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HIGHER EDUCATION INSTITUTIONS IN THE ARAB STATES:  
A STUDY OF OBJECTIVES AND THEIR ACHIEVEMENT

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## CONTENTS

	<u>Page</u>
Acknowledgements	i
Summary	iii
Chapter One	STATEMENT OF THE PROBLEM AND ORGANISATION OF THE STUDY
1.1	General consideration 1
1.2	The Rationale of the Study 4
1.3	The Methodology of the Study 4
1.4	The Utilisation of the Results of the Study 5
1.5	Organisation of the Study 6
Chapter Two	LITERATURE SURVEY
2.1	Introduction 9
2.2	Review of the Objectives of the Higher Education System 11
2.3	Institutional Goals 14
2.4	Perception of Objectives of Universities 16
2.5	Improved Decision-Making of Institutional Goal Achievement 21
2.5.1	The economic approach 21
2.5.2	Management Science approach 27
2.5.2.1	Resource Allocation Models 28
2.5.2.2	Goal Programming Approach (GP) 30
2.5.2.3	Views on Models' Effective- ness 30
2.5.3	Organisational Theorists Approach 34
2.6	Efficiency and Effectiveness in Organisation 37



	<u>Page</u>	
Chapter Three	HIGHER EDUCATION IN THE ARAB STATES	
3.1	Introduction	41
3.2	Geographical and Demographic Range	42
3.3	Economic and Political Range	42
3.4	The University: Development of the Modern Concept	44
3.4.1	Power and objectives of Universities in the Arab States	45
3.4.2	Demand for Higher Education	47
3.4.3	Availability of resources to universities	49
3.4.4	Physical structure of the universities	49
3.4.5	Criteria of Admission and degrees awarded	52
3.4.6	Staff:Student Ratio	52
3.4.7	Graduate Studies in the Arab universities	55
3.4.8	Libraries	56
3.5	Higher Education in Saudi Arabia and Jordan	56
3.5.1	Higher Education in Saudi Arabia	56
3.5.1.1	Universities establishment in Saudi Arabia	58
3.5.1.2	University objectives in Saudi Arabia	60
3.5.2	Higher Education in Jordan	62
3.5.2.1	University objectives in Jordan	63
3.6	Features of Institutional Governance in Saudi Arabia and Jordan	64
Chapter Four	PREVIOUS STUDIES CONDUCTED ON HIGHER EDUCATION IN THE ARAB STATES	
4.1	General Considerations	70
4.2	The call for changes	72
4.2.1	General Studies	72
4.2.2	Key Studies	76
Chapter Five	METHODOLOGY	
5.1	Concept of Official and Operative Goals	84
5.2	Studies on Measures of Goals Attainment	85
5.3	Measures of Goals Attainment in this Study	89
5.4	Pilot Study	91
5.5	Population of the Study	93
5.6	Layout of the questionnaire	94

	<u>Page</u>	
Chapter Six	DATA COLLECTION AND PROCESSING	
6.1	Selection of Institutional Sample	95
6.2	Selection of the Population Sample	96
6.3	Gathering Responses	99
6.4	Follow-Up Actions	101
6.5	Entering and Processing Data	104
	6.5.1 Steps of Data Processing	104
Chapter Seven	RESULTS	
7.1	Introduction	107
7.2	Data Analysis	108
7.3	Analysis Procedure	109
7.4	Findings of the Study	111
	7.4.1 Objective Areas preferences by universities	111
	7.4.2 Objective Areas preferences by respondent categories	121
	7.4.3 Appropriateness of the measures of progress	125
	7.4.4 Achievement of the measures of progress	149
Chapter Eight	DISCUSSION OF THE FINDINGS	
8.1	Introduction	178
8.2	Interpretation of differences and similarities in objective areas preferences.	178
8.3	Interpretation of the findings with respect to criteria	182
8.4	Comparison of the findings with Romney's findings	183
8.5	Achievement of institutions	184
	8.5.1 Measures indicating strengths	185
	8.5.2 Measures indicating weaknesses	187
	8.5.3 Inappropriate measures	190
8.6	Limitations of the Study	191
Chapter Nine	CONCLUSIONS AND RECOMMENDATIONS	
9.1	Conclusions	192
9.2	Recommendations	193
Bibliography		196
Appendices		204



<u>List of Tables</u>	<u>Page</u>
Table 3.1     Illustrates rate of increase of students in universities or equivalent in the Arab States	48
Table 3.2     General summary to illustrate number of colleges, administrative staff, teaching staff and students by each university in Saudi Arabia	50
Table 3.3     Staff:Student Ratio at Universities in Saudi Arabia 1970/80	54
Table 3.4     No. of books per student in some Arab and British universities	57
Table 6.2.1   Illustrates the breakdown of the selected respondents in each university	98
Table 6.4.1   shows the breakdown of the number of responses in each university	103
Table 7.1     Means and Rank Order of the twenty objective areas among the four universities as rated by the respondents in each university	112
Table 7.2     Two-way analysis of variance for the objective areas with significant F-ratio where $P \leq 0.05$ among the universities.	114
Table 7.3     Objective Areas with significant differences among pairs of universities	119
Table 7.4     Relative ranking of the twenty objective areas by type of respondents	122
Table 7.5     Percentage of criteria with significant differences among the universities in each objective area	126
Table 7.6     Two-way analysis of variance showing signifi- cant differences on the criteria appropriate- ness at $P \leq 0.05$ among the academic rank.	127
Table 7.7     Two-way analysis of variance showing signifi- cant differences on the criteria appropriate- ness at $P \leq 0.05$ among the universities.	129
Table 7.8     Measures of appropriateness with significant differences among pairs of universities as resulting from Duncan's Multiple Comparison Test	141
Table 7.9 /	

	<u>Page</u>	
Table 7.9	The eight measures of progress rated higher by respondents in University C over University A	142
Table 7.10	Measures rated higher by respondents in University C over University B	143
Table 7.11	Measures rated highly by respondents in University D over University A	145
Table 7.12	Measures rated higher by respondents in University D over University B	146
Table 7.13	Two-way analysis of variance showing significant differences on the criteria achievement at $P \leq 0.05$ among the academic rank.	150
Table 7.14	Percentage of Criteria achievement with significant differences among the institutions in each objective area	152
Table 7.15	Two-way analysis of variance showing significant differences on the criteria achievement at $P \leq 0.05$ among the universities	153
Table 7.16	Measures of achievement with significant differences among pairs of universities as resulting from Duncan's Multiple Comparison Test	170
Table 7.17	Measures of achievement rated higher by University C over Universities A, B and D	171
Table 7.18	Measures of achievement rated highly by respondents in University D over Universities A, B and C	172
Table 7.19	Measures of achievement rated higher by respondents in University D over Universities A and B	174
Table 7.20	Measures of achievement rated higher by respondents in Universities B, C and D over University A	175
Table 7.21	Measures of achievement with mix ratings among the respondents of the four universities	176

<u>List of Figures</u>	<u>Page</u>
Figure 3.1 Organizational Chart and decision-making hierarchy at universities in Saudi Arabia	65
Figure 3.2 Organizational Chart and decision-making hierarchy at the University of Jordan	67
Figure 3.3 Organizational Chart and decision-making hierarchy at Yarmouk University	68
Figure 5.1 Example of Romney's Questionnaire	88

<u>Appendices</u>		<u>Page</u>
Appendix 1	Institutional Goals Inventory	204
Appendix 2	Letter of Authorisation from NCHEMS	218
Appendix 3	Questionnaire on Measurement of Higher Education Institution Outcomes	219
Appendix 4	Copy of the letter sent to the President of the universities inviting them to take part in the Study	238
Appendix 5	Thank you letter for those universities accepted to take part in the Study	240
Appendix 6	Draft covering letter to be attached later with the Questionnaire	242
Appendix 7	A copy of the follow-up letter sent by the Supervisor	243
Appendix 8	Analysis of Variance Technique	244
Appendix 9	Duncan's New Multiple Comparison Test	247
Appendix 10	Codes and Description of all variables	251



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Summary

Over the last two decades more attention has been paid by the governments of developed and developing countries to the role of higher education in general and universities in particular. Their major concern is the growing demand for higher education and the growing expenditure of that sector. These two reasons led to an inquiry into the role of higher education institutions, their objectives and their effective use of the resources allocated to them.

The need to achieve better understanding and definition of the role of higher education institutions and effectiveness requires better understanding of the institutional objectives and their measure of achievement by the various constituencies involved in the institutions' activities.

This study aimed to investigate the different objectives and to examine the appropriateness and degree of achievement of measures of a set of institutional goals in four Arab Universities. The study approach used included a literature survey of studies conducted on higher education institutions in Europe, North America and the Arab States and the collection of data by a questionnaire. The population sample represents administrators and faculty members in the four Arab Universities.

Mean scores were used to generate the ranking of the objective areas, in terms of their perceived preferences among the four universities and among the respondent groups.

Also, the analysis of variance technique was used to ascertain which of the objective areas and their measures received divergent views among the four universities and among the respondent groups. The analysis of variance technique was followed by Duncan's New Multiple Comparison test to identify pairs of factors which differ significantly, to help in the interpretation of the findings.

The study revealed that there were differences in respondent ratings of the objective areas, their measures and degree of achievement among the four universities but not among the different respondents categories.

The findings of the study provided the conclusion that: only in some objective areas were priorities perceived differently by the universities and by respondent groups; homogeneity exists among the respondent groups on the appropriateness of the measures and the degree of achievement of these measures; close correlation appears to exist between the ratings of the objective areas and their associated measures; and, finally, there was consensus among the respondents that all universities were performing poorly on the most highly rated objective areas.

The results and conclusions of the study were utilised to draw up some recommendations which might be useful to decision-makers in achieving their institutional objectives.

CHAPTER I

STATEMENT OF THE PROBLEM AND  
ORGANISATION OF THE STUDY



## 1.1 General Considerations

This study has emerged from the growing worldwide concern about the role of higher education institutions in general and universities in particular. Such concern reached a peak in the sixties and seventies, and continued through the eighties, especially among the European nations where, for instance, complex reforms were instituted in the GDR between 1968 and 1970, in France between 1966 and 1969 and in the FRG in 1964. These reforms included university studies and discipline branching, university structures and the management of higher education institutions (see Pomazi, 1984). In the UK and the USA there was expansion but without reforms between 1960 and 1966 (see Altbach, 1979).

Two phenomena stimulated the need for substantial changes in the higher education system in the Western countries: firstly, rapid expansion to meet the great demand for higher education studies which in turn helped to meet the shortage of skilled manpower in the labour market and, secondly, the continuous changes and advances in technology which in turn altered the occupational structures, social behaviour and changed the lifestyles of the people (see Murphy, 1984). However, this rapid expansion was brought to a halt when economic stringency was imposed on the universities and consequently more attention has been directed towards management and accountability.

In this respect it is worthwhile pointing out what Richman and Farmer (1974: ix) claim. They state that universities and colleges are seriously mismanaged and the cause of this is: the nature of their goals, ambiguities relating to power and authority, financial constraints and the kinds of professionals that work for academic institutions. Recently, as financial resources suppliers, governments have been exerting more pressure on universities to provide a better service to meet the needs of society and, at the same time, to maintain a high standard of academic excellence and set their priorities and strategies (Wittrock, 1984). Similarly, Clarke et al. (1984: 26) argue that:

Recently national public policy makers in many countries have been putting pressure on universities to give more emphasis to service society along with the traditional functions of teaching and research.

In addition, in the UK, the SRHE\* (Monograph 49, 1982) have carried out a study on the role of universities and two studies are currently being carried out by DES and the UGC. The first of these is looking at the responses of university management to retrenchment and is under the direction of Professor John Sizer of Loughborough University. The second aims to review the way in which resources are distributed among the universities. Furthermore, both studies are examining the issue of performance indicators as a means of encouraging efficiency among institutions as well as

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\* Society for Research in Higher Education.



improving accountability (see The Times Higher Education Supplement, p.11, 4.1.85).

Clarke et al. (1984) add that the concept of service to society by universities means, in practice, improving the management of publicly funded resources and conducting teaching and research in those areas most likely to assist in the revival of depressed economies and resolving community problems. Consequently, universities in the Western nations have been put under pressure to realign their studies and to define their unidentified objectives. However, all these elements - growth, reforms, mismanagement, definition of objectives, accountability, economic and government pressure - have resulted in the development of a number of professional bodies, especially in Western Europe and North America, to deal with these problems and to exchange knowledge and techniques with regard to resolving them. Examples of such bodies are: The Carnegie Commission, Association for Institutional Research (AIR), National Centre for Higher Education Management Systems (NCHEMS) in the United States; Society for Research in Higher Education (SRHE) in the United Kingdom; Westdeutsche Rektorenkonferenz in West Germany and Centre for Educational Research and Innovation (CERI) based in Paris which covers all the member countries of the Organisation for Economic and Cooperative Development (OECD). Moreover, several journals are now available which serve to disseminate data and new ideas in this

field. For more details see Altbach (1979).

