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Report on a Visit to the
National University of Somalia

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by

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INTRODUCTION

A team of four American university administrators were invited by USAID, in consultation with the Ministry of Culture and Higher Education and the University of the Somali Democratic Republic, to visit the National University of Somalia and to make recommendations respecting the administration and management of the University. The visit was conducted during a ten-day period in December 1985. The report contains the recommendations that are based upon the findings of this visit.

The team consisted of Dr. John Aragon, Past President of New Mexico Highlands University; Dr. Larry Benedict, Associate Provost and Dean for Student Services, University of Massachusetts; William Ferrero, Vice President for Administration and Finance, Empire State College/State University of New York; and Peter Ristuben, President of Bethany College.

The team met with the University's senior administrative staff, including the rector, vice-rector, and several deans, on an individual basis. In a number of instances there were several meetings with individuals. In no case was a meeting pro forma or brief. These individual sessions were conducted during the day. For four consecutive evenings the entire team conducted workshops which also involved the vice-rector, all the deans of the universities, all principal administrators, and senior lecturers.

The methodology for the evening sessions involved having one team member chair the session, beginning it with a statement concerning the particular

topics to be discussed. The plenary groups would then break into smaller discussion groups for more intensive analysis, being assisted in their discussions by the vice-rector, the directors of planning of the University and the Ministry of Culture and Higher Education, and the team members. Each discussion group would then report its analyses and recommendations to the plenary group. Careful notes were taken by members of the team, and these notes have served as the basis for their sections of this report.

The team sought to review the general administrative structure and procedures of the University, enrollment and student records management, and campus maintenance. Its recommendations, therefore, are concentrated in although not restricted to these areas.

All members of the team were impressed with the quality and commitment of the University staff, both faculty and senior administrative. These human resources are substantial. If they could be matched with the much needed physical resources and with qualified subordinate staff, the National University of Somalia would be in an enviable position to meet the needs of a developing nation. It is obvious, however, that Somalia is not in a position to meet these needs without substantial external assistance. It is our hope that this report, with its specific recommendations, will not only identify the many needs of the University but that it also will identify areas in which international organizations and other national governments might cooperate with Somalia in the development of this essential institution. The team is not unmindful of the ways in which the government and the academic institutions of its own nation might be of service.

A few words should be said about the format of this report. It is comprised of three basic sections: Enrollment and Student Records Management; Administration, Management, and Finances; and Campus Maintenance. Each of these sections was prepared by the team member with particular expertness in that area. The fourth section contains recommendations that do not fit readily into one of the three major fields of inquiry and review.

The team is grateful to many individuals for their courtesies and services: the Rector and Vice-Rector of the University; the Permanent Secretary for Culture and Higher Education; the Directors of Planning for the National University and the Ministry of Culture and Higher Education; the principal administrators of the University; and the Deans of Faculties and their colleagues. We met and worked with many competent and committed individuals, and this adds to our gratefulness. Finally, we wish to thank Dr. Edwin Tolle of USAID/Mogadishu for his leadership in making the visit possible, for his wise advice, and for his commitment to the cause of education. To his assistant, Mr. Hassan, we also wish to extend our thanks.

PART I

ENROLLMENT AND STUDENT RECORDS MANAGEMENT

SECTION I: SYSTEMATIC RECORD KEEPING

A systematic approach to enrollment and records management is critical to the effective and efficient management of a contemporary university. The National University of Somalia (NUS) is a relatively young university. As such, its administration is concerned that its enrollment and records management procedures be as up-to-date as possible.

A general consensus exists among the individuals with whom we met that the NUS needs improved, systematic record keeping. In our meetings with the Deans, this was described as "Improvement of record keeping/systematic record keeping." In our second workshop, with senior lecturers and administrative staff, the need was phrased as "a centralized, computerized data base." Finally, in our third workshop came this need statement: "lack of uniformity for transcripts, need to computerize grades."

This general need, then, is widely recognized. In fact, several important steps are currently being taken within the administration to address the need. The Registrar has recently drafted a proposed format for a uniform transcript and plans to have a centralized transcript process. Furthermore, he plans to begin centralizing the grade collection process with eventual plans to computerize it as well. He is to be commended and supported for these efforts.

To begin meeting the needs described above and to support current administrative efforts in this area, the following steps should be taken.

A. IMPLEMENT A STAFF DEVELOPMENT AND TRAINING PROGRAM IN RECORDS MANAGEMENT

1. Conduct Follow-Up Workshops to the Initial Consultative Visit.

A series of in-depth workshops should be held for Deans, Senior Lecturers, and administrative staff on the general principles of records management. The workshops should focus on such topics as:

- (1) current administrative practices in American universities;
- (2) the key components of a comprehensive system of student records, hereafter referred to as an integrated student information system or SIS (Appendix I contains an articles on the key components of such an SIS);
- (3) the relationship of accurate, systematic, "hard copy" records to the computer, both as a basis for input to the computer and as back-up copy should the computer fail;
- (4) the use of a SIS for both the operational needs of the University and as a basis for institutional research;
- (5) principles of records management.

We recommend three steps. First, staff from the Ministry of Higher Education and from USAID should facilitate these workshops, in conjunction with

the NUS Registrar and Director of Planning. Second, videotaped presentations should be used as part of these workshops. Videotapes would cover topics 1-5 above as well as other topics which might emerge. Supportive reading materials would also be used. Last, USAID should sponsor and coordinate this effort, since USAID sponsored the first consultative visit on which this report is based.

During the follow-up workshops, it would be helpful to have the sessions videotaped and then returned to the participating institution for a response. This videotaped communication process could continue back and forth as often as necessary. If a color-sound video camera is available on site from either USAID or from another training project, it could be borrowed for the few times it would be needed. Otherwise, it is recommended that such a camera be purchased. This videotaped mode would be much more effective than written communication and would so enhance the training effort that the relatively small cost for a videocamera could be easily justified.

2. Offer an Off-site Internship Program for Administrative Staff.

In addition to the workshops, administrative staff would welcome and could benefit from short-term, intensive training off-site in both records and enrollment management, including training on microcomputers. (The topic of enrollment management is presented in Section II.) Therefore, we recommend that an internship program be developed for key administrative staff of NUS.

This internship program would place two or three staff from the NUS at an American university, perhaps one of those of the visiting team. The length

would be approximately five months, equivalent to one academic semester in the United States plus time for orientation and an evaluative session at the end. Repetition of this program several times would create a core group of administrators with in-depth training. These administrators could work together from a common set of experiences, and train other staff at the NUS.

This internship would include such activities as:

- (1) participation in two graduate level courses in higher education administration, computer applications, management or other relevant course work;
- (2) an intensive, hands-on internship experience in appropriate administrative offices of the host university, e.g., Registrar's Office, Office of Admissions, Office of Institutional Research and Planning;
- (3) participation in staff meetings, and planning sessions;
- (4) structured, short visits to other institutions to observe administrative practices and procedures at several types of American colleges and universities, e.g., large public, small public, and small private;
- (5) participation in appropriate professional conferences, e.g., American Association of Higher Education, American Association of

Collegiate Registrars and Admissions Officers, Association for Institutional Research;

- (6) completion of a major written report, or operations manual, about the application of the intern's experience in this program to the NUS.

We propose that USAID sponsor this program, in conjunction with an American university, again from one of the visiting team members institutions. We recommend that the first two (or three) interns might be the Registrar and one of his staff or a designee and the Director of Planning.

The second phase might include the Assistant Registrar from the Lafoole School of Education and the Registrar from the Faculty of Medicine. Lafole is recommended because of the size of its enrollment as well as the problem presented by its distant location from the central campus. The Registrar from the Faculty of Medicine is recommended because of the status of the Faculty of Medicine at the University and because of the comprehensive and technical nature of the system currently in use in that Faculty. These two individuals will play a key role in the implementation of systematic and computerized record keeping at NUS. Thereafter, other interns from within the administration, and possibly from among the Deans, could be chosen, depending upon the needs as perceived by NUS.

3. Sponsor an On-site Consultation Team Visit:

Following the workshops and the first two phases of the internship

program, we recommend that a short-term consultancy team of two to four members be invited to NUS to work with the staff on further planning and implementation of practices and procedures. This visit could last from four to eight weeks, depending upon the status of training and development at that time. We further recommend that the team members come from the institution participating in the internship program.

The team would work with the trained staff to plan for emerging needs, to design and implement further training as necessary, and to help implement and evaluate the efforts made in the areas of records and enrollment management. The staff would welcome and could benefit from such on-site consultative help.

THE PROJECTED TIMELINE

	1986	1987	1988	1989
1. Follow-up workshops with videotapes	April '86	Feb. '87		
2. Internship Program Phase 1		Feb. '87.....	June '87	
3. Internship Program Phase 2		Sept. '87.....	Jan. '88	
4. On-site Consultation Team			Spring '88	
5. Internship program Phase 3			Sept. '88	Jan. '89

B. CENTRALIZE STUDENT RECORDS AND TRANSCRIPTS

1. Develop a Plan for the Centralization of Student Records and Transcripts.

Student record keeping and transcript production at the NUS is for the most part decentralized. One of the major needs to emerge from our visit was to centralize student records and transcripts. Almost without exception, American colleges and universities have centralized their record keeping and transcript production. Centralizing is the most effective, efficient, and cost-effective manner in which to perform these functions.

However, this recommendation is not made simply because of the current practice in the United States. Centralizing records and transcripts will benefit the institution, the students, and those external agencies needing student transcripts. Other reasons include the following.

- (1) Fewer records would need to be kept. Fewer records would result in savings of staff time and effort as well as a saving in space and materials. Such time and materials could be devoted to other efforts. For example, staff freed from redundant record keeping could begin to work on other needs, e.g., retention studies and student outcomes studies.
- (2) Greater control over the uniformity and quality of records kept would be assured.
- (3) Standardization and uniformity of formats will be assured.

- (4) Bureaucracy will be reduced and the amount of time required to produce an official transcript will be shortened.
- (5) Uniform quality control will be enhanced since fewer personnel will be involved in the process.
- (6) Duplication of effort will be reduced, again allowing staff time to do many other important tasks.

In line with this thinking, the University Registrar is currently planning for the centralization of grades and eventually for the centralization of transcripts. For this, he is to be commended and supported in his efforts.

2. Convene a Records Management Planning Committee.

To assist the Registrar with this planning, and with the eventual implementation of centralized record keeping, it is recommended that a Records Management Planning Committee be convened. The Committee should be convened either by the University Senate or the Rector to give it the support and credibility of the highest levels of the administration. The Registrar should chair this group. Membership should include the Registrar's staff, the Registrars' and Assistant registrars' from those Faculties where they exist, one or two Deans, one or two Senior Lecturers, and any other members deemed appropriate by the convenor or the chair.

This Planning Committee should develop a plan for records centralization that addresses the following topics.

- (1) Standardization of practices and procedures for records, grades, and transcripts. The Registrar has already proposed a standard format for transcripts. This Planning Committee could aid his effort as well as begin to focus on other issues such as standardized forms across faculties, standardized grading procedures, and standardized record keeping of all kinds. (Appendix II contains samples of standard forms and unified transcripts which this Committee might find helpful in its work.)
- (2) Proposed timelines for centralization of records.
- (3) Provision for the individual Faculties to receive copies of student records and transcripts as needed for advising and monitoring purposes.
- (4) Identification of responsible individuals and offices for implementing the plan.

By having such a planning group from across the institution, the Registrar would be supported in his efforts as well as have access to individuals throughout the institution who could help with future implementation of these recommendations.

The work of this Planning Committee is seen as a logical extension of the workshops conducted during the initial consultation team's visit. It is seen also as another follow-up in the series of workshops described in

Recommendation #1. Hence, we recommend that the work of this Committee be considered as part of the on-going series of follow-up workshops and be recognized and rewarded as such.

3. Plan for the Physical Centralization of Records Keeping Staff and Equipment.

We recommend that the Records Management Planning Committee discuss the desirability and feasibility of physically bringing together the current records management staff and equipment. Some of the currently decentralized staff may be physically located in the central Registrar's Office. Although limited space would clearly be a problem, the benefits of bringing this staff together and the economies of scale possible from such a move make this an attractive option.

The obvious exception to this recommendation is Lafole. It is too physically removed from the central campus to be incorporated in the central campus. Accordingly, as part of its planning process, we recommend that the Planning Committee consider the continued support of satellite records operation at Lafole with very close ties to the central Registrar's Office.

4. Purchase a Minimal Amount of Equipment for this Centralization.

In order for the Registrar and other administrative staff to make progress in this area, it is absolutely critical that a minimal amount of equipment be bought to support these efforts. Basic equipment in this case is not a desire but a necessity. Minimal equipment for this function is as follows:

- (1) filing cabinets,
- (2) filing folders,
- (3) typewriters,
- (4) small copy machine,
- (5) office supplies, including paper, typewriter ribbons, etc.

Sufficient equipment and supplies should be purchased that will allow for centralization of records and for expected growth in the quantity of records in the coming years. In addition, a separate purchase plan for Lafole should be developed and implemented in line with the recommendation in Part 3 that a satellite operation be maintained at Lafole.

5. Implement the Plan for Centralization.

Following the planning by the Records Management Planning Committee, the administration, faculty, and staff can proceed with the speedy and systematic implementation of the plans developed.

C. DEVELOP A PLAN FOR THE COMPUTERIZATION OF CENTRAL RECORD KEEPING: AN INTEGRATED STUDENT INFORMATION SYSTEM (SIS)

The 1980's clearly represent the age of the computer, and the administration of NUS is looking at the use of computers in many different ways within the university. There is no question that any centralized record keeping and transcript production will require computerization. In addition, an integrated SIS is a necessity if the University is to conduct the kinds of research studies needed in a contemporary university (and as called for in the

recent Sector Assessment): analysis of intake and graduate rates, projections for future intake and graduation numbers, retention studies, analysis of types of drop-outs, tracers studies, and so on. Hence, the issue is one of "when computerization occurs," not "if computerization occurs."

One lesson many universities have learned is to plan carefully before computerization. The first step in any computerization process is the planning stage. (Appendix III contains an article about planning for computerization.) Computerization of records will be as accurate and effective as the data entered into the system. To quote a Registrar who has been through the computerization process, "You can't computerize an inaccurate or ineffective manual system, because all you will get is an inaccurate and ineffective computer system."

Hence, the first step in computerizing records and develop an integrated SIS is to develop a plan. This plan should include at least the following elements:

- (1) a list of which data are to be kept on the computer;
- (2) a schemata for organizing the data on the computer (see Appendix IV for several examples of formats for organizing different kinds of data on a computer);
- (3) a process for entering the data into the computer and identifying staff to be trained to do the actual data entry;

- (4) a list of those with access to the data and responsibility for generating reports from the data.

Many more questions need to be answered during this planning process before the actual acquisition and installation of a computer. Once such planning is complete, the University can move to the next stage: actual computerization.

D. WRITE A PROPOSAL FOR THE ACQUISITION AND INSTALLATION OF A COMPUTER SYSTEM FOR AN INTEGRATED SIS

Funds will be required to purchase and install a computer system. While the cost of such a system for a university of 3,000 to 5,000 students would not be considered expensive by American standards, it is clear that the National University of Somalia will require financial help to acquire, install, and maintain such a system. The best way to secure such funds would be to develop and submit a proposal for funding to an external agency.

1. Train staff in Proposal Writing Skills.

Accordingly, our next recommendation with respect to computerization is to train staff in proposal writing skills. Such a general need emerged from our workshops; proposal writing for the acquisition of a computer is a specific application.

Certain conventions used in proposal writing are widely accepted by a variety of funding agencies. Having learned the basic procedures of proposal

writing, staff can apply the skills to a wide variety of needs, ranging in this instance from the acquisition and support of a computer, to staff training, or to funds for research studies.

We understand that Dr. Mark Berger, an experienced proposal writer who is currently a technical consultant in Somalia, plans to conduct a workshop on proposal writing for administrators in Somalia. One requirement of this workshop will be to write an actual proposal and have it critiqued. This is an excellent opportunity for University staff to acquire the skills needed to secure outside funding, while at the same time write an actual proposal which could be submitted for funding. We recommend that administrators from NUS be included in that workshop or specifically request a workshop by Dr. Berger.

2. Write the Proposal for a Computer System.

The actual proposal should include at least the following key components:

- (1) a statement of the goals for the system--what the system is supposed to do;
- (2) a statment of how the system should operate;
- (3) a statement of the required number of records expected to be maintained;

- (4) a provision for on-going support to help physically maintain the system. The amount of support for this would be relatively modest but it is an essential part of the proposal. Too much donated equipment has broken down and is now inoperable because no on-going support funds accompanied the original donation or purchase of equipment;
- (5) a provision for funds to provide on-site consultancy and technical support to install and train NUS professional and technical staff in the use of the new system. (If the internship activity described earlier is funded and implemented, several staff will have already had in-depth training in such systems.)
- (6) A provision for the computer hardware to be compatible with whatever other brand of computer equipment is most used in Mogadishu.

USAID is currently using WANG equipment. In addition, the Somalia Management Training and Development project will use a number of computers. If WANG does become the predominant computer equipment in Mogadishu, we recommend that the NUS proposal call for the purchase of WANG equipment. If not, we would recommend the purchase of computer equipment that is compatible with the brand of computer equipment most used in Mogadishu.

There are two major reasons for this recommendation. First, the number of users who will be skilled in using this particular equipment will be larger than those for other equipment, and these users would constitute a core who

could train and help others to acquire computer skills. Second, with a sufficiently large number of the same type of equipment, an on-site technician could be trained and located in Mogadishu to service and maintain such equipment. This technician could be funded from several sources and be shared by several projects, including SOMTAD, NUS, and AID. Such technical support will be critical in maintaining the system once it is installed.

The purpose of this proposal is to secure equipment for the centralized record-keeping function. However, since we have earlier recommended that a satellite operation be maintained at Lafole, the proposal should also incorporate a stand-alone microcomputer system specifically for Lafole. Obviously, this microcomputer system will need to be compatible with the primary central system.

E. SECURE FUNDING FOR THE PROPOSAL

A number of sources exist to which the proposal could be submitted for funding. We recommend that the proposal writers confer with staff from AID, with Dr. Mark Berger, and with staff from the Ministry of Finance, including Dr. Chadambaram, for suggestions as to which funding agency might be the most appropriate. A potential funding source might even be the computer manufacturer itself. A number of computer manufacturers routinely contribute equipment to universities and other agencies for a variety of reasons. Hence, this source of potential funding should not be overlooked.

F. ACQUIRE AND INSTALL THE COMPUTER SYSTEM

The nature of this proposal is such that it should receive external funding from some source. Having done that, the plans from the preparation stage as outlined in these recommendations would be in place and installation could proceed in a systematic fashion.

This set of recommendations in Section I has been made to enhance the record-keeping capacity of the University, to make it more efficient and effective, to reduce the amount of staff time required to keep records manually, and to computerize the operation. The final result will be an integrated student information system (SIS) that will provide the basis for managing the student records of the University while at the same time providing a basis on which much needed research can be done.

SECTION II: ENROLLMENT MANAGEMENT

A. CONVENE AN ENROLLMENT MANAGEMENT COMMITTEE

The concept of enrollment management is rapidly becoming commonplace in American colleges and universities. Enrollment management can be broadly defined as ". . . a process, or activity, which influences the size, shape, and the characteristics of a student body by directing institutional efforts in the areas of marketing, recruitment, and admissions) In addition, the process exerts a significant influence on academic advising, the institutional research agenda, orientation, retention studies, and students services. It is not simply an administrative process. Enrollment management involves the entire campus." (Hossler, D. Enrollment Management: An Integrated Approach. New York: The College Board, 1984.)

A number of enrollment management issues arose during our visit at NUS: the entrance examination issue, the initial placement of students in the different Faculties, internal transfers of students between Faculties, research on drop-outs and the need to develop policy about drop-outs, projections of numbers of student intake and numbers of graduates, and tracer studies of graduates. All are enrollment management issues, and all concern the entire University.

Accordingly, in order to systematically address these issues, we recommend an Enrollment Management Committee be convened. This Committee should be convened by either the Senate or the Rector to indicate the importance of this committee and its pan-campus nature. The committee should be charged with

studying and making policy recommendations in each of the areas listed. Finally, we recommend that the Committee be chaired by the Vice Rector or his designee. This also would signal the importance of the Committee by having someone at the Vice Rector's level, with his prestige, chairing the Committee.

The Committee should be composed of representatives of the Senate, including Deans, key administrators, and Senior Lecturers. Student representatives from the Student Government Association might also be included. The Committee should be viewed by everyone as representing a campus-wide perspective rather than the perspective of any single constituency.

As we did for the Records Management Committee, we recommend that the activities of this Enrollment Management Committee be seen as a logical extension of the follow-up workshops and training described in Recommendation #1. As such, this work would itself constitute a planning and training activity and should be recognized and rewarded as such.

B. FORMULATE A POLICY ON THE ENTRANCE EXAMINATION PROCESS

An area of growing concern is the increasing number of secondary school leavers who wish to sit for the entrance examination. During the next year or so, some 12,000 students are expected to compete for the approximately 1,100 available openings in the entering class. This figure is expected to grow even more dramatically in future years.

Grading this many exams will require a prodigious effort. To make the matter worse, the University has only a short period of time in which to

complete the grading process, notify students of their acceptance, and then enroll the students. Finally, since the examination is given on only one date in a central location, the University lacks adequate space to accommodate so many test-takers at one time.

The NUS administration is clearly concerned about managing this effort. In the United States, as well as in many other countries, several different strategies are employed with respect to Admissions Testing. (Appendix V contains a section from the International Encyclopedia of Education on "Higher Education: Access" which describes these various approaches.) The Enrollment Management Committee might debate several possible options and then recommend as policy whichever one it deems most appropriate. Options could include the following.

Option 1: Restrict the Entrance Examination to only the top 3,000 scorers on the secondary school leaving examination. The University could then select its entering class of 1,100 from the top scorers of these 3,000.

Option 2: Allow all secondary school leavers who have completed the two years of National Service to take the examination. However, move the test date up four to six months so that there would be an extended period of time in which the exams could be scored.

Option 3: Decentralize the examination site, so that the examination would be administered and graded in several parts of the country with only the scores being sent to the University. Such decentralization would address the issue of adequate space but still leave unresolved the issue of grading a

large number of examinations in a short period of time. It would also raise a concern about the security of the test.

We understand that the Ministry of Education administers the secondary school leavers examination at different sites around the country. Under Option 3, the University might use a similar system or even "piggy-back" on the Ministry's system as a test distribution and administration mechanism.

Option 4: In combination with one or another of the options, the entrance examination could be changed to entirely multiple-choice. Multiple-choice examinations have the advantage of being scored very rapidly, but may not meet the needs of the faculty for in-depth questioning. (Using multiple-choice examinations does not address the issue of space.)

A variation of Option 4 would be to administer a multiple-choice examination to all secondary school leavers. A more intensive, in-depth examination then could be given to the top 20 percent or 25 percent scorers on such an examination.

The current system of "blind grading" the entrance examination--having an examination scored without the scorer knowing the name of the examinee--is an excellent one and should be maintained whichever other option or options might be adopted. In addition, the plans to offer more than one version of the entrance examination in order to reflect the different curricula at the secondary school level is an excellent one and should continue.

C. STUDY THE CURRENT POLICY ON THE INITIAL PLACEMENT OF STUDENTS IN THE FACULTIES.

Current University policy allows entering students to list their first and second choice of Faculties. The University tries to accommodate these choices by first placing the very top scorers in their first choice, the next highest scoring students in their second choice, and so on. Currently, the Faculties of top choice are Medicine, Languages, Engineering, and Economics. Least favorite choices are Geology and Education.

The first choice of the very best students is realized, as it is for the next best scoring students. But the majority of students do not appear to be given their choices and are instead assigned to another Faculty.

The current placement system is a logical one, given the limited spaces available in the most popular Faculties. However, several major problems loom as a result of this system. The first problem concerns morale, motivation, and student drop-outs. It is no coincidence that the Faculties with the lowest graduation rates in 1982 are also the Faculties of lowest student choice: Education and Geology. The issue of retention of students is a very complex one caused by many different variables. However, it is safe to assume that initial placement within a certain Faculty is one of those variables and as such, should be examined closely by NUS.

A second issue with this placement system is the inherent assumption that there is a direct relationship between the score one receives on the entrance examination and the ability to perform well within a Faculty, i.e., the highest

scorers will make the best doctors, the poorest scorers the best geologists or teachers. This is an assumption that should be examined empirically. It is possible that NUS might want to adopt other criteria in addition to the score on the entrance examination in placing students in Faculties.

The third issue relates to national manpower needs. If it is true that the very best students are only going into Medicine, Languages, and Engineering and that these best students are being lost to the Faculties of Education, Law, Political Science, and Agriculture, the long-term implications for the availability of high quality graduates to assume leadership positions in education, in the economy, and in the government are very serious.

We recommend that the Enrollment Management Committee study and debate this issue and the possibility of modifying the current placement process. (Refer again to Appendix V for an article on higher education access issues around the world. Such an article might form the basis for a discussion by the Committee.)

D. STUDY OTHER ISSUES RELATED TO RETENTION

Retention of students at NUS is emerging as an area of concern. It was noted in the Sector Assessment Report. It was voiced during the workshops we conducted. Accordingly, we recommend that the Enrollment Management Committee take the responsibility for coordinating the study of this complex issue.

Before the installation of a computerized SIS and the development of a complete and accurate data base, it is proposed that the Enrollment Management Committee examine and discuss the drop-out rates for each Faculty; discuss the implications of these different rates; determine from the students the reasons for dropping-out; examine differences between men and women, between urban and rural students and so on. After careful study and debate the University can take appropriate steps to address the issue of student drop-outs.

As noted above, the issue of retention of students is very complex. Initial placement of students may be one factor, but research in the United States has documented many other factors. Furthermore, there is some evidence that these factors may vary from university to university. This implies the need for specific research at NUS about the unique nature of its drop-outs.

