beginning of each school year. Lists of surplus and shortage in each mudiriya are supposed to be prepared by the end of February and all transfers and promotions finalized by July 1. If this were the case, then MOMP and MOE Coordination would be able to distribute new teachers according to an accurate picture of teacher needs well before school starts in September. In practice, however, mudiriyas often begin a new school year without knowing how many teachers they will actually have, as decisions about transfers and promotions have been delayed while newly-assigned teachers are already on site. The director of primary education in Daqahliya commented on this problem:

Normally we get the names of new teachers being assigned to our directorate before September. However, in order to know our real needs for teachers in the coming year, we must know how many of our own teachers are transferring out or leaving the system. This is not done until after school is out in June. So, in September, we often have surpluses or shortages in certain grade levels and subject matter areas.

This situation creates a scramble at the start of each year, mudiriya officials pleading with the diwan Coordination Offices to send more teachers and to make the necessary transfers, while school administrators fill in temporarily as teachers. The confusion is

exacerbated frequently by unanticipated student enrollment, which leads to the ad hoc creation of new classes that require more teachers to meet the student enrollment. The director general of MOE Elementary Planning and Coordination described their involvement in handling the initial pressure of providing teachers at the beginning of each year:

We send forms to all directorates in August and September to find out the new classes created when school opens and the corresponding number of teachers. We also obtain the same data from the MOE planning department here to verify our numbers. The directorates send us their reports quickly, because they usually need more supervisors (which can be promoted locally) for more classes and new teachers (unless they are a directorate with a surplus). Many schools cover the teacher squeeze resulting from classroom expansion by assigning assistant headmasters and other administrators to teach.

Another problem in the hiring and placement of teachers is that MOE Coordination makes appointments and transfers not just once annually, but throughout the school year to fill specific needs. This disrupts school organization and the continuity of the curriculum, and creates an administrative nightmare for school officials who must continually juggle slots in the teaching staff. To compound the problem, teachers are frequently conscripted for army annual training midway through the school year, which causes more disruptions and teacher shortages. Mudiriva officials exhibited a mixture of frustration and resignation after years of dealing with the vagaries of centralized authority, as typified by this plaintive comment from the director general in Beni Suef: "These are national policies over which we have no control. So what can we do?"

Yet another factor hindering effective teacher placement is the manual filing and records system that the diwan uses to keep track of its large number of employees. The director general of the MOE Personnel Department stated that the work of his office in assigning new teachers to the governorates each year is delayed for several reasons: clerical mistakes in recording the names and addresses of graduates on the lists that come from MOMP and the department of Coordination; names of graduates who should have been placed many times are completely omitted from the lists; files are frequently lost or misfiled; and important

papers are sometimes stolen from personal files. He felt that a computerized filing and record keeping system would dramatically increase the ability of his office to process the paperwork for the thousands of new teachers each year and to place them in a more timely, efficient manner.

Clearly, the process of teacher recruitment and placement is determined by teacher supply, not teacher demand, a fact which obviates the need for carrying out accurate projections of annual teacher needs. The reality is that the yearly "planning" process, whether for providing teachers or constructing buildings or any of the other major MOE tasks, involves a simple application of set mathematical formulas and rough estimates because nothing more precise is needed. Decision-makers in the mudirivas and the diwan thus constitute merely a placement service, finding positions for all of the teachers who are assigned to them by the central bureaucracy. The real problem for most of them is not "how many and what kinds of teachers do we need to staff our schools during the coming years?" but "how can we effectively deal with the annual influx of teachers into our mudiriva, provided that the number far exceeds our needs in most subjects, that many of the graduates lack teacher training, and that their specializations often do not match our curriculum requirements?"

C: Construction of New Buildings and Classrooms

Educational planning, as it is currently carried out in the MOE, is primarily a matter of determining and satisfying the need for classroom space throughout the school system. The money to fund construction of new classrooms, buildings, and equipment is allocated and accounted for in bab (chapter) three of the four-chapter national budget, the overall responsibility for which rests with the Ministry of Finance. Bab one covers employee salaries and benefits, bab two handles recurrent operating costs, and bab four takes care of long-term loans. The four-chapter budget system was initiated in 1960, when Egypt began receiving massive amounts of financial aid from foreign countries. At first, the Ministry of Finance

(MOF) supervised preparation and monitoring of all four chapters. Now, however, with the population explosion and the resulting strain on the country's physical infrastructure, the government has assigned functional responsibility for capital investment projects--chapters three and four--to the Ministry of Planning (MOP) in order to alleviate some of the administrative burden of the MOF. The MOP, however, also collects aggregated data on bab one and two in order to have a general picture of the entire budget. Data from all four chapters are used, according to the first undersecretary for Education and Human Resources, to carry out costing studies on education and other sectors.

The MOE has virtually no control over its salaries, operating expenses, and long term loans (babs 1, 2, and 4 of the annual educational budget). The MOE Department of Financial Affairs serves primarily as a reporting agency to the MOF which directly supervises these three areas for all government ministries (please see Cuadra's and Morrison's studies on educational finance in the MOE for details). The task of preparing and supervising bab three of the annual educational budget falls to the MOE's Department of Planning and Follow-up. Preparation of the bab three budget involves estimating the needs for new classrooms in all 26 governorates during the upcoming fiscal year, reaching an agreement with the Ministry of Planning on the actual numbers to be then included in the annual budget proposal that goes to the Ministry of Finance, and supervising the implementation of the building projects funded in the final version of the budget approved by the People's Assembly and the Cabinet.

1: Data for Planning

The annual bab three budget cycle begins in September, when MOE Planning sends out data forms to the mudiriyas to determine the actual number of students and classrooms at the start of the new school year. Schools compile their report and send it to the section and district, and from there it is sent to the mudiriya Planning Office. The mudiriya aggregates the data and forwards them to MOE Planning in Cairo by the end of October. This report

enables the director general to see what the actual numbers are in each mudiriva, in contrast to the estimated numbers used in the July 1 budget. He can then determine where the real needs are--the surpluses and deficits of classrooms--and, on the basis of this data, he will evaluate requests for budget adjustments that come from the mudirivas during the year. In compiling this report and others related to bab three, the director general of MOE Planning and the planning directors in each mudiriva disseminate forms and collect data on primary, preparatory, and secondary schools in collaboration with the national and regional directors of the three educational levels.

By the beginning of November, MOE Planning issues another set of forms to the mudiriva Planning Offices in order to estimate the needs for new classrooms in the governorates for the coming year. These are standard forms designed by the Ministry of Planning (MOP) and used by all ministries in preparing the bab three budget. After the forms are distributed to each district in the mudiriva, the director of education in the district meets with school headmasters and local town councils to establish their needs for new classrooms. Each district submits its requests to the director of Planning in the mudiriva, who prepares a report for the whole governorate and gives it to the director general. The director general submits the proposal to the education committee of the governorate local council for discussion and, subsequently, to the entire local council and governor for final approval. By January 31, the bab three budget proposal from each governorate is to be returned to the director general of MOE Planning.

The Department of Planning and Follow-up in the diwan is responsible for aggregating the budget data from the governorates and preparing the annual assessment of capital cost needs for the educational system. During January and February, the MOE budget proposal is put together, but, curiously, the director general said that he does this by himself--without looking at the reports from the mudirivas. He compiles it based on his personal

experience and estimation of each governorate's requirements, using the data from the October start-up reports.

The estimates of classroom needs are calculated as follows: the entire student population for the coming year is projected by figuring the number of new entrants into the system, assuming 96% of the five to six year olds from the 1986 biennial census and promotions, based on averages from previous years, producing total numbers for student enrollment. These numbers are sometimes checked for accuracy against the data collected by MOE Statistics in the November national school census as the reports come in from the governorates.

The director general stated that he has no data available on the number of repeaters in first, third, and fifth grades, and no data at all on dropouts. Since repeaters, dropouts, and migration are not factored into the calculation, enrollment figures are necessarily skewed. The total number of students is divided by the ratio of students per classroom, usually between 40 and 45, depending on the density of population in each mudiriva, in order to get the number of classrooms needed in a given area. The number of classrooms is multiplied by 1.3 to figure the number of teachers needed, based on the 30 hours per week required by the curriculum, divided by 24 hours per week for one teacher. After the director general has completed calculating the needs for each level of education in each directorate for the new year, he aggregates the figures to produce the total bab three MOE budget for the new fiscal year. By the end of February, he submits this to the MOP.

2: Planning Process in the Central Office

The role of the MOP is to attempt to satisfy the needs of the MOE for classrooms. To do so, the priorities from the director general of MOE Planning are evaluated according to the targets that the MOP establishes each year, based on budgetary limits and priorities imposed by the Cabinet. One target is the number of students who should enter each level of

education as dictated by the five-year plan. In the current five-year plan, the target enrollment for basic education is 96.4% of the total eligible student population, taking into account the 2.8% increase in population each year. The first undersecretary in charge of the education sector in the MOP stated that he does "a lot of bargaining with the director general of MOE Planning to arrive at what we finally allot to him for bab three expenditures in the coming year."

Planning representatives of each ministry conduct similar bargaining sessions with the MOP, after which the MOP draws up its annual bab three budget proposal for each national sector according to the national priorities articulated in the five-year plan. In preparing the bab three educational budget plan each year, the MOP uses data from the MOE and from their own Follow-up and Statistics departments. In making projections about student enrollment in order to determine classroom needs, the MOP verifies the figures and growth rates used by MOE Planning in calculating the budget by comparing them to data from CAPMAS and MOE Statistics. There is, in fact, a department in the MOP for monitoring each level of education. Minister Ganzuri (MOP) presents the final bab three budget proposal to the Policy Committee of the Cabinet for discussion and approval by April 1.

Apparently, the practice of bargaining and negotiation is the modus operandi at every stage of the budgetary process. Each minister argues for the merits of his ministry's needs before the Policy Committee in order to change the allocation to each sector. The Prime Minister takes the budget proposal approved by the Policy Committee to the People's Assembly for discussion in the various committees, such as Education, Health, or Agriculture. Each minister can enter into the bargaining process again at this point in order to influence the allocation of monies. After approval by the Assembly, the budget plan is returned to the Policy Committee for review before being sent to the Ministries of Finance and Planning for distribution to the other ministries. Ministries should receive the approved budget for the new fiscal year in April or May, but it often does not arrive until August or September, in which

case the previous year's budget figures are used and then adjusted when the new budget is available.

Normally, the MOE receives a much lower figure than requested, but Minister Sorour's effective advocacy of educational issues has recently made education a high national priority. As a result, more funds are being allocated to MOE bab three than ever before. According to the director general, he requested LE 160 million for capital investment activities for fiscal year 1988-89 and was allotted LE 156 million, a much higher percentage than in previous years. The MOP has informed him that he will receive the full amount he requested in his budget proposal in 1989-90. The first undersecretary for education in the MOP stated that USAID's massive contribution, that financed the construction of over 800 schools at the basic education level, "has relieved some of the pressure on us."

Only after the director general of MOE Planning receives the new budget, does he review the budget proposals from the 26 mudiriyas. He then amends his earlier estimated budget for each governorate in light of their reported needs and the actual MOP allocation, assigning each mudiriya a total budget figure broken down by educational level. This total figure includes the number of classrooms and the amount of money allotted to each level for construction of new classrooms and buildings and for the purchase of new equipment. Copies of the bab three budget for the various educational levels are supposed to be sent to the appropriate departments in the diwan--Primary, Preparatory, and Secondary--and to the Planning Departments in the mudiriyas by the July 1 start of the new fiscal year.

3: Planning Process in the Governorates

The planning department in each governorate, working with the governor and local council, has the responsibility of distributing the capital budget to each of the districts in the mudiriya. During July and August, after receiving the capital budget allocation from the director general of MOE Planning, the mudiriya Planning director meets with the directors of

the Primary, Preparatory, and Secondary levels to determine their needs for new classrooms and equipment based on reports submitted by each district in the mudiriva. The planning director aggregates these numbers and prepares a proposal detailing how the bab three budget will be divided among the various educational districts. He and the director of education in the mudiriva (whose actual title will be director general, undersecretary, or first Undersecretary, depending on the size of the governorate--see Table 3) present the proposal to the education committee of the local council for discussion. Subsequently, the proposal goes to the entire council, where each representative lobbies intensively for his district's educational interests. Final allocations of the budget are approved by the governor. Starting in August, each district director and the section heads make field visits to schools in order to ensure the accuracy of the needs listed by headmasters in the various district budget requests.

By the end of August, after the numbers have been verified, the mudiriva Planning director sends the mudiriva's completed capital investment plan for the new year to MOE Planning in Cairo. Once the governorates submit their completed bab three plan, educational planning officials can transfer funds from one project to another within a given educational level with the governor's permission. To transfer funds between levels requires the permission of the director general of MOE Planning. The total bab three budget for the mudiriva cannot be amended, except in rare cases which require MOP approval, but mudiriva Planning officials make frequent visits to the diwan during the year to negotiate with the minister and the director general of Planning for additional financing for school construction. Sometimes the minister gives money to governorates during the year in the form of matching grants, intended to encourage local communities to donate land or money to build schools.

At this point the process of follow-up begins. This involves the close collaboration between the MOE diwan and the planning staff in the mudirivas in supervising expenditure of capital budget and implementation of construction and equipment projects. The National Investment Bank plays a key role in the process of bab three control; it receives copies of the

budget figures for each educational directorate from MOP and MOE Planning and is responsible, through banks located in each governorate, for the proper disbursement of funds up to the budgeted amount. The National Investment Bank works closely with Planning officials in the mudiriyas, setting up a time schedule for expenditures and monitoring the expenditure of the budgeted monies. The mudiriyas prepare a quarterly report of progress on each capital investment project and send copies to the bank and to MOE Planning.

While the National Investment Bank is responsible for the financial aspects of the building and equipment programs, the task of MOE Follow-up is to supervise the implementation of the budgeted projects, the actual work of building new classrooms and purchasing proper equipment. The directors of planning in the mudiriyas are directly accountable to the director general of MOE Planning for this, and he maintains constant contact with them in order to ensure that capital projects are proceeding satisfactorily. Because unspent bab three money reverts back to MOF at the end of the fiscal year, the director general frequently sends out letters of reminder and encouragement to the mudiriyas if their projects fall behind schedule. The mudiriva planning directors normally handcarry their quarterly reports to the follow-up staff in the diwan. This practice affords regular opportunities to discuss problems and questions. The director general of MOE Planning said that he sees representatives of the 26 mudiriva planning offices more than four times a year, since they make five to nine personal visits each year to review the status of the bab three budget.

In addition to the quarterly reports that every mudiriva prepares on bab three projects, each district in the mudiriva compiles a monthly report--to forward it to the planning office--for the directors of each of the three levels of education in the mudiriva, which is forwarded to the planning office. Staff from the planning office routinely visit the schools and building projects in order to verify the accuracy of the data they receive in these reports. Random site checks often indicate discrepancies. The mudiriva director and the

Planning director use the information obtained from written reports and field visits in their monthly meeting with the education committee of the local council.

In March, the mudiriyas send out forms to the districts for a year-end accounting in each level of education. The purpose of this report is to find out what was actually done, as opposed to what was projected in the plan, to determine the needs for the coming year, and to see how much bab three money remains to be spent. Any remaining money is reallocated to projects that can spend it before the end of the fiscal year, in order to avoid loss of current financial credits and a possible reduction of capital budget in the next year's plan. These forms are returned to the mudiriva planning office by the end of May and a final, summative report of bab three is prepared and submitted to the director general of MOE Planning.