## 1.2 The Rationale of the Study

Throughout the 1960s and 70s, higher education in the Arab States has witnessed a great expansion in the number of institutions and the size of these institutions. This growth was supported by the pouring in of vast amounts of financial resources from the governments concerned. It was felt appropriate to investigate how effectively these institutions are functioning, and to provide empirical evidence on organisational and operational matters. Thus, this study is undertaken as a first step to consider university objectives, perception of priorities, appropriateness of criteria, and to measure the rate of achievement of the objectives in these countries.

The literature survey on universities in the Arab States indicates that very little work in this field has been carried out. Some of those studies that have been carried out will be discussed later.

## 1.3 The Methodology of the Study

In the selected sample of universities in the Arab States, the study will focus on the following issues:

- 1) the importance of each objective area to academic members in the different universities.
- 2) whether there are significant differences as to the appropriateness of the criteria to measure the achievement of objective areas, both among the sample universities and the respondent groups.
- 3) the degree of achievement of each set of criteria listed under the objective areas;
- 4) strengths and weaknesses on achieving their objectives among the sample universities.

#### 1.4 The Utilisation of the Results of the Study

The results should indicate:

- 1) the objective areas which are preferred among the sample universities and also among the respondent groups;
- 2) which criteria are generally agreed to be appropriate for measuring objective areas;
- 3) the unattained objective areas, which will require further investigation in order to find an appropriate remedy;
- 4) evidence of the appropriate usefulness



of the approach as a tool for university management to measure effectiveness and efficiency of their institutions.

### 1.5 Organisation of the Study

This study consists of nine chapters. The first chapter describes briefly the origin, purpose, importance and organisation of the study. The next chapter introduces the literature survey on reforms of the higher education system in Europe and North America; research conducted on the study of objectives, and ways and means of improving decision-making in these institutions.

Chapter three provides a general description of higher education institutions in the Arab States and includes an outline of the geographic and demographic nature of the countries. The objectives of higher education in the Arab States are discussed as is the growing demand for university education institutions and the governance of human, physical and financial resources available to these institutions.

Illustrations of variations among the Arab States with regard to the above elements are provided from statistics wherever available. Also in this chapter, particular attention has been paid to Saudi Arabia and

Jordan.

In chapter four the early initiatives of some researchers who carried out studies on higher education institutions in the Arab States are described. Most of these studies are limited to a particular university in one country.

Chapters five and six introduce the methodology applied and the collection of data in this study. Chapter five being mainly devoted to the design of the methodology used in a pilot test on a sample population which was conducted to obtain feedback on the clarity and the relevance of the questionnaire to the Arab universities. Chapter six gives a brief description of the procedure used to select the sample universities as well as the respondent groups in each university. A summary of the follow-up actions and an analysis of the responses are included. The various stages of data processing and choosing of a relevant computer package for the statistical analysis are listed and the chapter is concluded with details of the pilot test carried out on the statistical package.

The results of the analysis are presented in chapter seven and illustrate the rankings of the objective areas among the four universities together with the ranking of these same objective areas among the respondent groups. Moreover, an analysis of variance is provided to illustrate the significant differences which exist among

the universities and among the respondent groups.

The statistical test used to identify institutions which differed significantly was the Duncan's New Multiple Comparison Technique. The findings of the statistical analysis formed the basis for the discussion, conclusion and recommendations which are presented in chapters eight and nine respectively.

CHAPTER II

LITERATURE SURVEY



## 2.1 Introduction

An organisation is a social system established to coordinate activities of a group to achieve common goals or objectives (Blau, 1968). Various types of organisation have been set up to meet such goals and objectives. Parson (1960) broadly classified organisations into four types: 1) oriented to economic production, such as business firms; 2) oriented to political goals, such as government organisations; 3) integrative, such as courts and political parties; 4) pattern-maintenance, such as churches and schools. Attainment of the organisational goals is associated with the degree of interaction among the groups which comprise the organisational system.

Higher education institutions in general, and universities in particular, are organisations characterised by a wide range of goals. Some of these goals have remained undefined and ambiguous for centuries and, according to Clarke et al. (1984: 26):

Over the centuries of evolution in the university system, the fundamental role has not changed, that is to preserve, transmit and extend knowledge.

However, the definition and accomplishment of university goals and objectives have become central and important issues among organisational theorists, social scientists, economists and institutional researchers in higher education.

As mentioned earlier, higher education institutions in most European countries were affected by two major events: 1) the reform and expansion of the higher education system during the 1960s, with more financial resources being poured into the system, especially the university sector, and 2) the contraction of resources during the 1970s and 80's which had implications for the efficiency and effectiveness of higher education institutions, especially universities. A similar course of events took place in other parts of the world, e.g. Latin America, Eastern Europe and Asia but, in the Arab States, higher education institutions are still in a phase of expansion and have yet to encounter economic retrenchment. However, following the stagnation of oil prices at the beginning of the 1980s, signs of coming constraints can be forecast.

Since it is the purpose of this study to identify the appropriate measures of objectives and achievements of higher education institutions in the Arab States, it was considered that it would be useful to carry out a survey of work carried out in Europe and North America in an attempt to gain insight on the most seemly approach to Middle Eastern studies.

## 2.2 Review of the Objectives of the Higher Education System

It is a fact that, among the Western countries during the 1960's there was a growing demand by both parents and students for more higher education studies. Furthermore, demand by the labour market for more specialised and technically qualified personnel also grew. Thus, during the 1960's the Western European countries addressed themselves to discuss issues of reform and expansion of higher education in their countries (Council of Europe, 1967). In Europe, ancient universities had been established to promote the training of clergymen, doctors and lawyers (Robbins Report, 1963). However, the post-medieval universities in Europe perceived their function as preparing students for professional jobs, promoting the advancement of knowledge and promoting and extending education to university standard, i.e. providing the community with scholars (Clarke et al., 1984).

In the UK these objectives were subjected to a thorough review by the Robbins Committee in 1963 which recommended that the objectives should be redefined and emphasis laid on four main objectives:

Firstly, instruction in skills, suitable to play a part in the general division of labour; secondly, what is taught should be taught in such a way to promote the general powers of the mind; thirdly, is the advancement of learning; and finally, the transmission of a



common culture and common standard of citizenship.

(Robbins Report, 1963: 6-7)

Two decades have now elapsed since the Robbins Committee review and these four objectives, together with the future role of higher education in the UK, have been recently considered by the University Grants Committee and the National Advisory Body. A need for change has been justified because of:

the faster pace of scientific, technological and economic change which the society now experiences and its implications for the types of skill which higher education attempts to inculcate.

(For further details on the discussion see The Times Higher Education Supplement, 14.9.84, for a debate on higher education in England, Wales and Northern Ireland; The Times Higher Education Supplement, 14.12.84 for a debate on higher education in Scotland.)

In the United States the term higher education is used much more flexibly and higher education objectives differ considerably among the vastly different types of institution offer varying levels of course from Liberal Arts to professional, vocational and semi-professional.

A.D. Henderson is quoted by the Robbins Committee (1963) as stating that the University or College role is "to nourish social, economic, political and cultural advancement of the Americans". These are



non-operational objectives.

The Carnegie Commission (1973) re-stated the objectives of higher education as follows:

- .... the provision of opportunities for the intellectual, aesthetic, ethical and skill development of individual students, and the provision of campus environments which can constructively assist students in their more general growth.
- the advancement of human capability in society at large.
- the enlargement of educational justice for the post-secondary age group.
- the transmission and advancement of learning and wisdom.
- the critical evaluation of society through individual thought and persuasion for the sake of the society's self-renewal.

(Report of the Carnegie Commission, 1973: 1)

As mentioned earlier, reforms and changes in higher education objectives were widespread during the 1960s. For instance, in India the Indian Education Commission stated the objectives of higher education as:

to seek and cultivate new knowledge; to provide the right kind of leadership in all walks of life; to provide society with competent men and women trained in various skills, who will also be cultivated individuals imbued with a sense of social purpose; to strive to promote equality and social justice; and to foster in the teachers and students, and through them the society generally, the attitudes and values needed for developing the "good life" in individuals and society.

(Singh, 1973: 53)

Furthermore, in a socialist country like Poland, higher education objectives were reviewed to meet the political

system. Kluczyński (1980: 24-28) summarised these objectives in a socialist society as follows:

(a) There is a need for highly qualified personnel for the national economy and culture, resulting from the current trends and stage of the socio-economic development of the country.

(b) The socio-political function of higher education gives rise to the next group of considerations which determine the planning of its development. One of them is the shaping of socio-political principles and awareness.

(c) Individual needs for higher education increase and become more complex as the level of education in that society and the standard of living rises. These needs will continue growing because of the desire to follow up the development of knowledge and to participate in the country's socio-political and cultural life.

Many other instances such as the above example are cited in the literature.

### 2.3 Institutional Goals

Within the broad framework of higher education objectives defined by the State, institutions formulate their own objectives to pursue: private institutions may differ in their objectives from the State controlled institutions, (as in the USA) those with a technological base pursue different objectives than do the traditional and professional institutions; highly specialised institutions, such as specialist colleges, pursue objectives which differ from those of universities, and so on.

The present study focuses only on universities as institutions of higher education. Watson (1977: 133), in his discussion on types of higher education institutions in Western Europe and the USA in the 1970s, defined the university as:

the major institution in which past experience is transmitted while at the same time it is tested and new knowledge is discovered.

However, a better definition of the term university is provided by Ben-David (1968: 191):

Universities are organisations engaged in the advancement of knowledge; they teach, train and examine students in a variety of scholarly, scientific and professional fields. Intellectual pursuits in universities define the highest prevailing levels of competence in these fields. The universities confer degrees and provide opportunities both for members of their teaching staffs and for some of their students to do original research.

Richman and Farmer (1974: 93) commented on such interdependent relationships, i.e. relationships between objectives and outputs. They stated:

If output is not quantified, how do we really know if we are doing anything useful, or how much we are doing?

They added:

Universities and colleges have this problem. Students are educated; research is profound; and professors may do some university or public service. But at the end of each year, how can we measure achievement of our most cherished goals?

Perhaps the best approach to tackling these problems is to consider the perception and the analysis



of the objectives of universities and this is the subject of the next section.

#### 2.4 Perception of Objectives of Universities

One of the earliest research studies on perception of objectives of universities and colleges was conducted by Gross and Grambsch (1964) in the USA. They surveyed 7,200 administrators and faculty members in 68 universities. The respondents were asked to comment on their perceptions of what the goals of the university were and what the goals should be. The questionnaire consisted of a list of 47 goals. The findings of Gross and Grambsch are summarised by Winstead and Hobson (1971: 670):

They found general agreement that the modern University is among the most important institutions in American society, but consensus on its role and purpose did not exist.

Discussion of these findings is presented in Richman and Farmer (1974).

An excellent study by Baldrige in 1959 surveyed 569 faculty members at New York University. The respondents were asked to rate nine university goals. Baldrige found that all the goals were rated highly, which suggested no clear sense of preferences. Later, Baldrige and others analysed these goals and the faculty subculture that grew up around them. They found that

there were differences among the faculty members in goal preferences when related to various disciplines taught by them and at various levels. For instance, is the faculty member teaching post graduates or undergraduates, professional or vocational programmes, etc. Similarly, differences among the faculty members on research include basic research, applied research etc. Moreover, staff in the same field such as Biology, Physics or Economics often had different individual goal preferences. It was thus apparent that conflicts arose in universities among the faculty members over the goal system due to subculture prejudice or bias.

The above study has been criticised by Richman and Farmer (1974) who claim that the goals were stated in a very general way and most of them are difficult, if not impossible, to quantify. Also, not much attention was paid to student performance.

Another comprehensive survey was carried out by Peterson (1973) on 116 higher education institutions in California. Peterson focused on 20 goals, 13 of which were related to output goals, i.e. the basic goals which the institution ought to achieve, e.g. academic development, intellectual development, vocational preparation etc. The remaining 7 goals were related to process goals on which the effective functioning of the organisation depend and which must be formulated by the management, e.g. innovation, planning and organisational climate. He also made use of

90 goal statements related to the basic 20 goals (in a format similar to that presented in Appendix I).

Respondents were asked to rate on a five point scale, the current importance of each of the goal statements and the importance that each should receive. His sample consisted of faculty members, administrators, regents, trustees, chief executives and students.