In addition to this preliminary study of the issue, we also recommend the following steps.

1. Develop an Accurate Data Base

The first step in developing systematic efforts to address the drop-out issue is the development of an accurate data base. The current data on drop-outs are estimates provided by the office of the Director of Planning. For example, the Director estimates a current drop-out rate of 15 percent, while the Sector Assessment reports graduation rates for 1982 for the different Faculties ranging from 81 percent in Law to 46 percent in Geology.

Graduation rates and retention rates are different phenomena. For example, some of the students who had not graduated in 1982 have probably since graduated. Hence, more students may have been retained than are reflected in the graduation statistics. This only underscores the need for additional, accurate data.

One of the primary advantages of and benefits from the computerized SIS, described earlier in this report, is the ability to accurately monitor student drop-out rates. Hence, implementing the earlier recommendation about installing a centralized, computerized SIS will facilitate the study of drop-outs.

2. Use Exit Interviews to Gather Data on Drop-outs

Prior to the installation of an integrated SIS, NUS should begin to collect baseline data about drop-outs using exit interviews for students withdrawing from the University. Appendix VI contains several examples of what some universities in the United States are using for this purpose. Clearly major differences exist between these universities and NUS, but the samples could serve as models from which the Registrar's Office might want to develop an appropriate instrument for use at NUS. Data from these interviews can be filed in hard copy form until such time as the University implements its student data base.

While some students simply leave the University and never return, many others withdraw by notifying the Registrar or the various Faculty secretaries or registrars. While exit interviews would be extremely difficult to give for

students who simply leave the University, a short, simple interview--oral or written--could be given to the latter.

3. Use Comparative Data in the Study of Drop-outs

Once drop-out rates have been accurately established, NUS might want to gather comparative data from other universities in Europe and the United States. Such data would provide a context within which to view NUS's drop-out statistics. Appendix VII contains two figures from a recent report on drop-outs and retention done by the University of Massachusetts in Amherst, Massachusetts. These figures show a relatively stable rate of attrition both for that University as well as for four year, Baccalaureate degree granting colleges in the United States. The estimates given for NUS's drop-out rate as well as the graduation rates for 1982 contained in the Sector Assessment Report compare quite favorably with these figures.

However, we reiterate that the specific causes of attrition remain to be determined as do the differential rates of attrition among the Faculties. Such data need to be gathered.

E. EXAMINE THE POLICY ABOUT THE INTERNAL TRANSFER OF STUDENTS BETWEEN FACULTIES

The University's current policy allows very few internal transfers of students between or among Faculties. Once a student has been placed in a Faculty, the student is generally expected to remain within that Faculty. A more common approach in American colleges and universities is to allow

students to change their major area of study depending upon the space available in the intended area of study. This optimizes student interest in a field of study, thereby facilitating student retention. It optimizes resources by keeping full student spaces in different Faculties. Since there are drop-outs from the different Faculties there are some spaces available into which students could transfer.

We concur with the position stated in the Sector Assessment: "This is a questionable policy when one considers that competent students may not succeed in Medicine or one of the other highly demanding programs. Their only choice is to leave the institution; they do not have the alternative of transferring within the institution to a faculty more closely matched to their interests or aptitudes." (p. 29).

Accordingly, we recommend that the Enrollment Management Committee examine this policy to modify it. A liberalized policy allowing more internal transfers of students between the Faculties, depending upon available space, should lead to improved retention, to a better match of student ability and major field of study, and to a more efficient use of resources.

F. MAKE PROJECTIONS OF STUDENT INTAKE AND GRADUATES AND CONDUCT TRACER STUDIES OF GRADUATES

Two other vital enrollment management issues were identified during our visit and were also noted in the Sector Assessment. The first concerns accurate projections of student intake and graduates. The second deals with

the need to conduct tracer studies of the University's graduates. Such data are essential for long-range planning and effective policy development.

The Sector Assessment states that the University has adequate competency in research methodology to design and implement such research duties. Based on our observations and discussions we would agree. However, what is needed are the actual resources to conduct such studies. All are agreed that such studies are necessary and desirable. Given the limited resources at NUS, we are of the opinion that these studies can not be conducted at the present time without additional resources being provided.

In addition, without a systematic student data base, the collection and storage of such data are problematic at the present time. Accordingly, while we acknowledge the importance of these studies, we do not give them as high a priority as we do our earlier recommendations.

At such time as the implementation of our earlier recommendations has been completed, or is well under way, we would recommend that attention be focused in this area. We would then recommend that the staff write a proposal for external funding of these research studies. Since these studies are conceptually related and serve the same policy decisions, incorporating them into one comprehensive proposal for external funding would be the most efficient way of conducting such research.

We do note that the Ministry of Higher Education in conjunction with the Ministry of Labor is presently undertaking a tracer study. We recommend that

the Ministries work with NUS on this project. Furthermore, upon completion, the data should be made available to the University and entered into its newly computerized data base.

PART II

ADMINISTRATION, MANAGEMENT, AND FINANCE

SECTION I: OVERVIEW AND ANALYSIS

In a modern, contemporary university, it is important to have well defined, well organized, and properly maintained administrative and fiscal systems. They provide the vehicles for sharing of information and concerns. Most importantly they provide the information needed to make critical decisions regarding the allocation and use of scarce resources. It is important that those with decision-making roles each have sufficient accurate information to inform their decisions. The amount of information required varies but, regardless of the amount, it is essential that the information be uniform and presented in such a way as to make the decision process as efficient as possible.

In recent years the computer has been used increasingly to collect data, manipulate data, and to transmit data. However, in the absence of electronic assistance, alternate systems can be effectively used.

In applying generally accepted management concepts to the National University of Somalia, several areas became quickly apparent.

- (1) The organizational structure of the University is basically sound. That is to say that it is organized along the lines evident in United States' universities. There appears to be a minimum of overlapping or duplication and organizational reporting lines are clear and rational.

- (2) Accounting for funds is done in accordance with generally accepted accounting principles. The detailed level of accounting that takes place is impressive. Within the time allotted, it was not possible to determine the accuracy of the records but their organization was well thought out.
- (3) Staffing appeared to be sufficient in terms of numbers of people assigned to various tasks. There did not appear to be a shortage of labor.
- (4) Resources were extremely scarce but apparently well managed.

While organizationally and along management lines the University appears satisfactory, there are several severe deficiencies. Among them are the following.

- (1) All accounting for this multi-campus University system is done manually and in the absence of readily available communications such as telephones. It was remarkable to review the level of detailed information that is maintained without the aid of even the most basic of bookkeeping machines.
- (2) While staffing and organization appear adequate, there is no depth. People at the decision-making levels appear to be dedicated, industrious, and intelligent. However, we did not find evidence of adequate back-up or second-in-command in any area.

So while there are sufficient numbers of people to create the illusion of a well staffed and functioning system, the question of supporting staff adequacy or inadequacy must be addressed. Without the development of a secondary level of staffing, the systems that have been developed and do provide information for critical decisions will eventually collapse.

- (3) The question of resources cannot be overlooked. Resources are obviously very scarce but sharing of existing resources within the various Faculties is limited. Perhaps more efficient methods of deploying resources, both financial and personnel, should be examined.

In the following section of this report, the concerns expressed by administrators and faculty will be presented and discussed. Following that section will be a presentation of specific recommendations dealing with administrative and management practices.

The seminar held to discuss Administrative and Management Planning Needs was held with the idea of identifying the perceived needs of the senior staff in this area. What follows is a summary of the small group discussions that took place as they were reported back to the larger group; the listing does not necessarily reflect an order of priority.

- (1) **Staff Development at All Levels.** Regardless of the group or individuals we spoke with, this topic emerged as the area of greatest need. They stressed the "at all levels" portion of the

statement saying that from support staff through instructional staff and into the senior management, staff development was badly needed. Development also took on several forms; one of the most pressing was the development of a second level of manager. It was pointed out, for example, that many individuals are not able to take vacations because there is no one to carry on their duties in their absence. It became apparent that the main obstacle in the way of developing these mid-level managers was the salary structure. Salaries are set at such a level that it is very difficult to entice anyone to work in the University at a second level managerial position. Because of the nature of this problem, a solution may be a long way off if one is to be found at all.

A second area of staff development had to do with increased language proficiencies. A great deal of interest was expressed in learning English as a second language or becoming more proficient in English or Italian. The solution to this problem need not be so long in coming nor very costly. This seems an ideal situation to encourage groups like the Peace Corps to participate. If this solution is not satisfactory, there are others such as developing exchange programs with cooperating universities in the United States whereby a graduate student may spend some time in Somalia teaching English proficiency as part of a graduate degree program. There are, of course, many other solutions but the point is that this is a demonstrated need that could get immediate attention at little costs.

Another developmental need was expressed as more opportunities to study abroad. This was more along the lines of scholarly activity and again because of cost implications, any attention to this area may be a long way off. However, there are several scholarship programs available to University staff and perhaps their availability should be more widely publicized. While the number of these scholarships is limited, they should be fully utilized and other additional sources actively pursued.

- (2) **Transportation and Communication Needs.** The need for improved transportation systems and methods of communication is nationwide, not confined specifically to the University. While this problem must be terribly frustrating in a multi-campus setting, any solution will have to come as a national, not University, solution.

It is important to note that there are some basic activities that do not take place because these services are unavailable. For example, committees to discuss library acquisitions on a University-wide basis do not exist. Neither do committees to discuss the sharing of resources or the acquisition of equipment. A case for efficiency might be made if such committees were organized and allocated sufficient resources to meet on a regular basis. It is a low-cost answer and certainly does not address the much larger issues but perhaps it can serve to organize some vital groups within the University and achieve some positive, mutually beneficial results.

- (3) Need for Increased Library Acquisitions. The situation at the College at Lafole was described to us in great detail and appeared to be the most critical of many critical needs. The College of Education at Lafole enrolls 1,500 (nearly half of the total University enrollment) and has only 2,000 volumes in its library. In addition, most of the volumes on hand are terribly outdated and the library itself can accommodate only 70 students. We were told that the last library acquisition for the College of Education was in 1977.

While the situation at Lafole appeared the most critical, we were not made aware of any library holdings or facilities that were adequate. The solution in this area is fiscal and therefore, at least on the surface, remote. However, we were told that UNESCO has a substantial program for supporting library acquisitions which made funds available on a 10 to 1 matching basis. That is to say, UNESCO would contribute \$500,000 if the Somalis could generate a \$50,000 match. While this appears to be a lucrative offer, apparently the matching funds cannot be appropriated. It would appear that this situation is fairly desperate and that anything that could be done would have a positive impact.

The area of textbooks and text relevancy was also described as a critical need. Texts have been acquired from various foreign countries over the years and their relevancy is questionable. Examples that may convey vivid images to students in the United States may be completely lost on students in Somalia. The problem

is not one of intellect but of relevance. Perhaps the time is appropriate for the faculty at the National University of Somalia to begin authoring their own text materials. Perhaps if they were written and published within the country they would not only be more relevant but also less costly.

- (4) Centralized Computer Systems to Service Both Academic and Administrative Needs. This is an unfulfilled goal on many college campuses in the United States. Academics and administrators alike succumb to the notion that by acquiring a computer and plugging it in, all problems will be solved. Those with practical experience in these matters know that this is simply not true. The investment in a computer system can provide a great return but the commitment in terms of time and money is considerable. The environment necessary to operate a modern computer must still be controlled and the skilled staff required to create, operate, and maintain systems are expensive and in short supply.

The potential near-term solution to this need is to continue to develop and maintain the manual systems that are now in place. Microcomputers will be available before long and the conversion of a good manual system to an operational computer system will be much easier than starting with an inadequate, inferior system. It will also be important for basic services such as a steady current of electricity to be available before serious consideration be given to abandoning vital manual systems in favor of computers. It would be best in this case to become familiar with computers by using them

for basic operations such as word processing and spreadsheet analysis. These operations can be done relatively inexpensively and provide a wide range of users with some introductory experience.

The goal of a centralized computer system is a noble one and should not be tossed aside. However, it should be recognized as a long-term goal that will need considerable preparation and a substantial investment of money and personnel time.

- (5) Need for General Equipment such as Laboratory, Photocopy, Printing, and Audiovisual. This is a fairly critical need in any academic setting but there is an important difference between the situation found in Somalia and in the United States, and that is maintenance. During our visit, we frequently saw equipment that was not in use because it was in need of repair. Some of this equipment was undoubtedly obsolete but there was also a sizeable portion that was fairly modern and up-to-date. So there is a dual need here: there is unquestionably a need for more equipment and more modern equipment but it might not be a wise investment to purchase state-of-the-art equipment without first investing in the development of the skills necessary to maintain and repair equipment. The more modern the equipment, usually the more sophisticated it becomes and the higher the level of skill required to provide maintenance.

Additionally, all equipment requires consumable supplies. Whether it's toner for photocopiers, ink and paper for printing presses, chemicals for the laboratories, or films and cassettes for

the audiovisual labs, without these supplies the equipment is of little use. While it may be attractive for some donors to provide the initial equipment, only infrequently will these same donors provide continuous consumable supplies. This then becomes an ongoing cost item that requires budget consideration.

To summarize, if the decision is made to continue to offer instruction in the sciences, for example, the fallout of this decision must be understood to mean that up-to-date equipment must be acquired, that provision must be made for maintaining the equipment, and that a budget commitment must be made to ensure that consumable supplies are available. It is hard to conceive of a modern university functioning efficiently without the basic equipment required for instruction and administration; attempting to operate without these basic elements will eventually jeopardize the quality of the program. Yet it is essential that those in decision-making positions know that the purchase price of a piece of equipment is quickly becoming the least significant item of expenditure, with maintenance and consumable supplies frequently costing more than the equipment itself.

- (6) **Improvement and Expansion of Facilities.** The new campus at Mogadishu appears to be a more than adequate physical facility for the time being. However, the campus at Lafole is another case altogether. This campus is 23 years old and was originally designed to accommodate 750 students; the College of Education currently enrolls 1,500 students. The result is that everything has been

doubled up--dormitories, classrooms, libraries, etc. It is a situation that is not conducive to learning. We were shown classrooms with not enough seats for the students, laboratories with chemicals long past expiration, insufficient or nonexistent equipment. Everything there seems to be working against any learning activity yet there is a very strong commitment on the part of the faculty, staff, and students to see that the academic experience there is a successful one. This is the only English language facility in the University, and this fact seems to be working to its disadvantage. The language of instruction throughout the other colleges within the University is Italian and it appears that the Italian government provides subsidies to most, if not all, these Faculties but not to Lafole. There is no doubt that a considerable infusion of funds is needed at Lafole. Given the calibre of the people working there, great returns would be realized from this investment--and that is how it must be viewed, as an investment.

The following is a partial list of the most obvious needs at Lafole:

- o additional classrooms (with furniture)
- o additional dormitory space
- o additional laboratories
- o expansion of library
- o general refurbishment of existing facilities
- o expansion of recreational facilities.

There is a lesson to be learned from a review of the physical plant at Lafole and that is that an ongoing maintenance program must be developed for the new main campus in Mogadishu or serious problems will arise in the not too distant future. The old adage that an ounce of prevention is worth a pound of cure has never been more appropriate.

- (7) **Insufficient Funding.** This was probably the most overriding theme we heard while at the University. The people with whom we spoke realized that resources throughout the country were constrained and that the University was not being disproportionately disadvantaged. However, the feeling expressed by many was that higher education was not a high priority of the government and until this was changed, improvement would be difficult to achieve.

Those in the field of higher education do not give the impression of being resigned to this fate. Rather they represent themselves as a group of concerned, industrious, intellectual individuals with a deep sense of commitment to their profession, their students and their country.

SECTION II: SPECIFIC RECOMMENDATIONS

What follows are specific recommendations that, if implemented, could provide assistance in important administrative areas within the National University of Somalia. Our intention is, wherever possible, to recommend changes in current procedures or alternate procedures that would have little or no additional cost implications. In some areas, it has not been possible to ignore the need for increased costs and thus some recommendations are of a longer term nature than others. It is also important to note that this is not an attempt to compile a list that identifies solutions for all problems that exist. There is no doubt that the surface is barely being scratched and that a considerable amount of follow-up and technical on-site advice is required if major improvements are to be achieved. It also is not intended to portray the University as a place that is doing everything improperly; this certainly is far from the case.

As in the discussion of needs voiced by the University senior staff, the order of these recommendations and comments does not necessarily reflect any priority.

A. NO- OR LOW-COST RECOMMENDATIONS THAT CAN BE IMPLEMENTED IN THE NEAR TERM

- (1) Share Existing Resources. During our short stay, the conclusion was drawn that little information is exchanged between the various Faculties. Therefore, one major accomplishment of our visit was the bringing together of senior staff from all parts of the University for four sessions of sharing of concerns. This activity should be

encouraged and should continue on a regular basis. These people represent the leadership of the University and their combined efforts could provide the basis for streamlining of procedures and creating efficiencies throughout the University community. Of course it goes without saying that bringing these people together also provides a stimulus to academic thought which itself may lead to great benefits.

One concrete example of the absence of resource sharing occurred during our visit to the College of Industrial Chemistry and subsequently to the College of Education at Lafole. While visiting the College of Industrial Chemistry, we were impressed by the fine facility that exists to produce glass products. We were shown samples of the high quality work that was being done; test tubes, beakers, and other laboratory supplies were being produced on a regular basis at a rate in excess of what the College could consume. Therefore, the surplus was being diverted to other ministries and elsewhere within the country. On a subsequent visit to the College of Education at Lafole, we toured the laboratories and found a severe need for the kinds of products just described. When asked why there wasn't a plentiful supply of beakers, test tubes, etc., the answer was: lack of budget resources. When we mentioned the Industrial Chemistry facilities and their apparent excess of these supplies, the faculty at Lafole exhibited surprise that such a facility even existed within the University.

If the situation was accurately understood by us, the University could benefit significantly by bringing these two Faculties together--first, certainly a more efficient use of resources; second, actually a budget savings by not having to purchase these items on the open market for the students at Lafole; third, and perhaps most important, the lines of communication between the two Faculties would be opened up and perhaps lead to still further efficiencies and exchange of ideas.

This type of resource sharing could be implemented in the very near term at no cost and perhaps could actually create budgetary savings.

- (2) Establish an Inventory of Parts and Supplies Most Commonly Used During the Fiscal Year. This recommendation addresses areas other than consumable office supplies of which, it is assumed, inventories are maintained. An example of what this recommendation addresses is something like vehicle maintenance. As the situation was described, if a vehicle needs a battery, the Director of Facilities must (1) approve the acquisition, (2) send a staff member to secure at least three competitive bids, (3) review the bids and select the lowest unless there are extenuating circumstances, (4) bring the bids along with his approval and recommendation to the Director of Finance, (5) the Director of Finance issues a check, and (6) the staff member returns to the low bidder and purchases the battery. This seems extremely cumbersome, particularly in view of the detailed records that are maintained by the Director of Facilities. He has more

detail concerning all aspects of facilities and facilities management than most modern, computerized universities in the United States. Based on the information in hand, he could accurately project what would be needed during the course of the year and many of those parts and supplies could be stocked. This recommendation goes beyond vehicle maintenance and can be applied to virtually the entire University. The results would be considerable streamlining of the current cumbersome process, savings in time and money spent fulfilling current requirements, and better service to all constituents of the University.

However, it is important to note that a recommendation such as this can only be made because of the detailed information systems that are currently being maintained. It is essential that these manual systems continue to be maintained at their current exceptional level.

- (3) **Establish a More Efficient Bidding System.** As a follow up to #2 involving inventories, a review of the bidding system should be undertaken. Once again, because of the exceptional level of detailed records being maintained, the process of identifying those specific items to be purchased and the quantities required is made much easier.

Given this information, it would make more efficient use of time and potentially save money if specifications for certain items could be drawn up and let for bid once during each fiscal year rather than

have the process proceed as in the example of the battery for the motor vehicle. It would not be necessary to stock all the items that go out for bid, but identifying the vendor to be used would save a number of steps when it did come time to purchase. This is another method of having supplies available while not stocking an inventory.

The system could work as follows. Specifications for all items that are to be let for bid are drawn up. Items to be bid could range from office supplies, such as paper, to paint for buildings, to tires for vehicles, to vehicles themselves depending how extensive a process one would want. Once the specifications were clearly written and agreed to by those in a decision-making role, the information would be provided to a number of bidders (at least three) who choose to participate. In order to avoid collusion, the bids would have to be returned in sealed envelopes to a public place at a prescribed time and the bids would be opened in public. Presumably, the bid would be awarded to the low bidder for a fixed price for whatever period of time had been previously agreed to in the bid specifications and a contract entered into between the University and the vendor for the items covered in the bid at the prices specified for an agreed upon length of time.

In the example of the battery, if the University had let for bid vehicle batteries and had awarded a year-long contract to a particular vendor, then when a battery was needed that was not part of any University inventory, the staff member could go directly to

the vendor without having to solicit other bids. This type of bidding usually generates a sufficient amount of competition to assure a price below that commonly found in the open market. If security and credibility are not maintained, the system will not work. However, if the bid system works properly, it will create efficiencies and savings with minimal effort. Attached for review are summary guidelines used within the State University of New York for purchasing and bidding (Appendix I).

- (4) **Develop a System of Preventive Maintenance.** The development of a preventive maintenance program should be considered as a cost avoidance program rather than an area of increased expenditure or a potential source of budgetary savings and is an extremely important area for consideration. During the 1960s, universities in the United States experienced unprecedented growth in enrollment which consequently led to dramatic growth in the area of facilities. The result is that many campuses are composed of buildings built since 1960. During the sixties and even into the late seventies, little attention was given to the maintenance needs of these buildings because they were all relatively new. In the late seventies and into the eighties, it became painfully clear that the area of preventive maintenance was an area of great importance and because it had largely gone ignored, major building and structural repairs were necessary requiring the expenditure of large sums of money. Through careful study of the cause and effect of the required repairs, it was determined that the expense for repair could have been minimized had some form of preventive maintenance been

applied. As it turned out, a very expensive lesson was learned and most universities vigorously undertook the development of such programs to avoid the recurrence of such major expense.

The National University of Somalia could learn this valuable lesson without the staggering costs. The University complex at Mogadishu is a new facility which at first glance requires little or no structural maintenance. However, this is precisely the time to begin a program of preventive maintenance. Regular checks should be made of the entire structure in order that minor problems can be addressed before they become major structural issues. This should also extend into areas such as painting and general upkeep as neglect in these areas can often lead to further deterioration and increased expenditures. This is an area of extreme importance that has little obvious pay back but will create considerable cost avoidance in the future. The University facility is a beautiful new structure that can and should be maintained; a considerable capital expense was incurred to create the structure and it would be a travesty to allow this investment to go unprotected. The Director of Facilities has considerable knowledge in this area and has excellent ideas on how such a program could be mounted. He could provide projections of expenditures required as well as costs avoided.

B. RECOMMENDATIONS THAT WILL REQUIRE A LONGER TERM TO IMPLEMENT AND MAY ALSO HAVE BUDGETARY IMPLICATIONS

- (1) **Computerization.** In order for the National University of Somalia to become a modern university and prepare its students and staff at a level comparable to western universities, computerization must eventually take place. As mentioned earlier in this report, this step should not be taken without first having adequate support to service the equipment and knowledgeable staff to make it function properly.

When the decision to move into the computer age is made, a clear distinction should be made between academic and administrative uses. Additionally, a decision between microcomputers and mainframe equipment must be made. At least initially it might be wise to go in the direction of micro or personal computers. These machines are portable and relatively inexpensive and are becoming powerful enough to perform many of the functions of the more expensive mainframes. Also, the software availability for microcomputers is almost limitless and has the major advantage of being relatively inexpensive. These machines can be used to meet both administrative and academic needs within certain limitations. Microcomputers would certainly provide faculty, staff, and students with invaluable experiences that can be transferred to mainframe use should that occasion arise.

(2) **University Autonomy.** This is an issue that many public universities must deal with in the United States. Although it is difficult for a governmental body to develop differential funding formulae for its various ministries, it is essential that the University makes very clear that it operates differently and that measures applied to other agencies cannot uniformly be applied to it. Public universities in the United States are fond of telling their governmental funding sources that "we cannot be treated as if we were the motor vehicle department." While the analogy may not be relevant in Somalia, the point must be made that higher education must be viewed separately and on its own merits. The University's needs are unique and should be treated in that way. The National University of Somalia has been given a great responsibility, that of providing a higher education to the people of the country. Theirs is the responsibility of educating the leaders of tomorrow. If the University fails, the country fails. Given this responsibility, it is logical to assume that any formula for allocation of resources would acknowledge this and take it into account. It is not that the University should want a disproportionate share of the nation's resources but that it should be given wider flexibility in the use of resources once allocated.

It also means that the priority of higher education within the government be set at an appropriate level. If higher education is held at a low priority, then regardless of the amount of flexibility provided, an adequate job will be difficult indeed and that of providing education at a high level will be impossible.

- (3) Provide some Autonomy for the Facilities at Lafole. This recommendation may actually have the effect of creating budgetary savings and it should also be looked at in terms of having a fixed term of existence and conveying a message about the importance of this College within the University. What is being advocated is not permanent separation but rather a solution on a temporary basis.

As the situation now stands, the Faculties at Lafole are isolated from the main campus at Mogadishu yet they must work through the main campus in order to function. This kind of centralization works well in many dispersed western universities but the key ingredient to success is the availability of reliable, efficient methods of communication. Without these systems of communication, the centralized system breaks down and becomes inefficient.

Reporting links should be maintained between the two locations but if a separate budget could be created and administered by the staffs at Lafole, efficiencies in operations would occur. Examples of the current system inefficiencies abound but perhaps the example of the vehicle battery could serve again. Under the current situation, a person from Lafole would have to drive to Mogadishu to get permission to purchase the battery, wait until the bids were solicited, wait while the low bidder was determined, then wait for the check to be written and the battery purchased, then drive back to Lafole and install the battery. This process was described to us as taking one to six days if everything went well. As a result, most of the administrative staff at Lafole spend three days a week in Mogadishu.