4: Issues

Interviews with MOE officials revealed a number of issues and obstacles related to the annual capital budget plan. Foremost among these is the fact that the figures used in preparing the annual budget projections are not derived from research or reliable data. Instead, the budgetary process relies almost exclusively on tradition, personal intuition, and the bargaining power and influence of political advocates. The first undersecretary for Education and Human Resources in the MOP, who supervises MOE preparation of the bab three budget, stated: "We use our experience and personal sense to establish budget figures each year. The process is not scientific or accurate; the figures are approximations only." The planning director in Beni Suef pointed out "we do not have studies to support estimates of cost for new buildings. We estimate the cost based on previous experience."

Several senior officials, both in the MOE and the MOF, protested against the fact that, once budget figures are established for each governorate, the governors and local councils take excessive liberties in the use of money allocated to them, often attempting to transfer funds from one project or account to another without obtaining the necessary approvals from

the central authorities. The director general of the education sector in the MOF stated that the main problem for him is that "the governorates are too independent and powerful in their use of budget money, especially in bab three--school construction." The director general of the National Center for Educational Research confirmed this problem, pointing out that governors sometimes take money allocated for school construction and use it to build roads or to finance other projects. The director general of MOE Planning added, however, that this problem has become less prevalent in recent years, as governors recognize more and more their constitutional obligation to observe the budgetary limits established by the central ministries. In an attempt to address this problem, Minister Sorour has recently created a new Physical Planning Unit in the MOE; its task is to supervise the work of school construction in the governorates and bring this critical activity under greater central control.

Another set of issues deals with the follow-up and implementation of bab three projects. One of the main difficulties encountered by MOE Planning officials is coordinating the roles of the local councils, building contractors, community, and banks in order to complete construction projects within the prescribed budgetary and time limits. Contract disputes, shortages of building materials, political squabbles between local councils and the community about site location and participatory financing, poor quality of construction, unanticipated increases in building costs, and failure of contractors to keep up with the construction schedule are problems that planners in the mudiriyas spend most of their time and energy on. Related to this, the director general of MOE Planning noted that one of the major obstacles in implementing the bab three budget plan is lack of adequate transportation for planning personnel in the mudiriyas. It is difficult for them to get out from their offices to visit the districts and schools and monitor progress on the myriad building and equipment projects under their supervision.

D: Development of Curriculum

Curriculum development in the MOE can be divided into two main areas: (1) Curriculum revision, which involves the routine updating and correction of dates and facts in the existing curriculum, is the responsibility of the curriculum subject experts in each educational level (as this is primarily a matter of periodically modifying school books, it will be included in the next section on provision of textbooks) and (2) Curriculum reform, which involves substantive modifications in the scope, sequence, and content of curricula in each level of education. This function was officially assigned to the National Center for Educational Research (NCER) in 1974, shortly after its inception. NCER's responsibility is to supervise development of the national curriculum in collaboration with curriculum committees comprised of representatives from university faculties of education and other academic colleges, a consultant or inspector from the MOE department, a teacher, and a subject expert.

I: Curriculum Reform

Each educational department in the diwan (Primary, Preparatory, Secondary, Technical, etc.) has three people principally involved with curriculum reform in each subject: a curriculum director, a subject expert, and an inspector general. These three, working under the director general of the department, are responsible for subject matter follow-up on the central level. At the school level in the governorates, the school principal, assistant principal, and first teachers are responsible for insuring that the prescribed curriculum is implemented properly by the teachers in each classroom. At the mudiriva level, each educational division sends out inspectors to visit schools, where they observe general conditions and classroom teaching, checking to see if teachers are following the curriculum, and write reports to the inspector generals in the mudiriva and the diwan. (See following section on supervision and evaluation of schools for a more detailed discussion of the inspection system.) The inspector general and subject experts in each MOE diwan department discuss the evaluations from the

governorates and submit reports to the subject consultants who advise the minister and first undersecretary for Education on all curriculum matters.

The NCER also has experts for each subject in the curriculum. The original intent was that these specialists, working closely with the MOE subject consultants, would play a central role in directing and coordinating all curriculum activities nationwide. However, in 1985, the MOE established its own curriculum reform committees, separate from those of the NCER, and the field reports from the MOE inspectors have not been routinely shared with the NCER consultants. As a result, the NCER has effectively become disengaged from significant involvement with the mainstream MOE departments in the actual process of development and supervision of the national school curriculum.

The preparation of new curricula is a process of collaboration between the curriculum directors, subject specialists, and inspector generals for each educational level and subject. They, or someone they appoint, write the curriculum according to objectives established by the curriculum committees and taking into account the age, grade, and regional differences of students. All new textbooks in the curriculum must be ready for print by December for the following school year. The curriculum director of MOE Primary Education stated that they prepare curriculum materials and books that cover the entire range of the subject matter, leaving selection of what is most appropriate for each region to the discretion of the teachers and local official. In July, the director general of each educational level prepares a handbook that describes the expectations and instructions for the new year, and highlights changes in the curriculum. In addition, a teacher's guide for curriculum is prepared for each subject, and one copy of it along with the new handbook will be distributed to each district (MOE Primary Education has 48 reporting districts, consisting of 24 mudiriyas, 12 Cairo districts, 6 Alexandria districts and 6 Giza districts). The districts are responsible for ensuring that their schools receive sufficient copies of each publication. The curriculum directors in each MOE department meet regularly with the Department of Teacher Training Institutes to review and

evaluate curriculum so that the new teachers graduating from the TTIs will know how to teach it.

New textbooks should be returned from the printing presses by July, and during August and September the curriculum team in each department prepares instructions for the inspectors who will supervise implementation and evaluation of the new curriculum materials. Field testing of new materials is conducted after the distribution to all districts are completed. During the course of the year, textbooks are checked to verify grade-level appropriateness and, at the end of the year, teachers and students are asked to evaluate textbooks and offer recommendations for change. The curriculum director for MOE Primary Education said that materials are reviewed and changes made in one or more specific subjects on a rotating basis. For example, last year they modified fifth grade social studies; the following year they will work on sixth grade social studies. He also stated that examinations are not referenced to curriculum objectives for purposes of evaluation. The curriculum is not, therefore, changed as a result of examination results, unless a high proportion of students does poorly on a given section of the exams. In order to know whether curriculum objectives have been reached each year, curriculum leaders in the MOE diwan depend on the observations of the school inspectors who visit the classrooms and check examination results in the schools. They read the inspectors' reports and meet with the inspector generals to ascertain the degree to which students are mastering subject content and achieving curricular objectives.

When changes are initiated, it is the responsibility of the directors of each educational level in the mudiriyas to see that teachers receive training in how to handle the new curriculum. To assist in this, the diwan, as mentioned before, prepares a teacher's guide that includes instructional ideas and methods for preparing lessons. Each teacher in the system is supposed to have a copy of this guide for the subject he/she teaches, but interview data suggest that not all teachers have the guide. The central ministry's Department for Training (located in Heliopolis, not the main diwan) sponsors mandatory training courses for teachers

who will be teaching the new curriculum. This department has six training centers for this purpose that are located around the country. In addition, some training is given at the local level in the schools. Unfortunately, these centers are insufficient to meet the curriculum training demands of the whole educational system, especially in the smaller, more remote governorates.

2: Issues

Several obstacles hinder the effective development and implementation of curricula in the school system. One major impediment is the apparent organizational and operational rift between the NCER and the curriculum leaders in the MOE departments. One informant stated that the only way for NCER specialists to have access to the field reports--that describe the actual situation in the schools--is by making friends with MOE subject consultants. Otherwise, there is virtually "no communication between the MOE subject consultants and the NCER subject experts, who are supposed to be the 'brains' of each subject." This detachment of the research and policy analysis 'arm' of curriculum design from the practitioners in the MOE departments represents a serious flaw in the system. It means that the actual process of curriculum development in the MOE is deprived of the effective evaluative function of the research and expertise that the NCER can provide, and that any curriculum work carried out in the NCER will remain primarily an academic exercise, unresponsive to real curriculum needs and problems in the educational system.

A related issue is that national and regional examinations are not used as a tool for evaluating curriculum and student achievement; they are primarily used as a screening device for promoting or retaining students or ranking them in order to determine which educational track or specialization they can pursue at the next level. No viable link exists between design of curriculum and preparation of examinations; no empirical means exists for assessing the degree to which the objectives of the curriculum are being achieved and students are learning.

However, the curriculum director for MOE Primary Education pointed out that some attempts are underway to address these problems. The MOE and NCER, he said, are currently conducting a study on the development of test questions for all subject areas and levels that is designed to help teachers improve their evaluation of student learning. He also stated that one of his goals is "to have a national examination linked to our curriculum objectives that we could use for diagnostic purposes."

Curriculum officials in the MOE said that the in-house reports prepared by the school inspectors and inspectors general are virtually the only source they make use of in evaluating and improving curriculum. Data from the MOE Planning and Statistics departments are not used. Furthermore, curriculum studies done by the universities are used only occasionally, due to the difficulty in obtaining them.

Part of the problem is the absence of a formal agency or association in Egypt for coordinating nationwide curriculum activities and for promoting discussion and awareness of curriculum issues. This was supposed to be largely NCER's function, but for reasons cited earlier they have not assumed it. Informants said that newspapers play a helpful role in fostering dialogue, but that they are not generally critical enough. Without a formal curriculum association at the national level, informal networks of interested university faculty and students and MOE supervisors and employees attempt to generate interest and action in the field of curriculum reform.

A number of education officials in the governorates brought up the difficulties inherent in applying a centrally-prepared curriculum at the regional and local levels. Although they are, theoretically, given some latitude to adapt curriculum content to suit their local circumstances, in practice, such adjustments are seldom made. Teachers rarely obtain copies of the curriculum guides and tend to follow the scope, sequence, and content of curriculum exactly as contained in the prescribed textbooks. The result, in many cases, is the presentation of subject matter that is uninteresting and irrelevant to both teachers and students --a factor

that contributes to increased repetitions and dropouts, as well as reduced student achievement. A common refrain during the regional interviews was "too little involvement in preparing curriculum for our schools according to local needs" and a plea to have a greater say in what teachers teach, rather than simply being responsible to train them each time changes are made in the textbooks.

Two other factors were cited as hampering curriculum implementation and, thereby, reducing the internal efficiency of schools: one is the lack of visual aids and equipment to illustrate and supplement the material in the textbooks, and the other is the overcrowded condition of classrooms.

E: Provision of Textbooks

Providing textbooks for all levels of the educational system, primary through university, is the responsibility of the Central Agency for University and School Books. This agency works closely with textbook departments in the MOE diwan and the Ministry of Higher Education to supervise the production of all printed instructional materials. Although the Central Agency for University and School Books is linked organizationally and functionally to the MOE and MOHE, it is fiscally independent of these two ministries, receiving its budget from the Central Directorate for Services of the MOF rather than the Central Directorate for Government Administration as they do. (For further detail, see BRIDGES reports on educational finance prepared by Ernesto Cuadra and Don Morrison.)

The major task of the Textbooks Department in the MOE is to distribute the required number and kind of textbooks to each governorate for all levels of pre-university education, including kindergarten, special education, and private schools, before the start of the school year. Each year this department, in collaboration with the mudiriyas, the MOE departments, the CAUSB, and 48 printing presses in Cairo, produces and distributes more than 150 million textbooks. The Textbook Department is also responsible for the printing and distribution of

all examination forms for the annual school leaving exam in technical, teacher training, and general secondary schools.

1: Incorporation of Changes

The process of new textbook production requires a three-year lead time in order to complete the cycle of writing, review, printing, and distribution. The director general of Textbooks initiates this process each year in March by sending a form to all Primary, Preparatory, Secondary, and teacher training departments in the MOE in order to get their suggestions on ways to improve the content of textbooks currently in use. In the MOE Department of Primary Education, this annual review of textbooks is carried out by school inspectors and a sample of 100 teachers, whose written comments go first to the inspector generals and curriculum directors in the diwan and then to the director general of Textbooks. The director general of Secondary Education stated that her department sponsors an annual symposia in which experts discuss the curriculum and evaluate the content of textbooks.

When these forms are returned within the next two months, the Textbook Department uses the departmental recommendations as a basis for evaluating their textbooks and reaching a decision whether to revise existing books, to produce a completely new textbook, or to continue using the books as they are with no changes. Proposals for substantive modification of the content of textbooks are submitted to the undersecretary, the MOE curriculum consultants, and, finally, to the minister who must approve all changes in curriculum and textbooks. The minister, working with NCER and curriculum consultants, appoints curriculum committees to undertake the task of evaluation, re-writing, review and approval of new materials, a process which normally takes up to two years to complete.

Books that require minor revision are sent to the appropriate subject experts in each educational level in the diwan. The job of these experts is to correct factual errors identified

during the evaluation process and prepare errata sheets that are submitted to the Textbooks Department for insertion in the books during re-printing.

2: Production Schedule

In May and June, fifteen months prior to the start of the target school year, the mudiriyas send data on the projected budget, number of students, and textbook needs to the Textbooks Department. These data are submitted on forms and distributed by the Textbook Department, that does not make use of the annual statistical census compiled by MOE Statistics. In July, the Textbook Department aggregates these figures and begins to calculate, for each subject and grade level, the total number of books needed according to the MOE textbook budget and the projected number of students in the system.

Books that require no changes are submitted to the Central Agency for University and School Books in September for reprinting. By November, if the mudiriyas have not submitted their projections, the director general estimates their needs in order to meet the December deadline for submitting materials to the printing presses. In the case of new and revised books, the director general begins collecting draft copies from the curriculum committees and the MOE departments in November. Late December is the deadline for submitting drafts of new and revised materials, along with the projected number of copies of each required for the coming year, to both the Central Agency for University and School Books and the printers. All reprinted, revised, and new books should be printed, shipped to the Textbook Department warehouse in the MOE diwan in Cairo, where they will be ready for distribution to the governorates by the beginning of September each year.

3: Issues

The MOE Textbooks Department faces a number of obstacles in carrying out its responsibility to provide school books to more than 10 million pre-university students.

Shortages and delays in producing books and shipping them to the schools are recurrent problems. The director of Primary Education in Daqahliya governorate observed that his main problem each year is the late arrival of textbooks: "We must start instruction at the beginning of the new year without books for the teachers or children, and this problem persists sometimes for several weeks or longer."

These delays are a result of several factors, among which are arbitrary policy changes that affect school enrollment and, therefore, the availability of books. For example, the education committee of the local council may reduce the minimum passing score on the preparatory examination without informing the director general of Textbooks. This increases the number of students entering general secondary and technical schools the following year, and, since these increases are not taken into account, a shortage of books occurs in the fall, which in turn evokes angry complaints from parents, teachers, and school administrators.

Another example is that education officials in the governorates sometimes lower the enrollment age for new entrants from six to five or five and a half years. This brings more students into the system than anticipated and book shortages are the inevitable result. These unexpected shortages cause a severe strain on the production and delivery system of the Textbooks Department, and students go weeks or even months without textbooks.