A summary of Peterson's findings is as follows:

1. The study revealed that there were significant disagreements on some of the objectives among the various constituencies; e.g. students at the University of California emphasise the "should be" individual personal development and academic innovation and change, than the faculty did. Also the study revealed a considerable agreement among the institutions and constituencies on "should be" goals rather than on "is" goals, e.g. intellectual orientation and healthy climate on campus.
2. The basic goals, involving output and process goals of the various types of institutions, must be operationalised if they are to be pursued effectively and efficiently. They must also be evaluated, measured and verified in concrete ways by subgoals.
3. Interests of students and the interests of the economy and efficiency will be best served by different institutions pursuing diverse goals.
4. Communication by campus officials with lay people will help understanding and acceptance of institutional goals.



In a review of the foregoing studies and other similar studies and in the light of personal discussion with people interested in this field and personal experience, Richman and Farmer (1974) have suggested a theoretical conception of goals and priorities of higher education institutions. However, they admit that empirical evidence is required for verification. They list 31 common goals pursued by higher education institutions, arranged in five basic categories: programme goals; student impact goals; faculty oriented goals; institutional and administrative goals; and goals related to the outside world. They did not differentiate between outcomes and process goals as did the previous studies. All these goals are treated as results, outcomes or outputs of institutions. For more details refer to Richman and Farmer (1974: 109-125).

An interesting study which has generated considerable interest among researchers in higher education is that which was carried out by Romney (1976). Romney investigated preferences of objectives of higher education institutions and examined the appropriateness of measures of progress for each objective. His list of 20 objective areas was based on the Institutional Goals Inventory (IGI) developed by Educational Testing Services (ETS), Princeton, in 1973. The Inventory described 20 objective areas for all types of higher education

institutions in the United States. Under each objective area, the goal statements which made up that objective area were listed. Further discussion will follow later in the study.

Romney surveyed 1150 people in 45 universities and colleges. His sample was drawn from six different types of institution and it includes faculty members, administrators and trustees. He summarised his findings as: "Goal and measure preferences generally varied across the institutional types, not among trustees, faculty and administrators" (p.6). Further references will be made to his findings later.

Given the aforementioned studies, and assuming the institutional objectives are clearly stated, set up in a form of priorities and well operationalised, there still remain the questions of how the institutional management improved decision making. What techniques can be used to achieve the best possible outcomes? Probably there are no direct and simple answers to these questions, but attempts have been made to help decision-makers solve these issues, and these will be explored in the next section.



## 2.5 Improved Decision-making for Institutional Goal Achievement

Making a decision involves choosing a course of action from several alternatives leading to the achievement of the desired objectives. Therefore, an institution's management must choose what course of action to follow to attain the institution's objectives. Important elements in decision-making, however, are the amount of information and data available to the decision-maker. Higher education institutions are known to store vast quantities of information and data, e.g. student inputs, students in each course, in each year, in each degree, staff number by categories of degrees, academic rank, part- or full-time, space availability, timetabling, etc. The availability and accuracy of this information and the data may aid the production of the best decision. Accordingly, several approaches have been developed with the aim of improving the decision-making process in higher education institutions. Among the most common approaches are: economic, management science and organisational theorists' approach. Each of these is discussed in turn in the following subsections.

### 2.5.1 The economic approach

The economic approach to the decision-making process is based on minimising the total cost of producing any

desired outputs or combination of outputs. The early two approaches developed by the economists are the Cost-Benefit Analysis approach and the Cost-Effectiveness approach. Cost-Benefit Analysis, as defined by Blaug (1983: 21):

consists of a systematic comparison of the quantifiable costs and benefits of an activity, hopefully expressed in monetary terms.

He added:

We can quantify the costs of higher education and we can even quantify some of its benefits.

Psacharopoulos (1980) prepared an excellent study on the application of the Cost-Benefit Analysis approach to higher education in developing countries. The purpose of the study was to take a close look at the socio-economic rationale of higher education provision in developing countries. This study addressed the following questions: How does the economic pay off of expenditure on education compare with that of other sectors in a variety of country settings? Also, how do the different fields of university specialisation compare in terms of net economic rewards? The study comes to some interesting conclusions, with the main conclusion being:

The high correlation between technical education and economic development does not necessarily mean that the former was a cause of the latter. Psacharopoulos (1980: 64)

The second approach, the Cost-Effectiveness approach, is where the specified objectives are accomplished with the least cost.

From the educational point of view, Blaug (1970) has emphasised the point that:

education serves multiple objectives, some of which involve "benefits" that cannot be measured in units directly comparable to the resource costs of education. (p.21)

He suggests that these unmeasurable units, such as social, cultural and political goals, must somehow be stated and given weighting relevant to the "output" of the educational system. Nevertheless, in contemplating the problem of combining inputs within educational institutions, Blaug rejected the general rule laid down in economic textbooks to the effect that inputs should be allocated with maximum efficiency to achieve given ends. But defining your objectives if possible is very worthwhile.

What follows are examples of studies of economic approaches directed towards improving the decision-making process at universities to meet their objectives.

Economists distinguish between inputs and outputs in universities as follows:

1. Inputs include:

a. Human resources, such as academic staff classified according to their qualifications, academic titles, part- or full-time; then academic related staff such as librarians and technicians; and, finally, non-teaching staff such as janitors, drivers, cleaners. All these are measured by the outlays on their salaries.



The quality of inputs here are affected by age qualifications and number. Students are also considered as inputs and are valued in terms of earnings foregone. This again is affected by the number of students.

b) Physical resources: includes buildings whether expressed in rent or rate of depreciation; capital equipment, e.g. computers, microscopes, books in the university library, etc. and consumable materials e.g. fuel, chemicals and stationery.

2. Outputs include:

a. Graduate students with various degrees, and the number of Ph.Ds awarded.

b. Production of research and its quality. This measure of output is treated by some writers in terms of the number of papers published and by others as the number of citations of a paper by other writers in the field (Barton, 1957).

c. Publications by university staff, i.e. other than research papers.

d. services provided by the staff whether through consultations or actual involvement in solving problems of major interest to the society. Again, this output measure depends on the rating of quality of performance of services (Barton, 1957).

For more details on this approach see Bowen (1980), Verry & Davies (1976), Pickford (1975), Richman & Farmer (1974), Blaug (1970) and Barton (1957).



Accordingly, several studies on cost-effectiveness have been organised by the Centre for Education Research and Innovation (CERI). These studies were carried out over the period 1970-71 in eight universities in the member states of the Organisation for Economic Cooperation and Development (OECD). Two of the studies centred on cost-projections and cost-effectiveness.

The first of these studies was conducted by Simpson et al. (1972) at the University of Lancaster and was concerned with the issue of recurrent expenditure and the role of the department in participating in University planning. The study concluded with the suggestion that there should be an undergraduate teaching loads model and a future cost of staff salaries model.

The second study, undertaken by Bottomley et al. (1972) examined the cost of teaching undergraduate students in different courses and the potential economies of scale together with an analysis of marginal costs. Their findings suggest that - because of the scale of economies - a reduction of teaching cost per student could be attained by increasing the number of students enrolled in each course. In addition, economies of scale do exist through the use of academic staff and university buildings. Bottomley et al. also

developed simple cost models such as an academic staff model and a building model.

On the same lines of the above studies, Pickford (1975) conducted a study at Sussex University in 1972-73, finance for the research being funded by the Leverhulme Trust. His findings supported those of Bottomley et al. but he emphasised that:

the economies of scale available with expansion are only potential economies unless the individual universities are given a sufficient incentive to achieve them. (p.4)

A similar important contribution to research in this field was made by Bowen (1980) in his study carried out in the United States.

A modified version of economic approach is the use of planning-programming-budgeting system (PPBS) technique which was developed at the University of Toronto during the 1960s. This technique can be used to examine the cost and efficiency in educational planning at various institutional levels. For example, it was applied in California State College to develop a five year budget for a growing State College adding an engineering curriculum. Application of this technique requires planning of the programming, budgeting of each programme and control. Full details of this technique are presented in Hussain (1976).

### 2.5.2 Management Science approach

Another approach to improving decision - making in universities was that of management science through the use of mathematical models. Smith (1970) defined the mathematical model as "a form of series of mathematical equations which express the way in which one part of the system is related to other parts." (p.3). A mathematical model might represent an aspect of one activity in the system and need little data, or it might represent a series of related activities in the system that requires vast amounts of data. Examples of the first kind are simple models such as faculty appointment and promotion rate models, teaching load models, student aid models and space allocation models. Examples of the latter are complex models such as resource allocation models. An excellent survey of the development of the simple and complex models with critical analysis, both in the UK and elsewhere, is presented by Ball (1977). Furthermore, a detailed discussion on the philosophical and methodological problems on the use and building of these models is presented by Hopkins and Massy (1981). Also, a considerable amount of work has been accumulated by Hussain (1978) on the design and implementation of resource allocation models at the institutions of higher education, both in Western Europe and North America.



Some institutional researchers have recently become interested in finding out the degree of success and effectiveness of implementation of planning models in several universities. Mims et al. (1983) examined the factors which influence the different degrees of effectiveness and utility of the planning model at the University of Michigan and the Western New Mexico University. These two universities adopted the same rational planning model which was developed by the University of Michigan. They found that:

While the model served some of the planning needs at Western New Mexico, it did not fit well with the planning needs at Michigan. Whether the same lack of fit applies to all rational models of this type is not clear, but at least some of the basic assumptions implicit in rational systems are incogruent with conditions at large institutions with multiple purposes, many constituencies and constantly shifting internal and external pressures. (p.42)

In the interests of brevity and to avoid the lengthy mathematical treatise which is beyond the scope of this study, a summary of some of the most widely used models in North America and Europe is sufficient for the purposes of this study.

#### 2.5.2.1 Resource Allocation Models:

1) Resource Requirements Prediction Model (RRPM) was developed by the National Centre for Higher Education Management Science (NCHEMS) after an earlier model by George B. Weathersby (1967).



2) Comprehensive Analytical Methods for Planning in University System (CAMPUS) developed at the University of Toronto, Canada, in the mid 1960s with the help of Ford Foundation.

The above models are "variously utilised for the management of many American Universities" (Hecquet and Jadot, 1978:157).

3) Higher Education Long-term Planning (HELP) developed by Midwest Research Institute in the United States.

4) System for Exploring Alternative Resource Commitments in Higher Education (SEARCH) developed by Peat, Marwick, Mitchell & Co., is utilised by private colleges in the States.

5) Hochschul-Informations-System (HIS) developed for German Universities in the early 1970s by HIS GmbH.

6) Total University Simulation System (TUSS) developed at the University of Utrecht in the Netherlands in 1970.

7) Model of Simulation & Allocation of Resources (MSAR) developed in Portugal in 1973 and 1974.

8) Générateur de ressources normatives (GERN) developed by the Service d'Etudes of the Université Catholique de Louvain in 1977.

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For a description of the logic of HIS, MSAR, TUSS and GERN models, see Hecquet and Jadot (1978).

9) TRADES, "an interactive computer model called TRADES for assessing financial tradeoffs among its primary planning variables" (Hopkins and Massy, 1981: 69). It was developed at Stanford University between 1973 and 1974 and is utilised by this university.

#### 2.5.2.2 Goal Programming Approach (GP):

This is an optimising approach built to handle decision problems characterised by multiple goals with subgoals (Lee and Moore, 1972). Application of this approach is usually confronted by goal preferences which have to be explicitly stated, but, nevertheless, it is an important approach since it allows specific objectives to be taken into account. The approach has been applied in a College of Business in the United States as a resource allocation planning model, then applied to university admissions decision process in order to determine the number of students to be admitted to each course within the available resources. The model was first developed by Walthan (1971).

#### 2.5.2.3 Views on Models' Effectiveness

As mentioned earlier, models are means to aid decision-makers to choose the best alternative action to achieve certain goals or objectives. The merits of utilising these models has been the subject of argument by many writers and researchers. Mayo and Kallio (1983: 6) have focused on the problems that derived from the use

of models. Their study was built on the use of cost-curriculum models in three different health science schools at the University of Michigan. Their findings are summarised as follows:

Analytical models can be integral and effective components of the decision support systems of college and university administrators. To facilitate their use, three areas of concern need to be addressed by persons sharing the responsibility for introducing, developing, and implementing a model in a particular setting. These factors are:

1- Model's technological aspects must be appropriate to the decision, feasible in terms of practical considerations, and of demonstrated feasibility.

2- Human factor issues need to be considered including the cognitive style of the individuals receiving the model results, the political climate and managerial decision-making traditions of the organisation, and the role of the consultant.

3- The role of the model in the decision process must be understood - that is, at what stage it will be used, how it will be used and by whom.