If a budget were separately established for the Faculties at Lafole, delay could be reduced. If the inventory and purchasing systems described here were implemented at Lafole, the procedure could be streamlined even further. Perhaps Lafole could serve as an experimental test case for these systems; if they worked, as they should, everyone's life would be made simpler and the processes would work more efficiently. If they did not work, there still would be a gain in that at least something was attempted and a message given. It seems like a perfect opportunity to try something with little or no chance of loss.

Once the communications issue is settled, the question of autonomy would become moot and a centralized system could be recreated.

III. OTHER RECOMMENDATIONS

The following are general comments concerning a number of unrelated issues not necessarily involving Administration and Fiscal Management.

A. NATIONAL SERVICE

Every citizen of Somalia is required to perform two years of National Service which may take many forms including teaching primary and secondary school or serving in the military. Another alternative might be to perform National Service at the National University, perhaps serving in the area of maintenance and performing many of the routine day-to-day tasks. Since those performing National Service are paid from the Ministry of Education, it is conceivable that the service performed at the University would create a situation where savings would occur. Services provided by those performing National Service would not have to be paid for with University funding and that funding could then be transferred to other areas of need. The benefits of this would be great, the labor force already exists and deploying them at the University would enable University officials to make more efficient use of scarce resources.

B. GRANTSMANSHIP

There are many areas of fiscal need within the University and everyone recognizes that these needs must compete with other national needs for limited available funding. One area that should be more fully explored is that of attracting funding from sources heretofore untapped. There are numerous

corporations and philanthropic organizations that have considerable funding available. There are people who are expert in aligning needs with potential sources and preparing and submitting grant applications for support. It might be possible for a U.S. graduate student to work this kind of function into a graduate program and perform these services at little or no cost to the University.

Grant seeking is a major activity in most western universities with entire offices created for this function. In most cases these offices are supported from the administrative overhead portion of the grants that they receive. Perhaps in the case of the National University of Somalia the start up costs of such an operation may have to be contributed but the long term goal should be self-sufficiency.

C. TUITION AND FEES

University education and related services are provided to the students of the National University of Somalia free of charge. This entails tuition, room, board, books, supplies, and a modest stipend. This is a great benefit that is virtually unheard of in the United States. Not only do American universities require income generated from tuition and related fees in order to finance their operations, but it is also felt that by requiring some payment, the student feels a sense of ownership that is lacking without any charge.

It is understandable that in a country such as Somalia there are very few students in a position to contribute anything to the cost of their education.

Requiring a payment for all would lead to the creation of an elitist institution. However, there are some students who can contribute and they should be required to do so. Those who cannot pay should not be excluded from the University because of lack of funds but they should understand that there is a cost associated with their learning. Aid programs can and should be developed to help those in need. However, the issue of tuition and fees should be closely examined.

PART III

MAINTENANCE OF THE PHYSICAL PLANT

SECTION I: THE CENTRAL CAMPUS

The Central Campus of the National University is relatively new and at the time of our visit was still largely unused. It houses a majority of the Faculties, although less than half of the University's student body is enrolled there. The facility is not only new, but also quite modern and well-planned and could possibly accommodate an enrollment three times larger.

The person in charge of the plant's maintenance is called the Director of Technical Services. He is an engineer and a graduate of the University of Michigan. The Director is quite competent and has the Division well organized on paper. He has three subdivisions:

- o general mechanical under the management of a mechanical engineer;
- o buildings under the management of a civil engineer; and,
- o electronics under the management of an electrical engineer.

All requests are initiated by the respective academic Faculty, sent to the Academic Dean, and then to the Rector and, if approved, then channeled to the Technical Services Division. At this point, the request is honored if funds are available. It should be stated that approximately 90 percent of the maintenance budget is currently being used for the motor pool. Most of the remaining 10 percent is used for paint and supplies for decorative purposes. This leaves no budget for preventive maintenance or up-grading of facilities.

Personnel in the Division is more than adequate. The janitorial staff is composed of 60 people:

- o 10 janitors assigned to administration
- o 20 janitors assigned to classrooms
- o 30 janitors assigned to dorms, laundry, and dining hall

All this for a campus that currently has an enrollment of fewer than 3,000 students. The Government of Somalia is committed to a policy of full employment; thus the large number of janitorial personnel, all of whom work the same hours: 7:00 A.M.--2:00 P.M.

The system and staff are in place. There is a shortage of materials, inventory controls, and priorities.

Recommendation #1

The Director should be sent on a short tour (60-90 days) to a small state university to study the effective deployment and use of personnel, the establishment of maintenance priorities, warehousing, and long-range planning.

Recommendation #2

This recommendation is for the dormitories, dining room, and laundry. While these facilities are under the general rubric of the Division of Technical Assistance, there are unique characteristics that should be addressed separately from those of the academic realm. These facilities are also new but are showing much greater need for maintenance. Their use is more

of a 24-hour nature. The dorms are filled to capacity with 720 residents living two to a room. There are currently 144 women residents living in one of the high-rise type dormitories. Plans and land are available for four additional dormitories, each to house 144 students.

Both the laundry and dining hall are modern, well designed, and have modern equipment. The laundry has industrial-type washers, dryers, and pressing machines. The dining room has good cooking resources and well-designed serving tables.

Neither the laundry, the dining room, nor the dormitories has had any soap for the last four months! Thus, the laundry has not operated for the same period of time. The dining hall operates but the sanitation (dishwashing) is of a highly questionable nature. The dormitories also show the effect of lack of cleaning materials--soap, mops, disinfectants, and wax.

The following recommendations could prove to be highly useful.

- A. Somalia does not have a powdered soap industry. The University should be a prime recipient of powdered soap products for use in its laundry and dining room.
- B. Liquid disinfectants, waxes, paint, and equipment (mops, polishers, and brooms) should be provided by either a grant or loan.

C. A short-term technician should be sent to Somalia to instruct the housing director on maintenance planning and management. In particular, this should be a person from a small university knowledgeable about creative uses of student labor in dormitories and related plant maintenance. A series of contests among the dorm students should be held periodically with modest prizes given to a building, a floor, or individual room residents for outstanding neatness and maintenance. Periodic meetings of all residents should be held in the large meeting area of the dining room where lectures and instruction on neatness and sanitation should be given. Many students are from areas in Somalia where plumbing and electricity are rare. Instruction on the use of these unknown facilities is crucial.

Recommendation #3

The main campus has no current recreation facilities for either the faculty, staff, or the students. Yet, there are areas where these could be quite easily accommodated next to and among the academic and dormitory buildings.

A gymnasium may not be a high priority item. The weather in and around Mogadishu lends itself quite nicely to outdoor facilities which would have the added advantage of high visibility and low cost.

- o Four concrete aprons (slabs) strategically placed throughout the campus would serve quite nicely. Each would serve multiple purposes:

- as a basaketball court
- as a tennis court
- as a volleyball court
- o A running track could economically be constructed for team competition and individual development.
- o The Wells-Fargo Bank of California has been partially donating to western universities out-door exercise equipment. Each set of equipment includes apparatus for chin-ups, sit-ups, leg stretching, push-ups, etc. Each set comes with a complete set of instructions engraved on the equipment itself. It requires an outdoor space of 25' X 25'. It is weather resistant and total cost (outside of shipping) is less than \$5,000.

Recommendation #4

The main campus has a print shop that ostensibly prints materials for the internal use of the University. It also reproduces and binds textbooks. Unfortunately, all of the presses and cameras were inoperative due to break-downs and no replacement parts. The University should be provided an inventory of replacement parts for its print shop.

Recommendation #5

The Industrial Chemistry Faculty was most impressive. It was composed of a young and dedicated faculty. It was doing both scholarly and practical research. The team was most impressed with its reseach in herbal medicines. They are working closely with village healers in analyzing the chemical ingredients of native herbs and sharing this information with the regional medical personnel. They, too, suffered from laboratory equipment that was broken, rusted, or inactive due to lack of repair and replacement parts. The

Industrial Chemistry Faculty was involved in a rather unique enterprise that could be in part a solution to their problems in equipment. They have in their department the equipment and personnel for glass blowing. They are currently making their own jars, breakers, tubes, and other needed glassware for their use. This is probably the only such facility in the country. It is recommended that an analysis be made of the marketability of these wares and that the department be encouraged to market their products in a profit-making venture. It is probable that the University could begin to generate revenues to defray the cost of some of its needed equipment.

SECTION II: THE LAFOLE CAMPUS

The Lafole campus is located approximately ten miles outside of Mogadishu. It was built in the early 1960's as a two-year teacher's college. It was designed both structurally and academically under the guidance of Eastern Michigan University.

Lafole is the only institution that uses English as one of its languages of instruction, this being a carry-over of the influence of Eastern Michigan University. Because of its commitment to English, if for no other reason, it would seem that the Lafole campus should receive special care and consideration. In addition, since it is the oldest post-secondary institution in the country, most of the government's officials are graduates of Lafole. It thus has powerful and influential alumni.

Recommendation #1

The administration at Lafole currently must rely on the main campus for all of its supplies and materials. The personnel spend inordinate amounts of time shuttling between the two campuses. A warehouse with its own inventory of supplies and materials should be established at the Lafole campus.

Recommendation #2

The deteriorated state of the classrooms and laboratories dictate that immediate efforts be initiated to provide sanitation materials (soap,

disinfectants, paint), library resources (multiple copies of basal reading series, reference books such as up-to-date encyclopedias), and teacher aids such as globes, maps, and microscopes.

Recommendation #3

The dormitories and dining room are truly out-moded and too small. If their expansion proves to be expensive, then the provision of maintenance materials and furniture should be given top priority.

Recommendation #4

The Lafolle campus is in great need of printing equipment. They currently use mimeo and other duplicating machines for reproducing teaching materials. Even more than the main campus, they are in need of a small, unsophisticated press. This one piece of equipment would probably prove more vital in the improvement of teaching than any other single thing.

Recommendation #5

Lafolle does have a gymnasium that is currently inoperative due to the buckling of the floor. During our visit we were told that plans are already under way for its repair. Nonetheless, need for recreational facilities is still of paramount importance. The recommendation is that the facilities recommended for the main campus be duplicated here--outdoor facilities.

A general recommendation that is applicable to both campuses merits some consideration. As mentioned earlier, all youth in Somalia are expected, between their graduation from high school and before commencing their university studies, to give two years of National Service. A great many of the high school graduates are given two-year teaching assignments in the primary schools; others do health and agricultural work in the rural areas. A large number are given busy work jobs just to fulfill their obligation.

It is recommended that those high school graduates who have been accepted into university study be assigned to either the National University or Lafole, and that they also compose the labor force for the building of the suggested recreational facilities.

This notion was broached with all the university administrators interviewed and in each instance they agreed that they knew of no reason why this notion could not be pursued. It is an idea that could prove both educationally and economically profitable.

SECTION III. ADDITIONAL RECOMMENDATIONS

Many of the foregoing recommendations were developed out of needs delineated by administrators and members of the Faculties of the National University. There were, however, other needs that also became apparent in individual conversations and in the intensive evening workshops. That these were not given major mention in the foregoing sections in no way diminishes their significance in the on-going development of the University. Indeed, many of these recommendations, we believe, are crucial to the development of the University. Many of these needs could be met through efforts of assisting nations and collegial institutions.

Recommendation #1

Do not increase significantly the enrollment of the University until more effective and plentiful funding is available and there is assurance that University graduates will have appropriate employment following graduation. It is clear that the government has not funded the University at the level required for adequate faculty and staff compensation and for effective operation with the current enrollment. It also is clear that University graduates are finding it increasingly difficult to find appropriate positions.

Recommendation #2

Seek ways immediately to provide substantial salary increases for faculty and staff, as well as to provide other elements of compensation such as campus housing and recreational facilities. There is no way by which the full

efforts of University employees can be directed to University activity given their need to be engaged in other remunerative activities. It also will not be possible to encourage the repatriation of Somali academics until there is considerably greater financial recognition of their role in the development of the nation. This must be given great priority, certainly before the University increases the enrollment of the University or develops graduate programs.

Recommendation #3

Provide in-service educational opportunities for both faculty and staff. This need, along with the need for increased compensation, was given high priority by virtually every person with whom the team met. English language instruction should be provided for all faculty and administrative staffs. Furthermore the secondary- and tertiary-level administrative staffs need intensive and long-range in-service instruction and training in the skill areas called upon in their positions. It is suggested that graduate students from American universities might be called upon to provide the English-language instruction. If the Peace Corps were to return to Somalia, volunteers could be extremely effective instructors in both the English language and skills training/education. The importance of the English language in the future of the University and its potential importance to English-speaking national alliances would, it appears to the team, place high priority upon English language instruction.

Recommendation #4

It is recommended that the various Faculties, either individually through their respective deans or collectively through the Central Administration, seek external funding for curricular consultation by experts from other universities. The critical need for expert assistance in the review and restructuring of the various curricula was clearly and urgently stated by deans and senior faculty.

Recommendation #5

In conjunction with the review and remodeling of the curricula, it will be important for the Faculties to examine the relevance of their text and other teaching materials. Much of this review can be conducted within the Faculties, but substantial financial assistance will be necessary to produce new, more current, and thus more appropriate instructional materials. The immediate value of such activity, as a consequence of the new materials and of a faculty which has had significant development opportunities, will be substantial.

Recommendation #6

There must be an effort, conducted on the basis of urgency, to strengthen the libraries of the University. This situation is desperate. The Central Library has only 14,000 volumes, many of which are outdated, and it has not purchased books for two years. The library at Lafole has not purchased even one volume since 1977. Faculty members have no journals, students in most

cases have only limited access to textbooks, which are often out of date. UNESCO has a program of support for the purchase of journals and books, but the University has not participated in the program for several years. Funds that are allocated for the purchase of UNESCO coupons, which permit the purchase of books on a matching basis with the far greater share provided by UNESCO, have regularly been reallocated, leaving nothing for coupon purchase. The University should review its policy of reallocation as it relates to the library and then aggressively seek assistance from external aid organizations, as well as from universities. Here, again, the language competencies of students and faculty will be determinant. It should not be forgotten that at least half of the University's students have English as a primary instructional language. It should also be noted that the libraries of the University have great need for even basic library technology.

Recommendation #7

Students are entering the University with increasing deficiencies. Many of them meet neither the required cognitive level nor the basic skills requirement. This speaks not only to the need to maintain more effective elementary and secondary schools--the latter staffed by University graduates--but also to the need for more intensive and extensive preparatory work at the University itself. Here, again, volunteer organizations such as the Peace Corps could be of immense value and service. But there is much the University could do, such as assigning highly qualified faculty members to "zero semester" work with entering students as well as developing a cadre of teachers whose field is remediation.

Recommendation #8

There needs to be a greater sense of one University rather than the federation of Faculties that now appears to exist. This is especially obvious when one examines the uneven distribution/placement of materials and modern glass-making machine, or a modern chemical store room with an adequate inventory of chemicals, while other Faculties go without and often are even unaware of the endowments of their colleagues. The central administration should encourage greater sharing, as well as continue to work to make more equipment and materials available to be shared.

Recommendation #9

Renewed attention should be given to the Student Health Program, with especial reference to increased funding. The Health Service operates with the same funding as it received in 1978-79.

Recommendation #10

Tracer studies of students should be conducted and made a regular activity of the University. The Ministry of Culture and Higher Education has begun such a study that is awaiting a decision from USAID regarding funding. Tracer studies would provide invaluable information for University and national planning.

Recommendation #11

Linkages should be established between American universities and those National University Faculties that employ English as a language of instruction or wish to have more contact with English-speaking colleagues and institutions (an obvious example of the former is the Faculty of Education; of the latter, the Faculty of Economics). USAID and USIS could be instrumental in establishing these linkages.

Recommendation #12

An outgrowth of the above recommendation is the recommendation that there be greater opportunity for faculty exchanges between the National University and American universities. Such an exchange might be weighted in such a way that a Somali faculty member would have an opportunity to study and to observe as a part of his program, as well as to teach. Interest in such a program was high among the senior lecturers, and its advantages for University and individual faculty development is obvious.

Recommendation #13

Because of the growing interest among Somali Faculties in English as a language of instruction and scholarship, it is recommended that the Rector of the University be given an opportunity to visit American universities and to explore linkage possibilities. The Rector understands the Italian system, having been educated in Italy, but he is not especially familiar with the American university system. Here also the programs of USAID and USIS might be involved.

Recommendation #14

The University should publish an up-to-date calendar. The one it now is using was published for the year 1978-79 and is of only limited use. The reference to Lafole, as an example, is said to describe the two-year program, although the college now has a four-year baccalaureate program.

Recommendation #15

Because of the special nature and history of the College of Education at Lafole, a number of specific recommendations already have been made elsewhere in this report. The following additional recommendations are offered.

- (a) External aid should be sought/offered to provide a thorough renovation of the campus, which has been the victim of nearly twenty-five years of deferred maintenance.
- (b) Additional facilities should be constructed to enable the College to accomodate the greatly increased number of students it has been required to educate (a campus built for 750 students houses and educates 1,500).
- (c) The college library should be infused with new accessions of texts, journals, and reference and other books on a major scale. Since the language of instruction is English, these publications should also be in the English language. The potential for American support in

this area, as in the other areas mentioned above, is significant and, the team believes, it is a clear priority.

- (d) Classroom and laboratory furniture should be replaced. It is noted that USAID has contributed significantly to the remodeling of several laboratories, but much more needs to be done, soon.
- (e) Laboratory chemicals and other supplies are almost nonexistent. A program of replenishment should be undertaken immediately. The contrast between the chemical store room of the Faculty of Industrial Chemistry and the shelves of out-dated and unstable chemicals in the laboratories of Lafole should be acknowledged and eliminated.
- (f) Printing and other duplicating equipment should be made available to the Lafole Faculties, which do not have access to the print shop that exists on the main campus and is limited to the use of only certain faculties. The distance of Lafole from Mogadishu is another factor to be considered.
- (g) There should be an even more thorough preparation of students admitted to study at Lafole. This will require additional personnel, materials, and funding, but it is essential if Lafole is to provide secondary school teachers of improved quality and to continue to supply University graduates to all sectors of the Somali society.

- (h) Since 60 percent of the Lafole faculty have received their entire education within Somalia, opportunities for foreign study--long- and short-term--would be advantageous. This should be carefully explored.

- (i) Also because of the distance separating the Lafole campus from the city of Mogadishu, we suggest that a strong enticement to faculty would be the construction of faculty housing on the campus. The effect of this upon the quality of campus life for students would also be significant.

- (j) There is a strong interest expressed by the Lafole Faculties in obtaining expert assistance from the United States in the writing of text books, the development of curricula, and in the teaching of English. There are American experts readily available to provide such support.

- (k) A program should be established that provides research opportunities for the Lafole Faculties, and funding should be provided.

In sum, the needs of the National University of Somalia are almost without limit. The ones that the team has identified through its recent visit to the University are substantial, and the expense of addressing them will be great, both in the terms of the demands upon the time of individuals and of the financial costs. But if it is the judgment of the government of Somalia that

the University serves an indispensable service to the people of Somalia and an essential role in the development of the nation, the government and the University must seek additional funding.

The team has identified those needs and made those recommendations that it believes are especially important to the effective operation and to the continuation of the University. It encourages the University to undertake whatever activities it can with its presently limited funding and to seek new ways of acquiring the expertise and funding it needs. The team encourages the Government of the Republic of Somalia to reassess its priorities in light of University as well as general national needs. And the team encourages the United States government to consider the special needs of the University when developing its assistance program for Somalia.

PART I APPENDICES

APPENDIX I

"Characteristics of a Comprehensive Student Record System"

by David J. Eckholm

From college and University: The Journal of the American Association of Collegiate Registrars and Admissions Officers, Summer 1983, Vol 58, No. 4, pp. 376-383, AACRAO.

It is not being suggested that the university should not have the right to make decisions. On the contrary, the university should learn proper decision making. What is important here, though, is that decisions must be made in light of social, political and economic indicators, not in spite of the environments. The university must target its operations at the needs of the market.

Summary

Long range planning is a necessary tool for today's academic planner. But before universities hope to utilize this "way of business" several hurdles will have to be jumped. First, universities must obtain qualified personnel for planning. Secondly, they must obtain the necessary information that is required for planning. Finally, and most difficult, universities must change the orientation from introspective ivory towerism to a market-oriented operation. Then, long range planning may help.

Characteristics of a Comprehensive Student Records System

DAVID J. ECFHOLM

INTRODUCTION

ALL COMPUTERIZED student record system development should be preceded by a delineation of the features or characteristics to be provided. Any system, whether large or small, should be defined from very general terms down to the program specifications. This paper describes the broad, general characteristics that would likely be incorporated in a comprehensive student records system.

Personnel who have been involved in major systems development or who are responsible for managing system applications might not find the following descriptions to be new information. Still, the characteristics described could be used both to provide a general framework for major student record systems development and as a benchmark for evaluating existing systems.

Nevertheless, the real intent of the paper is to provide a broad frame of reference with regard to computing and student record applications that would be helpful to persons confronting major systems development for the first time, persons who do not deal with computing on a routine basis, and new staff recently employed in a student service area. With that intent in mind the characteristics are described in general, nontechnical language.

INTEGRATED

When a student record system is integrated, it maintains common information in a central file. Offices that have a need for the information use this central file rather than create their own files with duplicate information. If housing, financial aids, and registration have a need for the student's home address, they will use the same file rather than create three separate files with three separate home addresses.

Administrative offices have one thing in common, the student, and because of that their separate operations will depend on much of the same student information. An integrated system simply shares data common between offices. The student population is then the same for all the offices, and the problems of reconciling the file of one office with that of another are avoided. Each office will have some student information specific to the function of that office, but most of the information used by that office is probably the same information used by other offices.

An integrated student record system reduces the amount of data being stored, makes information collected by one office available for use by other offices, and generally means that one correction will update the data for all offices. Applying the example of the student's home address, obvious efficiencies and savings are gained when the address is stored only one time. The space, time, and costs associated with storing and updating multiple home addresses are considerably reduced. The use of the same home address by multiple offices subjects the home address to the review and scrutiny of the various users, which in turn is a form of quality control and validation that improves data reliability.

Finally, by pooling the data formerly spread across separate subsystems, it becomes easier and more timely to access the necessary information. For example, it becomes easier for registration to know that a student owes money and that transcripts should be

held, for billing to know that a student has added a course and that additional fees should be assessed, and, in general, for all offices to know that a student is registered.

CUMULATIVE

The cumulative student record system maintains all data on a student in one file and adds only new information. Fixed information such as sex, high school of graduation, birthdate, race, etc. are collected and stored only one time, regardless of the number of terms for which the student was enrolled. Term oriented information such as courses, grades, and grade point ratio is collected, stored and identified by term, but within the same student record as the fixed information.

The traditional alternative to the cumulative approach is a term oriented record system. In the case of a term oriented system there is a file for each term, and all of the student's biographic, demographic, and current course data are in each file. A student who is admitted and attends eight semesters will appear in eight separate files. Except for the data that are specific to a semester such as courses and grades, most of the student information is the same from one term file to another; and if you wanted to know everything about that student, you would have to read eight separate files.

In drawing a parallel to manual recordkeeping, a cumulative file is similar to keeping one folder per student and adding to that folder as new information develops, as opposed to keeping one folder for each term in which the student was enrolled. In the latter case, if you wanted to know all about a student, you would need to look at several folders in order to see all of the information. The advantages of one folder per student are obvious — you save space, money, and time.

Some of the advantages of an integrated system also accrue to a cumulative system. If student information is stored in one file rather than a file for each term, the information can be corrected in one place rather than having to correct it in a number of places. There is also the advantage of retrieving or analyzing the information when it is in one place.

HISTORICAL (Perpetual)

The perpetual characteristic of a student record system refers to

the length of time that you keep that record on file. Now that you have the cumulative record of the student, you need to decide on how long you want to keep it. If you're a real saver, you'll want to keep it forever, perpetually. Perhaps that is a little exaggerated, but there is a real need to keep the student record accessible well beyond the student's last term of enrollment. There will be grade changes, name changes, delinquent fees, transcript requests, career counseling, job placement, management studies, and alumni solicitation.

Following is an outline of how the records of students who do not return might be handled under a reasonably perpetual record system.

1-3 Years After Last Attendance

Records are kept active so that pending business such as grade changes, outstanding fee charges, and transcript requests can be computer processed on a daily basis. Records are also readily available for information analysis, reporting, or in the event the student re-enters.

4-10 Years After Last Attendance

Records are transferred to an inactive file. Changes can still be processed, but they are probably made on less than a daily basis. Records can be retrieved fairly easily but usually not daily. Various data will be duplicated and transferred to other active files. For example, some of the data will be duplicated on an active alumni file where it has some use on a regular basis.

11 + Years After Last Attendance

Records are stored on tape and used primarily for security. Occasionally a tape will be loaded back on to a file for information reporting and analysis. Actual need for a specific student record is so infrequent that manual processing might be more efficient.

Some of the data may be transferred to a historical file. The historical file would be maintained on an inactive basis, but would be more accessible and efficient to use than the tape records.

The principle criteria that will eventually determine how long and under what storage medium records are kept are the amount of available storage space and the need to have the record accessible.

RESPONSIVE

A responsive student record system will provide timely service and adapt to changes in user requirements. Most systems will function reasonably well when they are doing those things for which they were designed, but a good system will also be able to handle the unexpected and the unusual.

With respect to providing a timely service, ad hoc requests for reports and analyses and quick answers to simple questions should not be a problem for a good system. New or revised user programs shouldn't require long lead time and high development cost. The system should be able to respond efficiently to requests for information in a variety of formats, from a variety of sources and about a variety of subjects.