Part of the difficulty in responding to such requests quickly lies in the lack of cooperation and the poor channels of communication between the MOE diwan and governorate education officials. For example, the Deputy Director General in Beni Suef stated that one of his most vexing problems is the lack of information about the availability of textbooks:

"I often send my trucks to Cairo to the central MOE offices to fill shortages in textbooks. But many times they come back empty--fruitless trips which cost a lot of money. I need a direct link with the MOE Textbook Department to know what books are available for distribution before I send my trucks there."

On the other hand, the first undersecretary for Directorate Affairs and Administration in the MOE diwan pointed out that an uncooperative attitude of mudiriva officials frequently accounts for late delivery of books to the schools: "We often find that one month after

delivering textbooks from our central warehouse here to an educational directorate, the books still have not arrived to the various schools."

Book shortages are especially acute in technical education, which has become a high priority in the Minister's current reform effort. According to the director general of Textbooks, new classes in these schools are opening constantly and unpredictably, "who knows where and when." He said that there is no coordination between his office and the undersecretary for Technical Education, who issues all regulations, and he, therefore, receives no advance notice to prepare and distribute the right number of books in time.

A lack of coordination between the various curriculum committees and the curriculum consultants further exacerbates the problem of book shortages and delays. After the curriculum recommendations and revisions are prepared each year, the consultants who review the recommendations and report to the minister often hold on to the materials too long which throws the entire production and distribution cycle behind schedule.

The director general discussed the problems associated with printing books, lamenting the poor quality of printing presses and paper in the publication of MOE materials. If the resources were available, he said that his highest priority would be to change the appearance of textbooks completely, using better paper (probably imported because the local product is low grade) and better design. Furthermore, he would seek to change the content of the books, the fundamental nature of the ideas and the writing, which would require hiring better authors. His recommendation for accomplishing this would be to institute a system of authorship by competition. In his opinion, greater expertise and ambition are required: "we need new curriculum people to design curricula and books which are more suited to current needs of the students and the educational system.

Once the textbooks are printed and shipped to the MOE diwan, inadequate storage facilities contribute further to untimely delivery to the schools. The Textbook Department has been located in the same building of the MOE diwan since 1938. (Most of the diwan offices,

including the Textbook Department, are housed in buildings that were formerly the palace complex of one of the members of Egypt's royal family.) The building was not designed as a textbook facility and is woefully inadequate to handle the large number of employees and the massive volume of books, 151 million. The building consists of five floors with no elevator; the difficulties inherent in hauling huge quantities of books up and down the stairs make the process of distribution more cumbersome and inefficient than it need be.

These problems in the production, storage, and distribution of textbooks have spawned a controversial educational issue: the use of "external books" in the schools. Since MOE textbooks are generally of poor quality, lacking in curricula that are relevant and up-to-date, and delivered late to the schools each year, many teachers and students have resorted to using textbooks written and published by private sector entrepreneurs. Although expensive compared to the official textbooks prescribed in the MOE curriculum, which students normally receive free of charge, these "black market" curriculum materials sell briskly each year, primarily because the content and physical appearance are of superior quality and they are available in sufficient quantities when teachers and students need them. These materials also tend to be less complicated than MOE books, providing simplified summaries helpful in studying for exams. Despite protests by the minister, who has prohibited the use of external books in the schools, parents who can afford them are willing to pay the higher price to give their children a perceived advantage in mastering subject matter and obtaining higher grades on examinations. Opposition newspapers have highlighted this issue as another example of government's failure to provide basic services to citizens equitably and efficiently. The result, they argue, is the introduction of class distinction and elitism into the national school system.

F: Supervision and Evaluation of the School System

Officials in the MOE diwan are viewed as decision- and policy-makers, while personnel in the mudiriyas are viewed as implementers of policy. The Department of Primary

Education in the diwan has five divisions to supervise school operations in the governorates: Curriculum, Planning and School Organization, Student Affairs and Examinations, Pre-School, and Inspection. The departments of Preparatory, Technical, and Secondary Education have similar organizational divisions (except for Pre-School).

It is the responsibility of the director general, in collaboration with staff from these five divisions, to formulate standard policies and procedures for local school administration governing vital aspects of the instructional process, such as the organization of the school day and the responsibilities of school principals, parent councils, and inspectors. Educational leaders at the level of the mudirivas and districts are responsible for distributing textbooks shipped from the central offices, coordinating the work of school inspectors, supervising food services, handling placement of teachers from the TTIs, and establishing the opening and closing dates for local schools and the schedule of most year-end promotional examinations. The General Secondary national leaving exam, however, is administered centrally: all high school seniors take the same exam at one of the four regional exam centers. Officials identified two main sources of information that guide supervision and evaluation of their educational programs: the inspector generals and the report forms that each mudiriva submits during the bab three planning process each year.

1: Supervision and Evaluation by the Central Office

The system of school inspection is the bureaucratic mechanism that the MOE has devised as the critical link between decision-making and decision implementation. The main task of the inspectors is to supervise the process of implementation and evaluation of national policies and programs at the local level, functioning as the "eyes and ears" of the central ministry in the districts and schools. According to the director general of MOE Secondary Education, inspectors operate under a broad mandate "to visit schools in the mudirivas to solve problems; if they cannot solve a problem they bring it to us [in the diwan]." Interviews revealed that inspectors deal with a wide range of issues during these visits, including the

condition of school buildings, class size, availability of textbooks and equipment, number of teachers, teacher preparation, promotions and transfers, evaluation of curriculum, student and teacher attendance, student achievement, in-service training, and examinations. However, the extent to which inspectors are actually involved in solving the problems they encounter, in contrast to simply reporting them to officials in the diwan, remains unclear.

In the diwan, each level of education has an inspector general for each academic subject to whom the regional and local inspectors report, and the inspector generals are, in turn, supervised by the director of Technical Inspection, who reports directly to the director general for that level. In the mudirivas there are inspectors for each educational level and subject, supervised by a first inspector, who coordinates the work of all inspectors in the mudiriva. The number of inspectors varies from one governorate to another according to the number of teachers.

The inspector generals from the diwan make site visits themselves and depend on reports from the mudiriva inspectors who visit the schools on a regular basis. In Secondary Education, for example, there are 25 inspector generals who visit two schools in one mudiriva each week and write a report to the Director of Technical Inspection in the diwan. Local school inspectors also make regular visits and write weekly reports; those are sent to the inspector generals in the diwan and to the mudiriva first inspector, as well as to the director of Technical Inspection for each level of education. The director of Technical Inspection aggregates the reports and discusses them with the director general, who informs the appropriate department (Planning, Textbooks, or Teacher Coordination, as the case may be) of special needs and problems.

The annual inspection cycle begins in July with a report on the previous school year that contains observations and recommendations at the level of specific schools. The inspector generals for each subject use these as the basis for their annual report submitted to the

director of Technical Inspection, who prepares a summative annual report for the director general and the undersecretary.

Toward the end of the summer, usually during the month of August, the inspectors prepare a pre-year evaluation concerning the readiness of books, teachers, and buildings. Because of the large number of schools (approximately 12,000) at the Basic Education level, only a sample of schools are selected for evaluation to present a picture of school conditions throughout the system. Officials try to balance the sample by including both rural and urban schools and by selecting different schools each year. If the evaluation indicates shortages and problems as the new year approaches, the director general reports these to the appropriate department in the diwan and requests assistance. For example, the Textbooks Department is contacted when book shortages are reported and is asked to provide a specified number of books to the mudiriva or district where the shortage exists.

During July and August, when the curriculum guides are prepared and sent out to the governorates, it is the responsibility of the director of Technical Inspection in each division in the diwan to see that inspectors receive instructions on new or modified curriculum and methods of teaching. The directors of Technical Inspection and the inspector generals, together with the subject experts in each division, review the textbooks just received from the printers to identify printing errors. During this period, the director of Technical Inspection and his staff also review, design, and prepare inspection forms for the coming year.

In September and October, the director of Technical Inspection prepares the annual plan for school inspection visits. One of the initial activities of the plan is to visit all 48 of the reporting mudirivas and districts during the first five to six weeks after school begins. This is done by the inspector generals, who divide up the visits among themselves; the main objective is to ensure that local inspectors in their subject area are implementing the plan and have distributed curriculum instructions to the schools. In addition, the inspector generals visit a sample of schools in order to check on buildings, books, equipment, and class sizes and to

determine what actions are necessary. When problems turn up during these visits, the inspector generals have the prerogative to reprimand local inspectors found to be negligent in their duties. Most often they do this through verbal censure, but in cases requiring severe sanction, they can even order temporary salary reductions. The inspector general also confers with officials in his educational division about the number of teachers assigned to the mudiriva and arranges transfers and promotions when it is deemed necessary.

In November, inspector generals begin another round of field visits to sample schools in order to evaluate teaching activities in their respective subject areas. They enter classrooms, accompanied by the local inspector, to check on the grade books and student workbooks, talk with students to see if they are learning what the curriculum specifies, and observe the instructional methods of teachers. The inspector generals work with the inspectors and school headmasters to solve problems and then write a report to the director of Technical Inspection in the diwan.

During this period, the director of Technical Inspection works with the School Organization staff of MOE Primary Education to design and develop in-service training programs for inspectors and teachers. In July and August, the Social Organization staff begin collecting suggestions from departments within the ministry in order to be able to submit the final in-service training plan by November. The programs that are developed are presented at the regional and local levels during the following summer.

At the end of January, all of the inspector generals meet to discuss their field reports and to prepare a general report for submission to the director generals and the undersecretary for Basic Education. This report is primarily a statistical compilation of the number of students, classes, teachers, and boys and girls for purposes of preparing budget projections for the new fiscal year.

During February, the inspector generals initiate another set of visits to the mudirivas, each inspector general visiting a selection of about 30 schools. These visits are unannounced

in order for the inspector generals and inspectors to obtain an accurate, unmanipulated view of how the school is operating. One purpose of these visits is to validate student attendance figures that teachers record daily by checking classrooms, to see if enrolled students are actually attending, and to check on students who have dropped out. They also verify that headmasters are keeping accurate daily attendance figures for teachers. The director of Technical Inspection in the MOE Primary Education Department stated that according to the February inspections: "everything is normal" in the schools--teacher attendance is 99%, student attendance is 96%, except in rural areas where it dips to about 94%, and only about 2 or 3% of students drop out of school.

2: Exams

Another objective of the February visit is to begin the process of preparing questions for year-end promotional examinations. Until recently, promotional exams at the primary level were given only after the second, fourth, and sixth grades, but now all students take an exam at the end of each school year. There is, however, a policy of not failing anyone after the first grade. Each teacher prepares his/her own exam according to specifications that the diwan inspector generals and subject experts issue for each subject. The diwan departments collaborate with NCER in the development of exam questions and other testing and evaluation procedures.

During March and April, the inspectors work with school and mudiriva officials in the final preparations for administering and scoring the exams. Throughout the year, copies of all monthly, semester, and final exams prepared in the schools are sent to the diwan, where the Curriculum and Technical Inspection staff examine the test questions. They write a report to each mudiriva evaluating the exams in light of the guidelines established by the diwan. The MOE has established examination centers in each mudiriva that grade exams, analyze each test item, and send a report to the diwan departments. Any complaints about the grading of exams are handled by the Division of Student Affairs in each educational division. The Department

of Examinations in the Secondary Education is responsible for preparing and administering the national leaving exam (as-Sanawiya al-'Aama) for 12th graders. The results of the science and math portions of this exam are sent to England to be evaluated.

The "first level" exams are usually given in May (but sometimes in April, depending on local circumstances), and the "second level" exams--for those who failed in May--are given in September. The combined results of the first and second level exams are used by mudiriva and diwan officials to estimate the number of students who will be in each grade level for the coming year. This information is used as the basis for calculating the number of classrooms required in order to distribute the budget received from the diwan. The Department of Preparatory Education calculates the proportion of students who pass the examination in each school by hand. It can also provide ninth grade pass rate results for every preparatory school in the system by subject. The director general of Secondary Education stated that she uses exam results to identify the best and worst mudirivas each year.

In June and July, after exam results are reported, the inspectors begin compiling their annual report. These reports are sent to the diwan departments where the director generals compile an aggregate report and then meet as a committee to prepare a summative evaluation of the school year for the undersecretary of their educational level. While the January report is focused upon statistics as the basis for financial decision-making, the June report highlights the achievements, issues, and problems in the educational system.

3: Supervision and Evaluation by the Governorates

It is difficult to summarize how the process of supervision and evaluation operates at the governorate level since not all mudirivas employ the same system of inspection. For example, officials in Beni Suef have issued a new directive changing the system of technical supervision this year; each inspector is now responsible for 50 classes, not 100, as before, and only for grades one through four. They will supervise all aspects of these classes for the

primary system, not just their specialization, and will report directly to the educational department in the mudiriva. These changes were instituted to facilitate communication and the collection of data in the field, and to build a more effective chain of responsibility and accountability.

Day-to-day supervision of curriculum and teaching at the school level is the responsibility of the headmaster supported by the deputy headmaster and head teachers. One of their main tasks is to see that teachers implement the curriculum properly. The local inspectors assist them, although in a limited way due to the logistical difficulty of visiting every classroom and evaluating every teacher in every school. Inspectors should visit each teacher twice yearly: the first time to discuss curriculum and teaching strategies; the second time to evaluate his/her performance. The inspector writes a report on the teacher that is kept in the school. This annual evaluation is scored on a scale of 100 points--70 from the inspector and 30 from the headmaster--and becomes the basis for promotions, raises, opportunity for secondment abroad, and other financial and bureaucratic perquisites offered to MOE employees.

4: Issues

The formal structure of supervision and evaluation in the MOE is designed to maintain administrative control and accountability and not to provide feedback about the internal efficiency of the school system. Its fundamental task is to assess how employees are performing, a function that it carries out reasonably well. It does little to evaluate how much students are learning and how well curricular objectives are being achieved. Although good records are kept of exam results and these data could be used as an empirical basis for analyzing, changing, and improving the curriculum, MOE officials depend primarily on the impressionist information they receive from inspectors' reports to inform their administrative and policy decisions. The director of Curriculum for Primary Education stated:

We don't, in general, make changes as a result of exams, but, if we see that everyone did poorly on a section of the exam, we would change the curriculum. The way we know if objectives have been reached is by supervisors checking examinations in school to see if children are learning. We depend on the inspector generals to make observations in the classroom; we have meetings with them and read their reports.

Although the system of school inspectors is the primary administrative mechanism for the follow-up and evaluation of educational policies and programs, interview data reveal two significant problems. First, because of the vast numbers of schools and teachers in the system, it is virtually impossible for inspectors to observe carefully and systematically operations in the schools and classrooms, especially those in remote, rural areas. As a result, inspector generals visit only a sample of schools to obtain data for reports and provide only a general, speculative analysis to MOE policy makers. The local school inspectors, whose job it is to perform a more detailed, comprehensive evaluation of teacher effectiveness and student achievement, make a cursory observation of classrooms in order to evaluate and stimulate instructional expertise, and a superficial review of grade books and workbooks in order to assess the extent of student learning and curriculum implementation.

Second, promotional and leaving exams are not linked to objectives of the national curriculum that describe what the educational system is trying to accomplish. Thus the critical process of measuring system performance in terms of student learning has been divorced from statements of organizational intent, which form the basis for evaluating the internal efficiency of the system. This problem has not been adequately addressed in the MOE and, as a result, the system's capacity to employ examinations as an effective diagnostic tool for supervision and self-evaluation is lacking.