Morris and Brown (1974) focused on another angle of the effective usage of mathematical models, that is the difficulty of measuring the outputs. They claim that:

The use of mathematical models implies a need for the development of a useful output measures of a university in order to relate these measures to effectiveness and ultimately to controllable variables. (p.133)

While Hopkins and Massy (1981), with their involvement in the context of the decision-making problem experienced



at Stanford University during the 1970s, believe that:

quantitative planning models when appropriately designed and applied, can be of great use in aiding us to make decisions of fundamental academic importance. At the same time, we are wholeheartedly opposed to the notion of quantitative modelling as a substitute for the kind of qualitative decision-making that is the essence of academic leadership. (p.1)

Fielden (1973: 1) "on reviewing the application of the PPBS approach" claimed that the five concepts associated with a conventional planning framework prove to be neither feasible nor sensible in a contemporary university. These concepts are: 1) Identification of university goals and statement of objectives to achieve these goals; 2) Overall planning should be viewed, taking into account its effect on society and other departments and organisations; 3) Clustering of activities into programmes to meet certain objectives and provide measures of achieving these objectives; 4) Emphasis on vigorous analysis of the alternative options for undertaking programmes; 5) Gauging the success of achieving the university objectives, through established linked budgets and plans.

Disputing the relevance of the above five concepts Fielden stated that the first concept, related to creation and agreeing hierarchical objectives and sub-objectives, would limit flexibility and autonomy of the university. The second concept related to university expenditure which must be justified in the context of other national



programmes. The third concept related to programme objectives and these programmes could be of little or no value unless the institution has simplified and defined objectives in certain areas.

In the fourth concept, he emphasised the need for ad hoc analysis to avoid the risk of losing feedback on results and effectiveness, instead of the incremental analysis. The fifth concept, related to gauging the achievement of university objectives, needs more clear definition such as whose objectives? What is the time scale? What weights are given to the various measures?

The author of the present study believes that the advantage of using planning programming budgeting system (PPBS) techniques is to help to identify accurately what has been achieved and its cost.

In this respect, Blaug (1970) advocates the use of planning programming budgeting by saying that:

The introduction of programming budgeting must lead to more delineation of goals and may provide an acceptable framework for formulating educational decisions in terms of accomplishing stated objectives.

He added that:

It is a process which formulates objectives in meaningful and concrete terms, analyses the alternative means to accomplish these objectives, calculates the costs of all the alternative inputs involved, assigns the priorities to the various objectives and then maximizes the value of this "objective function" subject to budgetary constraints.

(p.284)

The foregoing discussion led to a new form of study addressed to the improving of decision-making, that is the establishing of criteria for achieving the objectives, and we now come to the role of the organisational theorists.

### 2.5.3 Organisational Theorists Approach

Organisational theorists have been involved with the issue of improving decision-making in institutions of higher education and the measuring of the achievement of organisational goals from different angles. The pioneering work in this field, especially in the UK and Europe, was coordinated by CERI in 1971. Their first study, conducted by Rivett et al. (1974) at Sussex University, had as its main purpose the investigation of the effectiveness of the existing administrative structure of higher education institutions in eight universities in Europe, and the identification of measures of effectiveness. The terms effectiveness and efficiency will be discussed in more detail later.

The design of the study was based on two approaches:

- 1) System Approach: which considers an education institution as a single system operating within an external environment which imposes certain constraints upon its operations.
- 2) Behavioural Approach: which depends on the isolation of some factors which relate to attainment of

the organisational goals.

The team conclude their study by suggesting 26 measures related to administration effectiveness and structure of higher education institutions. These measures were grouped into four categories namely: general, environmental, structural and effectiveness measures. For details of the study see Rivett et al. (1974).

Another study carried out by Yokoo et al. (1975) at Hiroshima University in Japan in 1973, again as a part of the CERI programme, aimed to:

investigate patterns and practices of the decision-making process in institutional management in Japanese higher education institutions, from the perspective of the relationship between "democratisation" and efficiency. (p. 2)

In their concluding remarks, Yokoo et al. call for greater participation in the decision-making process, especially by the junior faculty members.

A third study sponsored by CERI/OECD, was conducted by O'Donoghue et al. (1974) at Trinity College in Dublin in 1974. The study was aimed at investigating the cost of decision-making, e.g. committee structure, time and money consumed in the process. Part of their findings, which is a well known fact, was that the main cost of participation in decision-making results from its time-absorbing nature and secretarial costs. However, an important result in



their findings was that 40% of the total time spent by full professors is on administrative activities (including both administrative and academic committee meetings), which was at the expense of research and teaching. Moreover O'Donoghue et al. speculated that the percentage of university expenditure spent on making decisions by academic staff and administrators could well be nearer 4½ to 5% or more of the whole University budget. For details of this study, refer to O'Donoghue et al. (1974).

The outcomes of the previous studies seem of very limited value because effectiveness of the administrative structure and cost of decision-making require considerable information on group interaction and skills in ideas generation as well as a selection of people to participate in the process of decision-making, which all the previous studies lack.

Smith and Norris (1974), in their investigation of indicators of performance of committees, suggested examination of the following measures:

- 1- Terms of reference of committees.
- 2- The appropriate composition of skill, experience etc. for a committee.
- 3- Relevant information required by the committee.
- 4- How quickly, accurately and timely decisions are made.
- 5- Work down structure, i.e. vertical communication.



6- Network analysis structure, i.e.  
horizontal communication. (p.18).

## 2.6 Efficiency and Effectiveness in Organisations

Having described the various approaches aimed at improving decision-making of the institutional management, there remains the problem of efficiency and effectiveness of the whole institution. Several efforts have been made by organisational theorists to formulate an acceptable definition for both efficiency and effectiveness of the organisation. Almost all of them have failed to consider the quality of education in setting appropriate criteria for the evaluation of efficiency and effectiveness in higher education institutions.

Details of the first attempts in this area by Barton (1957), Georgopolus and Tannenbaum (1957) and Perrow (1957) are presented by Etzioni (1964) and Price (1968). These studies were all carried out in the USA and were concerned with profit and non-profit making organisations.

However, the terms efficiency and effectiveness are sometimes used interchangeably, but most of the authors distinguish between the two terms as shown in the following sample of definitions. Szczepanski (1980)

defines the two terms as "efficiency denotes the state of people or institutions, effectiveness is the actual result of its functioning" (p.41). Norris (1978; 2) defines the terms as "effectiveness is doing the right thing while efficiency is doing the thing right".

Bowen (1980) linked efficiency with the relationship between two variables, the input and the output, or the resources and outcomes but did not define effectiveness. In defining efficiency, he stated:

The degree of efficiency in any human undertaking is discovered by comparing means and ends. It is measured as a ratio between the two. The greater the ends achieved with given means, or the fewer the means used to achieve given ends, the greater the efficiency.

(p.230)

Fielden and Lockwood (1973) preferred to use the term efficiency in their study at the University of Sussex: "not as a ratio of inputs to outputs but to mean the degree of success in achieving the desired aims whatever they may be". (p.24). Yet that definition is considered by some writers as effectiveness.

Calvert (1979: 65) quoted Romney et al. (1978):

They defined efficiency as the relationship between resources used and outcomes produced; and effectiveness as the relationship between outcomes produced and the objectives which led to those outcomes.

As far as the methodology used to provide quantitative and qualitative evidence for efficiency and effectiveness is concerned, both Cameron (1978) and Zammuto (1982) have identified four approaches. Each

of these authors has critically analysed the four approaches but, for the purposes of this study, a brief description of the approaches will be sufficient.

- 1) The goal approach: defines effectiveness as the extent to which the organisation accomplishes its goals (both operative and official goals) (Etzioni, 1964; Price, 1964; Campbell, 1977; Scott, 1977). This approach puts more emphasis on the rate of achievement of the stated goals and verification of its operationalised subgoals.
- 2) The system resource approach: defines effectiveness in terms of the ability of the organisation to exploit its needed resources from the environment (Yuchtman and Seashore, 1967). Much emphasis is placed on the inputs; the more resources obtained from the external environment, the more effective is the organisation.
- 3) The process approach: here effectiveness is defined in terms of the organisational procedure or internal organisational health. This approach associates effectiveness with high morale, absence of strain and easy communications, both horizontally and vertically. Advocates of this approach are Pfeffer (1977) and Steers (1977).
- 4) The strategic constituencies approach or the participant satisfaction approach: defines effectiveness in terms of degree of satisfaction among the constituency



groups such as: resource supplies; product or service users, various groups in the organisation. The more the organisation responds favourably to the demands of such groups, the more it is effective.

The conclusion that must be drawn from the previous discussion is that measurable criteria need to be formulated to assess the achievement of the institutional goals whatever approach is used. In this context, Romney (1976) has developed a set of criteria in an attempt to investigate the appropriateness of these measures to the achievement of institutional goals. Reference to this study has been made earlier and it will be considered further in chapter five.

Since the use of the goal approach by Romney has produced significant results among respondent groups in six types of American institutions, this shows that with a better understanding of institutional objectives, achievement could be judged through an investigation of the people involved in the making of decisions and those implementing these decisions and making use of the available resources, i.e. using the goal approach.

The goal approach would seem to be more relevant to non-profit organisations such as universities. Since the administrative procedures in universities are different than government or private organisations, in a way it has to depart from bureaucratic rigidity and rely on flexibility which promotes the pursuance of innovation, academic performance and exploration of new ideas and knowledge, i.e. the achievement of university goals.

CHAPTER III

HIGHER EDUCATION IN THE ARAB STATES

### 3.1 Introduction

Despite the political cleavages in the Arab world, all the Arabs in the various States constitute one people sharing a common language, common culture and mainly one religion. Thus, it seems reasonable to highlight briefly the range of differences and similarities among the Arab States as, because of the diverse character of the various States - geographic, demographic, economic, political and educational - difficulties in getting access to data and information on higher education might arise.

In this chapter it is intended to give a general outline of these differences and their impact on the development of higher education institutions such as universities. In view of the wide differences in level of university development throughout the Arab States, attention will be drawn only to the major points of difference and similarity in the university objectives, number of students enrolled, staff:student ratios and power hierarchies. These differences and similarities will be supported by statistical examples whenever possible.

A broader view of the historical development of universities, their objectives and their power hierarchy, in Saudi Arabia and Jordan will be considered towards the end of this chapter.



### 3.2 Geographical and Demographic Range

In sum, the total area of the 20 Arab States is 13,605,560 km<sup>2</sup>\*, located between longitude 13° West and 60° East, and from latitude 11° to 39°, with a total population of around 166 million.† Density of population ranges from 43 million in Egypt‡ to only a quarter of a million in Qatar.‡ Equally significant is the wide divergence of total area which ranges from 2.5 million km<sup>2</sup> in Sudan\* to only 678 km<sup>2</sup> in Bahrain Islands.†

The major part of the mainland mass consists of desert and only a fraction of the land is suitable for agriculture. All the Arab States have a coastline.

### 3.3 Economic and Political Range

A large number of the Arab States are oil-producing countries, with the quantity produced varying from those with the highest reserves in the world such as Saudi Arabia, Kuwait, Iraq, Libya, Qatar and UAE, to those with

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\* National Science and Technology Policies in the Arab States Document No. 38 (CASTARAB), 1976.

+ Bureau of Statistics, Bahrain, 1982.

# Compiled from The World of Learning 1982-83, 33rd ed., European Pub. Ltd.

low reserves such as Egypt, Oman, Syria, Tunisia, Morocco and Bahrain, and those which have no oil resources at all such as Jordan, Yemen Democratic Republic, North Yemen, Sudan, Somalia and Mauritania. In countries which have a high annual rainfall or have rivers, large numbers of the population are engaged in agriculture; Egypt, Sudan, Syria, Iraq, Jordan and Lebanon fall into this category.

Among the Arab States there are three kingdoms, four emirates, one sultanate and the rest are republics. The majority of the Arab States achieved independence immediately following the Second World War, and the remainder during the 1960s.

During the colonial period the educational system in general, and higher education in particular, were neglected and wherever it existed it had very limited objectives.

As in other developing countries in the world, the Arab States have had full responsibility for running their internal and external affairs, creating very large opportunities for jobs and a need for more qualified manpower, especially in high-ranking positions in the civil service, army, education and business.

### 3.4 The University: Development of the Modern Concept

Higher education relates to all types of post-secondary education excluding further education. Higher education studies are pursued in diversified types of institution, some of which award degrees and others which do not. This study is mainly concerned with universities as higher education institutions attracting large numbers of students who generally view the attainment of a university degree as a means of securing a better job and high earning.