Besides being timely, the system must be able to respond to change since the data requirements of any system are not going to remain the same. New data will be needed, revisions to existing data structures will occur, and coding schemes will change. For example, new majors, course renumberings, changes in degree requirements, a change in the grading system, and a new fee assessment policy are just a few of the many things that can and do affect a student record system. The degree to which the system can adapt to any and all of these changes will be another measure of the system's responsiveness.

EFFICIENT DATA ENTRY AND RETRIEVAL

Data entry and retrieval characteristics involve the inputs and the outputs — getting the information in the computer and out again in some useful manner (garbage in, garbage out?). There are different means of entering data to the computer just as there are different ways of getting it back out, so it's a matter of applying the best combination of methods to each function.

Let's take the case of an admissions office and the processing of the application for admission. School A receives the application and sends the form to data processing where the form is coded, the information keypunched, and the cards "batched" with others and loaded to the computer during the night. Subsequently, the admissions office requests lists, labels, enrollment reports, and other reports. This "batch" oriented process probably functions very well for School A.

CHARACTERISTICS OF A RECORD SYSTEM

School B is more sophisticated. The application comes in and a clerk enters the information "on-line" to the computer. Messages flash on the screen when data items are inconsistent or if the clerk makes an input error. These editing routines validate the information being entered. School A may have similar editing routines but the clerk will have to wait until the next day to find out if there are any input errors. School B can also use the screen to display information previously entered. School A will need to request a report to be run to retrieve the same information.

Regardless of whether a particular office employs punched cards, magnetic tape, machine readable forms, or terminals; whether it is batch or on-line oriented; or whether data validation is done through printed error messages or flashes on a terminal screen, a good system will support or will be capable of supporting the method of data processing that is the most efficient and cost effective for a specific operation.

FLEXIBLE

Flexibility is easy to talk about but considerably more difficult to implement. State agency mandates, new federal requirements, institutional needs, technological developments, and changing levels of resource allocations will always place new demands on a system; however, a reasonably flexible system will not become obsolete with the force of such changes.

A look at change with respect to a manual system might help to provide a perspective for visualizing the need for a flexible computer system. An office that started out with a basic student information system many years ago might have had a Rollodex system — 3 X 5 cards connected to a small wheel. The cards and the wheel represented the collection and storage instruments. Then as data requirements changed and information needs expanded, the office might very well have undergone numerous data collection form and storage device changes. As the 3 X 5 cards were expanded to 4 X 6 and then to 8 X 11 and 8 X 14, the storage units also changed. In retrospect the manual record-keeping system wasn't very flexible because eventually it consisted of varying and essentially incompatible data, forms, and storage units.

Computer systems have experienced similar growth and development with respect to hardware, methods of input, data storage, languages, etc., but in a much shorter period of time. Many schools

have had problems associated with the growth of data and with the introduction of new systems to accommodate the growth. The experiences of schools in adjusting, adapting, or converting student record systems to changes in data requirements and to changes in computer technology are legend in administrative circles. If systems can be designed with enough flexibility, then perhaps many of the problems experienced in the past can be avoided in the future.

Fortunately, there are computer tools and techniques available today, such as generalized data base management systems (DBMS) and automated data element dictionaries (DED), that facilitate flexibility. In general, these features refer to the structure of the data within the computer and the degree to which the data are independent of the computer programs which access the data. Most record systems have been hampered by highly structured designs which require a major effort every time a new data element is added. These systems have also had data definitions, codes, and editing criteria within each individual program so that any change in data requirements almost certainly necessitated a change in every program using that data.

The use of a DBMS and a DED loosens the data structure and frees data definitions from specific programs. It acts like a clearinghouse for all data definitions, codes, and editing criteria. Changes in data requirements are made in the clearinghouse rather than in specific programs. In addition, the DBMS and DED reduce much of the complexity formerly associated with data processing and provide generalized tools which allow the administrative user to bypass the computer programmer when changing data requirements or retrieving data.

Finally, should new technology and/or cost make a change in computer hardware practical, the fact that most computer vendors have versions of DBMS and other generalized tools will make the required conversion to a new system much easier than has been the case in the past. In the end the combination of generalized computer features and design considerations make the characteristic of a flexible system obtainable.

'CONCLUSION'

In conclusion, a current state-of-the-art computerized student record system will incorporate most or all of several important characteristics. As an *integrated* system it will reduce data redundan-

cy, increase data reliability, make the maintenance of data more efficient, and improve the access and timeliness of information. The *cumulative* feature will mean that data will be stored by student rather than by term and that all of the data about a student will be stored in essentially one place. A sufficient *historical/perpetual* depth will provide a length of time within which it is practical, effective, and efficient to maintain the records of students who are no longer enrolled. As a *responsive* system it will provide timely service to various requests for information and will adapt to changes in data requirements. The system will also be capable of supporting the method(s) of *data entry and retrieval* most efficient and effective for a given administrative unit. Finally, a *flexible* student record system is one to which data elements can be added or deleted, changes in data definitions and codes can be made, resource requirements can be adjusted, and new technology can be adapted with minimum redesign and conversion.

CANADIAN ADMISSIONS: AN UPDATE AND SUMMARY OF RESEARCH FINDINGS

ALEXANDER L. DARLING

FOR MANY ADMISSIONS officers in the United States the World Education Series publication *Canada* (Parnall and Lockyear, 1974) is a major reference document. Since 1974 a number of changes have taken place, and the recommendations contained in that book do not appear to have been based upon any research of student performance. The purpose of this paper is to note some of the changes that have taken place since then, and to report on the research conducted on student performance in Canadian universities. While some of the research has been published, much of it has been conducted in-house and is directed to a single university or academic programme. This paper does not refer to research on mature student admissions, since the research findings both in Canada and the United States appears to be institution-specific and

APPENDIX II

Samples of Permanent Record Cards, Unified Transcripts, Student Records.

NAME CLASS || UNIVERSITY LOCATION
 ||
 HOME ADDRESS PARENT/GUARDIAN ADMITTED FROM BIRTHDATE *FIRST ENROLLMENT || STUDENT NUMBER || Degree Awarded ||
 ||
 ||
 ||
 ||

Dept.	No.	Descriptive Title	Credit	Grade	Dept.	No.	Descriptive Title	Credit	Grade	
		SAMPLE					SAMPLE			
							THE FAMILY EDUCATION RIGHTS AND PRIVACY ACT OF 1974 PROHIBITS DISCLOSURE OF INFORMATION FROM THIS TRANSCRIPT TO THIRD PARTIES WITHOUT PRIOR WRITTEN CONSENT OF THE STUDENT.			

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Dept.	No.	Descriptive Title	Credit	Grade	Dept.	No.	Descriptive Title	Credit	Grade
		SAMPLE					SAMPLE		

POSITION CLASS	NO. GRADUATED	Date	Audit Log Name and Address	Reason	Transcripts
FACULTY RULINGS AND REMARKS					

NAME:

Student ID:

Birthdate

DEPT	NUMBER	DESCRIPTIVE TITLE	CREDIT	GRADE	DEPT	NUMBER	DESCRIPTIVE TITLE	CREDIT	GRADE
UNDERGRADUATE					CA:13.00 GC:13.00 QP:15.50 QPA:1.19 CE:10.00 STATUS: SUSPENDED FOR ACADEMIC DEFICIENCY				
FALL SEMESTER - 1981 31.00 TRANSFER CREDITS ACCEPTED FROM DANIEL WEBSTER COLL TAKEN 1981 @TRANS 001 TRANS 001 A 1					SUMMER SESSION - 1984 CLSICS 100 GREFK CIV 3 AB ECE 211 SYST ANALYSIS I 4 W ECE 221 INT DIG & COMP SYS 3 W CA: 3.00 GC: 3.00 QP:10.50 QPA:3.50 CE: 3.00				
SPRING SEMESTER - 1982 04.00 TRANSFER CREDITS ACCEPTED FROM WORCESTER ST COLL TAKEN 1982 @TRANS 001 TRANS 001 A 1					FALL SEMESTER - 1984 ASTRON 100 EXPLORING UNIVERSE 3 BC M E 201 INTRO MATL SCIENCE 3 U M E 230 THERMODYNAMICS I 3 F M F 302 MECH ENGIN LAB 4 C CA:13.00 GC:13.00 QP:18.50 QPA:1.42 CE:10.00 STATUS: DISMISSED FOR ACADEMIC DEFICIENCY				
FALL SEMESTER - 1982 ENGIN 103 INTRO TO ENGR A 3 C ENGL 162 SCI FIC&IMAGINATION 3 BC MATH 132 CALC II 4 CD P E G66 PE 100 TENNIS I 1 A PHYSIC 161 GENERAL PHYSICS I 4 BC CA:15.00 GC:15.00 QP:33.50 QPA:2.23 CE:15.00					*** CUMULATIVE TOTALS *** *GC: 62.00 QP: 87.50 QPA: 1.41 CE: 82.00 * *****				
SPRING SEMESTER - 1983 M E 201 INTRO MATL SCIENCE 3 F M E 202 INTRO MATL SCI LAB 3 BC M F 211 MECHANICS II 3 F M E 214 INTRO TO ME DESIGN 2 D MATH 233 MULTIVAR CALCULUS 3 F PHYSIC 162 GENERAL PHYSICS II 4 F CA:18.00 GC:18.00 QP: 9.50 QPA:0.53 CE: 5.00					***** *SUMMARY* *CLASS: 1986 *MAJOR: MECHANICAL ENGINEERING *****				
SUMMER SESSION - 1983 04.00 TRANSFER CREDITS ACCEPTED FROM WORCESTER ST COLL TAKEN 1983 @MA 310 CALCULUS III 4 (CR)					END OF TRANSCRIPT; PRINTED 01/03/86				
FALL SEMESTER - 1983 M F 211 MECHANICS II 3 CD M F 230 THERMODYNAMICS I 3 F MATH 431 ORD DIF EQ/SCI ENG 3 D PHYSIC 162 GENERAL PHYSICS II 4 C					SAMPLE - OFFICIAL TRANSCRIPT				

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NAME:

Page 1

Student ID:

Birthdate:

SAMPLE - OFFICAL TRANSCRIPT

DEPT	NUMBER	DESCRIPTIVE TITLE	CREDIT	GRADE	DEPT	NUMBER	DESCRIPTIVE TITLE	CREDIT	GRADE
UNDERGRADUATE									
FALL SEMESTER - 1980									
08.00 TRANSFER CREDITS ACCEPTED FROM									
BOSTON UNIV TAKEN 1980									
TRANS	001	TRANS 001 A 1	8	(CR)	HIST	311	FUR PL DPL 1914-1945	3	AB
SPRING SEMESTER - 1981									
CLSICS	224	GREEK MYTHOLOGY	3	AB	HIST	353	ARGENTINA	3	AB
COMLIT	105B	SHORT STORY-N&S AMER	3	AB	JS	398	PRACTICUM	6	A
HIST	150	ADVANCED PLACEMENT	3	CR	LAT AM	392C	SFM-BIBLIOG LA STUD	3	A
HIST	151	ADVANCED PLACEMENT	3	CR	SPAN	320	LIT CURRNTS-SPAIN I	3	A
PHYSIC	100	PHYSICS FOR POETS	3	B	CA:19.00	GC:19.00	QP:73.00	QPA:3.84	CE:19.00
POLSCI	121	WORLD POLITICS	3	A	SPRING SEMESTER - 1983				
RHET	ADV	SAT SCORE EXEMPTION	3	CR	ENGL	272	AMERICAN ROMANTICISM	3	A
CA:21.00	GC:12.00	QP:42.00	QPA:3.50	CE:21.00	HIST	H05	HNRS COL HIST 377	1	A
SUMMER SESSION - 1981					HIST	354	HIST OF MEXICO	3	A
ENT	226	INSECTS AND MAN	3	B	HIST	377	US SOCIAL HISTORY	3	A
CA:3.00	GC:3.00	QP:9.00	QPA:3.00	CE:3.00	LAT AM	394B	SEM-CENT AM CRISIS	3	A
FALL SEMESTER - 1981					P E	G01	PE 100 INTER SWIM	1	A
CLSICS	H01	HNRS COL CLSICS 265	1	A	CA:14.00	GC:14.00	QP:56.00	QPA:4.00	CE:14.00
CLSICS	265	GREEK DRAMA IN TRANS	3	A	SUMMER SESSION - 1983				
HIST	120	LATIN AMERICAN CIVIL	3	AB	04.00 TRANSFER CREDITS ACCEPTED FROM				
HIST	302	ERLY MID AG 300-1100	3	B	UNIV DE BELGRANC TAKEN 1983				
SPAN	150	BASIC GRAMMAR I	3	B	POL	001	INTERNL REL S CONE	4	(CR)
CA:13.00	GC:13.00	QP:44.50	QPA:3.42	CE:13.00	FALL SEMESTER - 1983				
SPRING SEMESTER - 1982					09.00 TRANSFER CREDITS ACCEPTED FROM				
HIST	121	LATIN AMERICAN CIVIL	3	A	UNIV NAC AUTO DE MEXICO TAKEN 1983				
HIST	303	MIDDLE AGE 1100-1350	3	B	WH	313	LATIN AMER 20 CENT	3	(CR)
JS	497W	SPTP-PRESS&3RD WORLD	3	A	WH	343	FORM & CRISIS MEX SO	3	(CR)
POLSCI	H01	HNRS COL POLSCI 258H	1	A	W	310	IBERO AMER LIT	3	(CR)
POLSCI	258H	INTER-AMER RELATIONS	3	A	SPRING SEMESTER - 1984				
SPAN	180	ORAL SPANISH I	3	A	ANTH	H03	HNRS COL ANTH 103A	1	A
CA:16.00	GC:16.00	QP:61.00	QPA:3.81	CE:16.00	ANTH	103A	INTRO PHYSICAL ANTH	3	C
FALL SEMESTER - 1982					HIST	H01	HNRS COL HIST 305	1	AB
HIST	H04	HNRS COL HIST 311	1	A	HIST	305	REN&REFORM 1494-1600	3	AB
					HIST	498Y	SENIOR HONORS	4	A
					HIST	499	SENIOR HONORS	5	A
					SPAN	597A	ST-CNTMP LAT AM NOVL	3	AB
					CA:20.00	GC:20.00	QP:70.50	QPA:3.53	CE:20.00
					TRANSCRIPT CONTINUED ON NEXT PAGE				

NAME:

Student ID:

Birthdate:

SAMPLE - OFFICIAL TRANSCRIPT

UNDERGRADUATE (CONT'D)

* * * * * CUMULATIVE TOTALS * * * * *

*GC: 97.00 QP: 356.00 QPA: 3.67 CE: 127.00 *

* * * * *

* * * * * DEGREE SUMMARY * * * * *

*AWARDED: BA ARTS AND SCIENCES *

*DATE: MAY 27, 1984 *

*HONORS: MAGNA CUM LAUDE CLASS: 1984 *

*MAJOR: HISTORY-HR *

*HONORS *

*MINOR: SPANISH *

* * * * *

END OF TRANSCRIPT; PRINTED 01/03/86

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SAMPLE - INTERNAL MICROFICHE TRANSCRIPT COPY

UNDERGRADUATE

FALL SEMESTER - 1981
 ASTROM 100 EXPLORING UNIVERSE (M) 3 AB
 ECON 103A INTRO TO MICROECON (S) 3 A
 MATH 120 MATH FOR BUSINESS I (M) 3 AB
 P E 666 PE 100 TENNIS I 1 A
 PHIL 100 INTRO TO PHIL (H) 3 A
 SOWEST C20 HUMAN SEXUALITY 1 P
 CA:14.00 GC:13.00 OP:49.00 OPA:3.77 CE:14.00

SPRING SEMESTER - 1982
 ECON 104E INTRO TO MACROECON (S) 3 B
 HIST 151 DEV AMER CIV 1876 ON (H) 3 AB
 MATH 132 CALC II (M) 4 D
 P E 666 PE 100 TENNIS I 1 A
 PSYCH 100B ELEMENTARY PSYCH (S) 3 PB
 RHET 100C RHET OF LANG & WR (R) 3 AB
 CA:17.00 GC:14.00 OP:38.00 OPA:2.71 CE:17.00

FALL SEMESTER - 1982
 ACCTG 221 INTRO TO ACCTG I 3 B
 SA 210 INTRO TO BUS COMP 3 AB
 ENGL 152 EXPOSITORY WRIT/RHET (R) 3 BC
 HIST 150 DEV AMER CIV TO 1876 (H) 3 PBC
 MATH 121 LINEAR METHSPROB BUS /M/ 3 B
 CA:15.00 GC:12.00 OP:36.00 OPA:3.00 CE:15.00

SPRING SEMESTER - 1983
 ACCTG 222 INTRO TO ACCTG II 3 C
 GB FIN 260 INTRO TO LAW 3 AB
 MGT 301 PRINCIPLES OF MGT 3 AB
 MKTG 301 FUND OF MKTG 3 B
 STATIS 140 STAT FOR BUS /M/ 3 B
 CA:15.00 GC:15.00 OP:45.00 OPA:3.00 CE:15.00

FALL SEMESTER - 1983
 FSN 130 NUTRITION & PEOPLE /M/ 3 AB
 GB FIN 301 CORPORATION FINANCE 3 A
 GB FIN 303 APPL BUSINESS STAT 3 A

GB FIN 330 PRIM OF INSURANCE 3 A
 SOM H01 HRS COL SOM 590E 1 AB
 SOM 590E FINANCIAL ACCTG I 3 AB
 CA:16.00 GC:16.00 OP:60.50 OPA:3.78 CE:16.00

WINTER SESSION - 1984
 W-ACCT 311 BUS APPL OF COMP 3 AB
 CA: 3.00 GC: 3.00 OP:10.50 OPA:3.50 CE: 3.00

SPRING SEMESTER - 1984
 ECON 304H INTERMED MACROEC TH /S/ 3 AB
 GB FIN H03 HRS COL GBFIN 304 1 A
 GB FIN 304 MODELS IN FIN ANAL 3 A
 GB FIN 320 INVESTMENTS 3 A
 GB FIN 397 SPECIAL TOPICS 3 BC
 SOCIOL 212 ELEM STATISTICS 3 B
 CA:16.00 GC:16.00 OP:55.00 OPA:3.44 CE:16.00

SPRING SEMESTER - 1985
 ACCTG 371 FEDERAL TAXES 3 A
 GB FIN 302 PRBLMS IN BUS FIN I 3 AB
 GB FIN 421 PORTFOLIO THEORY 3 B
 MICBIO 160 BIOLOGY OF CANCER /M/ 3 B
 P E 630 PE 100 SLIPMASTICS 1 A
 P E 632 PE 100 SOCIAL DMC I 1 A
 P E 661 PE 100 SKIING-ALPINE 1 P
 SOM 590D FINANCIAL ACCTG II 3 U
 CA:15.00 GC:14.00 OP:50.00 OPA:3.57 CE:15.00

..... CUMULATIVE TOTALS
 TT: 7 GC: 103.00 OP: 344.00 OPA: 3.34 CE: 111.00

..... SUMMARY
 *CLASS: 1986
 *MAJOR: GENERAL BUSINESS FINANCE

TRANSCRIPT CONTINUED ON NEXT PAGE

[REDACTED]

SAMPLE - INTERNAL MICROFICHE TRANSCRIPT COPY

[REDACTED]

2

UNDERGRADUATE (CONT'D)
SUMMER 1984 - WINTER 1985

COOPERATIVE EDUC WORK SEMESTER AT
WANG LABORATORIES, CHELMSFORD MASS..
DURING 7/23/84 - 1/24/85 FOR 884
HOURS

END OF TRANSCRIPT; PRINTED 08/04/85

INTERNAL WORK COPY

SAMPLE - INTERNAL MICROFICHE TRANSCRIPT COPY

09/02/66

UNDERGRADUATE

FALL SEMESTER - 1984
 CHEM 111 GEN CHEM-SCI (M) 4 B
 ECON 103A INTRO TO MICROECON (S) 3 AB
 ENGIN 103 INTRO TO ENGR A 3 F
 ENGL 111 BASIC WRITING 3 BC
 MATH 104 ALG/ANAL GEOM/TRIG 3 A
 CA:16.00 GC:16.00 GP:42.00 GPA:2.63 CE:13.00

WINTER SESSION - 1985
 U-ENWP 112 COLLEGE WRITING (R) 3 BC
 CA: 3.00 GC: 3.00 GP: 7.50 GPA:2.50 CE: 3.00

SPRING SEMESTER - 1985
 CHEM 112 GEN CHEM-SCI (M) 4 B
 ECON 104A INTRO TO MACROECON (S) 3 AB
 LATIN 110 ELEMENTARY LATIN I 3 A
 MATH 131 CALC I (M) 4 B
 CA:14.00 GC:14.00 GP:46.50 GPA:3.32 CE:14.00

..... CUMULATIVE TOTALS
 TT: 2 GC: 33.00 GP: 96.00 GPA: 2.91 CE: 30.00

..... SUMMARY
 CLASS: 1988
 MAJOR: SCHOOL OF ENGINEERING

END OF TRANSCRIPT; PRINTED 06/25/85

UNOFFICIAL WORK COPY

2

SAMPLE - ADVISING TRANSCRIPT COPY

UNDERGRADUATE

FALL SEMESTER - 1984

CHEM	111	GEN CHEM-SCI	(M)	4	B
ECON	103A	INTRO TO MICROECON	(S)	3	AB
ENGIN	103	INTRO TO ENGR A		3	F
ENGL	111	BASIC WRITING		3	BC
MATH	104	ALG/ANAL GEOM/TRIG		3	A
CA:16.00	GC:16.00	QP:42.00	QPA:2.63	CE:13.00	

WINTER SESSION - 1985

W-ENWP	112	COLLEGE WRITING	(R)	3	BC
CA: 3.00	GC: 3.00	QP: 7.50	QPA:2.50	CE: 3.00	

SPRING SEMESTER - 1985

CHEM	112	GEN CHEM-SCI	(M)	4	B
ECON	104A	INTRO TO MACROECON	(S)	3	AB
LATIN	110	ELEMENTARY LATIN I		3	A
MATH	131	CALC I	(M)	4	B
CA:14.00	GC:14.00	QP:46.50	QPA:3.32	CE:14.00	

***** CUMULATIVE TOTALS *****
 TT: 2 GC: 33.00 QP: 96.00 QPA: 2.91 CE: 30.00

***** SUMMARY *****
 *CLASS: 1988 *
 *MAJOR: SCHOOL OF MANAGEMENT *

END OF TRANSCRIPT; PRINTED 01/03/86

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UNDERGRADUATE

FALL SEMESTER - 1981
 ASTRON 100 EXPLORING UNIVERSE (M) 3 AB
 ECON 103A INTRO TO MICROECON (S) 3 A
 MATH 120 MATH FOR BUSINESS I (M) 3 AB
 P E G66 PE 100 TENNIS I 1 A
 PHIL 100 INTRO TO PHIL (H) 3 A
 SOWEST C20 HUMAN SEXUALITY 1 P
 CA:14.00 GC:13.00 QP:49.00 QPA:3.77 CE:14.00

SPRING SEMESTER - 1982
 ECON 104E INTRO TO MACROECON (S) 3 B
 HIST 151 DEV AMER CIV 1876 CN (H) 3 AB
 MATH 132 CALC II (M) 4 D
 P E G66 PE 100 TENNIS I 1 A
 PSYCH 100B ELEMENTARY PSYCH (S) 3 PB
 RHET 100C RHET OF LANG & WR (R) 3 AB
 CA:17.00 GC:14.00 QP:38.00 QPA:2.71 CE:17.00

FALL SEMESTER - 1982
 ACCTG 221 INTRO TO ACCTG I 3 B
 BA 210 INTRO TO BUS COMP 3 AB
 ENGL 152 EXPOSITORY WRIT/RHET (R) 3 BC
 HIST 150 DEV AMER CIV TO 1876 (H) 3 PBC
 MATH 121 LINEAR METH&PROB BUS /M/ 3 B
 CA:15.00 GC:12.00 QP:36.00 QPA:3.00 CE:15.00

SPRING SEMESTER - 1983
 ACCTG 222 INTRO TO ACCTG II 3 C
 GB FIN 260 INTRO TO LAW 3 AB
 MGT 301 PRINCIPLES OF MGT 3 AB
 MKTG 301 FUND OF MKTG 3 B
 STATIS 140 STAT FOR BUS /M/ 3 B
 CA:15.00 GC:15.00 QP:45.00 QPA:3.00 CE:15.00

FALL SEMESTER - 1983
 FS&N 130 NUTRITION & PEOPLE /M/ 3 AB
 GB FIN 301 CORPORATION FINANCE 3 A
 GB FIN 303 APPL BUSINESS STAT 3 A

GB FIN 330 PRIN OF INSURANCE 3 A
 SOM H01 HNRS CCL SOM 590E 1 AB
 SOM 590E FINANCIAL ACCTG I 3 AB
 CA:16.00 GC:16.00 QP:60.50 QPA:3.78 CE:16.00

WINTER SESSION - 1984
 W-ACCT 311 BUS APPL OF COMP 3 A
 CA: 3.00 GC: 3.00 QP:10.50 QPA:3.50 CE: 3.00

SPRING SEMESTER - 1984
 ECON 304H INTERMED MACROEC TH /S/ 3 A
 GB FIN H03 HNRS CCL GBFIN 304 1 A
 GB FIN 304 MODELS IN FIN ANAL 3 A
 GB FIN 320 INVESTMENTS 3 A
 GB FIN 397 SPECIAL TOPICS 3 B
 SOCIOL 212 ELEM STATISTICS 3 B
 CA:16.00 GC:16.00 QP:55.00 QPA:3.44 CE:16.00

SPRING SEMESTER - 1985
 ACCTG 371 FEDERAL TAXES 3 A
 GB FIN 302 PRBLMS IN BUS FIN I 3 A
 GB FIN 421 PORTFOLIO THEORY 3 B
 MICBIO 160 BIOLOGY OF CANCER /M/ 3 B
 P E G30 PE 100 SLIMNASTICS 1 A
 P E G32 PE 100 SOCIAL DNC I 1 A
 P E G61 PE 100 SKIING-ALPINE 1 P
 SOM 590D FINANCIAL ACCTG II 3 W
 CA:15.00 GC:14.00 QP:50.00 QPA:3.57 CE:15.00