G: Collection and Publication of School Information

Information to support decision and policy-formation for pre-university education in Egypt comes officially from three sources: (1) the Department of Statistics and Computing in the diwan; (2) the National Center for Educational Research (NCER) in the diwan; and (3) the Central Agency for Population Mobilization and Statistics (CAPMAS), the organization responsible for overseeing the collection and publication of statistical data for the entire government bureaucracy. Unofficially, the minister and other senior decision-makers often go directly to the primary, preparatory, or secondary departments for data they need.

While some of their responsibilities overlap to a certain degree, each of the three units serves a distinct function in providing educational data. The Statistics Department is the official source of data in the MOE for monitoring and evaluating the daily operation of schools, public and private; it collects data on matters such as the number of students, teachers, and classrooms, the condition of buildings, and examination results. The mandate for the NCER is to conduct research and analysis of critical educational issues as a basis for providing policy options to senior decision-makers in the MOE. CAPMAS handles educational institutions that lie outside the jurisdiction of the MOE, primarily non-formal institutions affiliated with factories, private and public-sector businesses, hospitals, and government ministries.

In addition to these three organizations that provide information about primary, preparatory, secondary, and non-formal schools, the Ministry of Higher Education collects statistics, and conducts research and policy analysis on the system of university education, and the Ministry of Religious Endowments publishes statistical data about the Al-Azhar religious schools under its control. Educational data from the Ministry of Higher Education and the Ministry of Religious Endowments are included in a comprehensive statistical yearbook published by CAPMAS each year. The Ministry of Higher Education and Ministry of Religious Endowments data collection systems will not be dealt with at length in this discussion, as they fall outside the scope of the study, i.e. the Basic Education cycle in the MOE.

1: The Ministry of Education General Directorate for Statistics and Computing

The general director for Statistics and Computing is responsible for collection of all information about the Ministry of Education: schools, exams, classes, students, teachers, employees, and buildings. Data about these items are collected annually in two major reports: (1) the November 15 census of schools, sections, classrooms, students, and buildings; and (2) the February 1 report on teachers, staff, and other MOE employees. In addition to these two official reports, MOE Statistics prepares an unofficial report on the number of public schools (i.e. official government schools, not private schools), the number of students attending them, and the class size by grade at the end of the second week of school in September. This September report is preliminary: it is published for internal use by the minister, senior officials, the Planning Department, the Food Division, and a few other specific units. At the end of the school year in May, Statistics collects all Basic Education exam scores from the examination centers in the governorates. They also compile ad hoc statistical reports at the request of various MOE officials and departments and carry out studies on their own initiative such as comparisons of class sizes, examinations of differences in urban versus rural schools, or experiences of new entrants to secondary schools.

The process of compiling the November 15 census begins in the preceding March, when Statistics and Computing prepares new forms and sends them to the major departments in the diwan for suggestions and revisions. The deadline to have the forms reviewed, revised (if necessary), and sent to the printer is May 31. An early printing date is imperative due to the large number of forms that must be prepared. There are 20 forms for the November report, and every school receives three sets of each; 51,000 of each form are needed for the primary level and 15,000 of each for the preparatory.

During the latter half of October, the director general of Statistics and Computing holds his annual training conference in the diwan for all Statistics officials from the 42 reporting units. Usually about 80 people attend this meeting, in which the director general discusses the reporting schedule and any changes in the forms and procedures for the new year, lectures

participants about the theory of statistics and its important role in the educational system, and encourages them to do their work carefully and accurately.

By November 1, the forms are sent to the Statistics departments of 42 reporting units for distribution to the schools. During the first week of November, statistics officials in these units hold a series of meetings with supervisors of each educational level, district statistics personnel, and school headmasters to distribute the forms, review information from the October meeting in Cairo, and discuss questions and problems. The schools are supposed to fill out the forms on November 15 promptly and return them to the mudiriva or district Statistics Office, where they should be reviewed and forwarded to the diwan Statistics and Computing no later than December 15. The Director of Statistics in Beni Suef stated that she instructs data collectors to compile their data in pencil up until November fifteenth; then they are to bring in a final copy in ink by the eighteenth. She also stated that she and her staff in the mudiriva central offices deal directly with the schools in completing the census and do not go through district personnel, as do her counterparts in larger mudirivas.

School officials routinely keep records of student and teacher attendance, which they use in completing the annual census forms. They also keep a record on each student that includes name, address, and father's name, but does not include explicit age data. However, ages could be calculated from the copy of each child's birth certificate that is kept on file in the school. Interviews at the school level indicated that those responsible for preparing the report are hampered in their efforts by the lack of an instruction manual to clarify procedures for filling out the forms.

As the forms are returned to the mudiriva, statistics employees separate them by educational level, review all three copies of each school report, compile a temporary report for immediate use in the mudiriva, and forward the originals to MOE Statistics in Cairo. This processing at the mudiriva level should be completed by December or January, but reports from the schools are often delayed beyond that time. As the mudiriva report cannot be compiled until each school has submitted its forms, statistics personnel are forced to spend a lot of time following-up with the schools.

Upon receiving the school reports, Statistics and Computing in Cairo reviews them for data entry errors and then enters them in the computer. Under the best circumstances, that is when the data forms come in on time and the computer is functioning properly, the November report of Primary Education is completed and published by the middle of February; unfortunately, publication of the report is sometimes delayed long beyond that date. The Primary Education report is prepared first, as the sheer volume of it requires more processing than the other sections, all of which are supposed to be published by April 1. The final report is produced on the four printers in Statistics and Computing and copies are sent to the first undersecretary for Directorate and Administrative Affairs, the Department of Planning and Follow-up, the Department of Financial Affairs, and CAPMAS. The director general of Statistics and Computing prepares an abbreviated version of the report to distribute to departments in the diwan and a one-page summary for the minister. The director general stated that he used to distribute the unabridged report more widely, but changed that policy "because only a handful of people were really making good use of it; this saves time, effort, and paper".

The February 1 report of teachers and other school personnel is much smaller in scale and, therefore, requires less processing time. Beginning January 15, forms are sent out and the reporting units are instructed to fill them out on the first day of February. By the end of February, the forms should be returned to Statistics and Computing for data review and entry into the computer; the report appears by May 1.

2: Issues

Officials supervising the formal system of data collection and distribution in the MOE identified a number of issues impinging on the use of information among decision-makers. The director general of Statistics and Computing summarized these, saying that the major obstacle is the difficulty of gathering data. This problem has several aspects: (1) errors in the data, that occur since the people completing the data forms do not understand the purpose of the forms and are not qualified to complete them; (2) "statistics are not vital to our work in the

schools" attitude of headmasters who do not carefully choose the people responsible for compiling the data; (3) late forms, since the significance of timing is not clear to those filling out the forms; and (4) the large number of corrections that must be made in the data in order to prepare them for reporting on the mainframe computer.

Other informants substantiated these points, emphasizing repeatedly that the main impediment to developing a more effective educational management information system is that the annual statistical reports are collected, tabulated, and published primarily by hand and by personnel who lack training and motivation to perform these tasks efficiently. The manual system currently in place is antiquated, cumbersome, and, according to the director general of Statistics and Computing, fraught with "hindrances and delays." The voluminous amounts of data generated by a rapidly expanding school population have simply outstripped the capacity of the existing educational management information system to provide timely, reliable, and relevant data to decision-makers.

What little automated equipment exists is outdated and usually out of order. The mainframe computer system currently used, although impressive in size and appearance, is barely adequate for routine tasks of data storage, retrieval, and report generation and lacks the capacity to serve as a tool for cross-tabulation and the analysis of educational statistics. Recently the mainframe computer malfunctioned with disastrous results: seven years of data were lost. The only calculator used for the myriad computing tasks in the central MOE Statistics Department is kept under lock and the key is in the director general's desk. He uses it on occasion, but other staff members normally use paper and pencil to do routine calculations and to compile statistical tables for reports, despite of the availability of a new IBM PC installed two years ago. The situation is similar in the Statistics Offices in the governorates; personnel there must also process thousands of handwritten forms, laboriously checking the accuracy of reported figures without the benefit of even the simplest electronic calculating equipment.

Another difficulty frequently cited during interviews is the lack of qualified personnel to perform competently the technical tasks required by an effective information system. The

root of the problem is that employees in the MOE are generally not hired and placed in a position because their qualifications match the requirements of the job, but because they have a college degree and the government guaranteed them employment somewhere in the bureaucracy. Consequently, employees in MOE Statistics come from a variety of educational disciplines and very few have any previous training in statistics and computers. Statistics personnel in the 42 reporting units generally have no qualifications at all to work in statistical reporting. Although Statistics and Computing officials are aware of this, their only effort to confront the problem is holding meetings once each year, in October, to review changes in the data forms and to encourage statistics people from the mudiriyas and districts to complete their tasks accurately. Beyond that, little is done to help inexperienced local data collectors fill out the long, detailed report forms properly. The school-level officials interviewed pointed out that the ministry should provide a handbook that provides information on the importance and technique of accurate reporting and presents step-by-step instructions, to accompany each set of forms.

Compounding the problem is the fact that the salary structure for civil servants does not adequately compensate those few who do possess technical skills and expertise; they can find better work and better pay in the private sector and, as a result, the MOE suffers from a "brain drain" of technical staff. The director general of Statistics and Computing said that "it is hard to keep good people; we have already lost two or three of our best employees." The director of Statistics in Beni Suf characterized the problem in these terms:

Workers in the ministry have no incentive to do well, to show any initiative or do anything more than the least amount expected of them. If we perform our work conscientiously and well, we receive no reward; if we are lazy and unproductive, we receive no punishment. So why bother to push ourselves to work hard in improving the system?

It is not surprising, then, that most statistics officials, when asked what they would do to improve the reporting system if more resources were allocated to them, mentioned purchasing automated computing equipment and providing higher salaries and additional incentives for their subordinates. The director general of Statistics and Computing observed that statistics people, especially in the governorates, are unlike their colleagues in other MOE

departments, who often have little real work to do. The manual data collection system ensures that they are swamped with piles of report forms to be processed for most of the year.

As important as good equipment and qualified, motivated personnel are to improving the quality of information for decision-makers in the MOE, some informants offered candid, perceptive comments about a deeper, more fundamental problem that must be addressed in developing an effective educational management information system. Statistics officials at both the national and regional levels decried the attitude of many senior decision-makers in the MOE, who are openly contemptuous of or indifferent to the role of statistics in the process of solving educational problems. This attitude, informants said, accounts for much of the carelessness and delay that they encounter in the reporting of school data. The following comments, by the director general of Statistic and Computing and the director of Statistics in Beni Suef, respectively, describe the countervailing sentiments.

The problem is that some directorate officials are not serious about collecting reliable, accurate data. Also, some officials here in the Central Offices still are not convinced of the importance of good data in running their departments...Many school officials find the reporting system, with all the forms required, a lot of foolishness; extra work that they have neither time nor desire to do.

The main problem I have encountered, here and throughout Egypt, is that there is no awareness of statistics, their use and importance, how to gather them accurately, and interpret them correctly.

Interviews with end-users of the information system generally corroborated these observations, but also indicated that officials are not as unaware of the potential usefulness of statistical data as the Statistics and Computing staff asserts. A number of officials acknowledged the need for reliable statistical data in their work, but lamented the fact that the official information system simply does not provide the required kinds of data when they are needed in the annual decision-making cycle. Many decision-makers rely on alternative, unofficial data collection systems that have been established in virtually every MOE department in order to meet their data requirements. Many of the officials interviewed evinced a sense of ambivalence, rather than contempt, ignorance, or indifference, about the value of statistical data in solving educational problems. They recognized that good information is important, but were skeptical

about the availability of dependable information. This ambivalent attitude is typified in the following comments by the deputy director general of Beni Suef directorate:

The statistics department here in our offices is very good, but I really don't rely on them much, except for some basic statistical data now and then. Statistics are not very reliable here in Egypt--we all know that. When I request information from Statistics, it always takes four hours for them to respond, especially if it's a customized request. I am anxious to find out how we can make statistics the basis of our work; I think that is very important.

When Statistics and Computing conducted the February census to collect the detailed data on teachers the deputy director general in Beni Suef needs for his reports, the director general gave a revealing response:

Really? I didn't know that, but there is still a large gap between what I need and what statistics can provide. So I have the inspectors visit the schools and gather the specific data that I need to appoint and distribute teachers. I need this information immediately, not when it is two months old.

These remarks touch on several issues which came up frequently during interviews: the failure of the national MOE Statistics Department to make existing data available to decision-makers, especially in the governorates; the gap between what officials need and what the system currently provides; and the resulting dependence on parallel systems, especially school inspectors, to obtain the right data at the right time.

As stated earlier, it is the policy of the central Statistics Department to distribute complete copies of the two annual reports to only a few select officials because experience has shown that "only a handful of people" make use of them and because reduced distribution saves time, effort, and money. The director general of MOE Statistics said that, although his department interfaces with all other units in the diwan, he does not routinely send information to individuals or departments unless he receives a specific request from them. Moreover, anyone desiring access to statistical data in Statistics and Computing must first obtain formal permission from the director general by presenting an official letter of request and authorization.

This policy of limited access to and distribution of official data about education has created a number of dysfunctions in the information system. Apparently, even Statistics personnel involved in the process of data collection at the regional level are excluded from

making use of national school census data. The Director of Statistics in Beni Suef, after reviewing November report forms and before forwarding the originals to Statistics and Computing in Cairo, said that she is forced to compile her own temporary report of the data on the mudiriva's schools and districts because "we never see the final statistical reports here after they are published each year." When line employees are thus denied the opportunity to see the fruits of their labors, morale suffers and work performance declines. It was evident during interviews that even the most conscientious personnel in the Statistics departments have misgivings about the value of mechanically producing statistical reports that are sent off to Cairo and never seen again. Whether by reason of oversight, negligence, lack of resources, or deliberate policy, the failure of the central Statistics Office to share information, even with its own people who help produce the reports, constitutes a startling example of bad management of the information system and reveals the central ministry's disregard, despite much rhetoric to the contrary, for the concerns of regional and local educators.

During interviews officials, who had stated that they used their own data collection systems because Statistics and Computing's lacked certain items, were frequently surprised to find out that the Statistics and Computing census reports do, in fact, contain most of the data they require. The policy of tightly controlled access and highly aggregated reporting of data has led to a situation in which decision-makers in the system simply do not know what information is available through the Central Statistics Office. They are unaware that they have access, albeit by request only, to a rich supply of disaggregated data covering many of their administrative needs. As MOE Statistics keeps the original school data forms on file in the diwan, they can, although the process is time-consuming, produce remarkably detailed reports broken down by mudiriva, district, and school. However, the availability of these data resources is one of the best kept secrets in the ministry.

Another, and perhaps more serious problem, lies in the incongruity between the reporting cycle and the decision-making cycle each year. Interviews showed that the existence of independent reporting systems in nearly every MOE department can be attributed to the fact that the official system does not produce information at critical junctures when decision-

makers and planners need it. In short, the timing of data production and distribution is not synchronized with the demands of data utilization.