The concept of a university in the Arab States as an institution of higher learning can be traced back as early as 868 and 970 A.D. with the establishment of Al-Qarawiyeen University in Tunisia and Al-Azhar University in Egypt respectively by religious men. The transition from this type of university, which is mainly concerned with Islamic studies and related disciplines such as Islamic Law and the Arabic Language (which is the language of the Quran) started in the late 19th century and early 20th century.

By 1879, the University of Algiers was founded; and in 1908 the Egyptian University was established which later became Cairo University, and in 1924 the Syrian University was opened. (Majali, 1976: 15).

But the concept of the modern university structure has been inherited from the Western culture, especially that of the French and the English, through the occupation of



the Arab States before and after the Second World War. Such a concept of the university was widespread throughout the Arab States during the 1960s and 70s, and is more pronounced in the oil producing countries such as Iraq, Saudi Arabia, Libya, Kuwait, Qatar, UAE and Bahrain.

The number of university institutions in the Arab States has now reached 70.

In this sense, it is fair to say that the Arab universities lack the indigenous characteristics which the Western universities have developed throughout history. In this respect, Al-Ebraheem and Stevens (1980:217) stated that: "The modern university is essentially an alien concept in the Arab world imposed by governments, in dire need of specialised manpower".

#### 3.4.1 Power and Objectives of Universities in the Arab States

Perhaps the most striking feature of higher education in the Arab States is its centralised nature which is characterised by close government supervision and management involvement in university policy, either through the Ministry of Higher Education or the Ministry of Education. In some countries, where there is more than one university, coordination between the national universities, allocation of the necessary funds for each

university and future development and other functions are undertaken by the Ministry of Higher Education. Saudi Arabia, Iraq, Syria and Algeria are examples of countries where this procedure is followed. Other countries delegate such supervision and budgetary allocation to the Ministry of Education, e.g. Kuwait, Qatar, Sudan and UAE. In the early 1980's Egypt abolished the Ministry of Higher Education, and supervision and budgetary control of all the national universities has been delegated to the Ministry of Education.

It is the role of the Minister of Higher Education, or the Minister of Education, to ensure that the university management implements the government's manpower plan; to enhance cooperation between the various universities in the country; to approve budget plans; and to approve nominations for senior administrative appointments in the university. Moreover, the Minister presides over the Supreme Council for Universities or the Board of Trustees in an ex officio capacity.

Despite the direct or indirect involvement of the Ministries of Education or Higher Education in university affairs, the university statute emphasises its autonomous nature as far as academic affairs are concerned only, e.g. curriculum design, assessment of student performance and research activities. Moreover,

senior administrative positions, like Rectors or Deans are appointed by a Presidential, Royal or Amiri Decree, providing prior approval of the nominees has been granted by the Minister and the institution concerned, i.e. there is no internal election procedure for such appointments as there is in the European universities.

The universities' objectives are stated by the Decree of the establishment. A survey of the Charters of some of the Arab States indicated the following goals:

- 1- Preparation of qualified and skilled undergraduate and graduate personnel to participate in the development of the society.
- 2- Encouragement of research in various fields.
- 3- Fostering the Arab and Islamic heritage.
- 4- Dissemination of knowledge.

#### 3.4.2 Demand for Higher Education

Since higher education in most of the Arab States is considered to be a state function and no fees are payable by students, the number of adults interested in pursuing a university education has increased dramatically all over the Arab nation, and many students from non-Arab countries have also been attracted. Table 3.1 illustrates the rate of increase in the number of students enrolled in universities or their equivalent



Table 3.1 illustrates Rate of Increase of students in universities or equivalent in the Arab States

State	1970			1975			1980			1981		
	Pop.	St.	%	Pop.	St.	%	Pop.	St.	%	Pop.	St.	%
Algeria	14330	19531	0.14	16776	41847	0.25	18594	79351	0.43	19590		
Egypt	33329	213404	0.64	37233	411097	1.10	41995	528751	1.26	43465		
Libya	1992	5222	0.26	2430	13427	0.55	2977	15267*	0.51	3095		
Mauritania	1245	-	-	1421	-	-	1634	-	-	1681		
Morocco	15520	16097	0.10	17305	45322	0.26	20242	-	-	20646		
Somalia	2789	964	0.04	3170	1936	0.06	3645	-	-	4895		
Sudan	14090	12057	0.09	15726	19208	0.12	18691*	25151*	0.14	18901		
Tunisia	5127	10347	0.20	5608	20505	0.37	6369	31827	0.50	6513	32832	0.50
Bahrain	215	-	-	256	-	-	-	317	-	322		
Iraq	9440	42431	0.45	11124	71456	0.64	13084	81782	0.63	13527		
Jordan	2299	2913	0.13	2702	5307	0.2	3190	17103	0.54	3364		
Kuwait	744	2225	0.3	1002	6246	0.62	1356	9388	0.7	1464	10683	0.73
Lebanon	2469	42578	1.73	2799	-	-	3161	79073	2.50	2688	70314	2.62
Oman	654	-	-	766	-	-	891	-	-	919		
Qatar	111	-	-	170	779	0.46	220	2269	1.03	248	2981	1.20
Saudi Arabia	6198	8492	0.14	7180	26437	0.37	8367	56552	0.68	9319		
Syria	6258	38893	0.62	7355	65348	0.89	8979	110832	1.23	9314		
U.A.E.	227	-	-	558	-	-	796	2519	0.32	762		
Yemen (North)	4836	61	0.001	5282	2408	0.05	5926	4519	0.08	5940		
Yemen (Demo)	1436	91	0.006	1690	1403	0.08	1969	3469	0.18	2030		

Notes: Population in Thousands

\* Figure for 1979. Figures are extracted from UNESCO Statistical Year Book, 1983. Where there is a blank box, the information is not available

in all the Arab States since 1970.

#### 3.4.3 Availability of Resources to Universities

There are great divergences between different Arab countries as regards resources available for universities, whether human or financial. The human resources are represented by the qualified academic staff, administrators and technicians. Such problems as there are seem to occur in some countries more than others. For instance, in countries with a large population and well established and diversified higher education institutions, such as Algeria, Egypt and Syria, presumably human resources are no problem, but these countries have financial constraints. In contrast, human resources comprise a major problem in countries like Saudi Arabia, Kuwait, Qatar, UAE, Bahrain and Oman. However, this shortage in human resources has largely been overcome by the recruitment of more expatriates and by pouring into the universities more financial resources. Table 3.2 illustrates the situation in Saudi-Arabian universities.

#### 3.4.4 Physical Structure of the Universities

Most of the universities in the Arab States consist of widely scattered colleges and buildings under the umbrella of one administrative unit. The

Table 3.2 General Summary to illustrate Number of Colleges, Administrative Staff, Teaching Staff and Students by each University in Saudi Arabia, 1981/82

University	Coll's.	Admin. Staff			Teaching Staff			Students*		
		Non-Saudi	Saudi	Total	Non-Saudi	Saudi	Total	Non-Saudi	Saudi	Total
Grand Total	61	5584	2406	7990	3665	2439	6104	14729	41780	56509
King Saud	15	2084	888	1972	1207	578	1785	2865	14269	17134
Imam Mohd. bin Saud	12	490	262	752	374	386	760	1454	5689	7143
King Abdul Aziz	9	1150	282	1432	799	458	1257	4424	13604	18028
King Faisal	5	695	213	908	342	202	544	284	1530	1814
Univ. of Petroleum and Minerals	7	716	304	1020	361	233	594	697	2144	2841
Islamic (Medina)	6	190	207	397	228	151	379	2907	364	3271
Umm. Al-Qurah	7	259	250	509	354	431	785	2098	4180	6278

Figures from Educational Statistics in the Kingdom of Saudi Arabia, 1981/82, p. 379.

\* The figures include male and female students in each university



reason for such dispersion of the academic units can be mainly attributed to the historical development of these universities and the continuous adjustment to the increasing demand for higher education. As a result of this dispersed physical structure, the possibility of wastage of the available resources is high through:

- a) duplication of personnel whether academic, administrative or academic related;
- b) duplication of facilities especially laboratories, laboratory equipment, lecture rooms and books;
- c) not making full use of scarce human resources in certain areas of study;
- d) low speed of communication between the academic staff and the administration or even between the academic staff themselves leading to wastage of time.

Recent efforts have been made to build all the colleges in one site to overcome the problem of wastage mentioned above. This step has been taken by King Saud University which moved to a new campus in 1983. The University of Kuwait and Baghdad University in Iraq have also moved to new campuses.

### 3.4.5 Criteria of Admission and Degrees Award

The secondary school certificate - Tawjeehia (which is equivalent to the G.C.E. in Britain) - is the sole criterion for university enrolment almost everywhere in the Arab States. Grades achievement in the various subjects at secondary school determine the allocation of applicants to the various colleges, i.e. high scores in Biology, Chemistry, Physics and English could result in the award of a place in Medical Sciences studies or a high score in Physics, Mathematics, Chemistry and English could gain a place in the College of Engineering. Students of Science subjects could be awarded a place in Arts Colleges but the reverse would not be possible for Arts students. Students are required to spend not less than four successful academic years (or the equivalent) - where the credit point system is applied, in order to be awarded the degree of B.A., B.Sc., B.Ed. or B.Com. This rule is not applicable to engineering and medical studies. For engineering, study lasts for five years at least and, for medicine, over six years, including the probationary period.

### 3.4.6 Staff:Student Ratio

The rapid expansion and high demand for university education during the 1970s has created a difficult problem for university staffing. In countries like Egypt,

where the resources available for universities are limited and where qualified staff being increasingly attracted by oil-producing countries, staff: student ratio are very low. For instance, in Cairo University the staff:student ratio was 1:50 in 1973/74 and 1:63 in 1975/76; in recently established universities like Tanta University the ratio was 1:80 and in Mansourah University, 1:103 in the year 1976/77. The ratio becomes worse when considering individual colleges where it ranges from 1:35 in the College of Medicine to 1:611 in the College of Commerce, both in Cairo University, in the year 1975/76.

Within Saudi Arabia the staff:student ratio varies very slightly over all the universities, from 1:8.1 in 1974/75 to 1:8.8 in 1979/80. However, the general picture, as illustrated in Table 3.3, is that the ratio varies considerably from one university to another.

Similarly, in Kuwait University the ratio generally never exceeded 1:15, in 1980/81 it was 1:15.4. Both in Kuwait and in Saudi Arabia, the availability of financial resources played a major role in maintaining a high staff: student ratio.

In Jordan University the ratio was 1:23 in 1982/83 but here the ratio has been maintained through keeping control of the number of enrolments through the selection process.



Table 3.3 Staff:Student Ratio at universities in Saudi Arabia  
1979/80

University	Academic staff	Regular Students*	Ratio
King Saud	1,321	12,789	1:9.7
Islamic	239	2,271	1:9.5
U.P.M.	552	2,794	1:5.1
King Abdul Aziz	1,206	14,031	1:11.6
Immam Mohd.	507	5,919	1:11.7
King Faisal	385	1,158	1:3

\*Regular students are all males.

Figures from Progress of Higher Education in the Kingdom of Saudi Arabia during ten years 1970-1980, p. 60.

### 3.4.7 Graduate Studies in the Arab Universities

Considerable attention has been paid to graduate studies in Arts, Islamic Studies and Education.

However, the number of enrolments in these graduate programmes varies from one university to another, with the Egyptian universities having high enrolments in these subjects. Moreover, in the fields of Science, Engineering and Medicine, most of the Arab universities have as yet no well established graduate programmes.

Advanced studies in the above areas are usually pursued at European or North-American universities. By way of example: five students were reading for a Ph.D. degree in Arts at Kuwait University in 1979/80 while, in the same year, 165 Kuwaiti students were reading for Ph.D. and Master degrees in the USA, Europe and Egypt. From Saudi Arabia, according to 1981/82 statistics, there were 3512 students reading for Diplomas, Masters and Ph.D degrees in Islamic Studies and Arabic Language in Saudi institutions, compared to 2597 reading for Master, Ph.D degrees in various fields of the Social Sciences, Natural Sciences, Engineering and Medicine studying in the USA, European countries and other Arab countries.

In Jordan University, according to 1982/83 statistics, there were 735 students enrolled in the Master programmes and only six in the Ph.D. Most of the Master studies were in Education, Arts and Science. The number of students on a university scholarship for advanced studies abroad was 156, mainly in Medicine, Engineering, Science and Medical Sciences.

#### 3.4.8 Libraries

Despite the establishment of some universities a long time ago, and the availability of resources, the acquisition of books and references seems far from satisfactory when compared to their counterparts in other European countries like Britain. This fact is illustrated by comparing the figures in Table 3.4.

### 3.5 Higher Education in Saudi Arabia and Jordan

In this section the discussion will be centred on the universities in Saudi Arabia and Jordan; two universities in each of these countries are to be included in this study.