* * * * * CUMULATIVE TOTALS * * * * *
 *TT: 7 GC: 103.00 QP: 344.00 QPA: 3.34 CE: 111.0
 * * * * *

* * * * * SUMMARY * * * * *
 *CLASS: 1986
 *MAJOR: GENERAL BUSINESS FINANCE
 * * * * *

UNDERGRADUATE (CONT'D)
SUMMER 1984 - WINTER 1985

COOPERATIVE EDUC WORK SEMESTER AT
WANG LABORATORIES, CHELMSFORD MASS.,
DURING 7/23/84 - 1/24/85 FOR 884
HOURS
END OF UNDERGRADUATE RECORD

END OF TRANSCRIPT; PRINTED 01/03/86

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HUMF ADDRESS PARENT/GUARDIAN ADMITTED FROM BIRTHDATE
 STUDENT 1982 MA 02174 NUMBER
 ARLINGTON H S
 * FIRST ENROLLMENT - AUG 31, 1977

AT MAJORED- BACHELOR OF ARTS MAJOR: POLITICAL SCIENCE
 BOSTON DATED- 05/30/82

ENTRANCE LANGUAGE	UNITS
English	3
Spanish	3

DEPT.	NO.	DESCRIPTIVE TITLE	CREDIT	GRADE	DEPT.	NO.	DESCRIPTIVE TITLE	CREDIT	GRADE
FALL SEMESTER - 1977					SPRING SEMESTER - 1980				
GEOL	101	PHYSICAL GEOLOGY (E)	3	F	BOTANY	101	GENERAL BOTANY (E)	3	F
HIST	100	WEST THY TO 1600 (C)	3	B	CLSCIS	224	GREEK MYTHOLOGY (C)	3	B
PHIL	160	INTRC TO ETHICS (C)	3	A	HONORS	053	HNRS COL POLSCI 362A	3	B
POLSCI	111	COMPARATIVE POLITICS (D)	3	B	LEGAL	250	INTRO LEGAL STUDIES	3	B
RHET	100C	RHET OF LANG AND WR (B)	3	AB	POLSCI	214	URBAN GOV & POLITICS (C)	3	B
		MAJOR- POLSCI SEM AVE- 2.70	15	40.5	POLSCI	362A	POL LAW & JUD BEHAV (C)	3	B
05/30/78 C SPRING SEMESTER - 1978					MAJOR- POLSCI SEM AVE- 1.88				
AFROAM	396	INDEPENDENT STLDY	3	A				16	30.0
ECON	103A	INTRC TO MICROECON (C)	3	BC					
JAPAN	244	JAPAN LIT TRAD II (C)	3	A					
P E	100	PE 100 WATER POLC (C)	3	AB					
POLSCI	121	WORLD POLITICS (C)	3	AB					
ZOOL	190G	RICL OF SOCIAL ISSUE (E)	3						
		MAJOR- POLSCI SEM AVE- 3.53	16	56.5	FALL SEMESTER - 1980				
07/06/78 C FALL SEMESTER - 1978					HIST 204T HISTORY AND THEORY (C)				
CLSCIS	297A	SP TPC-CL OR W CONSC	3	B	PHIL	220	HIST OF ANC PHIL (C)	3	C
ECON	104A	INTRC TO MACROECON (D)	3	AB	POLSCI	101	AMERICAN-POLITICS (C)	3	C
HONORS	C25	HNRS COL CLSCIS 297A	3	A	POLSCI	360	CONSTITUTIONAL LAW (C)	3	C
HONORS	004	HNRS COL POLSCI 291H	3	BC	SOCIAL	240	RACE RELATIONS (D)	3	AB
JAPAN	243	JAPAN LIT TRADTN I (C)	3	A	MAJOR- POLSCI SEM AVE- 2.20				
POLSCI	291H	JAPAN & WLD COMMUNTY	3	A	SPRING SEMESTER - 1981				
PSYCH	100C	ELEMENTARY PSYCH (D)	3	B	AFROAM	396	INDEPENDENT STUDY	3	A
		MAJOR- POLSCI SEM AVE- 3.00	17	51.0	ENGL	350D	EXPOSITORY WRITING	3	F
SPRING SEMESTER - 1979					MUSIC 100 APPRECIATION-INTRG (C)				
ASTRON	100	EXPLORING UNIVERSE (E)	3	BC	PHYSIC	100	PHYSICS FOR POETS (E)	3	C
ECON	204	INTERMED MACROECON TH	3	F	POLSCI	354	INTERNL RELATIONS (C)	3	BC
HIST	326	MIL HIST MOD EUROPE (C)	3	CD	ZOOL	250	BIOL OF BEHAVIOR (E)	3	CD
POLSCI	203	AMER POL THOUGHT (D)	3	B	MAJOR- POLSCI SEM AVE- 1.67				
POLSCI	347	ARMED FCS & POLIT (D)	3	C	SUMMER SEMESTER - 1981				
		MAJOR- POLSCI SEM AVE- 1.80	15	27.0	POLSCI	336	GOV & POL SERV UNICA (C)	3	F
FALL SEMESTER - 1979					MAJOR- POLSCI SEM AVE- 3.00				
COMLIT	201A	CINEMA & PSYCHE (C)	3	F	FALL SEMESTER - 1981				
HIST	284T	TOPICS IN US HIST	3	AB	BOTANY	101	GENERAL BOTANY (E)	3	F
HONORS	CO8	HNRS COL HIST 284T	3	AB	COMLIT	201A	CINEMA & PSYCHE (C)	3	B
JS	202	LANG AND COMM	3	F	ENGL	350D	EXPOSITORY WRITING	3	BC
POLSCI	371	MODERN POL THOUGHT (D)	3	AB	JS	202	LANG AND COMM	3	CD
SOCIAL	220	WORK AND SOCIETY (D)	3	AB	P E	G65	PE 100 BADMINTON	1	A
		MAJOR- POLSCI SEM AVE- 2.09	16	33.5	MAJOR- POLSCI SEM AVE- 1.92				
GRAD CRS- 67 CUM AVE- 2.64					GRAD CRS- 120 CUM AVE- 2.33				
			75	208.5	144 335.5				

SAMPLE - RECORD FROM STUDENT DATA BASE

THE FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT OF 1974 PROHIBITS DISCLOSURE OF INFORMATION FROM THIS TRANSCRIPT TO THIRD PARTIES WITHOUT PRIOR WRITTEN CONSENT OF THE STUDENT.

HOME ADDRESS [REDACTED] STUDENT NUMBER [REDACTED] CLASS (NC) 83
 PARENT/GUARDIAN [REDACTED]
 ADMITTED FROM U PUERTO RICO-MAYAGU
 BIRTHDATE [REDACTED] * FIRST ENROLLMENT - JAN 28, 1980 E

AWARDED- BACHELOR OF SCIENCE AT BOSTON
 MAJOR: SCIENCE MAJOR-ZOOLOGY DATED- 05/28/83

ENTRANCE LANGUAGE	UNITS

DEPT.	NO.	DESCRIPTIVE TITLE	CREDIT	GRADE
SPRING SEMESTER - 1980				
COINS	122	INTR PRB SOLV W/COMP (E)	4	BC
MATH	131	CALC I (E)	4	W
MATH	131	CALC I (E)	AU	AUC
PHIL	100	INTRO TO PHIL (C)	3	A
PSYCH	10CG	ELEMENTARY PSYCH (D)	3	A
RHET	100L	RHET OF LANG AND WR (B)	3	AB
MAJOR- COINS		SEM AVE- 3.42	13	44.5
GRAD CRS- 13		CUM AVE- 3.42	13	44.5
LEFT MAY 24 1980 Readmitted Sept 2, 1980				
MAXIMUM ALLOWABLE TRANSFER CREDITS TOWARD GRADUATION IS 75				
18 Transfer credits allowed for courses taken at University of Puerto Rico, 1979-1980				
FALL SEMESTER - 1980				
SPAN	140	INTERMED PROFIC	6	CR
ANTH	104J	INTRO CULTURAL ANTH (D)	3	B
COINS	201	ASSEMBLY LANG PROGRAM (E)	3	F
COINS	287	DATA STRUCTURES (E)	3	D
MATH	132	CALC II (E)	4	D
RHET	110L	LANGUAGE & SPEAKING (B)	3	B
MAJOR- COINS		SEM AVE- 1.47	17	25.0
GRAD CRS- 50		CUM AVE- 2.32	30	69.5
02/25/81 C				
4 Transfer credits allowed for courses taken at University of Puerto Rico, SUMMER 1980:				
MAT	123	CALCULO I (E)	4	C

SAMPLE - RECORD FROM
STUDENT DATA BASE

DEPT.	NO.	DESCRIPTIVE TITLE	CREDIT	GRADE
SPRING SEMESTER - 1981				
ANTH	100E	INTRO TO GENERAL ANTH (D)	3	EC
CLINS	201	ASSEMBLY LANG PROGRAM (E)	3	BC
COINS	287	DATA STRUCTURES (E)	3	CC
MATH	132	CALC II (E)	4	BC
PHIL	110A	INTRO TO LOGIC (E)	3	B
MAJOR- CLINS		SEM AVE- 2.41	17	41.0
GRAD CRS- 60		CUM AVE- 2.35	47	110.5
TRANSFER CREDIT GRANTED FOR THE FOLLOWING COURSES: INTER AMER UNIV PUERTO RICO SMR 81				
CHEM	310	ORGANIC CHEM	5.0	B
CHEM	311	ORGANIC CHEM	5.0	B
10 TOTAL TRANSFER CREDITS				
FALL SEMESTER - 1981				
PHYSIC	141	PHYS-LIFE SCI MAJ I (E)	4	B
SPAN	220	LIT CURRNTS-SPAIN I (C)	3	AB
ZOOL	102	INT AN BIOL/SCI MAJ (E)	3	RC
ZOOL	190A	HUMAN BIOLOGY (E)	3	RC
MAJOR- COINS		SEM AVE- 2.86	14	40.0
SPRING SEMESTER - 1982				
BIOCHM	420	ELEMENTARY BIOCHM (E)	3	BC
DANCE	110D	JAZZ DANCE I (E)	3	A
MUSIC	101	LITERATURE OF MUSIC (C)	3	A
P E	661	PE 100 SKIING-ALPINE (C)	3	P
SPAN	221	LIT CURRNTS-SPAIN II (C)	3	A
ZOOL	523	HISTOLOGY (C)	3	CD
MAJOR- ZOOL		SEM AVE- 3.14	14	44.0
GRAD CRS- 99		CUM AVE- 2.59	75	194.5
SEE REVERSE SIDE FOR ADDITIONAL COURSES.				
THE FAMILY EDUCATION AND POLICY ACT OF 1974 TRANSCRIPT OF THIS RECORD FROM THIS POINT FORWARD CONSIST OF THE STUDENT'S				

DEPT.	NO.	DESCRIPTIVE TITLE	CREDIT	GRADE	DEPT.	NO.	DESCRIPTIVE TITLE	CREDIT	GRADE
4 Transfer credits allowed for courses taken at University of Puerto Rico, 1982:					SPRING SEMESTER - 1983				
BIO	336	PRIN OF GENETICS	4	A	MUSIC	110	FUNDAMENTALS OF THEO (C)	3	A
					PE	G01	PE 100 INTER SWIM	1	A
					PE	G61	PE 100 SKIING-ALPINE	1	P
					PSYCH	380A	ABNORMAL PSYCH (D)	3	AB
4 Transfer credits allowed for courses taken at Universidad Del Sagrado, SUMMER 1982:					ZOOL	550	ANIMAL BEHAVIOR	3	C
FIS	204	FISICA GENERAL II	4	A	SOWEST	291F	SEM-INTER MAN COM SK	2	A
FALL SEMESTER - 1982					MAJOR- SCIZOO SEM AVE- 3.38 12 40.5				
SPAN	465	BUSINESS SPANISH	3	A	GRAD CRS- 133 CUM AVE- 2.83 100 282.5				
ZOOL	339	HUM ANATOMY&PHYSIOL	3	A					
ZOOL	566	VERT PHYSIOLOGY	2	BC					
SOWEST	191F	SEM-BASC MAN COM SKS	2	A					
MAJOR- ZOOOL SEM AVE- 3.65			13	47.5					
01/27/83 C	GRAD CRS- 120 CUM AVE- 2.75		88	242.0					

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POSITION IN CLASS

NO. GRADUATED

FACULTY RULINGS AND REMARKS

APPENDIX III

"A Model for User-Directed Development of Student Information Systems"

by Anthony Lolli

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and Admissions Officers

A Model For User-Directed Development of Student Information Systems

ANTHONY LOLLI

ABSTRACT

THE IMPORTANCE OF AN effective, flexible information system is a reality we each live with every day. Unfortunately, the truth of this statement is most apparent when the system fails to provide that which is required. In order to prevent such problems, end users must begin to take the responsibility for directing system development. Presented here is a model for such an activity. Included are discussions of vehicles for conceptual design, detail design and implementation, and policy consideration. The focus for discussion will be the process of the development effort rather than the resulting product.

INTRODUCTION

The availability of, and access to, information results in influence. This influence can be manifested in several ways including the traditional sense of influence as political power. Influence can also be interpreted as the ability to direct institutional activities such

as planning. Without access even the best of intentions are stillborn and the result is essentially an impotent operation. Daily operations are replete with examples which serve to validate this premise: responses to requests for information which is "not available"; analyses which take so long to conduct (due to data availability problems) that violation of the concern for timeliness reduces or completely eliminates the value of the data requested. These, then, are examples of the legacy of inadequate information systems. The development of a responsive, flexible information system is one means of increasing the ability to respond to requests for information. It is true that every possible event cannot be planned for in advance and, further, that preplanning will not preclude unreasonable demands. However, at the very least, the vast majority of problems which are the progeny of poor system design can be eliminated. This discussion presents one solution to the problem of system development. The central key to the successful resolution of development under this model is the requirement for end users to direct every phase of the development activity.

Not long ago a common reaction to any aspect of computerization was what might be described as stark terror. Many administrators (those trained in administration as well as those administering by fiat) lived in constant fear that someone might engage them in a discussion of computing. Creating further dissonance was the advent of the inevitable move toward computerization of informational files. Understanding that the ability to delegate responsibilities is one measure of administrative acumen, it is not surprising that administrators would have taken advantage of the opportunity to deposit this baby at the doorstep of those deemed to be experts — the administrative computing support staff. One can envision a directive to the effect, "Design a system for me." Administrators who abdicated this responsibility found themselves with systems which might or might not have met their needs. In fairness to the administrative computing support staff it must be said that they realized a need for sufficient direction and thus began the era of the systems analyst. This response to the identified problem of project direction was a necessary but insufficient solution. This realization also came to administrators, and occurred during an era which experienced the insidious incursion of computerization into many aspects of everyday, as well as personal, life. Attitudes slowly changed (as is usually the case) and with this came concomitant changes in behav-

ior. The inevitable had been accepted — and in many instances welcomed. Computer literacy for administrators became part of the zeitgeist. The time was right for implementation of the idea that the end user of an information system had not only the opportunity but the responsibility for contributing to the ultimate system effectiveness. Meeting this responsibility would require the end user to direct every phase of the development effort.

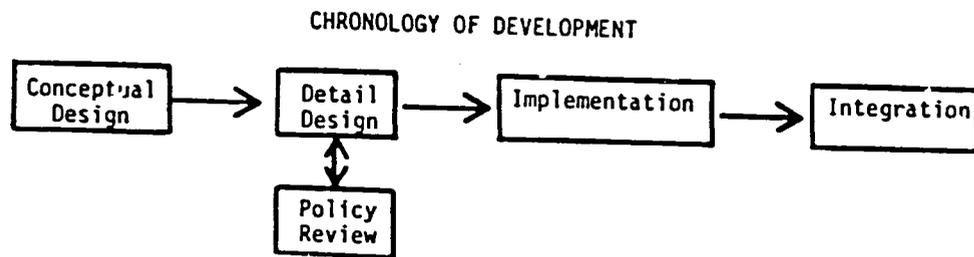
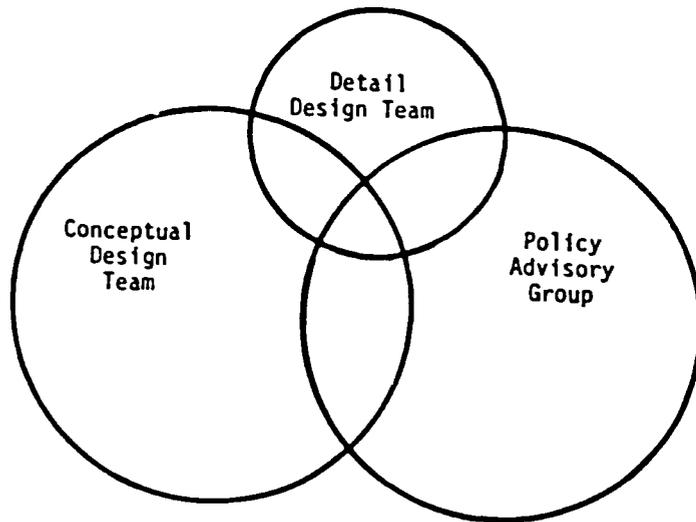
What follows is a model for that development. The focus will be on vehicles which facilitate that development, environmental issues such as political concerns and effective communications, strategies for assuring the availability of sufficient resources, and ancillary benefits accrued as a result of participation in the development effort. What does not follow is a description of specific system functions. Generalizability would not be served through such a discussion since every institution may require a unique solution to the problem of developing a responsive system.

THE MODEL

I hope to establish that there are several advantages to a user-directed development model. Most obvious is the benefit of a custom designed system capable of delivering exactly what is specified. Implications which follow as a result of this advantage include the issue of influence alluded to before. Also included is the issue of perceived competence. It is important that those who require information (e.g., decision makers) have confidence in our ability to provide useful information in a timely manner. These data characteristics are widely acknowledged but few fully understand the extent to which these characteristics are influenced by the responsiveness of the information system. A second advantage of the model is that participation under this paradigm results in a more complete awareness of the often complex nature of the operation at hand. The third advantage accrued as a result of participation under this model is that of discovering the interrelationships existing between the operation under study and other functional areas. Each of the last two identified advantages has an impact on the issues of perceived competence. In addition, each of the advantages also contributes to the ability to participate in planning activities.

What follows is a discussion of the various vehicles used to accomplish the series of required developmental activities. Figure 1

Figure 1

Figure 2
STAFFING MODEL

presents an overview of the chronology of activities and also shows interrelationships among the activities. Figure 2 presents the staffing plan and demonstrates the concept of continuity which will be elaborated on later.

Conceptual Design Team

Leadership for this team was selected by an executive sponsor whose responsibility was to gain support for development of an admissions component of an integrated student information system.

The conceptual design team, in effect, reported to the executive sponsor who, in turn, reported to an administration computing board. The computing board was charged with the responsibility of allocating development resources to functional areas which could demonstrate a need. Membership of the conceptual design team was selected to include those most knowledgeable of the existing system as well as those having a vested interest in the successful implementation of a new system. Approximately ten persons agreed to serve. Included were admissions personnel and a systems analyst. Proceedings took place three or four consecutive full days per week over a six week period. It was believed that a relatively intense schedule would yield a higher efficiency than would a less frequent schedule which spread meetings over a longer period of time.

The primary responsibility of the conceptual design team was the conduct of a non-technical needs assessment which would describe a system capable of operating in an on-line mode in a data base management environment. The conceptual design was intended to direct the later efforts of the detail design team (responsible for technical planning). The methodology used was an adaptation of International Business Machine's (IBM) Application Transfer Team. In fact, IBM made a system engineer available on a part-time consulting basis.

Specific objectives identified by the conceptual design team included:

- 1) determining problems of the current system;
- 2) determining the requirements of admissions as well as all offices functionally linked to admissions;
- 3) developing and testing a conceptual design;
- 4) developing an implementation plan;
- 5) estimating costs and benefits;
- 6) providing the executive sponsor with periodic progress reviews;
- 7) providing a final report; and
- 8) obtaining a commitment to implement the recommendations of the study.

These specific objectives guided the operations of the conceptual design team.

The scope of the study was also defined in terms of functional areas which needed to be included in the final design. Definition of the scope was, in one sense, the most important activity undertaken

by this team. An intimate knowledge of office functions and responsibilities was required since the scope would determine the direction of the investigation. Sufficient treatment of the scope's delimitations could not have been accomplished simply by turning this project over to a technical team of analysts.

A schedule was organized so that each of the thirty offices requiring contact with admissions could be interviewed. A list of questions designed to elicit specific information was sent to each office accompanied by a cover letter explaining the need for the interview and a request for participation. Consolidation of information collected during the interviews yielded nonduplicated lists of problems with the current system, desired new system characteristics (functions), and benefits to be accrued as a result of implementation of a new system.

A general system design was developed by integrating the functions identified from the scope of the study and desired system characteristics cited during the interview process. Each major function was defined in terms of unique but related modules. Every desired capability became a sub-module. Figure 3 shows an example of a module design worksheet used to standardize the description of requirements. Finally, a representation of the conceptual design was prepared. A portion of this representation is shown in figure 4. Interviewees were invited to a group meeting at which time the conceptual design was explained. At this meeting the design team explained how the system would meet the needs identified by each office interviewed. This general presentation provided the interviewees with the opportunity to react to the conceptual design and to identify needs, if any, which had not been included in the design. This meeting served a political purpose as well. Several operational areas, many of which were represented at the meeting, were preparing to gear up for similar studies of new computing systems. This placed us in competition for the limited computing resources which were available. Having to wait for the assignment of computing resources was made a little more bearable as a result of knowing that at least some of their information needs would be met through the admissions system.

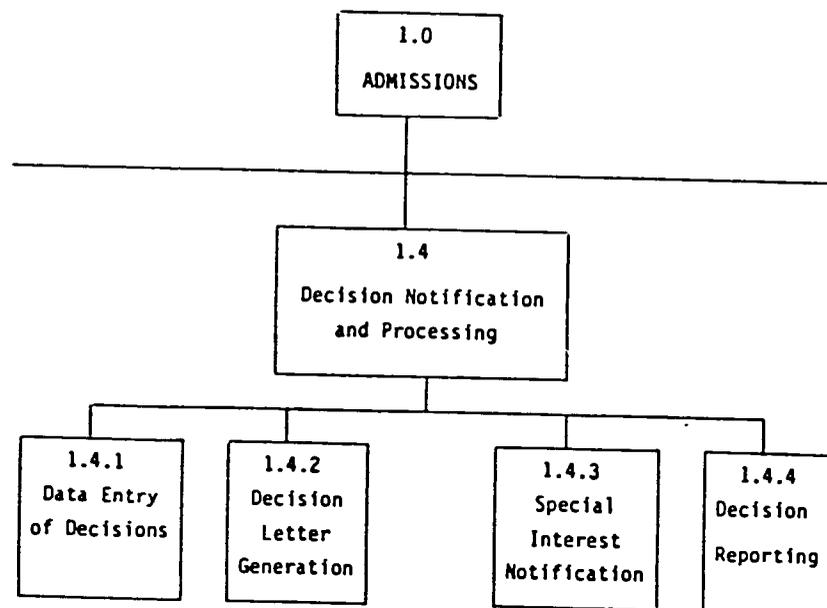
The next two steps were the only instances which required purely technical skills. For this reason, the systems analyst was given the entire responsibility for preparation of an implementation schedule and cost analysis. The implementation schedule made use of

the conceptual design module worksheets. As a result of his participation, the analyst was able to combine information from the module worksheets along with what he heard during preceding phases

FIGURE 3
MODULE DESIGN WORKSHEET

SYSTEM NAME: ADMISSIONS	TYPE: on line
MODULE NAME: 1.4.1 DATA ENTRY OF DECISIONS	
PURPOSE: 1. Automatic decision notifications.	
MAJOR FUNCTIONS: 1. Enter information concerning decisions.	
INPUTS: 1. Four Categories: 1. EDP: accept, postpone. 2. Regular decision: accept, admin. withdrawal, reject, waitlist, accept (hold), waitlist refused (hold), pending. 3. Student decision: entering, withdrawn, entering-withdrawn, intent to pay. 4. Carry forward of deferred and guaranteed admits by both UAO and college.	
OUTPUTS: 2. Capability to update fee receipt or waiver with system generation of date. 1. Updated Admissions file. 2. Generation of Financial Aid labels for approved applicants who are Financial Aid applicants. 3. Update Financial Aid data base for accept-withdrawn. 4. Update housing data base for accept-withdrawn. 5. Date folder leaves college (optional).	
DATA BASES REQUIRED: 1. Admissions data base.	
COMMENTS: 1. Graduate School requires: 1) field admit; 2) Graduate School admit; 3) student decisions; 4) student withdrawal; 5) hold. 2. Holds are determined during detailed design for non-releasable categories. 3. Pending will be used for delayed notification (will be entered and removed on line only) and will be made by colleges only. 4. Ability to update for indication of Cornell Nationals, Engineering Deans. 5. Decisions status of carry forwards should be examined during detailed design.	

FIGURE 4
REPRESENTATION OF CONCEPTUAL DESIGN



in order to develop his estimates of the length of time each module would require for programming. Included in this schedule was an estimate of the number of FTE programmers required. The systems analyst could not have generated his implementation schedule without having participated in earlier discussions. Similarly, the rest of the design team would have been less successful without input and questions from the systems analyst which forced the team to remain focused on information most essential to system development.

The cost estimate, also developed by the systems analyst, included considerations of hardware, personnel, and software costs. The cost estimate was split to address systems development costs and annual operating costs.

One of the final areas for deliberation was that of policy issues and their implications. Awareness of the importance of this issue developed over the course of the design team's meetings. As a result, the design team decided to address policy issues even though they were not included as part of the original scope of the study.