Informants cited this factor more than any other to account for the skepticism about the value of statistics. When officials cannot obtain "good data from the right source at the right time", in the words of the first undersecretary for Directorate and Administrative Affairs, from the official information system, they then turn to other sources that can provide the reliable, relevant, timely data they require for solving school problems. When this occurs in an organization, parallel data collection systems proliferate, the credibility of the formal system is undermined, and the notion that "statistics are not vital to our work," as the director general of MOE Statistics said, settles into the collective psyche. This attitude, combined with the sentiment of local and regional statisticians that their work is unappreciated by superiors in central Statistics, inevitably leads to apathy and carelessness in collecting data and overall erosion in the quality of information provided by the official system.

Interviews indicated that the ministry's information system, in order to provide timely data in support of decision-making and fiscal planning, should publish results of the national school census no later than the first of February each year. According to mudiriva officials, the first part of February is the peak period in the decision-making cycle, when budget preparations and demands for data are "particularly intense." Unfortunately, the November census of students, classrooms, and building conditions usually is not published before the end of March; similarly, the February census, which provides vital data on numbers and qualifications of teachers and other school personnel, is normally unavailable before the end of May. By the time information from these two reports finally appears, it is of little use to decision-makers and planners, who needed the data months earlier to complete their annual budget proposals, to project student enrollments, to estimate needs for classrooms, teachers, and textbooks for the new year, and to prepare for year-end examinations.

Another major bottleneck occurs because second-level (re-take) final exam results are not reported until after school begins in September. This presents a serious problem for second-level students, who cannot enroll in the next grade until their exam results are known,

and for school officials, who are unable to make an accurate assessment of actual resource needs even after the school year begins. One official recommended that, as a solution to the problem of timing, the November and February census reports be combined into one in order that data from both are collected in November and reported early in the new calendar year.

Some of the obstacles that hinder timely production of information for decision-makers were discussed earlier: the cumbersome nature of a paper-and-pencil system that processes thousands of data forms by hand, the negative attitude of many MOE officials towards the value of statistics in their work, and the assignment of data collection and tabulation to personnel who lack training in statistical methods and motivation to perform their tasks accurately. In addition to these problems, interviews suggested several other factors which contribute to delays in reporting. The first undersecretary for Directorate and Administrative Affairs believes that the push for decentralization of government and greater local autonomy has had an adverse impact on the ministry's capacity to collect timely, reliable data, stating:

The local councils now are not closely linked to us and do not cooperate with us properly. They act too independently of our needs and policies, and they are careless in the data they collect and send us about the local school systems...It is difficult to get accurate data when we need it from the directorates.

Directorate-level statistics officials, meanwhile, complain that they cannot submit their reports to the diwan on time because the schools are frequently late in sending their reports to the mudiriya. The director of Statistics in Beni Suef stated that "since I can't send in the reports to Cairo until every school is accounted for, we must keep calling, going to see them, trying in different ways to get their report turned in."

Interviews indicated two other issues that adversely affect the reliability of data reported at the regional and local levels. When the first undersecretary for Directorate and Administrative Affairs complained of the poor quality of data from the governorates, the director general of Statistics pointed out that his people know from examining the statistical reports that data from the schools are fairly accurate, but that officials in the mudiriyas make mistakes in compiling them to send to the diwan. A number of senior officials along with the director pointed out that number inflation is another widespread and well-known problem in

the ministry. According to him, "some officials deliberately alter the numbers from the schools to show more students and classrooms in order to obtain more budget and teachers for their schools." This practice of over-reporting school data to strengthen the governorate's bargaining position in obtaining federal budget monies obviously has a deleterious impact on the ministry's effort to produce more reliable information for planning and decision-making. This phenomenon is the natural outgrowth of the national planning and budgeting processes that allocate financial and human resources primarily on the basis of speculative estimates, personal experience, and political influence rather than empirical data. As long as budget preparation is not seen as a process requiring scientific analysis and hard data, the problem of number inflation by governorate officials seeking a bigger piece of the pie will persist.

3: The National Center for Educational Research (NCER)

The National Center for Educational Research exists, according to its director, "to meet the research needs of the ministry." The primary responsibility of NCER is to conduct policy research and analysis designed to provide sound policy options for senior decision-makers in the MOE. It seeks to carry out applied, action-oriented field studies, not academic research, to support development and evaluation of educational programs in curriculum, examinations, teacher training, educational technology, and educational costing. Other activities of the center include statistical analysis, computer training, and development of a computerized system of educational information and documentation.

NCER had its inception in 1956, when the ministry established a department of technical research and projects to support the need for a more informed policy-making apparatus. The department was formally reorganized in 1972 and named the National Center for Educational Research. Today, NCER is considered the oldest and largest center for educational research and documentation in the Arab world; it employs approximately 150 people, many of whom have high academic qualifications and are faculty members in a college of education. Although housed in the central diwan along with other MOE departments,

NCER is considered as an autonomous unit that reports directly to the minister and operates on a separate budget, salary structure, and policy for hiring and promotion.

A Board of Directors, chaired by the minister, supervises NCER's work; it includes six members from NCER, three from MOE, one from the Ministry of Higher Education, five deans of colleges of education, the president of the Academy of Science and Technology, the dean of Al-Azhar University, and the minister of Planning. The director of NCER is responsible for determining research priorities and formulating policy in order to achieve the objectives approved by the board. He meets weekly with the executive committee, comprised of ten representatives from NCER departments. Between April and June each year, the executive committee solicits recommendations from all MOE departments for topics to be included on the research agenda for the new school year that will begin in September. The executive committee then prioritizes these recommendations and submits them to the board for discussion and approval. In addition to the formally approved research topics, NCER attempts to respond to any ad hoc requests that they receive from officials throughout the year.

NCER is currently engaged in several major research and evaluation studies, including: an evaluation of the curriculum for educational radio and T.V. programs; a study of the five-year technical schools, which involves administering a questionnaire to teachers, administrators, and students to get their opinions about curriculum materials, equipment, the school year, and benefits from technical education; evaluation of experimental schools; the construction of a central bank of test items for use by teachers nationwide; an analysis of teacher training policy; a survey on in-service training of computer teachers; and an analysis of current examinations to improve the quality of questions.

The Director stated that NCER does not normally collect its own educational statistics. They use, "on a regular basis," the annual reports published by MOE Statistics for general data about the schools, but supplement those figures with their own information for studies that have specialized data requirements. He also said that NCER curriculum staff, the subject matter experts, work in close collaboration with MOE consultants for each subject.

4: Issues

One major problem facing NCER, according to the director, is the infrastructure, which lacks the necessary facilities, personnel, and organization to do its job effectively. Efforts are underway to reorganize the structure and functions of the Center and to establish a computerized information system to manage reports, documentation, and books currently on file, which will facilitate research activities. A lack of certain basic skills hampers researchers in NCER and officials are planning to remedy this situation by hiring more people with high qualifications and experience in curriculum, testing, techniques and methodology of research, computer training, English language and statistics (data from survey forms are currently sent outside the ministry for statistical analysis).

The director also commented that "another problem is our relationship with other MOE departments. I want to improve communication and dialogue so that we know better their research needs and they can benefit from our services." Interviews and informal discussions with other informants substantiated his observation and indicated that the relationship may be more problematic than he suspected. Clearly, NCER's role within the educational policy-making structure is severely hampered by a deep rift between its people, who are the main producers of information for decision-making, and the "mainstream" MOE departments and decision-makers, who should be the primary users of that information. Instead of viewing NCER as an important source of action-oriented policy research to support their problem-solving activities, diwan officials regard it, as one informant said, "as a step child--not important or relevant to the real, day-to-day work of providing and improving educational services."

BRIDGES consultants received their first hint of poor relations between NCER and the rest of the diwan when the first undersecretary, who initially supervised the project, instructed them emphatically to work only with Planning and Statistics personnel in the MOE diwan and not with NCER. In a project designed to improve the planning, policy-making, and research capacities of the ministry, this seemed a puzzling order. But, as project activities within the diwan proceeded, it soon became clear that the attitude of distrust and resentment exhibited by

the first undersecretary toward NCER was widespread among MOE officials. One official in the Department of Preparatory Education, when asked why departments send copies of the studies they conduct to the diwan Planning Department and not to NCER, summed up the prevailing sentiment in these terms: "NCER is separate from the rest of us here. Their work is different than ours and their people are paid differently than us, too."

Several factors contribute to the existence of this breach between the research arm and the decision-making arm of the ministry. One of the main causes of the problem, it appears, is the system of compensation and promotion. The ministry employs a dual salary structure: the "public wage system" and the "private (university) wage system." Employees of NCER, with Ph.D.s, are part of the private system, while employees in the NCER and the MOE departments, without Ph.D.s, are part of the public system. A serious contradiction results from this, as new employees in the private track make as much money as senior civil servants. This situation, naturally, fosters bitterness in the mainstream bureaucracy toward NCER staff holding Ph.D.s.

The problem is further complicated by the fact that promotions in NCER are based on individual research produced in a given period, as evaluated by a committee of university professors using university academic research criteria. The promotion review committee adopts an academic approach in its evaluation: the committee wants to know about the methodology and novelty of the study, rather than the utility of the research for solving educational problems. Consequently, when NCER staff are deciding what topics to research, the main question they ask themselves is "will my research project meet the academic criteria of the committee and secure my promotion?" instead of "what is needed by decision-makers in the ministry and what will benefit the educational system?" The promotion policy is responsible, in part, for the generation of research that, contrary to NCER's avowed mission, is primarily academic and theoretical in nature, rather than policy-oriented for use by decision-makers and practitioners. Some examples of the topics of research typically produced by NCER staff are: "Free Education: A Descriptive and Historical Study," "Environmental Education," and

"Preparation and Training of Teachers from 1882 to the Present." (See NCER Research Report 1983-84 for more.)

The organizational structure of the diwan has also contributed to the breakdown in communication between NCER staff and MOE staff. As NCER reports directly to the minister, responds primarily to his ad hoc requests for information, and operates on a separate budget, NCER staff consider themselves independent of the rest of the MOE diwan offices. Mainstream MOE officials view NCER as an elite group detached from the realities of running the school system. The posture of separateness and superiority in the NCER was apparent when NCER staff insisted, repeatedly and very adamantly, that acknowledgements of sponsorship in all conference publications describe the NCER not as a unit within the MOE, but as distinct from the MOE.

These attitudes have led to a lack of functional connections and dialogue between NCER and the various MOE departments. Even effective links to key units, such as Statistics, Planning, Libraries and Documentation services, and Training are missing. NCER normally publishes numerous copies of its studies in order to share research findings with those who, according to the director, are the main users of its data: academic researchers and graduate students. But, in most cases, no copies are sent to those who might need or benefit from them the most, the MOE department heads, education officials in the governorates, and other practitioners. One informant said that perhaps financial or bureaucratic problems prevent effective distribution of research findings, but that the problem can also be traced to an attitude among NCER staff of wanting to deal only with colleagues in the research-producing community. Even very useful, practical studies produced by NCER normally receive little attention, due to inadequate distribution to decision-makers. For example, a 1980 study entitled "Obstacles in Reading and Writing in Primary Education and Suggestions to Solve Them" was not circulated in the diwan and, consequently, was completely ignored.

Some studies, such as examination models, are widely disseminated by NCER. However, most of these studies also reflect the divergent needs of producers and users. Researchers want to promote their careers, so they write papers that are sophisticated, detailed,

and technical in nature, while decision-makers are looking for simplified, pragmatic, action-oriented options for problem solving. As a result, this research, although widely distributed, is little used.

5: The Central Agency for Population Mobilization and Statistics (CAPMAS)

The Central Agency for Population Mobilization and Statistics was formally established in 1964, but the department dates back to the turn of the century. The first official, scientific census was conducted in 1882, but less complete ones were carried out before that date. CAPMAS, as the official agent and repository for all statistical data to support government decision-making, is responsible for gathering basic statistics covering all domains of Egyptian society except for agriculture, health, and education. These ministries collect their own data and send a report to CAPMAS soon after the end of the calendar year for inclusion in the Statistical Yearbook published annually. CAPMAS relies on three main sources of data in compiling its statistical portrait of the country: household surveys, establishment surveys, and the ten-year census. All surveys are carried out by sampling. The Census Department conducts two major types of census, population and economic. The last biennial population census was in 1986 and the first economic census will take place in 1989.

The Agency is divided into three central administrative units: Mobilization, Statistics, and the General Secretariat. Statistics has five departments: Statistics, Training, Census, Population and Demographic Analysis, and Data Collection. The Statistics Department is supervised by a general director and has seven sections, including an Education Section. The Education Section is responsible for gathering all data on education in Egypt, including the non-formal (outside the MOE) system in factories, the private sector, and other ministries.

CAPMAS frequently receives requests from domestic and international organizations (primarily UNESCO) for information on topics such as the relationship of technical and secondary schools to the labor force, educational costing, class size, rural-urban differences, and special education. They have also been involved in studies of how to match educational output from the universities with market needs in the economy in an effort to address the

problem of huge surpluses of manpower in some sectors. CAPMAS tries to respond to all such demands for statistical studies and, therefore, collects data that are as comprehensive and reliable as possible. Data are obtained from MOE Statistics for pre-university education, from the Ministry of Higher Education for higher education, and from the al-Azhar Statistics Department for religious schools. CAPMAS collects its own data on educational organizations in the private and public sectors not under the MOE's jurisdiction.

The al-Azhar system for religious education is separate from the public schools of the MOE and is supervised by the Ministry of Religious Endowments. Roughly 10-15% of all students in Egypt attend these schools, data for which is reported to CAPMAS through al-Azhar's Department of Statistics. The al-Azhar schools emphasize religious studies and their students memorize the Qur'an, but they also offer a secular curriculum such as found in the MOE schools. The al-Azhar system does not collect data on the kuttaab schools, where young students, normally from about age four to eight, study the Qur'an and learn basic literacy skills. Although kuttaab schools once played a vital role in extending educational opportunity to regions not covered by the official system, their numbers have diminished sharply during the past three decades, as the MOE has constructed more and more schools in rural areas.

The annual report of educational statistics in the non-formal sector is also compiled by the Education Section. This report includes the number of schools, institutes, training centers, teachers, trainers, students, and graduates in fields such as nursing, health technology, mid-wifery, ambulance work, metal working, refrigeration, weaving, tanning, printing, tailoring, electricity, mechanics, construction, art, music, and transportation. In order to collect this data, Education sends out a form to the various non-formal educational units in October, which is supposed to be returned by February. If the forms are late, then staff from the data collection division of Education follow-up by making site visits. The data forms are designed and revised, when necessary, by the first undersecretary for Statistics (who, incidentally, requested and received from BRIDGES materials used by the State of Massachusetts in their annual educational census).

In February, staff members begin checking the accuracy of data on the incoming forms by comparing the new figures to the previous year's in order to see if there are increases or decreases. If there are significant differences, then they contact the institution to find out why. After reviewing the forms and editing and typing the data schedules, the report is ready for yearly publication. However, the report cannot go to press until at least 85-90% of the forms are received and, as many units submit their data forms late, its publication is often delayed due to insufficient data. The most recent report on the non-formal sector contains 1984-85 data and, as of August 1988, the Education Section was still working on the 1985-86 report.