#### 3.5.1 Higher Education in Saudi Arabia

The development of higher education in Saudi Arabia is well demonstrated by the increase in the number



Table 3.4 No. of books per student in some Arab and British Universities 1983.

University	Founded	No. of * Students	No. of Volumes in the Library	Books per Student
Cairo	1908	90,781	1,000,000	11:1
Khartoum	1956	8,777	209,000	23.8:1
Baghdad	1957	11,000	210,000	19.1:1
Kuwait	1966	17,033	340,000	20:1
King Abdul Aziz	1967	14,600	265,000	18.2:1
de Constantine	1969	8,340	100,000	12:1
-----				
Birmingham	1900	8,657	1,300,000	150.2:1
Exeter	1955	5,000	630,000	126:1
Leicester	1957	4,837	650,000	134.4:1
Bath	1966	3,600	200,000	55.5:1
Stirling	1967	2,600	350,000	134.6:1
Heriot-Watt	1966	3,200	100,000	31.3:1

Figures compiled from World of Learning 1982-83.

\* The figures represent the number of full time students only.

of students enrolled in the universities: from 11,337 in 1972/73 to 41,318 in 1977/78 and 63,563 in 1981/82. The number of universities has increased from five in 1972/73 to seven in 1981/82.

It should be mentioned, however, that the higher education institutions are for males only. Females can pursue their higher education in separate colleges, mainly to qualify for teaching jobs. There are now ten colleges for females, supervised by the Undersecretariat for Females which is a department of the Girls Education Administration. With the exception of the University of Petroleum and Minerals and the Islamic University in Medina, female students can join the universities as external students, using the university, including the library, during evenings and week-ends.

#### 3.5.1.1 Universities establishment in Saudi Arabia

The first University to be established in Saudi Arabia was Riyadh University in 1957 (see Jammaz, 1973). This university was founded by reshuffling, academically and structurally, the two colleges of Sharia (Islamic Law) and the College of Arabic Studies. In 1982 this university was renamed the King Saud University and, according to 1981/82 statistics, there are now 15 colleges and 17,134 students - 13,720 males and 3,414 females (mainly registered as external students).

In 1961 the Islamic University in Medina was awarded university status. Again, this university was based on the existing College of Sharia, founded in 1948 in Al-Madina City with the aim of producing trained Moslem judges and teachers of Arabic and Islamic Studies. Now it accommodates six colleges with 3,271 students, all male, and of that number only 364 are Saudi and 2907 non-Saudi.

Imman Mohammed Ibn Saud Islamic University was founded in 1974 following the amalgamation of four higher education institutions in Riyadh: Riyadh Ilmi Institute, College of Sharia, College of Arabic Language and the Higher Judicial Institute. This university has 12 colleges and 7143 students: 6086 male and 1057 female.

Unlike the previous universities, King Abdul Aziz University was established in Jeddah City as:

a private university in 1967 by a group of leading families headed by a businessman, Sheikh Ahmed Salah Jamjoom. It began with a College of Economics and Administration, and a year later a College of Arts was added. It came under State control in 1971 due to financial problems.

(Times Higher Education Supplement No. 311, 21 October 1977).

In 1971/72 the two Colleges of Sharia and Islamic Studies and the College of Education in Mekkah were annexed to this university, which then became a State university. At present there are nine colleges and the number of



students stands at 18,028: 12,597 males, 5,071 females.

The University of Petroleum and Minerals was established in 1975/76. This began by the establishment of a College of Petroleum and Minerals in 1963 under the supervision of the Ministry of Petroleum and Minerals Resources. Now it has seven colleges, mainly related to the engineering industry, petroleum and minerals. The number of students is 2,841, all male.

King Faisal University, a new foundation, was established in 1975 in the Eastern Province of Saudi Arabia as a technical university. It includes Colleges of Medicine and Medical Sciences, Architecture and Urban Planning, Agriculture and Nutrition and Veterinary Medicine. The newest university, established in 1981, is known as the University of Umm-Al-Qura (Makkah).

#### 3.5.1.2 University Objectives in Saudi Arabia

This continued expansion in universities throughout Saudi Arabia is a part of a national development plan adopted by the Saudi Government in 1970. Each development plan covers five years. The main objectives of higher education as expressed in these development plans are:

- 1- Developing loyalty to God and providing Islamic Education.
- 2- Preparing competent and qualified citizens.
- 3- Providing gifted students with the opportunity to continue higher education in all fields of academic specialisation.
- 4- Performing a positive role in the field of research.

- 5- Promoting publications.
- 6- Translating science and useful arts of knowledge into Arabic.
- 7- Offering training services and reorientation courses.

(Progress of higher education in the Kingdom of Saudi Arabia p. 26-27)

Based on the objectives of the national development plan of higher education, the official goals of all universities as stated in their Charters include:

- Provision of undergraduate and postgraduate instruction, in the various fields of science and humanities (including teacher training).
- Conducting and encouraging research in various fields (including religious studies)
- Promotion of cultural, social, scientific and sports activities.

(Progress of higher education in the Kingdom of Saudi Arabia, p. 18)

On surveying the objectives of King Faisal, King Saud and King Abdul Aziz Universities and the University of Petroleum and Minerals, one could readily notice - at least theoretically - that the objectives of each university are well defined, at least as far as the training of Saudi youngsters is concerned. The above institutions are trying to meet their targets through their institutional plans.

The only differences among the four universities are the variety and number of courses taught in each institution. The types of course characterise the

nature of the institution, whether technical, as King Faisal University, or vocational, as the University of Petroleum and Minerals, or traditional professional, as King Saud and King Abdul Aziz Universities.

### 3.5.2 Higher Education in Jordan

The University of Jordan was started by the establishment of a College of Arts in 1962. Three years later two colleges were added, the College of Science and the College of Economics and Commerce. By 1983/84, the number of colleges stood at 12 and all are located in one campus. In that year the number of students was 11,549 and the teaching staff numbered more than 500, including part-time staff. Though this University was established by a Royal Decree in 1962, it does not come under the supervision of any Ministry. The government support the university financially but the tuition fees, donations and academic consultancy fees make up a large part of the university funds.

The demand for university education increased during the 1970s and statistics show that, in 1976, there were over 50,000 students studying in colleges abroad. A new university was thus established by a Royal Decree in 1976/77 - Yarmouk University. It started with a College of Arts and Sciences and now it has ten colleges and a total of 10,015 students. Again, the main financial resources are derived from tuition



fees, donations from the private sector and international organisations and, in addition, the government provides financial support.

#### 3.5.2.1 University objectives in Jordan

Universities in Jordan may formulate their objectives independently without any political interference from the government as in the case of Saudi Arabia. However, the Board of Trustees in both universities in Jordan build their objectives on society's needs. Their objectives are summarised as follows:

- 1) to produce specialised and trained manpower to serve the country's social and economic needs;
- 2) to conduct research aimed at solving problems of the society and to contribute in the advancement of knowledge.
- 3) to provide a public service.

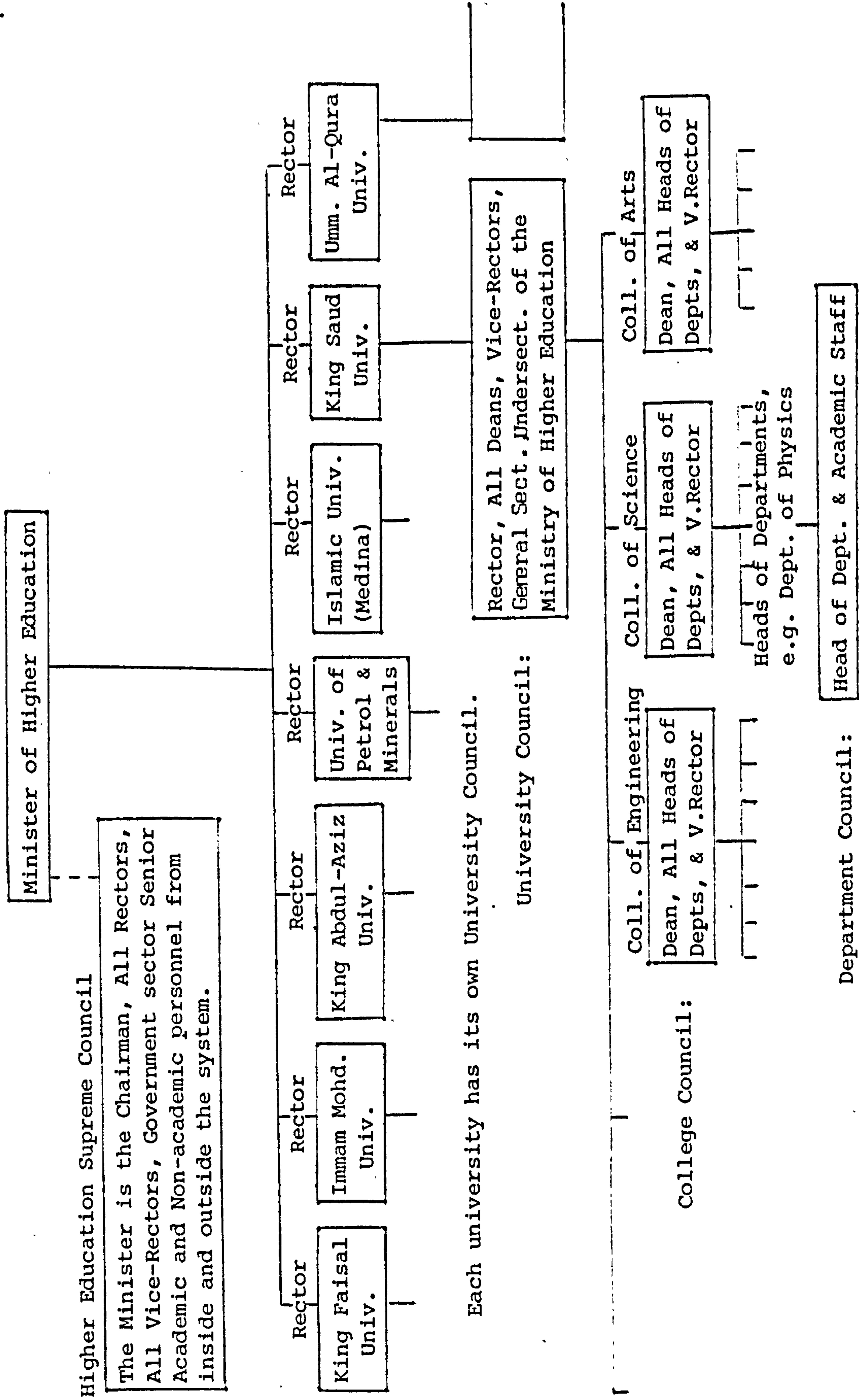
### 3.6 Features of Institutional Governance in Saudi Arabia and Jordan

In brief, as mentioned earlier (section 3.4.1), the legislative power for university affairs in Saudi Arabia is under the control of the Minister of Higher Education. The Minister presides over the Supreme Council of Universities in Saudi Arabia. He has the right to approve or disapprove of the university budget, rules and regulations, setting the salaries and allowances within the general framework of the civil service bureau and, finally, the establishment of a new college or department. The power hierarchy in Saudi Arabia is illustrated in Fig. 3.1.

On the other hand, the universities in Jordan are not under the control or supervision of a particular Ministry. Furthermore, the university budget is not ratified by the Cabinet Ministers and, thus, the universities enjoy more autonomy in running their affairs compared to their counterparts in Saudi Arabia or in other Arab countries.

Although these universities receive generous financial support from the State and the private sector in the form of donations, they are neither state institutions nor private, they are "national" institutions. As far as chair governance is concerned, this is the

**Figure 3.1** Organisational Chart and decision-making hierarchy at universities in Saudi Arabia  
 Adopted from Progress of Higher Education in the Kingdom of Saudi Arabia during 10 years, 1970 - 1980





responsibility of the Board of Trustees (synonymous with a University Council) who maintain the university independence, ratify its budget, raise funds, decide tuition fees, suggest university bye-laws and approve the appointment of senior university personnel.