The concerns of the design team centered around a relatively small but important number of issues. It was felt that discussion and resolution of these issues should occur before the actual development phase began. These issues included questions of access to data (i.e., ownership or stewardship of data) and financial responsibility for development and operations.

Finally, a working document was prepared. Each of the major phases cited above constituted a separate chapter. Appendices contained all of the supporting documents produced during the conceptual design phase. This report was accompanied by an executive summary and both were presented to the executive sponsor. The sponsor, in turn, presented the summary to a computing allocations board which granted approval for the allocation of money and personnel.

Detail Design Team

The major responsibility of this group was to translate the conceptual design into a series of programs which would accomplish the identified functions. Membership was limited to four people, two of whom had served on the conceptual design team. Staffing continuity between these first two teams was especially important in order to facilitate the system's development. This group included three admissions persons (two had served on the conceptual design) and a project leader (the systems analyst).

The entire team met once per week for two years to review progress, resolve current issues, and set deadlines for production vis a vis scheduling requirements of the admissions process. It is important to note that the detail design chairperson was in contact with the project leader on a daily basis. In fact, fully one half of the chairperson's time over this two year period was devoted exclusively to the development of the system. It is obvious then, that the chair must be someone who understands both the processing requirements of the admissions operations and the intent of the conceptual design.

The general responsibilities of the chair included several functions. The translation of the conceptual design into system functions has already been mentioned. Also included were: the scheduling of programs based on the admissions processing calendar; the documentation of programs as they became available; the development of user manuals; staff training for data entry staff as well as

administrative staff; the testing of programs once written; recommending necessary changes in programming following the test phase; and design of system generated reports to support administrative management needs.

Additional responsibilities of the entire detail design team included: reviewing proposed changes in technical staffing levels in view of future processing deadlines; planning for meeting research needs; assisting end users in the identification of new uses for the information system; and development of system-to-text processing interface.

Due to scheduling exigencies two phases of this development activity were identified. Phase I centered on functions which were represented within the previous system. This was primarily described by functions required in order to enroll a freshman class. The focus for Phase II was research support not previously available and included a new generation of management reports for planning purposes.

One particular skill which was essential throughout the detail design phase was the ability to establish and maintain effective communications with many constituencies. For example, the responsiveness of the programming staff is not limited only by their technical competence. Our awareness of their staffing constraints led to a strategy whereby we constantly adjusted deadlines to reflect only those functions which were essential to meet admissions' most important responsibilities. In an environment with finite resources and several development areas in competition for those resources, those responsible for determining computing staffing levels were under steady pressure to provide staffing. Our strategy of requesting special attention only when absolutely necessary was well received by computing administrators. As a result of this working relationship almost every essential admissions deadline was met.

Communication was also important for the successful training of data entry staff. The on-line environment was very different from the old system environment. As might be expected, there was significant trepidation on the part of support staff members who had never used computing hardware. Effective staff training required an awareness of this fear of computing technology. Therefore, admissions trainers and computing staff trainers worked closely in order to plan and implement training sessions which were successful. Each lesson was limited in scope so as to be both easily understand-

able and well documented so that learners could practice on their own.

An important issue for discussion which is directly related to the detail design phase is concerned with the question of whether or not to implement a new system while concurrently using an existing system. The choice we faced was easy to make for two reasons. First, the existing system was driven by mark-sensed forms and had an extremely high error rate. Second, a decision favoring concurrent development would have required clerical support for two systems simultaneously. As a result, we chose a development mode characterized as fast tracking. Basically, this style provides for the creation of system programs just in time for their implementation. This approach is not for the faint-hearted. The jeopardy associated with this method has severe implications. For this reason, fast tracking should only be adopted if everyone involved understands the danger and if computing administrators responsible for assignment of staffing levels agree to temporarily increasing staffing when the jeopardy appears unavoidable. The effective communications cited earlier will determine the likelihood that computing administrators will be responsive to staffing needs in order to meet required deadlines.

A final related topic is the phenomenon of the exploding horizon. During early phases individuals identify needs and wants with regard to system functions in terms of what was available under the old system. Awareness of potential system functions and services grows exponentially with familiarity of on-line computing in a data base management environment. Suddenly, end users begin to see a myriad of additional uses of the new system. Unfortunately, this occurs while work is still underway to implement the original conceptual design. The danger of attempting to include too many additional functions at this time is that staffing levels originally recommended can never be sufficient. In a situation with unlimited resources this might not be a problem. However, reality for most of us includes finite resources. Therefore, some effort must be made to focus on the original conceptual design while rendering resource devouring innovations to a later time.

Policy Advisory Group

~~New systems which represent new ways of doing business have the potential for creating policy problems.~~ This realization came to

members during the conceptual design phase. Policy issues were added to the scope of the conceptual design team's investigation for this reason. A policy advisory group was created in response to the recognition of the importance of this issue.

The major function of the policy advisory group was to discuss possible policy implications associated with the new system development. Following deliberations, recommendations for problem resolutions were made to the appropriate administrative office. Provisions were made for higher administrators to settle policy disputes in the event that the policy advisory group was unable to reach an agreement. The success of this group is evidenced by the fact that every issue identified was successfully settled within the advisory group.

Membership for this group included persons who served on the conceptual design team and/or the detail design team as well as others concerned with policy issues. Once again, continuity across developmental vehicles was important for the efficient operation of this advisory group. Meetings were held on an as-needed basis with variable frequency. During the early stages of the detail design phase several weekly meetings were necessary. Later in the process the advisory group met on a monthly basis. However, any member of the advisory group could request a committee meeting whenever s/he felt it was necessary.

This group not only served the purpose of policy problem resolution but also facilitated good working relationships with many end users. The political advantage of this function is obvious. Yet an additional function served by this group was the creation of information distribution channels to many offices not directly involved in the detail design phase. Many persons outside of the actual development circle were thereby kept informed of both progress and future plans.

Future Activities

At the present time several components of the student information system are under development. In addition, several others are awaiting the allocation of resources for startup. Ultimately the student information system will include the following areas: admissions, registrar, financial aid, public affairs, bursar, and campus life. Following the development of the last component the next task will involve the integration of each of these systems. At that time

the responsibility for coordination of integration will probably fall to a Data Base Manager. This administrator will work in concert with representatives from each functional area. Membership of this group responsible for integration will probably reflect the importance of continuity in staffing. Each representative will most likely be an individual who has served on the conceptual design team, detail design team, and policy advisory group.

SUMMARY

The success associated with this model depended upon a relatively small number of important factors. The selection of operating committees reflected an awareness of both functional responsibilities and the importance of staffing continuity. A common theme present in the composition of the conceptual design team, detail design team, and policy advisory group was the emphasis on user-directed involvement in the system development. Several benefits were accrued as a result of user involvement. First, the resulting system was capable of delivering what had been identified as required functions. Second, the development process caused users to become fully aware of the full complement of intricacies involved in their own operation. Similarly, users became aware of the wide network of interrelationships existing between admissions and thirty other functional areas. Third, participation increased computer literacy on the part of virtually every administrator and support staff member. This was true to such an extent that administrators who previously had no experience with computing systems became capable of initiating investigations of other areas such as text processing to mainframe interface and electronic mail capabilities.

Other nontechnical skills were also instrumental in this development effort. Foremost was the establishment of effective communications with technical support staff and demonstrable awareness of the staffing constraints faced by computing administrators. Success was also dependent upon an awareness of the political realities which exist where limited resources were being competed for. Assuring that the needs of each of the thirty offices requiring data from the admissions system would be met helped to address the concern that there were insufficient resources available to develop six systems concurrently.

System development is an activity which should not be undertaken lightly. It will almost certainly require more time and program-

ming support than was originally planned for. If one assumes that every problem presents an opportunity, there is great potential for the creation of more opportunities than can be reasonably addressed. There is also great potential for professional growth for users who participate in the development effort.

Transfer of Undergraduate Credit: The Quality and Quantity of Credit Accepted for Transfer

KAREN DOYLE WALTON

IN JANUARY 1982, a national mail survey of 1,000 accredited two- and four-year institutions of higher education was conducted to determine the policies, practices, and procedures for transferring undergraduate academic credit and to assess institutional application of computer technology to credit transfer.

SAMPLING PROCEDURE

The population of more than 3,500 institutions was stratified into categories according to:

1. geographic region (northeast, southeast, midlands, west)
2. 1979 enrollment by head count (below 1,000; 1,000-4,999; 5,000 and above).

In order to maximize representativeness, twelve sample subsets (4 geographic regions x 3 enrollment sizes) were drawn randomly from the twelve population subsets in the proportions that the population subsets make to the total population by use of computer-generated random numbers assigned to accredited institutions listed in the *1980-81 National Center for Education Statistics Education Directory, Colleges and Universities*.

QUESTIONNAIRE DESIGN

Slightly different versions of the Computer Assisted Credit Transfer Questionnaire were sent to two- and four-year institutions. The version sent to four-year institutions contained 55 items; the two-year version contained 42 items. The subjects investigated by the survey were:

1. Procedures for Transferring Credit
2. The Quality of Credits Accepted for Transfer
3. The Quantity of Credits Accepted for Transfer
4. Articulation Agreements and Other Course Transfer Agreements

APPENDIX IV

Samples of Formats for Entering and Storing Data in the Computer

SAMPLE - ADMISSIONS SYSTEM DISPLAY

1 - 10										11 - 20										21 - 30										31 - 40										41 - 50										51 - 60										61 - 70										71 - 80									
1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
LAST NAME, FIRST MI.										BIRTHDATE										AGE										UNIVERSITY NAME																																																	
(PERMANENT)										(MAILING)										(GUARDIAN)																																																											
NO. STREET										NO. STREET										NO. STREET																																																											
TOWN										TOWN										TOWN																																																											
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ID#										SS#										GUARD (TP-NAME)										OTHER NAME																																																	
CATEG										ENTER										M/Y										CLASS										DIV 2										MJ HUMNUT										CTZ US																			
SEX										MARIT										VET										SPEC										RES I										FINAID.										VISA																			
ETHNIC										FACLTY										ALTDV										M										TMDV										M																													
STATUS										INT										DATE										LETTER																																																	
1. APP										SYS										/ /										/ /																																																	
2.																				/ /										/ /										CHECKSTOP																																							
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UNDERGRADUATE
 ADMISSIONS
 DISPLAY
 PAGE 1

1/2

SAMPLE - ADMISSIONS SYSTEM DISPLAY.

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1. SAT	11/77	1-66-63	12/05/77
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STUDENT DATA SYSTEM

NAME: [REDACTED]

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STUDENT DATA SYSTEM

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COURSE SUMMARY

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CLASS: 86 MAJ: COMM M

STDNT-ID: [REDACTED]
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STDNT-NO: [REDACTED]
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NAME : AMH UNDERGRADUATE (AU)

CLASS : 86 MAJ COMM M

STUDENT-ID: [REDACTED]

OFFICE REC LOC: D

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STUDENT-NO: 0233356
STATUS: ACTIVE

DEGREE CODE..... 111 BA ARTS AND SCI

MAJOR LINK..... 1

DIPLOMA NAME..... [REDACTED]

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SAMPLE - FOR STORING INFORMATION
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APPENDIX V

"Higher Education: Access"

by

Barbara B. Burn

From International Encyclopedia of Education, Vol. IV, pp. 2179-2185,
Pergamon Press, New York.

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E. Vallance

Higher Education: Access

The subject of access to higher education covers the criteria and requirements for gaining admission to higher education. It also involves much more than these somewhat technical matters. In discussing access one should define higher education, because in some countries people may enroll in higher education institutions who may not have completed secondary school. Some so-called higher education institutions offer courses which are not postsecondary in quality or content. Thus, access to higher education can involve people who have not met normal criteria for higher education admissions enrolling in higher or

posteducation institutions to take courses not of higher education level. For the purposes of this paper, higher education simply refers to education offered by postsecondary institutions.

Access to higher education is significantly affected by socioeconomic factors. The children of those sectors of society which are advantaged in terms of family income, values, and professional status and expectations are far more likely to achieve the necessary qualifications for entry to higher education than the children of less advantaged backgrounds. They are far more likely to have the appropriate secondary-school preparation, needed financial resources, and higher education and career aspirations. These factors affect chances for access to higher education well before applicants take secondary-school leaving examinations or higher education admission examinations. The children of cultural and linguistic minorities may be particularly disadvantaged in these respects.

Another element in access to higher education is international student mobility. Foreign students comprise a small percentage of total entrants to higher education in most countries. Some are among the most qualified, while others seek study abroad because they failed to gain entry into their national higher education systems. Current trends to restrict foreign student admissions threaten to limit study abroad by foreign students. Any assessment of access to higher education should take account of this aspect of the total picture and its future outlook.

This paper will deal mainly with the more technical aspects of access to higher education worldwide, with some comments on admission to higher education by nontraditional students for new purposes, the role of socioeconomic factors in access, and international student mobility.

1. Criteria and Procedures for Access

Around the world criteria and procedures for access to higher education fall mainly into three patterns: (a) successful completion of university-preparatory secondary schooling assures access to higher education (with modifications in recent years to cope with greatly expanded secondary-school enrollments); (b) access depends on higher education entrance examinations; and (c) admission is based on a combination of secondary-school records, achievement and/or aptitude tests, personal references, and other data including work experience. While this three-part categorization may be oversimplified and each pattern has its variations, the following subsections focus on each in turn.

1.1 Completion of Academic Secondary School

In a number of countries, access to higher education, or a sector within it, is traditionally automatic for

young people who successfully complete academic or university-preparatory secondary school. Under this system entry to higher education is in effect determined chiefly by entry to the secondary-school stream which offers university preparatory studies.

This model characterizes the continental European countries and traces its roots to the medieval universities of Spain, Italy, and France, which included cathedral or university-preparatory schools as part of their functioning. Secondary (preuniversity) and university education were linked in a continuum with considerable commonality in teaching staff and curricula. Grammar (Latin) schools became a normal provision of a cathedral with no sharp dividing line between school and university study.

This close linkage of preuniversity and university studies persists today in the access systems of many of the continental European countries and of other countries which follow their model. In both France and the Federal Republic of Germany, for example, students who successfully complete university-preparatory secondary school, the *lycée* and *Gymnasium* respectively, achieve the *baccalauréat* or *Abitur* which in principle guarantee university admission. This was also true in Italy until 1969, when national legislation gave university access to all graduates of five-year secondary schools, not just those coming out of the classical academic high schools or *licei*.

With the quadrupling or more of enrollments in university-preparatory studies in many European countries since 1960, automatic access to university had been modified in order to limit the student influx into the most competitive—and often most expensive—disciplines or faculties. In France, for example, of the various specializations for the *baccalauréat*, some now feed into nonuniversity institutions of higher education, while only those involving concentration in the sciences and mathematics give access to university faculties of science. Admission to the most competitive and elite sector of French higher education, the *grandes écoles*, requires successful achievement in national examinations given after two or three years of special *post-baccalauréat* preparatory classes, admission to which typically requires specializations in science and mathematics for the *baccalauréat*. Under the socialist government consideration is being given to broadening access criteria to the *grandes écoles* to include such factors as creativity and personal characteristics, and to admit midcareer people in public agencies.

In the Federal Republic of Germany for more than a decade entry to the highly competitive fields of medicine, veterinary medicine, pharmacy, and several others has been limited by *numerus clausus* or quotas, and admission is based on grades in the *Abitur* and when it was gained, not merely on achieving it. Recently an admission system based on a combination of scores in newly developed national

aptitude tests, *Abitur* grades, and the length of the period since candidates achieved the *Abitur*, has been implemented for medical studies. A lottery, also now a part of the German system for medical admission, has for some time been applied in the Netherlands to curb or channel access. In short, the tradition of automatic access from university-preparatory secondary school has been significantly modified to restrict or postpone entry in the most competitive fields on the basis of academic record, specialization in preuniversity studies, and the date when they were completed.

Whereas some continental European countries have attempted to restrict access to higher education by imposing new admissions requirements or procedures, as in the Federal Republic of Germany, others have continued to admit all students who in principle are qualified and then fail many of them. Such selection through failure is extremely expensive in financial and human terms. One example is in France, where nearly one-half of the students entering medical studies do not survive their first-year examinations. Another approach is the recent move of the Italian government to impose differential fees geared to family income as a means to discourage students who enroll chiefly to have the benefits of student status but mostly do not follow courses. Open-access institutions in the United States also rely on a high failure or attrition rate to select out the less qualified.

Paralleling these pre- or post-admission selection systems has been an increased diversification in secondary studies, so that fewer students have the common core or base of studies traditionally expected for university preparation. At the same time, postsecondary education has also become more diversified, with the establishment of short-cycle, technically oriented, and other nonuniversity institutions, such as the regional colleges in Norway and *Instituts Universitaires de Technologie* in France. This widening of secondary and postsecondary options now channels students into a range of postsecondary programs and institutions of which the universities are only one category. The combination of student demand for greater choice at the secondary and postsecondary level and the needs of modern industrialized societies for more diversified postsecondary training are thus fast eroding the traditional system under which academic secondary-school studies gave automatic entry to higher education, and higher education chiefly involved humanistic studies, law, medicine, and theology. The unilinear mesh between academic secondary school and higher education, typical of the medieval period with its cathedral schools, is being replaced by diverse vertical paths from new kinds of secondary schools to new kinds of postsecondary institutions. Presumably these developments better meet the needs of contemporary society and the diverse abilities and aspirations of

the increased number of young people seeking higher education.

In countries outside of Europe which adhere to the continental European model, escalating enrollments in preuniversity and university studies have so far mostly not brought the imposition of quotas or other strategies to limit or postpone access to higher education, even though enrollment increases of from three to 10 or more of the age group have severely taxed their facilities. The countries following the continental European model include most of Latin American and the countries of Africa, the Middle East, and Asia which share the continental European tradition. However, there are wide variations in the access systems of these countries, and some have undergone significant modifications since the 1960s.

The Iberian tradition that education should be for the elite—that it should form the cultured humanistic gentleman—has given way to varying degrees in the Latin American countries to the need to harness higher education in the service of national development. New technological institutions are enrolling increasing numbers of students whose secondary studies may have been more specialized and of shorter duration than those offered at the traditional academic secondary schools. Brazil instituted selective admission to higher education in the 1970s, based on secondary-school records and entrance examinations; its access system aims at ensuring quality and channeling students to professional fields needed by the economy. The many private higher education institutions in Latin America, to a large extent targeted to technical and other professional training, range from highly selective to open access in their admissions policies. In general, however, the traditional status system of education persists widely in Latin America, with high student demand for entry to law, medicine, and the humanities, and continued large enrollments in these fields, especially in systems not restricting access to them.

In higher education systems elsewhere in the world which are the product of past cultural penetration by the former colonial powers of continental Europe, the traditional high status of humanistic studies is more and more challenged by new priorities for technological and scientific training. Some of the North African countries have successfully encouraged secondary-school graduates to enter the many new technical institutions set up since the 1970s to meet national needs for a technically trained workforce. In the francophone countries of west and central Africa, early elitist traditions which denigrate technically oriented and applied education still inhibit postsecondary enrollments in these fields. A promising exception to this situation is the development of new "umbrella universities" which seek to integrate technical and traditional studies in a single institution in order to diminish the status gap between them.

1.2 Higher Education Entrance Examinations

A range of factors accounts for the requirement of special entrance examinations in some educational systems or in sectors within them: historical traditions; the centralization—or decentralization—of higher education; national need and authority to restrict enrollments to institutional capacities; or the existence of a planned economy which ties the output of higher education—and hence input or access—to projected needs for a highly trained workforce.

Entrance examination systems vary widely among the countries which apply them. In some the examinations are national, as in Turkey, Thailand, and Greece. In other countries higher education entrance examinations are administered by the individual institutions, as in Japan. It now also has a national entrance examination for all the national and public universities, the Joint Achievement Test. However, these institutions comprise only one-fourth of all higher education institutions in Japan, and the one-fourth accord more weight to their own entrance examinations than to the new test. Modeled on nineteenth century universities in Germany, Japan's national universities substituted entrance examinations for the system of examinations followed in Germany. Because admission to the top national universities assures success in life, their entrance examinations are extraordinarily competitive, giving rise to the phenomenon known as "examination hell."

Entrance examinations are given in some countries on the theory that they assure equal opportunity for access to higher education and hence are democratic. Experience has demonstrated, however, that those students tend to do best in entrance examinations who are able to attend the best secondary schools or whose families can afford to put them in special programs to prepare them for the examinations. Some countries have therefore shifted their policies so that other factors can be taken into account in higher education admission, along with scores in entrance examinations. In Greece, for example, the newly elected government may include high-school records as well as national examination scores in university admission in order to widen access to students whose family background or school preparation militate against their excelling in the examinations. Turkey also may be moving in this direction.

One of the difficulties in some systems of national entrance examinations is the matching of students with academic fields. If admission to the most competitive fields, such as medicine, requires the highest examination scores, and students failing to enter medicine are then put into the field of their second or third choice (as in Turkey), professional frustration may result, affecting students' motivation for their studies and subsequent careers. Conversely, this system may cause the most able students to aspire

to admission to the most competitive fields as a way of proving their ability, even though they may really be more interested in another field.

In some countries which have not followed a system of national entrance examinations, high student demand to enroll in certain fields, especially medicine, has impelled governments to impose special entrance examinations in such fields, as in Brazil. Limiting access to one part of the system can then result in overcrowding the rest of the system unless it is expanded to accommodate increased numbers. This situation developed in Sweden when there was open access to higher education for students passing the *Studentexamen* (academic high-school leaving exam) to fields in which there were no admission quotas.

In the Soviet Union, higher education entrance examinations are administered by the individual institutions and involve oral tests. There, as in other socialist nations, access to higher education has sought to take into account the lesser chances of applicants from worker and peasant backgrounds to do well on national entrance examinations by granting extra points to these applicants. However, in these countries access practices have vacillated between admission dictated more by performance and admission based more on socioeconomic status. Academics have leaned towards meritocratic criteria, while public policy has favored the less advantaged. Experience has shown that the quality of graduates has declined when social status, not performance, has been the major criterion for admission.

In this connection it is of interest that shortly before the Polish government moved in fall 1981 to repress the Solidarity movement, the practice of automatic admission to university of the top graduate of every secondary school in Poland without taking the admission examination was terminated in order to strengthen equal opportunity for access; but the system of giving priority to students from working-class and peasant backgrounds was retained. This development is but one example of the continuing problem in socialist nations of determining an access system which can reconcile the intellectuals' insistence on meritocratic criteria, ideological pressures to favor students of worker and peasant background, and planning requirements for trained workers in different professional fields.

The People's Republic of China is a highly contemporary example of the application of national admissions examinations for entrance to higher education. A centuries-old tradition of examinations to enter the highest reaches of the intellectual professions—examinations which selected the Mandarins to staff China's bureaucracy—was for a decade shelved by the Cultural Revolution. Intellectual achievement and its measures were jettisoned in favor of access for peasants and workers. Extremely competitive subject-based examinations have since

been reinstated which give no special advantages to candidates on the basis of their social or economic background. Only 4 percent of the age group currently are admitted to higher education. In its determined effort to catch up on advances in knowledge elsewhere since the late 1960s, the People's Republic of China is firmly committed to meritocratic criteria to identify and train the cadres needed for an industrializing society.

To summarize, national examinations for higher education access, whether administered by the individual higher education institutions or on a national basis, appear most suited to educational systems which have diversified structures and institutions. In them students who do poorly on admission examinations can still enter higher education, even though in institutions of lesser prestige and with different purposes than the more competitive institutions or fields. Student demand does not build up to become a significant force in society. Systems which allow a second chance to students who fail to gain access to higher education through the admissions examination route, either through lateral transfer from the less prestigious to the more distinguished institutions or fields, or through lifelong learning programs, can more effectively keep demand within manageable limits than those in which failure in admissions examinations forever determines a person's chances in life.

In short, admissions examinations appear to be a crude instrument for reducing, diverting, or controlling access to higher education unless cultural or national traditions ensure their continued public acceptance, or the system gives or appears to give later opportunities to those initially winnowed out. Admission examinations have a longer future in countries where an authoritarian tradition helps assure their acceptance or in a diversified system where the casualties of the admission examination can aspire to future success through another route.

1.3 A Mix of Criteria

Access to higher education on the basis of a mix of criteria characterizes higher education systems, or sectors in them, ranging from the most selective to others which are so flexible as to verge on open access. Systems applying a mix of criteria typically give priority to school-leaving examinations but as only one factor among several, and tend to be those that are modeled on the higher education systems of the United Kingdom or the United States.

Basic to the mixed-criteria approach is the assumption that quantitative measures do not reliably predict success in higher education or in life, and that examinations do not effectively assess such factors as motivation, creativity, and "late blooming." Related to this is another assumption, explicit or implicit, namely that a major role of higher education is to identify and train future leaders in a society, and that

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assessing personal attributes is therefore an important element in the admission process.

The bias of mixed-criteria access systems towards including personal attributes as part of selection probably goes back to the early days of higher education in England before training for the professions became a major objective of the universities. "Gentleman students went to Oxford to learn to be gentlemen—so that 'their reason, fancy and carriage be improved by lighter institutions and exercises, that they might become rational and graceful speakers, and be of an acceptable behaviour in their countries'" (Dore 1976 p. 16).

Selection for admission was introduced at Oxbridge only after the tradition was well-established that students who went to Oxford or Cambridge might thereby gain vocational prospects not otherwise available to them and at the same time retain an elevated status in society. The introduction of honors at these universities in the midnineteenth century was a way to distinguish between students who attended university to obtain the social advantages of having a degree and those who wanted a credential testifying to substantive achievement.

As the concept developed that a basic purpose of the secondary schools (grammar schools) in the United Kingdom was to prepare young people for university studies, university admissibility came to depend in large measure on the successful completion of school-leaving examinations. However, in sharp contrast to the continental European tradition where successful completion of these examinations gives automatic access to higher education, success in school-leaving examinations in the United Kingdom, the Advanced (A') level of the General Certificate of Education (GCE), confers the right to apply to university, but not to automatic admission.