Another task undertaken by the Education Section is re-working the statistical reports published by MOE Statistics. Many foreign and Egyptian students come to CAPMAS seeking statistics on primary, preparatory, and secondary education. Because the MOE report is too detailed for the purposes of CAPMAS/Education, they use the MOE data to publish a report more suited to the needs of their users. A summary of the data obtained from MOE is presented in the education section of the Statistical Yearbook published in June of each year for the previous calendar year. However, the education section in the most recent yearbook for 1987, which appeared in June of 1988, presents data from the 1985-86 school year. In order to get a complete statistical profile of education from CAPMAS, one must consult two sources: the Statistical Yearbook, which condenses the MOE, MOHE, and al-Azhar data, and the annual report on non-formal education. Anyone seeking access to CAPMAS educational information, however, must present an official letter of request and pay a fee.

6: Issues

Interviews with CAPMAS officials revealed a number of inhibiting factors in their efforts to produce timely, reliable data on education. Predictably, they encounter many of the same problems as their colleagues in the MOE Statistics Department face: delays and errors caused by manual processing of data, late reporting by educational units, and personnel who are overworked and underqualified.

Although CAPMAS is in the process of computerizing its vast statistical operation, much of the collection, tabulation, and reporting of data is still done manually. The Statistics Office, for example, prepares three major reports by hand each month: the Consumer Price Index, the Wholesale Price Index, and tourism statistics. Recently, they have succeeded in entering foreign trade statistics on computer with a user service for nominal fees; data on industrial production and vital statistics, births and deaths, are now being computerized. CAPMAS specializes in microcomputer training and has a spacious, air-conditioned center equipped with state-of-the-art computers and accessories for that purpose. They train people in the use of computers for statistical analysis employing both English and Arabic software packages. However, as the first undersecretary for Statistics pointed out, the introduction of sophisticated technology has not necessarily increased the efficiency of their system for data collection and publication: "We are using microcomputers and mainframes in our work, but still do much of it manually. We still lag behind in data processing, a bottleneck which exists in all developing countries. Quite frankly, the most up-to-date statistics we have are those we compile by hand, not by computer."

Manual data processing and the late submission of data forms by reporting units constitute the main bottleneck, which results in the publication of perennially outdated statistical information on education by CAPMAS. Compounding the problem is the fact that the Education Section, charged with compiling all educational data and preparing the two major reports described above, is woefully understaffed. The head of the Education Section was the only employee in the department at the time of our interview, as she had been for some months, since her colleagues were all away on indefinite, unpaid leaves of absence. Her laconic comment describing how she copes with an overwhelming task speaks volumes about the difficulties hindering the timely production of educational statistics in CAPMAS: "I try to do all the work by myself, but it is too much for one individual."

7: Other Sources of Information on Education in Egypt

Although the MOE, NCER, and CAPMAS were the primary sources of information relevant to the purposes of this study, various other organizations are involved in the compilation and dissemination of research concerning Egypt's educational system, including the pre-university cycle. Among these: the Supreme Council, the National Center for Social Studies, the Institute for National Planning, and the twenty faculties of education, the undergraduate and graduate students of which all produce original research. The United States Agency for International Development (USAID), in cooperation with the MOE, sponsors a variety of educational research and development activities. The Development Information Center of USAID maintains a small, but well-organized, library of materials on international development, in general, and on Egypt's national development, in particular, including information of value to researchers interested in the educational system.

As NCER does not provide the kind of practical information that is required to solve current problems, a number of departments conduct their own research and policy analysis in order to meet the immediate needs of decision-makers. The head of Planning and School Organization in Preparatory Education said that, although these studies are not required by their job descriptions, "we do them on our own initiative because we need to know." Preparatory Education, for example, recently carried out a study on co-educational schools in response to questions posed by a member of the People's Assembly to the Minister of Education: "How big of a problem is the fact that co-ed schools are against our religious values? What is the influence of this situation? Is it really necessary to have co-ed schools?" The researchers found that 64% of preparatory schools have both boys and girls attending in the same classroom; that most of the schools, even new ones, are not designed to accommodate the different needs of boys' and girls' education, and that, even in schools where it is possible to divide classes to separate boys from girls, most have not done so. The study concluded that the problem is increasing due to the rapid nationwide growth in student population.

Another research project initiated by the Preparatory staff studied schools with three shifts and showed that, with more efficient class scheduling, they could handle 20 classes in a

15 room school and, thereby, get the use of three schools out of two. Some examples of other studies that Preparatory Education has completed recently are: "The Problem of Students Continuing from Primary to Preparatory School," "The Impact on Overcrowding in Preparatory Education as a Result of Cancelling the Third Session," and "Flexible Scheduling as a Means of Returning to a School of Only One Session."

Copies of these studies and others carried out by various MOE departments are sent to the director general and the undersecretary, who keep them on file in their offices. In light of the previous discussion about the lack of interaction between NCER and the MOE, it is revealing to note that these studies conducted by diwan staff are not routinely sent to NCER for inclusion in the library there, but are sent to the MOE Department of Planning and Follow-up, which is the official repository of all studies conducted by departments in the diwan. One official involved in conducting these studies said that staff are not allowed to send copies directly to the minister and that they do not know if he ever sees or reads their research. Research data indicate that these research projects receive little examination by senior policy-makers before finding their way into the undersecretary's and Department of Planning and Follow-up's files. One staff member in Preparatory Education, sensing that their research initiatives are constantly ignored in the decision-making process, made this poignant observation in reference to some studies they had conducted during the Minister's recent modification of the Basic Education cycle from nine to eight years:

The ministry's decisions and policies never take account of our ideas--the little guys in the various departments. We worked hard to prepare these studies, and I wanted to see our ideas and work at least referred to in the minister's decree. Everything comes from the top down to us: we're not important in the process.

He also appealed to us to find out what Planning and Follow-up actually does with studies after receiving them from the departments. When his question was put to officials in Planning and Follow-up, they responded that they read through the studies to glean any ideas of relevance to their work of building classrooms and then file them away. They added that they have not made any changes in procedures or policies as a result of the research and recommendations that have come to them.

In addition to these public sector organizations, a number of private institutions have been set up to promote dialogue on critical educational issues and to sponsor studies in support of positive educational change in Egypt. The Modern Education Association was organized by a group of university professors and intellectuals interested in exploring vital educational issues. Each month, in its headquarters in Tahrir Square, MEA sponsors panel discussions, guest speakers, and other activities which the public is invited to attend. (Foreigners are also welcome, but Arabic language ability is necessary.) The Human Resource Development and Information Center was founded in 1987 by a coalition of university professors and former MOE and NCER employees as an attempt to support educational reform through documentation of existing data about the school system and production of new data through non-government sponsored or influenced research and policy analysis. It has a good collection of research materials on Egyptian education and, recently, under the auspices of the BRIDGES Project, compiled a comprehensive bibliography in English of approximately 350 Arabic-language studies produced by educational researchers in Egypt from 1951 to the present.

VI. CONCLUSIONS AND RECOMMENDATIONS

This research project has attempted to describe the major decision-making processes in the Ministry of Education, to discuss how the information required by senior decision-makers in solving their educational problems is produced and distributed, and to identify the main issues and obstacles hindering the effective use of that information. The picture of information production, distribution, and utilization presented here has of necessity been painted in broad strokes, as a study of this length can only identify general procedures, trends, and issues in an organization as vast and complex as the MOE. Previous studies have also pointed out that trying to portray the lines of communication and divisions of responsibility within the MOE is a daunting task, as the informal, spontaneous nature of decision-making results in wide variations in procedures from one department and from one governorate to another [Greig, 1985, p.8]. Some readers will think that the model is oversimplified, focusing

on exceptions and disparities not covered; others will find that some activities and aspects of the organization important to their interest are omitted.

However, as Warwick [1980] has observed, a model, such as this one, is like a map that can help facilitate research, analysis, and discussion of organizational issues and, "as is true with any map, not all parts are relevant to a particular task, while some parts will need greater detail than is provided. Nevertheless, the framework can be useful as a way of raising questions and suggesting hypotheses about critical transactions in planning and implementation" (p. 388). It is hoped that this model can serve as a useful tool for planners, consultants, researchers, and educational management information system developers engaged in analysis of the educational system and that the findings, conclusions, and recommendations presented here might contribute in a positive way to the formulation of viable policy options in the MOE and to the dialogue on educational reform in Egypt.

A: Conclusions

I: Inter-department Relationships

While horizontal communication suffers from being one-directional, top-down, the compartmentalized nature of the MOE severely hampers the vertical sharing of information: each department functions as a completely separate component of the organization, with minimal linkages to other units. The existence of parallel data collection systems exacerbates the problem of fragmentation in the ministry's problem-solving apparatus. The first undersecretary of Directorate Affairs and Administration succinctly described the problem in these terms: "We need to link all departments and levels of education in a comprehensive data system because, historically, there has been little interaction and cooperation between individual units of the ministry." Many officials acknowledged that the interviews conducted with Statistics and Planning staff for this study were virtually the first time that they had engaged in substantive discussions of common concerns with colleagues from other departments. The consensus among those interviewed was that this kind of inter-

departmental dialogue was stimulating, productive, and essential to the development of more effective management procedures in the ministry.

2: Centralization

The traditional problem in Egypt of the isolation of rural areas from the urban areas that administer national development plans is a persistent obstacle to the establishment of an effective information network serving the national school system. Interviews clearly indicate a detachment between the central and regional administrative structures in the MOE, a problem which apparently exists in all the ministries. High-ranking officials in the diwan frequently complained that the governors and local councils exercise too much authority and autonomy in their use of centrally allocated budget and that even governorate MOE personnel do not cooperate adequately with diwan colleagues in implementing national policies and programs. Education officials in the governorates, meanwhile, discussed their sense of dislocation from the decision-making process in the diwan and the conflict between the expectations of MOE policy-makers and the realities of running the schools and working with local government officials. The director general in Beni Suef said that to carry out her duties "requires that I coordinate between different groups, especially the local governorate council--I can't oppose them in anything." While central authorities claim that they must take steps to consolidate their control over decision-making and resources because the governorates "act too independently of our needs and policies" (first undersecretary's comment), regional and local educators assert that they are, in fact, not independent enough in critical matters such as development of curriculum, recruitment of teachers, and generation and disbursement of revenues. These conflicting perceptions are further evidence of the lack of trust and communication between central and local officials.

Interview data showed that, despite almost thirty years of government and USAID-sponsored initiatives to decentralize administrative authority and give local officials more autonomy, the national decision-making process is still highly centralized. Mayfield [1977, p. 64] observed, in his study on local government development, that a wide gap existed between

the rhetoric of central authorities concerning the importance of decentralization and the reality of what control they have actually been willing to relinquish to local officials:

Public Law 52 is worded to imply that...a decentralized system is now being established when, in fact, it appears that local autonomy is still far in the future. Consequently, it is important to distinguish between what the law says and what still exists in practice... The central government still plays the dominant role in all fiscal and budgetary matters...[However], the national government appears committed to the gradual establishment of a truly local government system in which local councils will have access to their own separate revenues and resources.

In a recent conversation with Dr. Mayfield, he stated that his current research in Egypt shows that, in the past twelve years, the central government has made little progress toward closing that gap and granting governorates the fiscal autonomy they need to establish "a truly local government system." It is true that some reforms have been successfully introduced that increase the governor's authority and expand the structure and activities of local government institutions. But the federal government is apparently unwilling to take the crucial step of amending the process of budgetary decision-making to grant governors and local councils the authority to collect, allocate, and account for their own financial resources. Until that happens, there is little reason to expect satisfactory, lasting results from current efforts to decentralize control of local affairs, including education, and to give rural areas a meaningful role in the decision-making processes which shape national development.

3: Planning Process

Educational planning in the MOE is essentially a system of fiscal control, as accountability has little to do with the vital functions of long-range planning, policy analysis, and research. Planning is primarily concerned with preparing annual estimates for the bab three capital investment budget and accounting for the monies once they are allocated for various school construction projects. Many officials expressed their concern that the planning process in the MOE provides only short-term information for budget control and does not, in the words of the deputy director general in Beni Suef, "identify obstacles and problems over the next 25 years...things like the expected growth of the population, school entrants, and number of schools that will be needed."

The decision-making apparatus in the MOE, as shown by interview data dealing with assigning teachers, distributing textbooks, and allocating financial resources, is a matter of crisis management, reacting to needs as they come up rather than carefully analyzing data about the organization, anticipating needs, and preparing in advance to meet them. Political negotiation and personal influence, based on general estimates of need, also characterize the planning process. The director of the new Educational Planning Unit in NCER summed up fiscal decision-making bluntly and succinctly by saying that "changes in the budget each year depend on the power of the minister." Mayfield [1977] showed that financial planning by negotiation, rather than by objective analysis, is the norm throughout the bureaucracy and that this undermines adherence to more rigorous planning procedures:

Decisions tend to emerge from negotiation rather than from analysis of the merits of the proposed expenditures, as departments play one ministry against the other and as these ministries are compelled to resolve their differences through the arbitration of the Minister of Finance or the Prime Minister. Many program officers in Egypt argue that it is wasted effort to devote time and staff to analysis of specific programs if the final decision is likely to be a negotiated one anyway.

Numbers provided by the various data collection systems are used primarily to bolster a mudiriya's or ministry's bargaining position relative to the others. As a result, statistics compiled by local and regional officials for the annual reporting and budget preparation cycles are routinely inflated. As long as the MOE, and the entire government's decision-making structure, depends on political advocacy and impressionistic analysis, optimized use of scarce resources will be a difficult objective to achieve.

4: Information System

The current information system has little influence in the decision- and policy-making processes of the MOE, functioning primarily as a reporting device to enable administrators at the central level to maintain accountability and control at the regional and local levels of the implementation of national policies. It lacks the capability to provide the reliable, timely, relevant, and comprehensive data required by key officials in the problem-

solving cycle each year and to support effective policy analysis and long-range planning activities.

The main problems hindering the production, distribution, and use of information in the MOE can be summarized as follows:

. Due mainly to a lack of computing equipment and to heavy reliance on manual processing of large volumes of data, the official statistical reports are published too late in the annual planning cycle to be of use to decision-makers.

. Statistics personnel in many cases lack qualifications and motivation to carry out accurately their task of data collection and reporting.

. Many senior officials evince an attitude that statistical information "is a lot of foolishness and not reliable in Egypt." Information is used more often as a bargaining chip in the planning process than as a basis for rigorous analysis in formulating educational policies and programs.

. The official data collection system fails to provide key data items needed by officials in various departments, requiring each department to employ its own means of collecting data. For example, reliable data on repeaters and dropouts are not available, and planners therefore are forced to resort to crude estimates and speculation to project these figures.

. MOE Statistics and Computing does not routinely distribute data to departments, either in the central diwan or in the mudiriyas. Annual census reports are circulated in abridged form only to a few key departments; beyond that, they are kept under lock and key in the diwan for restricted use by authorized personnel only.

. Annual statistical reports are published in a highly-aggregated form, which results in decision-makers being unaware that many of the specific data items they need and collect separately are already available in the official Statistics and Computing system.

5: Data Collection

Although slow and cumbersome due to the tabulation of data by hand, the official system administered by MOE Statistics and Computing does succeed each year in producing an impressive array of basic statistical information about school operations regarding students, teachers and staff, buildings, textbooks, and examinations. However, because of delays in reporting Statistics and Computing data and the absence of key data items, each major department in the central diwan employs a separate system of data collection to provide the data that officials need to complete their annual tasks, the most important of which is the preparation of the budget plan for school construction (bab three). These parallel data collection systems depend on departmental staff and inspectors in the mudirivas to supervise the compilation of local school data, a time-consuming activity that diverts the local officials from their vital task of working with headmasters and teachers to improve the learning environment in the classroom.