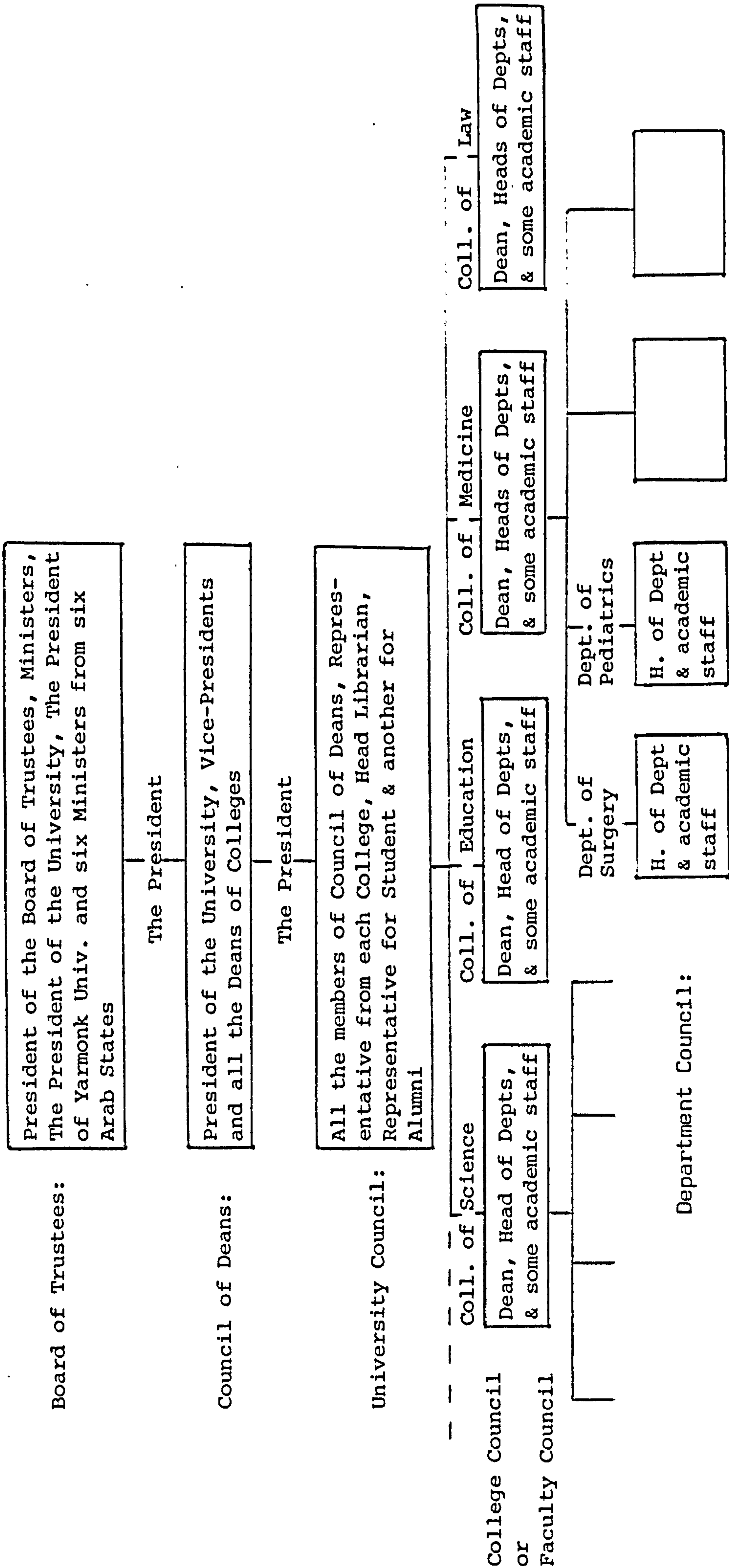
The power hierarchy of both universities in Jordan is illustrated in Figs. 3.2 and 3.3.

Another major dissimilarity is that the Saudi universities adopt an open policy admission system whereas in Jordan they are very selective.

A feature of both of the systems described is that all senior personnel appointments have to be confirmed by a Royal Decree. Another equally important feature is the non-allocation of responsibility to the members of academic staff. The rules and regulations of the university, which are issued by a Royal Decree in Jordan and by an edict in Saudi Arabia, spell out and define the responsibility of senior administrators, deans and heads of departments. They do not spell out, however, the terms of reference for each committee and the procedure of membership. The rules and regulations do emphasise the right of the President and the University Council to form committees when the need arises. Examples of such committees are the University Scholarship Committee, the University Admissions Committee and the Library Development Committee.

Figure 3.2 Organisational Chart and decision-making hierarchy at the University of Jordan

Constructed from University of Jordan Guidebook, 1982/83



Board of Trustees:

Council of Deans:

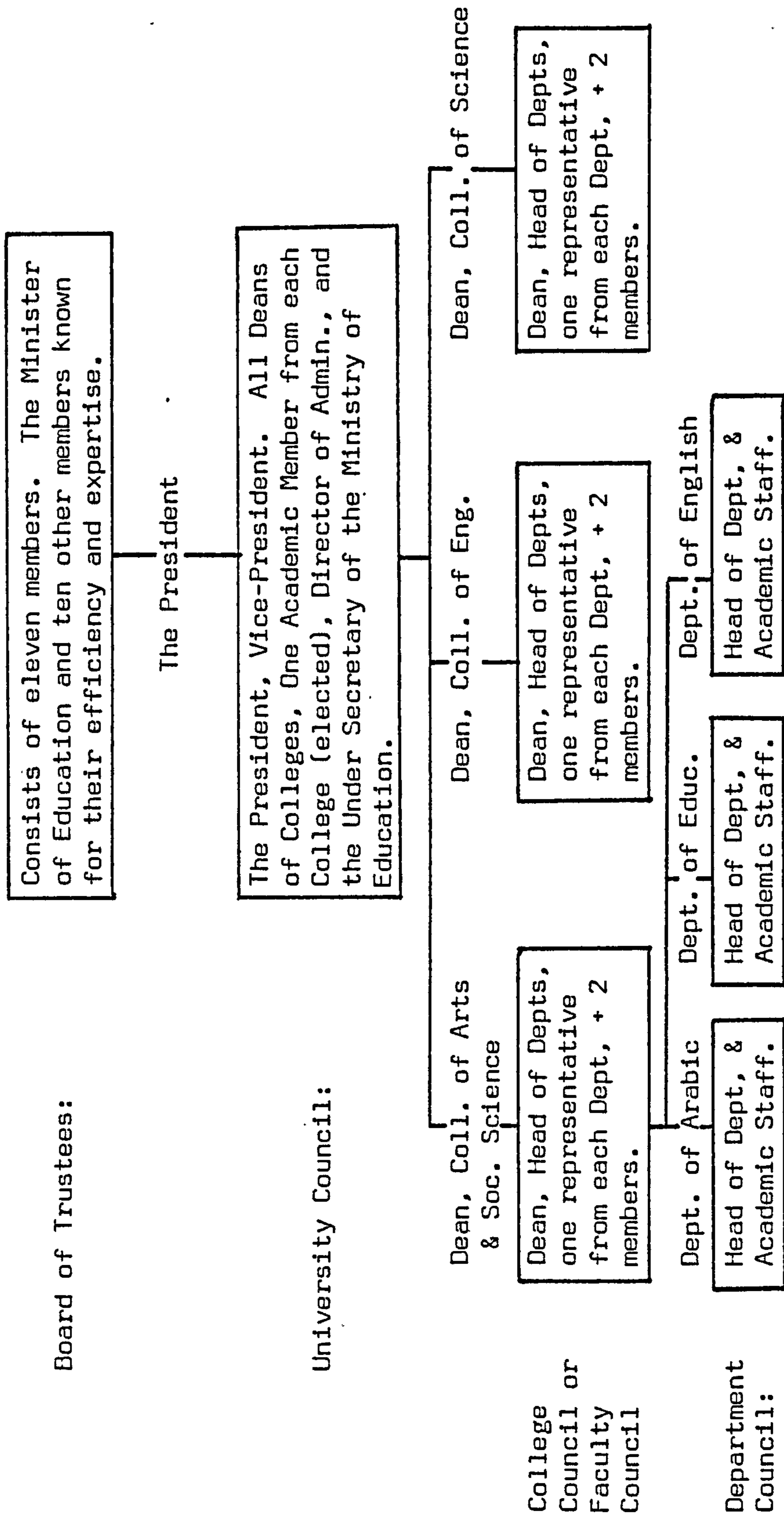
University Council:

College Council  
or  
Faculty Council

Department Council:

Figure 3.3 Organisational Chart and decision-making hierarchy at the Yarmouk University

Adapted from Statistical Book 1981/82, Yarmouk University and Yarmouk University Law 1976.





The foregoing description of growth and expansion of higher education institutions in the Arab States, underline the necessity to question the performance of these institutions and to what extent they have their objectives attained. How are these achievements measured? This is the subject of Chapter Five where the design of the methodology for measuring the objectives is discussed.

CHAPTER IV

PREVIOUS STUDIES CONDUCTED ON  
HIGHER EDUCATION IN  
THE ARAB STATES

#### 4.1 General Considerations

The Arab States are classified among the developing countries which are in the process of nation building. Emphasis on the expansion of primary and secondary education was given high priority on the list of the developing countries' national plans. This has led on to the expansion of higher education in order to meet the increased demand for specialists and technicians in the various aspects of cultural, social and economic development. Nevertheless, the rapid expansion of university education, with its major benefits to the nation, has generated certain problems for the universities themselves, e.g. in the selection and admission procedure of students; the recruitment of qualified academic staff; types of courses offered and the acquisition rate of books and equipment (Muttawa, 1973). The author of this dissertation believes that these problems are minor compared to those of defining the roles and capabilities of a university as a social system reacting to the changes and needs of the larger social system in which the university is located. An additional problem is its capability to react to the rate of advancement of knowledge taking place in other parts of the world i.e. the problem of responding to the social changes in the university's environment. In this respect, it is interesting to quote from Al-Ebraheem and Stevens (1980: 203-204) who state that:



The recognised necessity for Arab Universities to contribute to the regional development process, and the marked tendency of many Arab Universities in recent years to call upon American and Western universities for consultation, technological and support services, little attention has been given to the basic obstacles and problems encountered in organising, managing and developing these universities.

A further problem of university education expansion which is crystal clear is the political influence of the government system on the role of the university.

Quabin (1966) relates that influence to the direct involvement of the State in the financing, supervision, management and operation of the university. He states that:

This had the advantage of providing it with a measure of financial security and stable resources of revenue; on the other hand, and as a result, colleges and universities are not only regarded as adjuncts and instrument of state policy, but also are extremely sensitive to and affected by government changes (p.502)

In addition to the above problems, there remains the question of how to persuade people to introduce changes? The next section reviews the work that has been carried out so far on higher education in the Arab States.

## 4.2 The Call for Changes

Dissatisfaction with the role of the university in the Arab States can be traced as far back as 1963 when C. Zuraich, former President of Damascus University, in his lecture at the American University of Beirut, pointed out that:

Much consideration has been given to the function and the mission of the university in the early sixties in several countries. But nothing has been done about the active role of the university in the Lebanese society. (Zuraich (1963:42))

Since 1963 a number of scattered studies have been carried out to provide an enlightened start to the introduction of changes and the understanding of the status quo of university status in the Arab States. These studies were related to one or more universities in the same country which may have influenced their limited implications. Some of the studies are reviewed in the next section.

### 4.2.1 General Studies

In Iraq a comprehensive study on the organisation and administration structure of Baghdad University was carried out by Al-Shamma (1967). His study focused on:

- 1- The university and the society; the surrounding environment; the relationship between universities themselves and between the universities and the society; and the autonomy of the university.

- 2- Future enrolment.
- 3- The role of the High Supreme Council and related bodies in the university.
- 4- Proposals for affiliation and separation of some of the institutions of Baghdad University.
- 5- The organisational structure of the whole university.
- 6- Allocation of administrative staff and committee structure.

Al-Shamma, at the outset of his study, emphasised the extreme difficulty of development of the management of higher education institutions in developing countries, including Iraq. He added that it requires a special approach to consider the existing economic, social, political and educational structure, which influences the working conditions of the administrators, faculty members and students alike. Al-Shamma's study provided a detailed description of the existing organisational structure at various levels in Baghdad University. Each described level is followed by a theoretical suggestion aimed at improving the administration process. For instance, he suggested the introduction of an organisational officer whose role would be to give advice to the University President on developing the administrative procedure and enhancing efficiency. Also, he suggested the introduction of a grievance procedure system, headed



by a grievance officer, and the appointment of an internal auditor. But how relevant, how workable are these proposals and how much would these innovations cost? Al-Shammah does not suggest any answers to these questions.

Al-Shamma's study has been used as a term of reference for a national study to review the organisation and administrative structure of the universities and technical institutions in Iraq. Thus, a higher committee was established by the government in 1969 to carry out this task. Although the committee findings have not been published, some signs of change are to be seen in the establishment of more universities, especially the University of Technology which, according to Al-Naimi and Al-Nassri (1981:663):

.... has adjusted its work to national needs as expressed in the National Development Plan.

In another attempt to improve the university administration, Al-Majali (1972), as President of the University of Jordan, stated that:

Several measures have been taken to put the university on an evolutionary pathway which will enable it to discharge its functions more efficiently and effectively. (p. 9-10).