It is ironic that in the United Kingdom, which has neither university entrance examinations nor automatic entrance based on school-leaving examinations, the higher education institutions appear to dictate more to the schools on curricular matters than is true of the other two types of access systems. As the Ordinary (O') level examinations of the General Certificate of Education, taken at the age of 16 in 5 to 10 subjects, in effect became the selection hurdle for secondary-school students aspiring to university (because only those students successfully passing them can enter the university-preparatory sixth form classes), the universities defined their admission requirements to make sixth-form studies more and more specialized. They involve only two or three, occasionally four, subjects to be pursued to GCE A' level. In effect sixth-form studies became a highly specialized preparation for yet more specialization at university, which typically involves only one or two subjects, or more rarely two allied fields. Because the universities specify the A' level specializations required for admission to different fields, they shape

sixth-form offerings. Moreover, because sixth-form studies are almost entirely university-preparatory, O' level examinations, rather than certifying to the achievement of all who take them, label the many who do not pass them as nonsuccesses in the system. It is hardly surprising that efforts have been periodically mounted to diminish sixth-form specialization and to introduce a presixth-form examination which testifies to achievement rather than failure, most recently through the proposed merger of GCE and Certificate of Secondary Education (CSE) examinations in a range of subject fields at the age of 16 plus.

As indicated earlier, the mixed-criteria access approach followed in the United Kingdom has included not just GCE A' level results, but also other factors. Headteachers' letters of recommendation figure importantly, probably more in the most competitive universities and disciplines, and personal interviews of applicants have been part of the system, following the traditional importance given to assessing personal attributes. Applicants' personal statements are likewise important; they cover such matters as career intentions, intellectual and social interests, practical experience, and study abroad, if any. Thus, the combination of A' levels conferring the right to be considered, not the right to access, with other criteria of a relatively subjective nature, gives the higher education institutions considerable discretion in deciding whom they will admit.

The United Kingdom model of access to higher education has been followed in a number of other countries, especially the "old" and "new" Commonwealth nations. Some do not follow the system of highly specialized sixth-form studies, but require successful results in higher or senior certificate school examinations of a range of subjects, usually at least five. There are, however, considerable variations. New Zealand requires 13 years of schooling to enter some disciplines. The State of Queensland in Australia has an elaborate system which combines externally administered examinations, weighted secondary-school grades, and a scholastic aptitude test. In India students enter the 300 or so two-year colleges affiliated with the universities after 10 or 11 years of schooling, and with few exceptions proceed to university studies only after graduating from a college. In Canada the typical requirement is a high-school diploma with a minimum grade level. Ontario requires 13 years of schooling or 12 years for students entering the Qualifying University Year, while Quebec admits to university only those students who obtain the Collegial Diploma from the *Collèges de l'Enseignement Général et Professionnel*. Of the nearly 200 nonuniversity institutions, mostly set up since the early 1960s, some offer study programs after which students may enter or transfer to university programs. Contrasting with the relatively complex system in Canada, in the formerly British countries

of Africa admission follows more closely the system of A' and O' level passes in relevant subjects. Common to the use of most of the old and new Commonwealth countries are external examinations, reliance on ancillary information such as letters of recommendation, and university autonomy in deciding who is admitted.

The United States system for access to higher education is similar to that in the United Kingdom in that it involves a mix of criteria. With more than 3,000 higher education institutions, over one-third being the two-year community or junior colleges, the diversity among this array of institutions requires diversity in access criteria and procedures. It runs the gamut from high selectivity, as at the Ivy League colleges and at veterinary, medical, and law schools, to the first-come, first-served policy for anyone with a high-school diploma or its equivalent, as at the public community colleges, except in fields where demand exceeds capacity, such as nursing. The criteria most relied upon in selective admission to undergraduate study include objective aptitude and achievement tests, high-school records, rank in high-school class, and statements from high-school counselors. The most selective institutions also use letters of recommendation, autobiographic statements by candidates, and, to a lesser extent, personal interviews. Among those higher education institutions which are selective, one can distinguish between those using an "actuarial" approach—combining such objective indices as test scores, high-school grades, and rank in class—and a "clinical" approach which involves a subjective examination of the information in a student's record. The clinical approach is more characteristic of the private and residential institutions, while the actuarial approach is found more in state institutions enrolling large numbers of students.

While few other countries closely follow the American model of access, many have adopted aspects of it. Objective testing of ability and/or achievement is now part of the Federal Republic of Germany's system for medical school admission and for university admission in Queensland, Australia, and was initiated in Ontario, Canada, in the late 1970s. A number of countries have established post-secondary institutions modeled in part on the American community colleges in offering relatively non-selective admission and possibilities of transfer to degree-granting institutions. The whole notion of interinstitutional mobility, a critical aspect of equal opportunity for higher education in the United States, can now be found in a number of countries, although it is fully institutionalized in only a few.

2. *Other Aspects of Access*

Higher education systems in a number of countries have been impelled in recent years towards greater

flexibility in access. Demographic changes, especially the decline in the traditional higher education age group, have prompted many systems or sectors within them to seek new clienteles, especially the "mature" students for whom admission requirements are often very flexible. Countries which want to reinforce the relevance of higher education to society, and to diminish status barriers between university graduates and workers, give advantages in access to persons with work experience, as in Tanzania, Cuba, and some other socialist countries. Pressures to democratize access have in some countries resulted in reducing or eliminating traditional access criteria for various categories of persons; a notable example is Sweden's 25/4 system under which people aged 25 or more with at least four years of work experience but who lack traditional entrance qualifications can enter higher education institutions. The United Kingdom's Open University and its many counterparts in other countries give a second chance for higher education to people lacking conventional entry requirements, both to democratize access and to train and award credentials to talented and motivated "late bloomers." Thus, for a variety of reasons, admission to higher education is becoming more and more possible for nontraditional students.

Despite the dramatic increase in enrollments in higher education worldwide since the 1960s, these increases have not commensurately increased the participation of young people from the lower socioeconomic strata of society in higher education. One observer has remarked that "changes in arrangements for admission aimed at the widening of university access for students from underprivileged social strata have very rarely resulted in a significant increase in the proportion of these students in total enrollments, and especially those for regular full-degree programs: this applies even to Eastern European countries, to the very radical Sweden 25/4 admissions scheme and, partially at least, to the British Open University" (Cerych 1980 p. 2). A class system still characterizes the field of higher education; students from less advantaged backgrounds are much more represented in the less prestigious institutions and in the less competitive fields and remain few in the more selective institutions and in the more competitive fields. As institutions have widened access for the less advantaged students, many have increased their offerings in what is akin to the extension field in the United States, more as an adjunct than as an integral part of their functioning, thus diversifying and, in the eyes of some, diluting the basic character and purposes of higher education.

If the disadvantaged youth who are nationals of a country have vastly less access to higher education in most countries than do the more advantaged, it is not surprising that the children of cultural, linguistic, and racial minorities, immigrants, or "guest workers"

in the country, so far are almost entirely excluded from higher education. This is partly an age factor, especially in Western Europe, as few of the children of foreign workers have reached college age. But they will imminently. However, as few of this youth have pursued school studies which lead to higher education—and many have dropped out well before the end of compulsory schooling—those gaining the qualifications for higher education admission represent an infinitesimal percentage. Should this phenomenon persist, the two-society situation it will produce will be detrimental for national cohesion, let alone such matters as economic productivity and the social health and viability of the countries involved.

International student exchange serves several purposes: to give opportunity for higher education to qualified youth not having this opportunity at home; to offer advanced training to foreign students in fields not available or well-developed in their home countries; to develop and strengthen worldwide centers of excellence which attract the most talented students and faculty regardless of country of origin; and to enable young people in a range of disciplines to have direct experience of another country or culture as part of their higher education careers.

As the student demand for higher education worldwide has escalated since the 1960s and as many countries find they must cut back on expenditures for higher education, more and more of them are limiting access to their higher education systems for nationals of other countries. This takes the form of more stringent entrance requirements, higher fees for foreign students, and quotas on foreign student enrollments. The debate on costs and benefits of enrolling foreign students has intensified, with as yet no solid or compelling data identified to document the advantages and disadvantages of enrolling foreign students. The enrollment of students from one country in the higher education systems of others has more than quadrupled since the 1960s. That the foreign students tend to cluster in the major research universities and in the most expensive disciplines gives increasing urgency to the need to identify and make more widely understood the costs and benefits of enrolling foreign students. Some of the benefits will, however, elude quantification, because they involve enhanced international communication and understanding; the advantages of such factors do not lend themselves to objective measures, but are important to international scholarly collaboration and mutual understanding among countries.

3. Conclusion

This analysis of access to higher education worldwide has attempted to categorize systems under three major typologies: automatic entrance after successful completion of school leaving examination, higher

education entrance examinations, and a mix of criteria. The vastly increased enrollments in higher education around the world make it difficult to label the system of an individual country under only one of these rubrics. The combination of expanded secondary-school enrollments, increased student demand for higher education, the need for education at both levels to respond to more varied societal demands, diversification at the secondary- and higher-education levels to meet these demands, pressures to democratize access and yet to maintain and strengthen quality—these and other forces have resulted in few systems of higher education having a unilinear system of access. The content, modes, and delivery systems of higher education have shifted enormously since the 1960s. Access systems have lagged, but they have changed significantly. In particular, they have had to become more flexible to accommodate the new needs and dynamics; in so doing they have increasingly converged to take account of the new demands, while at the same time honoring the values of the traditional system.

See also. Selection Mechanisms for Entry to Higher Education; School-leaving Assessment and Certification; Prior Life Experience in Higher Education; Universities and Adult Education: Policies and Programs

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B. B. Burn

APPENDIX VI
Samples of Exit Interview Formats

Nonreturning Student Questionnaire

① Name: (please print)

Last First Middle
Initial

② Permanent Mailing Address:

City State Zip code

③ Student Identification Number:

1	2	3	4	5	6	7	8	9	

④ Sex: (Check one)

10. 1 Female
 2 Male

⑤ Race/Ethnic Identification: (Check one)

11. 1 American Indian or Alaskan Native
 2 Asian or Pacific Islander
 3 Black
 4 Hispanic
 5 White
 6 Nonresident Alien

⑥ Age: (Check one)

12. 1 Under 18
 2 18 - 20 years
 3 21 - 24 years
 4 25 - 34 years
 5 35 - 44 years
 6 45 - 54 years
 7 55 years and over

⑦ Please check the number of credit hours completed at this school: (Check one)

13. 1 0 - 5
 2 6 - 30
 3 31 - 60
 4 61 - 90
 5 91 - 120
 6 121 or more

8 a. Please write in what your major/program was when you left this school:

b. Check here if you did not have a major/program. 14-1

FOR OFFICE USE			
15	16	17	18

9 What was your cumulative grade point average at the time you left this school? (Check one)

19. 1.0 or less
 2. 1.1 to 2.0
 3. 2.1 to 3.0
 4. 3.1 to 4.0

10 Were you ever on academic probation while enrolled: (Check one)

20. 1. Yes
 2. No

11 Which one of the following degrees were you seeking at the time you left this school? (Check one)

21. 1. Was not seeking a degree; only registered for selected courses
 2. Associate degree
 3. Bachelor's degree
 4. Master's degree
 5. Professional degree (includes *only* dentistry, medicine, optometry, osteopathy, podiatry, veterinary medicine, law, and theology)
 6. Doctor's degree (e.g., Ph.D., Ed.D., D.B.A.)

12 How long were you enrolled before you left this school? (Check one)

22. 1. Less than one term
 2. One term, but less than one year
 3. One year or more, but less than two years
 4. Two years or more, but less than three years
 5. Three years or more

13 Were you *primarily* a full-time (12 hours or more) or part-time student while you attended this school? (Check one)

23. 1. Primarily full-time
 2. Primarily part-time

CONTINUED ON
REVERSE SIDE

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14 During your last two terms at this school, were you employed in a job for which you received wages? (Check one)

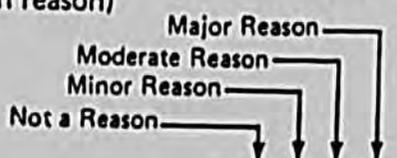
- 1 Not employed at all
- 2 Employed 1 - 10 hours/week
- 3 Employed 11 - 20 hours/week
- 4 Employed 21 - 35 hours/week
- 5 Employed 36 hours or more/week

15 Check all the sources of support you used to finance your last two terms of school.

- 1 a. Full- or part-time work while attending school
- 1 b. Savings
- 1 c. Support from parents
- 1 d. Employer support
- 1 e. Aid from spouse
- 1 f. Grants (Basic Opportunity Grant, Supplemental Educational Opportunity Grant, and others)
- 1 g. Loans
- 1 h. Scholarship
- 1 i. GI Benefits, Social Security, and other benefits

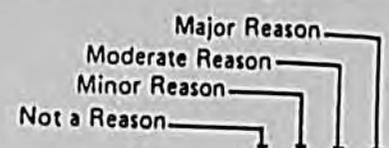
16 Please describe in your own words your reasons for leaving this school.

17 Listed below are reasons why a student might leave school. To what extent are these *your* reasons for leaving this school? (Check one answer for each reason)



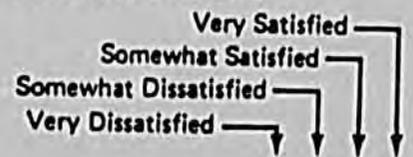
- Academic
- a. Low grades 34.
 - b. Found courses too difficult 35.
 - c. Inadequate study techniques or habits 36.
 - d. Needed a temporary break from studies 37.
 - e. Major or courses not available at this school 38.
 - f. Dissatisfaction with major department 39.
 - g. Unsure about my choice of major 40.
 - h. Course work not challenging 41.

17 continued



- Employment
- i. Scheduling conflict between job and studies 42.
 - j. Accepted a job 43.
 - k. Went into military service 44.
 - l. Couldn't find a job while at school 45.
- Financial
- m. Not enough money to go to school 46.
 - n. Applied, but could not obtain financial aid 47.
 - o. Financial aid was not sufficient 48.
 - p. Child care too costly 49.
 - q. This school was too expensive 50.
- Personal Circumstances
- r. Found study too time-consuming 51.
 - s. Home responsibilities were too great 52.
 - t. Illness, personal or family 53.
 - u. Personal problems 54.
 - v. Fulfilled my personal educational goals 55.
 - w. Marital situation changed my educational plans 56.
 - x. Moved out of the area 57.
 - y. Child care not available 58.

18 How satisfied were you with each of the college services listed below? (If you never used a particular service, check the first column and do not rate the item)



- a. Your overall impression of general education courses 59.
- b. Your overall impression of courses in your major/program 60.
- c. The overall quality of instruction 61.
- d. Availability of courses offered that were of interest to you 62.
- e. The accessibility of instructors 63.
- f. Helpfulness of instructors in assisting you with career plans 64.

19 How satisfied were you with each of the college services listed below? (If you never used a particular service, check the first column and do not rate the item)

		Very Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Very Dissatisfied	Never Used This Service
		0	1	2	3	4
a.	Admissions Office Information	65- <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Registration	66- <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Financial Aid Office	67- <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Student Employment Office	68- <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.	Faculty Academic Advising	69- <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f.	Nonfaculty Academic Advising	70- <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g.	Counseling Center	71- <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h.	Reading, Writing, Math Skills Improvement	72- <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i.	Testing Services	73- <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j.	Career Development/Placement Office	74- <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k.	Cafeteria	75- <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l.	Recreation and Athletic Facilities	76- <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m.	Library	77- <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n.	Health Center	78- <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o.	Housing Facilities	79- <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

20 Please write in the space below the one thing which, if changed for the better, would have encouraged you to stay at this school.

21 What are your current educational plans? (Check one)

- 80- 1 Have already re-enrolled at this school
- 2 Plan to re-enroll at this school within six months
- 3 Have already re-enrolled at another school
- 4 Plan to re-enroll at another school within six months
- 5 Have no plans to attend school within six months



CONFIDENTIAL QUESTIONNAIRE FOR
NON-RETURNING STUDENTS

1. Name _____ Date _____ / _____ / _____
Last First M. I. Month Year

2. Home Street Address _____
City _____ State _____ Zip Code _____

3. Student ID Number _____

6. Civil Rights Category (PLEASE CHECK ONE):
(✓)

4. Date of Birth _____ / _____
Month Year

_____ (1) American Indian or Alaska Native

_____ (2) Asian or Pacific Islander

_____ (3) Black/Negro

_____ (4) Hispanic

_____ (5) White, Other than Hispanic

5. Sex: _____ (1) Female _____ (2) Male

7. Please briefly describe the reasons why you left school.

8. Which one of the following degrees or certificates were you working toward at the time you left school? (PLEASE CHECK ONE)

(✓)

_____ (1) Certificate

_____ (2) Diploma (other than those listed below)

_____ (3) Associate degree

_____ (4) Bachelor's degree

_____ (5) Master's degree

_____ (6) Professional degree (includes only dentistry, medicine, optometry, osteopathy, podiatry, veterinary medicine, law, and theology)

_____ (7) Doctor's degree (e.g. Ph.D., Ed.D., D.B.A.)

_____ (8) Special Student

_____ (9) Other (Please specify) _____

9. How long were you enrolled before you left school? (PLEASE CHECK ONE)

(✓)

_____ (1) Less than one term

_____ (2) More than one term, but less than one year

_____ (3) More than one year, but less than two years

_____ (4) More than two years, but less than three years

_____ (5) Three years or more

10. How many months has it been since you withdrew from school? (PLEASE CHECK ONE)

(✓)

_____ (1) One month or less

_____ (2) Two to six months

_____ (3) Seven months to one year

_____ (4) More than one year

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11. What was your status at the time you left? (PLEASE CHECK ONE)
(✓)

- (1) Freshman
- (2) Sophomore
- (3) Junior
- (4) Senior
- (5) Graduate Student
- (6) Special Student
- (7) Other, _____

12. During the last two terms (or less) that you were enrolled, were you primarily:
(✓) (PLEASE CHECK ONE)

- (1) a full-time student
- (2) a part-time student
- (3) both during the last two terms

13. During the last two terms (or less) that you were enrolled were you employed in a job: (PLEASE CHECK ONE)
(✓)

- (1) Not at all
- (2) 1-10 hours/week
- (3) 11-20 hours/week
- (4) 21-35 hours/week
- (5) 36 or more hours/week

14. Which of the following types of financial aid were you receiving at any time during the last two terms (or less): (CHECK ALL THAT APPLY)
(✓)

- (1) None
- (2) Scholarship
- (3) Loan
- (4) Work-study
- (5) Other

15. What was your cumulative overall grade point average (GPA) at the time you left school (base on a 4.0 system)? (PLEASE FILL IN)

16. Were you ever on academic probation while enrolled? (PLEASE CHECK ONE)
(✓)

- (1) Yes
- (2) No

17. What was your last major? _____

18. How many different times did you change majors while enrolled? (PLEASE CHECK ONE)
(✓)

- (1) Never declared a major field of study
- (2) Never changed majors
- (3) One time
- (4) Two times
- (5) Three times
- (6) Four or more times

19. Listed below are several reasons why a student might not return to school. To what extent are these your reasons for not returning to this school? (CHECK THE APPROPRIATE RESPONSE)
(✓)

Major Reason	Moderate Reason	Minor Reason	Not A Reason
4	3	2	1

Academic

- Low Grades
- Found courses too difficult
- Inadequate study techniques or habits
- Needed a temporary break from studies
- Other, _____

Employment

- Conflict between job and studies
- Accepted a job and didn't need more school
- Went into military service
- Other, _____

Financial

- Not enough money to go to school
- Applied but could not obtain financial aid
- Financial aid was not sufficient
- Child care not available or too costly
- Other, _____

Personal Circumstance

- Found study time too time-consuming
- Home responsibilities were too great
- Illness, personal or family
- Personal problems
- Fulfilled my own personal goals in schooling
- Marital situation changed my education plans
- Moved out of the area
- Other _____

Satisfaction with School

- Overall dissatisfaction with school
- Dissatisfaction with specific aspects of this school
- Other, _____

20. Please check the appropriate box describing your degree of satisfaction with the following aspect of the school you left.

	Degree of Satisfaction					Does Not Apply
	None	Little	Moderate	Much	Great	
A. Counseling/guidance services	___	___	___	___	___	___
B. Academic advising services	___	___	___	___	___	___
C. Library services	___	___	___	___	___	___
D. Employment opportunities	___	___	___	___	___	___
E. Financial aid opportunities	___	___	___	___	___	___
F. Cost of attending this school	___	___	___	___	___	___
G. Enrollment size of this school	___	___	___	___	___	___
H. Rules and regulations at this school	___	___	___	___	___	___
I. Extra-curricular opportunities	___	___	___	___	___	___
J. Intellectual stimulation	___	___	___	___	___	___
K. Cultural opportunities	___	___	___	___	___	___
L. Social opportunities	___	___	___	___	___	___
M. Religious environment	___	___	___	___	___	___
N. Recreational facilities	___	___	___	___	___	___
O. Location of this school	___	___	___	___	___	___
P. Residence/living accommodations	___	___	___	___	___	___
Q. Grading system	___	___	___	___	___	___
R. Course content in your major field	___	___	___	___	___	___
S. Teaching in your major field	___	___	___	___	___	___
T. Amount of contact with your teachers	___	___	___	___	___	___
U. Scheduling of classes	___	___	___	___	___	___
V. Relevance of your major field to your career goals	___	___	___	___	___	___
W. Information given to you about this school before enrolling	___	___	___	___	___	___
X. The school in general	___	___	___	___	___	___

21. What are your current school plans? (PLEASE CHECK ONE)
(✓)

- ___ (1) Currently enrolled in another school; _____
- ___ (2) Plan to attend another school within the year NAME OF INSTITUTION
- ___ (3) Plan to return to this school within the year
- ___ (4) Plan not to return to school within the year

22. If you do not plan to attend school within the next year, or are not currently attending school what are you doing? (PLEASE CHECK ONE)
(✓)

- ___ (1) Entered or plan to enter military service
- ___ (2) Looking for a job
- ___ (3) Working in a job
- ___ (4) Caring for home and/or family
- ___ (5) Traveling
- ___ (6) Not doing anything

PORTLAND STATE UNIVERSITY

Student Questionnaire

Age _____

Sex: male _____ female _____
(0) (1)

Number of dependents (not including mate) _____

4. Civil Rights Category

- _____ (1) Native American
- _____ (2) Asian or Pacific Islander
- _____ (3) Black/Negro
- _____ (4) Hispanic
- _____ (5) White
- _____ (6) Other _____

Please briefly describe the reason why you left school _____

Which of the following were your intentions, as regards PSU, before you decided to leave? (PLEASE CHECK ONE)

- _____ (1) Achieve Bachelor of Science degree
- _____ (2) Achieve Bachelor of Arts degree
- _____ (3) Achieve a Masters degree or PhD
- _____ (4) To build-up credit hours before transferring to another school
- _____ (5) Other (Please specify) _____

How long were you enrolled before you left PSU? (PLEASE CHECK ONE)

- _____ (1) Less than one term
- _____ (2) More than one term, but less than one year
- _____ (3) More than one year, but less than two years
- _____ (4) More than two years, but less than three years
- _____ (5) More than three years
- _____ (6) Attended on and off for last _____ year(s)

What was your class status at the time you left PSU? (PLEASE CHECK ONE)

- _____ (1) Freshman
- _____ (2) Sophomore
- _____ (3) Junior
- _____ (4) Senior
- _____ (5) Graduate or Post-Baccalaureate
- _____ (6) Not sure
- _____ (7) Other (Please specify)

How many hours were you enrolled for your last term at PSU? (PLEASE CHECK ONE)

- _____ (1) 6 hours or less
- _____ (2) 7 to 11 hours
- _____ (3) 12 hours or more

During the last term that you were enrolled were you employed in a job: (PLEASE CHECK ONE)

- _____ (1) Not at all
- _____ (2) 1 to 10 hours/week
- _____ (3) 11 to 20 hours/week
- _____ (4) 21 to 35 hours/week
- _____ (5) 36 or more hours/week

11. If you were receiving any of the following types of financial aid at any time during the last two terms, please check all those that apply.

- (1) Scholarship
- (2) Grant (Basic Economic Opportunity)
- (3) Grant (other) _____
- (4) Loan _____
- (5) Work Study
- (6) Veterans
- (7) Other (Please specify) _____

2. Please fill in your cumulative overall grade point average (GPA) at the time you left school. _____

3. Was your term GPA below a 2.0 your last term at PSU?

- (1) Yes
- (2) No

4. What was your last major? _____

5. How many times did you change majors while enrolled at PSU? (PLEASE CHECK ONE)

- (1) Never declared a major field of study
- (2) Chose a major but never changed it
- (3) One time
- (4) Two times
- (5) Three times
- (6) Four or more times

Are you currently enrolled in another school?