6: Hierarchical Relationships

Perhaps the most salient organizational feature affecting the flow and use of information in the MOE is a rigid bureaucratic hierarchy, characterized by a top-down, autocratic approach to decision-making. High-level policies and decisions are often arrived at unilaterally without making use of information available, either from the data collection system or from subordinates whose work will be most affected by the new executive orders. As a result, the pervasive feeling among senior officials, from undersecretaries in the diwan to directors general in the mudirivas, is that their ideas and opinions are not important and their expertise is not valued in formulating crucial educational policies and programs. The truly important, creative work, they have concluded, is the exclusive domain of the minister and first undersecretaries, who, upon issuing policies and decisions, expect them merely to work out the bureaucratic details of implementation, follow-up, and reporting. One senior official commented that "right now, all the undersecretaries are upset with the minister because he is making all the decisions with no input or involvement from them. Where does he get his

information to make such decisions and changes? He doesn't have any information because he never consults us."

An example from the ministry's current reform effort illustrates this point. In July 1988, in an attempt to alleviate the crowded conditions of elementary schools, a new law was passed reducing Basic Education to eight years by making the Primary cycle five years. However, officials in the Department of Preparatory Education had no significant input in this crucial reform, although they would have to deal with the administrative nightmare of re-arranging teachers, curriculum, and examinations and enrolling all students leaving fifth and sixth grades--about one million additional students--with virtually no new classrooms for accommodating them. The director general said that "we were not consulted at all in considering this change in our schools. I, personally, read about it in the newspapers; that was the first I knew about it." Only after announcing passage of the law did the Minister solicit some ideas from Preparatory staff on what impact this change might have on their schools and how to handle it. In response, staff members worked hard to prepare several reports, which, apparently, were not read by the minister. This is what elicited the remark that: "the ministry's decisions and policies never take account of our ideas--the little guys in the various departments...Everything comes from the top down to us; we're not important in the process."

This, and other examples observed in the ministry, leads to the conclusion that senior officials depend on their information base less to support decision-making than to confirm decisions that have already been made. The familiar management pattern is to reach a policy decision after consulting a few select advisors, often from outside the MOE, in order to seek information that can substantiate the correctness of the decision and strengthen publicly its credibility and acceptance, and then to present a fait accompli to line personnel in the ministry for implementation.

7: Overcrowded Classrooms

Overwhelmingly, MOE officials identified overcrowded classrooms as Public Enemy Number One in the school system. While acknowledging the existence of other pressing issues, such as poor teaching, inadequate curriculum, and a lack of instructional materials, the vast

majority of informants believe that all such problems are directly attributable to the rapid growth in the number of students during the past two decades and the lack of adequate physical space to accommodate them. The refrain heard over and over again is that the quality of educational services has declined over the past two decades due to the system's incapacity to deal with increasingly crowded conditions in the schools and that, therefore, the solution to problems of quality is to reduce the pressure in the classroom by building more schools. The director general of Secondary Education, describing her future strategy for improving the educational system, articulated this conventional wisdom very succinctly: "Build more schools. New schools would solve all the problems." The director general of Preparatory Education elaborated this view as follows:

Our biggest problem is overcrowding in the classrooms, and therefore the most important thing for us is how to get enough buildings to relieve the pressure in the classrooms. There is no need to do research or study about this point: logic and experience are enough to show that reducing the class size must be our first priority and that this will greatly improve instruction and student achievement.

This system-wide attitude that school effectiveness will improve only when the problem of class size is brought under control has important implications for development of the MOE's information system. Decision-makers in each educational level view activities associated with financing and follow-up of school construction projects as their most critical tasks; consequently, the information systems are geared primarily to produce data required in preparing and accounting for the capital investment budget. As long as senior officials are convinced that building classrooms is the panacea for the ills of the school system, information and resources needed to support other crucial tasks, such as improving the quality of curriculum and instruction, will remain a secondary priority. Inevitably, this fact will work against efforts to establish a more reliable, comprehensive educational management information system and to address a broader range of educational issues.

B: Recommendations

1. Given the unrelenting rise in student population, the preoccupation of MOE officials with building more classrooms, and their conviction that this is the most effective

means to confront current problems, USAID is to be commended for its program of school construction, which is, unquestionably, a very timely and beneficial form of intervention to improve Egypt's education system. Earlier studies commissioned to evaluate the building program have shown its positive impact on increasing student enrollment in rural areas and improving the efficiency of the school system [Creative Associates, 1987]. In addition, interviews conducted for the present organizational analysis revealed unanimous praise and enthusiastic support among officials in all MOE departments, at both the central and local levels, for USAID's important contribution which has increased access to schooling and taken some of the pressure off the ministry's beleaguered capital investment budget. It is recommended, therefore, that USAID's effort to address the critical issue of quantity continue unabated as it turns its attention and resources increasingly to important issues of quality.

2. Among the most serious barriers to effective decision-making identified in this study are the autocratic style of management and the lack of communication among the various units and levels of the educational system. Over and over again, informants expressed dismay that senior policy-makers do not solicit their involvement when policy decisions affecting their departments are formulated, do not value their ideas and expertise, and view subordinates merely as implementers of policy. In addition to the obviously demoralizing effect this management posture has on employees, it also impairs problem-solving in the ministry by ignoring valuable information, expertise, and support which practitioners from the diwan and the governorates could contribute to the decision-making process.

As a result of these findings, it is strongly recommended that steps be taken to widen participation of line officials in substantive formulation of policy and to improve communication and coordination between departments in the diwan and the mudiriyas. Research on organizational effectiveness clearly indicates that a failure by senior officials to bring a broad coalition of key players into the decision-making process generates resentment and indifference among employees, leads to bureaucratic stagnation, and generally undermines efforts to achieve organizational goals. Warwick [1980] points out that the degree of

involvement by those responsible for actually carrying out decisions will have a significant impact on whether or not policies are successfully implemented. The following excerpts are particularly relevant for current reform efforts in the MOE:

In general, the more those involved in implementation have had a part in the planning process and feel the resulting plan is their own, the more likely they are to support its implementation...By contrast, the more a plan is perceived to be the creation of a disconnected group of planners, a narrow elite, a special interest group, or some other unrepresentative body, the more likely it is to generate controversy or be scuttled before being implemented [pp. 397-398].

One key issue is the degree of secrecy or openness [in decision-making]. When deliberations are conducted in secret and the policies are then simply announced, the feeling may arise that a plan has been sprung on the country without adequate opportunities for debate [p. 399].

Regrettably, interviews and personal observation indicate that policies for the current reform initiative are formulated mainly in secret by the minister and a group of close advisors, who are viewed as "disconnected" and "elite" by MOE officials, and then presented to the ministry and the public as a fait accompli. This approach has generated a great deal of controversy and opposition, both in the MOE and in the society at large, not so much because the content of the policies and decisions is offensive (most reasonable citizens recognize and support the need for drastic measures to improve the educational system), but because the process of policy-making has not allowed for serious discussion and input from a broader constituency before instituting sweeping policy changes.

All of this bodes ill for long-term implementation of the reform plan, despite the formidable clout and status that the current minister apparently enjoys in the national power structure. Development research in other countries has shown that, even when reforms have political backing at the highest levels of the government, as is the case in Egypt now, they may be stalled or ignored by lower-level implementers in the bureaucracy: "One of the most common mistakes...is to assume that if the generals are ready to move, the captains and troops will follow...There may be a president, a prime minister, and a minister of education, but their formal powers may have little to do with their de facto power in program execution" [Warwick, pp. 384, 404]. The point is that no matter how good the current reform plan may look on paper and how eloquent and influential the present minister may be, failure to do

everything possible to generate support for his policies among the rank-and-file in his own organization will severely hamper, and perhaps ultimately preclude, actual implementation of the reforms.

As noted above, one of the most effective strategies to defuse opposition and generate support for policy reforms is to open the decision-making process by involving personnel responsible for policy implementation. McGinn and Schiefelbein [1977] have shown how this strategy was successfully employed in Chile. The Educational Planning Office initiated curriculum reform by establishing broad-based committees and task forces, consisting of classroom teachers, school principals, directors in the central ministry, and university professors, who not only developed new curriculum materials and procedures together, but also field tested them in the schools. As a result of this close collaboration among senior officials and implementers, "word quickly spread among teachers that the Ministry was really interested in their ideas and support for the reforms was strengthened" [pp. 47-48]. Officials in Egypt's MOE should take similar steps to ensure that line officials and teachers are involved in substantive decision-making. As the practitioners begin to perceive that their ideas and input are valued by senior officials and reflected in policy reforms, then the likelihood of successfully implementing the minister's reform agenda will increase significantly.

An argument often heard to justify autocratic decision-making in the MOE, especially as educational reform is a high national priority now, is that the democratic, consensus-building approach to policy-making is too slow and tentative at a time when political and social conditions demand bold initiatives and immediate changes in the school system. While the logic of this posture is persuasive, it is based on the erroneous assumption, discussed above, that change can be forced on an organization by political fiat without considering the long-term costs in terms of employee morale, bureaucratic support, and policy implementation. Warwick [1980] has suggested, as a compromise between the detachment of ivory-tower planning and the cumbersome nature of participatory planning, that senior policy-makers identify key individuals in the organization "whose cooperation will be crucial during implementation and who are at least neutral on the matter at hand" [p. 398]. This strategy

could be adopted by senior policy-makers in the MOE, in order to benefit from the practical experience of diwan and governorate officials and to minimize opposition to proposed reforms. If the minister and his senior advisors are serious about making their current reform plan "a vehicle for change rather than a stationary expression of preferences" [Warwick, p. 387], then they must undertake measures such as this to widen participation in the decision-making processes associated with the plan.

3. One of the major dysfunctions identified by this study is the serious breach in coordination and communication between the National Center for Educational Research, the MOE unit officially responsible for producing policy research and analysis for decision-makers, and the mainstream MOE officials, who should be the principal users of that information. Several strategies are recommended, based on the comments and suggestions of informants, to address the problems which currently beset research and policy analysis activities in the ministry. Inter-disciplinary groups of researchers could be formed from NCER to make field visits to the educational districts. This would acquaint NCER staff with the real problems in the field and help governorate people realize that the NCER is a consultation center for problem-solving, "like an ambulance to respond to acute problems and prepare solutions" as one official said. NCER employees should work several months per year in the field, a suggestion that has been made previously to NCER officials, but ignored.

Another important step would be the preparation of a research map drawn up collaboratively by NCER, MOE departments, the Supreme Council of Education, the National Center for Social Studies, the Institute for National Planning, and the various faculties of education (about 20). These are the main centers of educational research and their activities must be coordinated in order for the objectives of producers and users of research to be consistent. The board of the NCER needs reorganization to include representatives both from organizations that produce research and those which use it. A critical element in preparing an integrated national research plan for education is the involvement of officials and policy implementers from all of the governorates. The goal should be to overcome the current

impasse between NCER and other MOE departments and to form a strong alliance that will bring research and policy analysis into harmony with the practical concerns of decision-makers and practitioners, who need sound information if they are to confront Egypt's educational problems. Some encouraging signs of greater cooperation between the NCER and the MOE departments have appeared recently, as officials from both attended several BRIDGES conferences and workshops to discuss issues and problems in the educational system. Hopefully, this trend will develop into a policy of systematic contact and dialogue between the MOE's policy researchers and policy implementers.

4. Research findings suggest that the current effort, sponsored by BRIDGES and USAID, to develop a computerized educational management information system is an appropriate initial step towards providing sound information for improving planning and policy-making in the MOE. This activity should receive highest priority in future project work plans in order to bring the system into operation as soon as possible and to provide the solid foundation of statistical data required to support other project and MOE activities.

The development and installation of an automated data collection system carries the potential to resolve many of the problems described in this study. The prime benefit would be to reduce reliance on manual processing of statistical forms, thus increasing the likelihood that data would be reported on time and more accurately. By alleviating the burden of paperwork for the Statistics staff and publishing statistical reports that are timely, reliable, and relevant, the new educational management information systems would eventually garner more credibility and use among decision-makers, reduce the need for parallel systems in each department, and bolster the morale and dependability of staff involved in data collection and processing. In this way, traditional attitudes of skepticism about the value of statistics in the decision-making process would gradually be undermined and replaced by greater willingness on the part of educational leaders to utilize information to inform planning and policy analysis.

Successful design and implementation of the automated educational management information systems currently under development will require, among other things, a

continuation of the collaborative efforts and inter-departmental dialogue initiated by this study. Interviews conducted for this analysis brought data providers from MOE Statistics together, for the first time, with data users from the various MOE departments in order to discuss issues, problems, and information needs. Participants welcomed this personal contact and communication with colleagues in other departments and expressed their hope for greater cooperation in the future. This kind of involvement by key officials from each educational level is crucial, both in the design of an educational management information system intended to serve the data needs of all decision-makers and in the implementation of the new system throughout the diwan and the governorates. In designing the prototype system, the BRIDGES Project has worked closely with MOE personnel at both the central and regional levels, holding workshops with top diwan officials to discuss potential uses of a computerized educational management information system and identify data needs of each department, as well as training staff from various departments and governorates in the use of microcomputers and data bases. Collaborative efforts of this nature have proved extremely beneficial in obtaining vital design information and generating high-level support for the new system. These kinds of activities should be continued and expanded to include a wider selection of line and staff people. In particular, it is strongly recommended that key individuals from each of the governorates, whose cooperation and support during the implementation phase will be essential, be identified and integrated as quickly as possible into the process of development and training for the new educational management information system.

In order to increase the probability of providing data that meet the information needs of decision-makers during the school year, it is important that the design of the new educational management information system incorporate, to the extent possible, existing procedures and critical time junctures of the annual planning cycle. The objective is to improve data collection and use by consolidating the various parallel information systems into one unified system. The goals of this unified system are:

- . to conduct only one statistical census each year, in November;
- . to build, where feasible, on the framework and procedures of the current official educational management information system; and

to provide data to all MOE and MOE-related decision-makers in time for the crucial planning and budget deadlines in early February.

5. The absence of a well-developed institutional capacity to conduct the short, medium, and long-term planning of educational programs severely cripples the problem-solving process in the ministry. Moreover, traditional government planning procedures, which rely on political acumen, past experience, and general estimates of need, militate against the optimal use of scarce resources and weaken the decision- and policy-making process. While it is unrealistic to expect that fiscal planning methodology in the government bureaucracy can be easily or quickly modified, it is hoped that senior MOE policy-makers can at least understand the pervasive, detrimental impact that current planning practices exert on the process of educational change, recognize the urgent need for reform in this area, and begin lobbying cabinet officers, members of the People's Assembly, and top officials in other ministries to initiate corrective action in all government agencies. A sine qua non to sustain national development is a planning capacity that is based primarily on rigorous, objective analysis of national need--not political negotiation--and that can provide decision-makers with a long-term view of needs and options.