- (1) Yes Where? _____
- (2) No

What are your future school plans? (PLEASE CHECK ONE)

- (1) Plan to continue enrollment at current school (Not PSU)
- (2) Plan to attend another school within the year
- (3) Plan to return to PSU within the year
- (4) Do not intend to return to school within the year
- (5) Plan to return to PSU, but do not know when

If you do not plan to attend school within the next year, or are not currently attending school, please indicate what you are currently doing. (CHECK ALL THAT APPLY)

- (1) Entered or plan to enter military service
- (2) Looking for a job
- (3) Working at a job
- (4) Caring for home and/or family
- (5) Traveling
- (6) Not doing anything
- (7) Other (Please specify) _____

19. Please circle the appropriate position describing your degree of satisfaction with the following aspects of PSU.

	Degree of Satisfaction					Does not Apply	Did not know existed
	None	Little	Moderate	Much	Great		
A. Personal Counseling/Guidance Services	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
B. Academic Advising Services	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
C. Career Advising	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
D. Library Services	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
E. Employment Assistance	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
F. Financial Aid Availability	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
G. Cost of Attending PSU	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
H. Rules and Regulations at PSU	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
I. Enrollment Size of PSU	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
J. Extra-Curricular Opportunities	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
K. Intellectual Stimulation	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
L. Cultural Opportunities	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
M. Social Opportunities	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
N. Religious Environment	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
O. Recreational Facilities	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
P. Location of PSU	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
Q. PSU Housing Accomodations	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
R. Grading System	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
S. Course Content in Your Major	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
T. Teaching in your major	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
U. Amount of Contact with your teacher	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
V. Scheduling of classes	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
W. Relevance of your major to your career goals	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>

Degree of Satisfaction

	None	Little	Moderate	Much	Great		
--	------	--------	----------	------	-------	--	--

Does not Apply

Did not know exists

X. Information given to you about PSU before enrolling	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
Y. The school in general	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
Z. Computing Services	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
A. Health Services	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
B. Parking/transportation	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
C. Evaluation of transfer credits	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
D. Food Services	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
E. Child Care	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
F. Information about administrative procedures	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
G. Veterans Services	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
H. Testing Services	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
I. Student Government	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>
J. Other (Please specify) _____	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>

Listed below are several reasons that a person might not return to school. To what extent are these reasons that you did not return to PSU? (CIRCLE THE APPROPRIATE RESPONSE)

	Major Reason	Moderate Reason	Minor Reason	Not a Reason
<u>Employment</u>				
Conflict between job & studies	1	2	3	4
Accepted a job & didn't need any more school	1	2	3	4
Went into Military Service	1	2	3	4
Other _____	1	2	3	4
<u>Academic</u>				
Needed a temporary break from studies	1	2	3	4
Inadequate study techniques or habits	1	2	3	4
Found courses too difficult	1	2	3	4
Low Grades	1	2	3	4
Developed an interest in a program not offered at PSU	1	2	3	4
Courses and/or instruction inadequate	1	2	3	4
Other _____	1	2	3	4

	Major Reason	Moderate Reason	Minor Reason	Not a Reason
<u>Financial</u>				
Not enough money to go to PSU	1	2	3	4
Applied but could not obtain Financial Aid	1	2	3	4
Financial Aid was not sufficient	1	2	3	4
Child care not available or too costly	1	2	3	4
Could make as much money working now as with degree	1	2	3	4
Other _____	1	2	3	4
<u>Personal Circumstances</u>				
Found studying too time consuming	1	2	3	4
Home responsibilities were too great	1	2	3	4
Illness or injury, personal or family	1	2	3	4
Personal problems	1	2	3	4
Fulfilled my own personal goals in schooling	1	2	3	4
Marital situation changed my educational plans	1	2	3	4
Moved out of the area	1	2	3	4
Transportation	1	2	3	4
Other _____	1	2	3	4
<u>Dissatisfaction with PSU</u>				
Overall dissatisfaction with PSU	1	2	3	4
Dissatisfied with specific aspects of PSU	1	2	3	4

Please indicate your status when first admitted to PSU.

- ____ (1) New freshman from high school
- ____ (2) Transfer from a community college
- ____ (3) Transfer from another Oregon State School of Higher Education
- ____ (4) Transfer from another Oregon college or university (Private)
- ____ (5) Transfer from an out-of-state college or university
- ____ (6) Other (PLEASE INDICATE) _____

KALAMAZOO VALLEY COMMUNITY COLLEGE
FORMER STUDENT QUESTIONNAIRE

1. Name: _____
(Please Print) Last First Maiden

2. Home Street Address: _____
City State Zip Code

3. Social Security Number: _____

4. Sex:

- (1) Male
 (2) Female

5. Race/Ethnic Identification: (Please check one)

- (1) American Indian or Alaskan Native
 (2) Asian or Pacific Islander
 (3) Black
 (4) Hispanic
 (5) White
 (6) Non-Resident Alien

6. Marital Status: (Please check one)

- (1) Single (2) Married

7. Age: (Please check one)

- (1) Under 18 (5) 35 - 44 years
 (2) 18 - 20 years (6) 45 - 54 years
 (3) 21 - 24 years (7) 55 years and over
 (4) 25 - 34 years

THE FOLLOWING QUESTIONS ARE RELATED TO YOUR EXPERIENCES AT
KALAMAZOO VALLEY COMMUNITY COLLEGE:

8. Please check the number of credit hours completed at KVCC.

- (1) 0 - 5
 (2) 6 - 25
 (3) 26 - 61
 (4) 62 and above

9. Please indicate the name of any college or other postsecondary institution you attended before attending KVCC.

10. What was your curriculum/program when you attended KVCC?

11. Did you pass any local, regional or national certification examinations related to your program at KVCC?

- (1) Was not required to take an exam
 (2) Yes
 (3) No

12. Please indicate whether you earned a certificate or degree from KVCC.

- (1) I earned credits without earning a degree or certificate
- (2) I earned a certificate of less than one year
- (3) I earned a one-year certificate
- (4) I earned a two-year Associate Degree

13. Thinking about your experiences at Kalamazoo Valley Community College, please respond to each of the following items. Use a one to five scale where 1 indicates complete dissatisfaction and 5 indicates complete satisfaction.

	<u>Completely Dissatisfied</u>				<u>Completely Satisfied</u>
	1	2	3	4	5
(1) Your overall impression of general education courses.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) Your overall impression of courses in your curriculum.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3) The overall quality of instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(4) Availability of courses offered that were of interest to you.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(5) The accessibility of instructors.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(6) Helpfulness of instructors in assisting you with career plans.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14. The following is a list of support services offered by Kalamazoo Valley Community College. If you check yes, indicate the extent of your use and satisfaction with each of these services.

	DID YOU USE THIS SERVICE?		IF YOU USED THE SERVICE, INDICATE YOUR DEGREE OF SATISFACTION				
	Yes	No	Completely Dissatisfied		Completely Satisfied		
			1	2	3	4	5
(1) Academic Program Planning...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) Career/Vocational Counseling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3) Personal Counseling.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(4) Part-time Job Placement.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(5) Full-time Job Placement.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(6) Financial Aid.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(7) Reading Skills Tutoring.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(8) Writing Skills Tutoring.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(9) Math Skills Tutoring.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(10) Learning Lab.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(11) Cafeteria.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(12) Learning Resources.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(13) Cultural Center Events.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(14) Recreational and Athletic Facilities.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(15) Testing Services.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(16) Foreign Student Services....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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15. The following are statements that reflect the goal of many students who attend KVCC. Please check if this was a goal of yours and then rate how well your experiences at this college helped you reach this goal.

	WAS THIS A GOAL OF YOURS?		Very Much	Quite A Bit	Some-what	Not At All	Can't Tell Yet
	Yes	No					
(1) To get a degree.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) To discover my vocational interest.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3) To prepare for a new career.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(4) To upgrade my job skills.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(5) To meet academic requirements necessary to transfer to a four-year institution.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(6) To attain specific skills that will enrich my daily life....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(7) To improve my ability to get along with people.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(8) To become actively involved in student life and campus activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(9) To increase my participation in cultural and social events.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(10) To improve my self-image.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(11) To meet people.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(12) To improve my leadership skills.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(13) Other (Please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

THE FOLLOWING QUESTIONS CONCERN YOUR CURRENT AND LONG-RUN OCCUPATIONAL PLANS AND ACTIVITIES:

16. What is your current employment status?
- (1) I am employed full-time (35 hours a week or more) (Go to Question 17 and continue)
- (2) I am employed part-time (Go to Question 17 and continue)
- (3) I am not employed but I am looking for a job (Skip to Question 25 and continue)
- (4) I am not employed and I am not looking for a job (Skip to Question 25 and continue)
17. What is your occupation?
- _____
18. Please indicate name of your employer and city where you are employed.
- Name: _____
- City: _____
- Self-employed
19. What are your annual or hour job earnings before deductions? (Gross income)
- (1) Less than \$3,000 per year (\$1.44 or less per hour)
- (2) \$3,000 - \$8,999 per year (\$1.44 - \$4.33 per hour)
- (3) \$9,000 - \$14,999 per year (\$4.33 - \$7.21 per hour)
- (4) \$15,000 - \$20,999 per year (\$7.22 - \$10.10 per hour)
- (5) \$21,000 - \$26,999 per year (\$10.11 - \$12.98 per hour)
- (6) \$27,000 and over per year (\$12.98 or more per hour)

20. How did you learn of this job? (Check the most important source)
- (1) Cooperative education program
 - (2) College placement office
 - (3) Public or private employment agency
 - (4) Newspaper advertisement
 - (5) Direct contact with employer
 - (6) Faculty contact or referral
 - (7) Contact through friend or relative
 - (8) Other: (Please specify) _____
21. How long did it take you to find this job after you left KVCC? (Please check one)
- (1) Was already working in it while enrolled in school
 - (2) Within one month
 - (3) One month to three months
 - (4) Three months to six months
 - (5) Over six months
22. To what extent is this job related to the curriculum/program you studied at Kalamazoo Valley Community College? (Please check one)
- (1) Not related (Go to Question 23 and continue)
 - (2) Somewhat related (Skip to Question 24 and continue)
 - (3) Directly related (Skip to Question 24 and continue)
23. If you are employed outside your curriculum/program, indicate principal reason. (Please check one)
- (1) Never planned to work in that field
 - (2) Could not find a job in that field
 - (3) Decided I did not like work in that field
 - (4) Developed a new career interest
 - (5) Too little opportunity for advancement
 - (6) Studied a field that I am unable to find a job in
 - (7) Other: (Please specify) _____

24. How well do you feel your curriculum/program prepared you for your job? (Please check one)
- (1) Excellent preparation
 - (2) Good preparation
 - (3) Fair preparation
 - (4) Poor preparation. Indicate in what way you were poorly prepared.
- _____
- _____

THE FOLLOWING QUESTIONS CONCERN YOUR CURRENT AND LONG-RUN EDUCATIONAL PLANS:

25. Since leaving Kalamazoo Valley Community College have you participated in other formal educational activity? (Please check any that apply)
- (1) Have enrolled in a degree program. (Go to Question 26 and continue)
 - (2) Have taken courses but am not enrolled for a degree. (Skip to Question 30 and continue)
 - (3) I have not taken any courses since KVCC. (Skip to Question 30 and continue)
26. You indicated you were enrolled in a degree program. Please indicate the name of the institution, the location of the institution, and your current curriculum/program in the space provided below.

Name of Institution	Location	Curriculum/Program

27. Did you experience any difficulty in transferring credits to another college after leaving Kalamazoo Valley Community College? (Please check one)
- (1) No, I did not experience difficulty in transferring.
 - (2) Yes, I experienced difficulty in transferring. If yes, please briefly indicate the nature of the difficulty.
- _____
- _____

28. What degree or certificate are you currently seeking?

- (1) Certificate
- (2) Diploma (other than those listed below)
- (3) Associate degree
- (4) Bachelor's degree
- (5) Professional degree (includes only D.D.S. or D.M.D., M.D., O.D., D.O., Pod.D., D.P., P.M., D.V.M., LL.B., J.D., B.D., M.Div., Rabbi)
- (6) Other: (Please specify) _____

29. How well do you feel your previous education at Kalamazoo Valley Community College prepared you for work on your current degree? (Please check one)

- (1) Excellent preparation
- (2) Good preparation
- (3) Fair preparation
- (4) Poor preparation

Comments: _____

30. Regardless of whether you are going on to another educational program at this time, what is the highest degree or certificate you eventually intend to complete? (Please check one)

- (1) No intention to complete a certificate or degree
- (2) Certificate
- (3) Diploma (other than those listed below)
- (4) Associate degree
- (5) Bachelor's degree
- (6) Master's degree
- (7) Professional degree (includes only D.D.S., D.M.D., M.D., O.D., D.O., Pod.D., D.P., P.M., D.V.M., LL.B., J.D., B.D., M.Div., Rabbi)
- (8) Doctor's degree (e.g., Ph.D., Ed.D., D.B.A.)
- (9) Other: (Please specify) _____

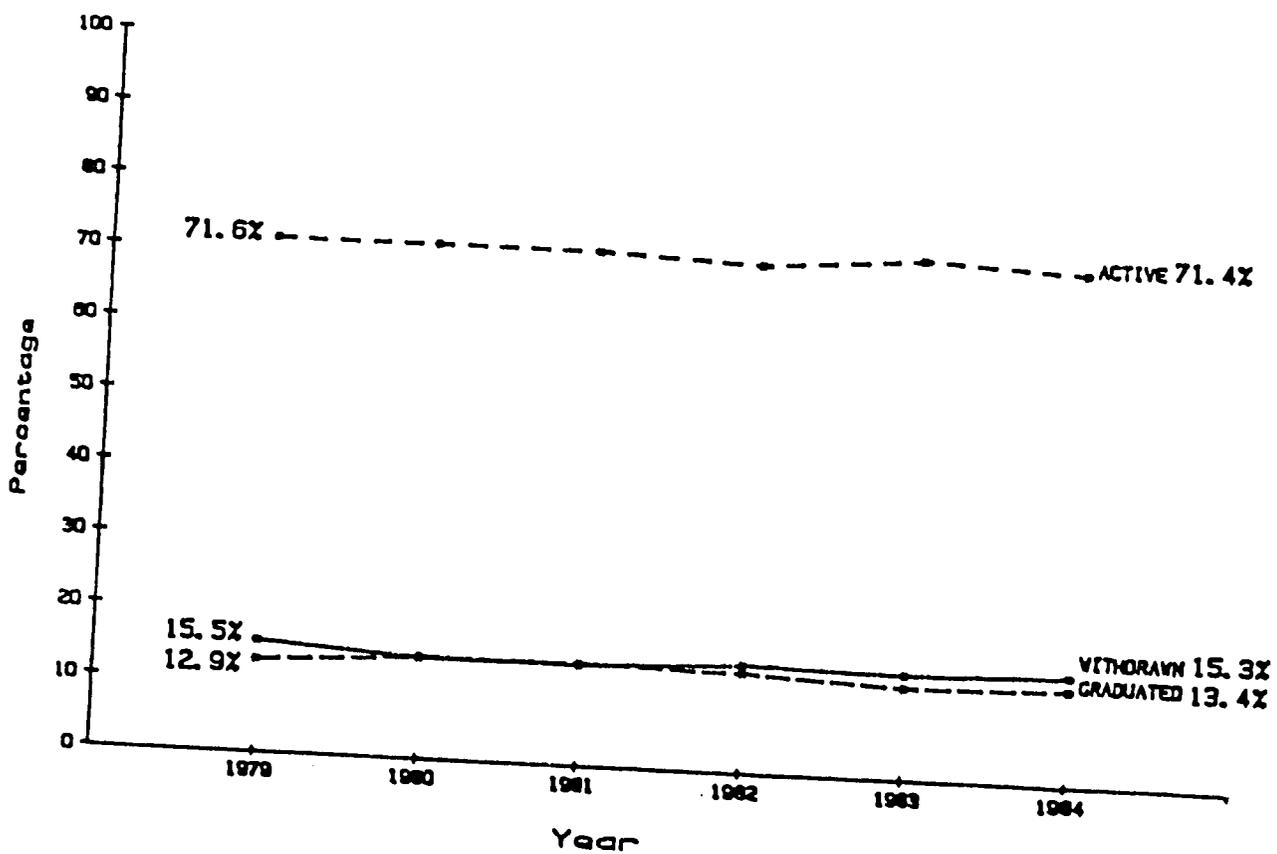
31. What was the most positive and worthwhile experience for you at Kalamazoo Valley Community College?

32. What one suggestion would you have for improving the quality of the educational experience for students enrolled in Kalamazoo Valley Community College?

APPENDIX VII
Comparative Data on Retention

Figure 1

Retention and Attrition at the University of Massachusetts at Amherst:
Spring Semester to Fall Semester, 1979 to 1984

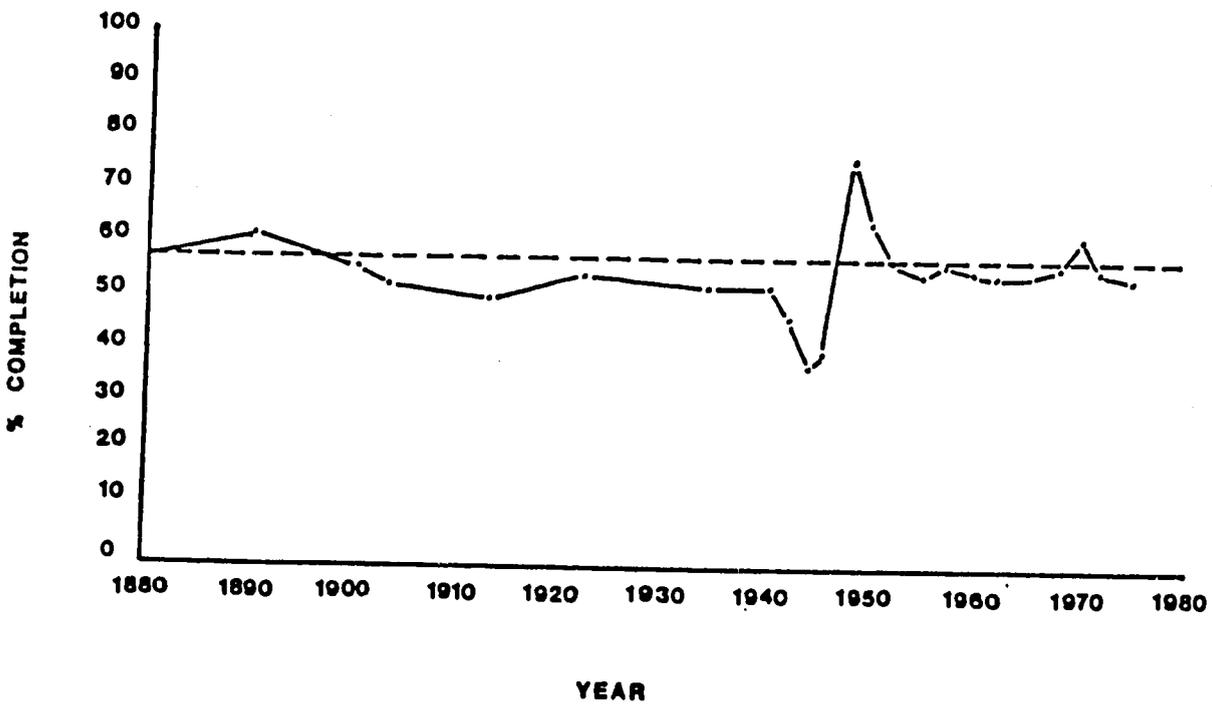


Source: Office of Institutional Research and Planning

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Figure 2

National Four Year B. A. Completion Rates: 1880 - 1980



Source: V. Tinto (1982). Limits of theory and practice in student attrition. Journal of Higher Education, 53, 687-700.

PART II APPENDIX

APPENDIX I

STATE UNIVERSITY OF NEW YORK

PURCHASING REGULATIONS

PURCHASING

Chapters 552-555 of the Laws of 1985 authorize the state university board of trustees to:

- purchase materials, equipment and supplies, including computer equipment and motor vehicles, when the amount for a single purchase does not exceed twenty thousand dollars,
- execute contracts for services to an amount not exceeding twenty thousand dollars,
- contract for printing to an amount not exceeding five thousand dollars,

without prior approval by any other state officer or agency, but subject to rules and regulations promulgated by the state university board of trustees after consultation with the state comptroller. The rules and regulations promulgated by the state university board of trustees shall, to the extent practicable, require that competitive proposals be solicited for purchases, and shall include requirements that purchases and contracts authorized under this section be at the lowest available price, including consideration of prices available through other state agencies, consistent with quality requirements, and as will best promote the public interest.

In addition, the trustees are also authorized:

"to enter into any contract or agreement deemed necessary or advisable after consultation with appropriate state agencies for carrying out the objects and purposes of state university without prior review or approval by any state officer or agency other than the state comptroller and the attorney general including contracts with non-profit corporations organized by officers, employees, alumni, or students of state university for the furtherance of its objects and purposes."

State University believes that the basic procurement objective is to secure the most appropriate materials, supplies, equipment, services, etc., at the lowest available price, consistent with quality requirements and delivery needs. The practice of competitive bidding, whether formal or informal, not only tends to assure reasonable prices, but will guard against favoritism, improvidence and fraud. Therefore, pursuant to the authorizing legislation, the Business Services/Purchasing Flexibility Committee recommends that the State University Board of Trustees adopt the following rules and regulations which would govern State University's purchasing and contract activities.

A. Purchase of materials, equipment and supplies including computer equipment and motor vehicles

1. Purchases up to \$2,500

A campus may purchase directly from a responsible vendor of its choice. While no competitive bidding is required, a campus should take steps necessary to ensure that prices are reasonable.

2. Purchases in excess of \$2,500 but not exceeding \$10,000

A campus must solicit a minimum of three (3) bids from responsible vendors offering such commodity. At the campus' option and depending upon the situation, the three (3) bids may be in the form of either verbal (telephone) quotations, written quotations or sealed bids.

3. Purchases in excess of \$10,000 but not exceeding \$20,000

A campus must solicit in writing a minimum of five (5) bids from responsible vendors offering such commodity. At the campus' option and depending upon the situation, the five (5) bids may be in the form of written quotations or sealed bids.

4. Purchases in excess of \$20,000

At the campus' option, purchases in excess of \$20,000 shall be made in the following manner:

a. Through State University Purchasing Procedures

Where a campus elects to purchase the required materials, equipment, supplies, etc., the campus must:

- (1) consult with the Office of General Services regarding the specific purchase prior to the solicitation of bids; and

(2) solicit in writing a minimum of five (5) bids from responsible vendors offering the required commodity. At the campus' option the five (5) bids may be in the form of written quotations or sealed bids.

b. Through the Office of General Services (OGS)

Where a campus elects to have the Office of General Services purchase the required materials, equipment, supplies, etc., the campus will submit the appropriate information to OGS and request that OGS complete the purchasing process.

5. Purchases over \$2,500 where competition may not be feasible

a. Sole Source Purchases

Where competition may not be feasible due to the sole source nature of a commodity, the campus must be able to justify and document the selection of the vendor and establish the reasonableness of the price. Sole source purchases must be approved in writing by the campus President or appropriate designee.

b. Emergency Purchases

Where competition may not be feasible due to the need for immediate delivery of a particular item or items, the waiver of

competitive bidding requirements must be approved in writing by the campus President or appropriate designee.

6. Purchases from the Office of General Services Term Contracts or from Preferred Sources

At the campus' option, a campus may elect to purchase an item or items from an existing Office of General Services Term Contract or from a "preferred sources" (i.e., Division of Correctional Industries of the New York State Department of Correctional Services and Industries for the Blind of NYS, Inc.) without the need to solicit competitive proposals. However, in instances where a campus has submitted a "filed requirement" with the Office of General Services for a specific term contract (e.g., fuel oil), the campus must honor its commitment to the term contract vendor in accordance with the provisions of the term contract.

7. Purchases from other than the Office of General Services Term Contracts

In instances where an OGS term contract item (identical make, model number, etc.) can be obtained at a price less than that of an existing OGS term contract, the campus may purchase such item from the non-term contract vendor without the need to solicit further competition.

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B. Printing

1. Purchase up to \$2,500

A campus may purchase such items of printing directly from a responsible vendor of its choice. While no competitive bidding is required, a campus should take steps necessary to ensure that prices are reasonable.

2. Purchases in excess of \$2,500 but not exceeding \$5,000

A campus must solicit in writing a minimum of three (3) bids from responsible vendors offering printing services. At the campus' option, the three bids may be in the form of written quotations or sealed bids.

3. Purchases in excess of \$5,000

At the campus' option, printing purchases in excess of \$5,000 shall be made in the following manner:

a. Through State University Purchasing Procedures

Where a campus elects to purchase the required printing, the campus must:

- (1) consult with the Office of General Services regarding the specific purchase prior to the solicitation of bids; and

(2) solicit in writing a minimum of five (5) bids from responsible vendors offering the required printing. At the campus option, the five bids may be in the form of written quotations or sealed bids.

b. Through the Office of General Services (OGS)

Where the campus elects to have the Office of General Services purchase the required printing, the campus will submit the appropriate information to OGS and request that OGS complete the purchasing process.

4. Purchases over \$2,500 where competition may not be feasible

a. Sole Source Purchases

Where competition may not be feasible due to the sole source nature of a commodity, the campus must be able to justify and document the selection of the vendor and establish the reasonableness of the price. Sole source purchases must be approved in writing by the campus President or appropriate designee.

b. Emergency Purchases

Where competition may not be feasible due to the need for immediate delivery of a particular printing item or items, the waiver for competitive bidding requirements must be approved in writing by the campus President or appropriate designee.

5. Purchases from the Office of General Services Term Contracts

At the campus' option, a campus may elect to purchase an item or items from an existing Office of General Services Term Contract without the need to solicit competitive proposals. However, in instances where a campus has submitted a "filled requirement" with the Office of General Services for a specific printing term contract (e.g., college catalogues), the campus must honor its commitment to the term contract vendor in accordance with the provisions of the term contract.

C. Contracting for Services

1. Contracts up to \$2,500

A campus may contract for services directly from a responsible vendor of its choice. While no competitive bidding is required, a campus should take steps necessary to ensure that prices are reasonable.

2. Contracts in excess of \$2,500 but not exceeding \$10,000

A campus must solicit a minimum of three (3) written quotations or proposals from responsible vendors offering such services.

3. Contracts in excess of \$10,000

A campus must solicit in writing a minimum of five (5) written quotations or proposals from responsible vendors offering such services.

4. Contracts over \$2,500 where competition may not be feasible

a. Sole Source Contract

Where competition may not be feasible due to the sole source nature of a service, the campus must be able to justify and document the selection of the vendor and establish the reasonableness of the price. Sole source services must be approved in writing by the campus President or appropriate designee.

b. Emergency Contracts

Where competition may not be feasible due to the need for an immediate service, the waiver of competitive bidding requirements must be approved in writing by the campus President or appropriate designee.