C: Achievements

This report attempts to describe the characteristics, both positive and negative, of the problem-solving process in the MOE as accurately and objectively as possible based on research data. However, one of the dangers inherent in conducting analysis of this kind is the tendency to dwell too much on problems and obstacles, while ignoring those aspects of the organization that are productive and praiseworthy. By definition, research aimed at supporting development and reform of an organization must focus on areas of weakness in order to strengthen and improve them. But this does not in any way diminish the many constructive features of the Ministry of Education and the positive changes and accomplishments that it has already realized:

- . The literacy rate in Egypt, nearly 55% now, is one of the highest in the Arab world. .
- The educational system does a commendable job of delivering basic educational services

classrooms, teachers, textbooks, and equipment--required by a huge and rapidly-growing student clientele.

. Egypt annually sends thousands of experienced teachers to staff schools in many African, Arab, and Islamic countries, thus extending educational opportunity to areas where it would otherwise be unavailable.

. A well-developed university system which includes the world's oldest continuously-operating university, Al-Azhar, founded in 970 A.D., successfully produces the country's needs for doctors, lawyers, engineers, pharmacists, accountants, teachers, and other professionals of high qualifications.

. The ministry has recently initiated a comprehensive reform plan and a number of innovative changes that have received top-level political support and resulted in an increase in budget allocations for education.

. The recent reorganization of the structure and functions of the NCER that is one other example of USAID's commitment to provide substantial technical and financial support places NCER in a position to become one of the premier units for educational planning, research, and policy analysis in the Middle East.

Significant achievements such as these reflect the diligence, commitment, and expertise of Egyptian educators and remind us that, in spite of the formidable problems discussed in this report, there is much that is right with Egypt's educational system.

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TABLE 1: OFFICIALS INTERVIEWED FOR THE MINISTRY OF
EDUCATION ORGANIZATIONAL ANALYSIS

	<u>Name</u>	<u>Position</u> <u>Organizational Unit</u>
1.	Ibrahim Murabba	First Undersecretary MOE Directorate Affairs & Admin.
2.	Reda Afifi	Undersecretary MOE Statistics & Directorate Aff.
3.	Mamdouh Farid	General Director MOE Planning & Follow-up
4.	Zahir Hemeida	General Director MOE Personnel Affairs
5.	Adbul Qawi	General Director MOE Financial Affairs
6.	Ahmad Abdul Mouty	General Director MOE Textbooks
7.	Mahmoud Galal	Undersecretary MOE Basic Education
8.	Hamida Mansour	General Director MOE Primary (Elem.) Education
9.	Khadija Aisa	General Director MOE Preparatory Education
10.	Fathi Hassan Mohamed	General Director MOE Teacher Training Institutes
11.	Ahmad Samy	General Director MOE Special Education
12.	Mohamed Abdullah	General Director MOE Adult Education & Literacy
13.	Mohamed A.H. Hussein	General Director MOE Elementary Coordination
14.	Hamida Abdel Khal	Director MOE Basic Kindergarten Program
15.	Amin Haroun	Director MOE Elementary Tech. Inspection
16.	Wafaa Bedewi	Director MOE Preparatory Planning & Org.

- | | | |
|-----|------------------------|---|
| 17. | Hamouda el-Kordy | Director
MOE Elementary Curriculum |
| 18. | Samir al-Sukary | Undersecretary
MOE Secondary Education |
| 19. | Aisha Hassanein | General Director
MOE General Secondary Education |
| 20. | Hussein Bashir | Director
MOE Nat. Center Educ. Research |
| 21. | Ikram Abul Hassan | General Director
Beni Suef Directorate |
| 22. | Saeed Faiz Khalil | Deputy Dir. General
Beni Suef Directorate |
| 23. | Rajai Abdul Gayyid | Director
Beni Suef Dir., Internal Affairs |
| 24. | Sayyid Abdul Gawwad | Director:
Beni Suef Dir., Elementary Educ. |
| 25. | Michael Guirguis | Director
Beni Suef Dir., Preparatory Educ. |
| 26. | Hanan Ibrahim | Director
Beni Suef Dir., Statistics |
| 27. | Louis Sawares | Director
Beni Suef Directorate, Planning |
| 28. | Abdel Rabu | Deputy Director
Beni Suef Dir., Finance and Budget |
| 29. | Ibrahim Sayyid Ibrahim | Director
Daqahliya Directorate, Planning |
| 30. | Ramzi Abdul Sharit | Director
Daqahliya Dir., Statistics |
| 31. | Mohamed A.H. el-Aziz | Director
Daqahliya Dir., Elementary Educ. |
| 32. | Mohamed el-Sadek | Undersecretary
Qena Directorate |
| 33. | Nazer Madrasa | Headmaster Qena
Directorate, Tuweirat School |
| 34. | Khaled Maher | General Director
Aswan Directorate |
| 35. | Mustafa Kamal Aisa | First Undersecretary
CAPM. AS, Statistics Department |

36. Evonne Malak
Head
CAPMAS Educational Statistics Dept.
37. Ahmed Zaki Raghav
General Director
Ministry of Finance, Education Sect.
38. Anwar Tawfiq
General Director
Ministry of Finance, Governorates Ed.
39. Mr. El-Hadidi
First Undersecretary
Ministry of Planning, Education Sector
40. Salah el-Din Majahid
General Director
Ministry of Manpower, Graduates Dept.
41. Rigaa al-Isqallani
General Director
Ministry of Manpower, Statistics Dept.
42. Gamal Nuweir
Director Human Resource
Development Information Center HRDIC

TABLE 2: OUTLINE OF INTERVIEW FORMAT

1. **Introductions**
 - a. MOE officials and interviewers
 - b. Goals of the BRIDGES project
 - c. Purpose of the interview
2. **Description of major tasks and responsibilities**
 - a. General data on the official and his department: qualifications, # of personnel, etc.
 - b. Major tasks, with time schedule throughout the year
 - c. Obstacles faced in carrying out these tasks
 - d. Additional resources required
3. **Select one task and ask:**
 - a. What specific steps are taken to accomplish it?
 - b. What is the time schedule for each step?
 - c. What information is needed?
 - d. Is this the information readily available? If not, where do you get it?
 - e. What other departments or agencies do you cooperate with in this task? How?
 - f. How can Planning and Statistics be of greater assistance in your work?
4. **Discuss the future. Suppose that additional money were allocated to you:**
 - a. How would you spend the money to improve your department?
 - b. If you had to justify these priorities to the minister by citing reliable information, what data would you collect? Is it available to you now? If not, what sources would you consult to obtain it? Why?

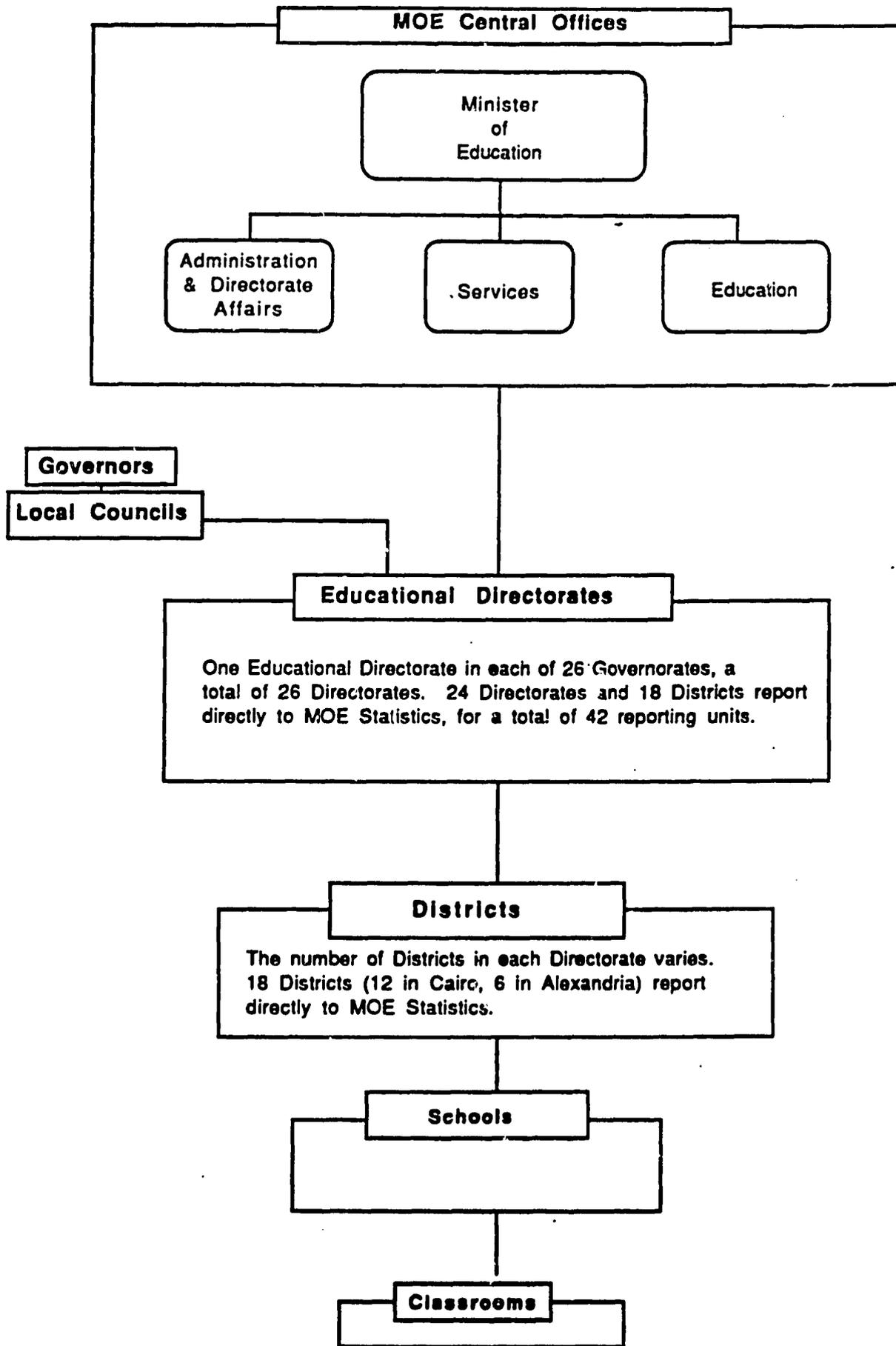
TABLE 3: DIRECTORATES AND DISTRICTS REPORTING DIRECTLY TO MOE STATISTICS

<u>Name of Directorate</u>	<u>Classification</u>
1. Cairo: (Districts)	Distinguished ("Mutamayyiz")
North Cairo 'Aabideen	
Shubra East Cairo	
Waayliy Zeytoun	
West Cairo Old Cairo	
South Cairo Helwaan	
Heliopolis Central Cairo	
2. Alexandria:	
East Alexandria Montazah	
Central Alexandria West Alexandria	
Gumruk 'Aamiriya	First Level ("Mustawa Awal")
3. Giza	
4. Gharbiya	
5. Buheira	
6. Kafr el-Sheikh	
7. Minofiya	
8. Qalyubiya	
9. Daqahliya	
10. Ismaa'iliya	
11. Sharqiya	
12. Fayoum	
13. Minya	
14. Assiout	
15. Sohaag	
16. Qena	
17. Dumyaat	
18. Port Said	
19. North Sinai	
20. South Sinai	
21. Suez	
22. Matrouh	<u>Total Reporting Units:</u>
23. Beni Suef	
24. Aswaan	
25. Red Sea	
26. New Valley	

12 Districts in Cairo Dir.
6 Districts in Alexandria Dir.
24 Educational Directorates

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FIGURE 1: ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF EDUCATION, EGYPT



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FIGURE 2
ORGANIZATIONAL CHART OF THE CENTRAL OFFICES (DIWAN) OF THE MINISTRY OF EDUCATION, EGYPT

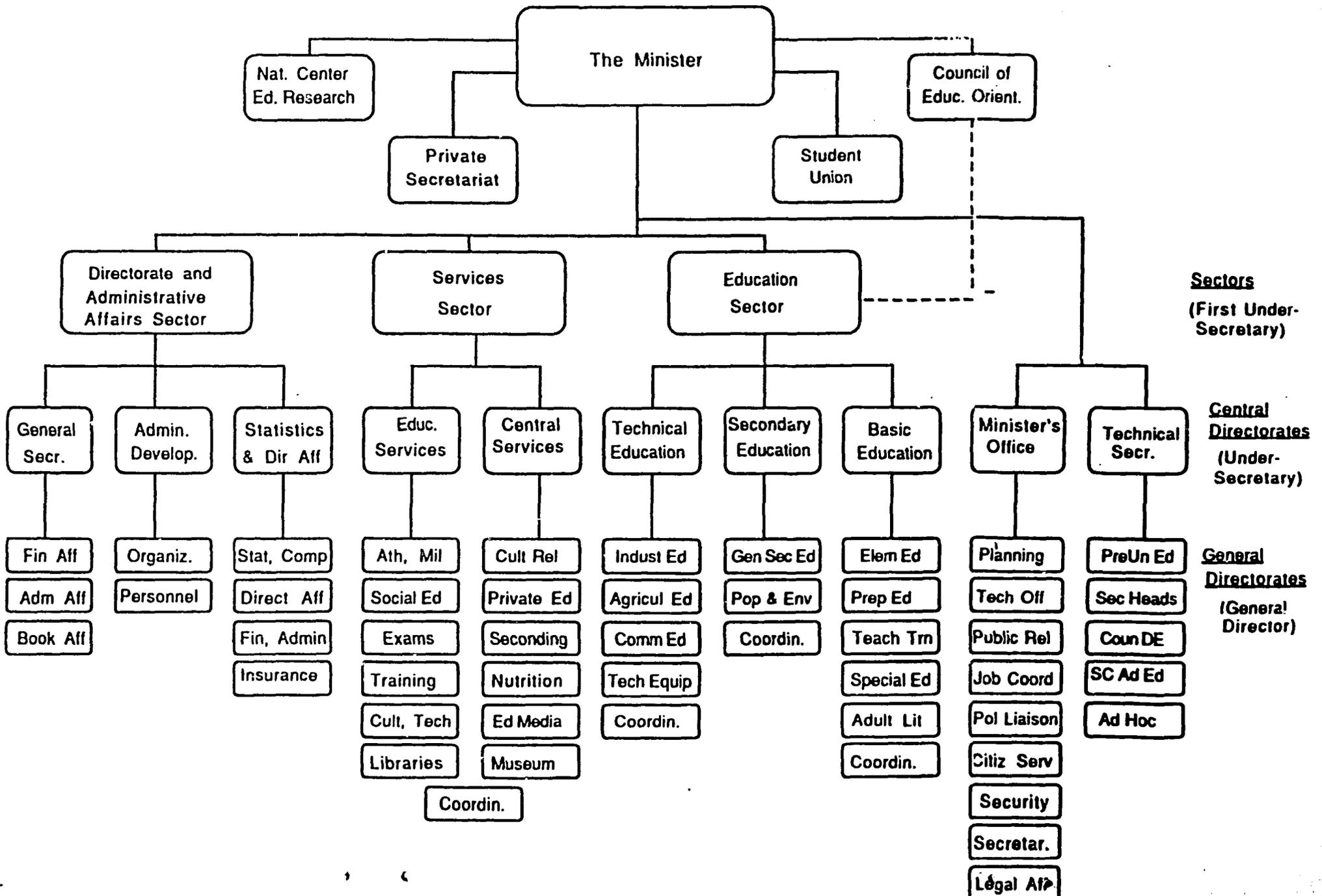


FIGURE 3: MOE ORGANIZATIONAL STRUCTURE IN THE GOVERNORATES