Examples of these measures include: revision of the university law to raise the standard of its functions and administration; introduction of credits system; establishment of a Students' Union.

In Egypt the problem of higher education institutions is rather different in that it is a grave

shortage of funds which affects the role of the universities. In this respect, Soliman (1980) conducted a study on Egyptian universities with the role of these universities as its focus, particularly their policy with regard to student admission and expansion of university education in Egypt. Soliman hoped that the results of the study would indicate tentative solutions to the existing problems and suggest required reforms. Part of his findings are of significant importance to the universities in Egypt if they are to function efficiently and effectively and these are:

1- The inefficiency of the administration is ascribed to the shortage of administrative staff which has an impact by delaying the completion of tasks related to student and staff affairs; also, some of the academic staff are overloaded with administrative tasks, thus leaving them with inadequate time for their teaching commitments and involvement in research activities.

2- The library, as a place of learning, is not providing the essential elements for all university activities to achieve the functions of teaching and research. The elements referred to include: shortage of books, unqualified staff, limited hours of opening, overcrowding and bad lighting.



#### 4.2.2 Key Studies

More specific studies on the objectives and the assessment of performance in some universities in Saudi Arabia were carried out as postgraduate research leading to a Ph.D. degree. One such was that of Kashmeeri (1977) who examined the perception of goals of higher education in three universities in Saudi Arabia. He surveyed 550 persons representing administrators, faculty members and students and adopted the whole Institutional Goals Inventory developed by the Educational Testing Services in Princeton, N.Y. This was translated into Arabic, slightly modified and tested on Saudi graduate students studying at the University of Oklahoma. The respondents were asked to rate 90 goal statements measuring 20 objective areas, on a five point scale ranging from 'of no importance' to 'extremely important', and also to give two judgements on whether the goal statement 'is' or 'should be' perceived to be of importance. The results of this study are that:

No significant differences in the perceived importance of institutional goals at the three universities in S.A.; no significant differences in perception of institutional goals among Saudi and non-Saudi; and finally students view goals drastically differently from faculty members and administrators. (p.84)

The author of this present study has considerable reservations concerning Kashmeeri's findings because, in his study, he did not make it clear whether these significant differences among students on one hand and faculty and administrators on the other hand, are on "should be" scores or on "is" scores on the goal statements. One has to be



cautious on student judgement on "should be" scores, because it needs a considerable information and knowledge about the future, which the students lack.

Another study, also in Saudi Arabia, was conducted by Jammaz (1973). His study: "Riyadh University (now King Saud University) from historical foundation: critical problems and suggested solutions" was aimed at analysing the university mission, administrative structure and its historical foundation in order to identify its most critical problems. He utilised the available historical information, held interviews with administrators and departmental chairmen and posted a questionnaire to 100 faculty members. His findings are summarised as follows:

- 1- Riyadh University is characterised by the same pattern administratively and academically as the Egyptian Universities.
- 2- Preparation of qualified manpower is mainly the dominant part of the University work, with little effort on research and general education.
- 3- Curriculum rigidity, shortage of textbooks and academic materials, rapid turnover of qualified faculty members, all these are major problems encountered by the university administration.
- 4- Lack of communication and coordination among the various colleges of the university.
- 5- The majority of faculty members play little or no part in decision-making.

These findings would be of benefit to university administrators where improvement is to be sought.

A recent study by Saegh (1983) was conducted on the impact of higher education institutions on the societal values of Saudi society. The aim of this research was to investigate the societal values of colleges and universities in Saudi Arabia; how much these institutions are contributing to the modernisation of the kingdom; how effective the institutions are in responding to economic and non-economic development; what evidence there is of the relationship between higher education and economic and non-economic development; and, finally, whether government investment in higher education is worthwhile.

Saegh based his study on information and data gathered mainly from the published data and statistics of three Ministries: Planning, Information and Higher Education, and his conclusion was that colleges and universities are contributing to the shaping and improvement of the quality of life in Saudi Arabia, and investment in higher education by the government is worthwhile.

Though Saegh has obviously put a lot of effort into accumulating the data and information presented in his study, the aims of the study are rather vague and some of the tables presented are not relevant. Perhaps better results could have been achieved if he had clarified the following:

- 1- The social responsibility of the university during the transition period of society from traditional to modern.
- 2- The line between the role of the university and that of the school with regard to their respective contribution to societal change.
- 3- Identification of certain measures for non-economic development.
- 4- The role of higher educational institutions in preserving Islamic culture and how this correlates with the national development plan.

Another significant study was conducted by Khashan (1984) at King Saud University from 1981-82. He focused on the university functional requisites which he defined as:

.... students' academic competence and their interaction with and perception of classmates, instructors and administration. Functional requisites also involve the efficient use of available resources (human and material) in serving the community of students. The interaction of these resources with the students determines the success or failure of an academic institution in fulfilling its educational objectives. (p.18)

Khashan surveyed 420 students, representing the first and second year students in the College of Science and College of Administrative Sciences at King Saud University. The respondents were asked to choose one response from among a choice of two or three that would best describe their socio-economic status,



attitude and view. The questions were related to areas such as socio-economic, academic perception and relationship perception aspects of the university's function as they affected faculty members, administrators and classmates. Khashan's concluding remarks are summarised below:

1- Although great emphasis is being paid to the structural aspects of education, i.e. physical plant, finance and the ability to attract staff, little attention seems to be dedicated to the functional aspects, i.e. academic function.

2- The availability of money has failed to change students' conception of college education in preparing them to handle college courses efficiently.

3- Also, money has failed to create a dynamic and change-oriented administration.

4- Students' functional problems are related to:

- a) a lack of adequate scholastic preparation;
- b) an unhealthy perception that faculty members and administrators are prepared to tolerate cheating and plagiarism;
- c) an apprehension of examinations, and failure to develop analytical skills.

These concluding remarks provide evidence of how deeply rooted are the academic problems at King Saud University. However, the present author believes that Khashan has identified some of the problems which are

inevitable in a rapidly developing society but his discussion would have been enhanced if he had included with his findings some suggested solutions to these problems.

Finally, reference must be made to the study sponsored by the Arab League for Education Cultural and Scientific Organisation (ALECSO) which was conducted in 1975. The purpose of this study was to describe the outlook of the organisational and administrative structure of all the universities in the Arab World, with special attention to be paid to the positive aspects of that organisational structure in helping achievement of the objectives. However, the study also aimed to identify the negative aspects that hamper the multiplication and development of university programmes especially with regard to academic performance and efficiency of the manpower required for the development of a social and economical community service.

It is important to note that the purposes of the study were not clear in the text and not just because of translation from Arabic to English. The questionnaire consisted of 110 pages, comprising two parts of data. The first part was made up of a set of questions which were to be answered by academics and administrators in personal interviews, while the second part consisted of statistical tables to be filled in by administrators. The questionnaire was presented by

several teams to all the universities in the Arab World. Although much effort had been put into the structuring of the questionnaire, some drawbacks are evident and these are summarised below:

1- There is inconsistency on the respondent scale: sometimes Yes or No; sometimes from 1 to 6; and sometimes open-ended questions.

2- Some of the questions are general.

3- The objectives could be ambiguous to the respondents.

It was not possible to get the outcome of this study, possibly because the study has not yet been completed or because difficulties in analysis have emerged.

In the light of the above-mentioned studies, it is possible to conclude that research in the field of higher education is still in its early stages.

A common feature of the previous studies is that they emerged from individual initiative aimed at gaining a Ph.D. degree - as is the case with the present study. Most of the studies are of a descriptive nature pertinent to educational problems and do not provide the solid judgement required to introduce change. It is the belief of the present author that the introduction of change to higher education institutions - if it is to be administered effectively and efficiently - requires carefully planned research which takes into consideration manpower planning, current and future



needs of qualified personnel, the growing and diversified nature of the economy, the scientific and technological explosion and the rapid social changes. Examination of these factors and their impact on the university structures and management require to bring together experts in the field of higher education from various institutions to discuss the already existing techniques of systems analysis for the purpose of developing their appropriate approach relevant to their situation. However, individual initiative must be highly respected, appreciated and encouraged if the scope of this area is to be widened and supported.

CHAPTER V

METHODOLOGY

## 5.1 Concept of Official and Operative Goals

As indicated earlier in chapter three, the official objectives of the universities in Saudi Arabia and Jordan are described in their charter of establishment. These objectives are mainly concerned with preparation of the youth to take part in the development of the country, conducting research and public service. To what extent these objectives have been attained is hard to say. To an institutional researcher, organisational theorists or other investigators, these objectives are general and require an operational definition to identify the specific goals of the university.

In defining organisational effectiveness, Yuchtman and Seashore (1967:892) claim that:

Most investigators tend implicitly or explicitly to make the following two assumptions: (1) that complex organisations have an ultimate goal toward which they are striving and (2) that the ultimate goal can be identified empirically and progress toward a specific goal is taken by many as the defining characteristic of complex organisation.

They refer to these assumptions as prescribed goal approach and derived goal approach respectively.

Further, Perrow (1957) described official goals as general, vague and not indicating the factors which influence organisational behaviour. He made reference to another category of goals: the operative goals which are designated to the ends sought through the



implementation of organisational policies. He added that:

In one sense they are - i.e. the operational goals - means to official goals, but since the latter are vague or high abstraction, the means become ends in themselves when the organisation is the object of analysis. (p.66)

For example, the official goals of a university which are related to the preparation of skilled and qualified manpower do not indicate more precisely where the emphasis is likely to be placed, e.g. on intellectual development of students, vocational technical or professional preparation or quantity/quality of the graduates. Decisions on these questions characterise the nature of the university and distinguish it from any other university having the same official goals.

Aside from the operational goals themselves, consideration must also be given to the measurement of these goals as, the more these measures are appropriate, quantifiable and attainable, the more the university is able to evaluate its effectiveness.

## 5.2 Studies on Measures of Goals Attainment

Empirical studies on what the goals of universities are, or should be, and the measure of achievement of these goals (as noted earlier in chapter two) have been undertaken by ETS (1972), Romney (1976) and Cameron (1978).

The ETS (1972) developed an Institutional Goal Inventory, designed for all types of higher education institutions in the United States. In this Inventory 20 objective areas are described and 90 goal statements are identified, with each objective area having several goal statements, i.e. several operational goals, that make up its goal area. For instance, the objective area academic development has been defined operationally as:

This goal area has to do with the acquisition of general and specialised knowledge, preparation of students for advanced scholarly study and maintenance of high intellectual standards on the campus. (p. 2).

This objective area has the following goal statements:

(1) to help students to acquire depth of knowledge in at least one academic discipline; (2) to ensure that students acquire a basic knowledge in the humanities, social sciences and natural sciences; (3) to prepare students for advanced academic work, e.g. at four year college or graduate or professional school; and (4) to hold students throughout the institution to a high standard of intellectual performance. (See Appendix 1 for the whole Institutional Goal Inventory by ETS.)

Romney (1976) dealt explicitly with the need to link goals and measures of outcomes as perceived by various respondents from various institutions. Based on the ETS study, Romney has tested the relative appropriateness of 20 objective areas and 125 measures of progress among 133 trustees, 417 administrators and 600 faculty members

in 45 colleges and universities of six different types. Under each goal area he listed several items of information which might serve as a measure of progress toward the attainment of the stated goal. In the questionnaire respondents were asked to mark each goal area which best reflected their perception of the extent to which the goal area should be a goal of their institution. Also, he asked the respondents to mark the measure that was most appropriate as an indicator of progress in that goal area, (see Figure 5.1). (For the whole questionnaire refer to the MIGA Study by Romney (1976) ).

In 1978, Cameron attempted to identify on an empirical basis the organisational domains, i.e. the population served, the technology and the services rendered by an organisation. Using empirical evidence, the main purpose of his study was to identify the major domains that typify colleges and universities and to assess the levels of effectiveness in each of those domains, and to determine the characteristics of institutions that might explain the differences in the domains of effectiveness among institutions of higher education. In the study 41 institutions in the United States, and about 55 academics, departmental heads and administrators in each institution, were surveyed. The questionnaire asked the respondents to rate the extent to which their institution possessed the



Figure 5.1 Example of Romney's Questionnaire

		Appropriateness						
		Inappropriate	Low	Below Av.	Av.	Above Av.	High	
Academic Development: (illustrative goals in this area include acquisition of general and specialised knowledge, Preparation of students for advanced scholarly study and/or maintenance of high intellectual standards on the campus.		should be a goal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.	Grade-point average (GPA) in College work for various student levels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.	Institutional graduates accepted for additional study in high-ranking schools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.	... etc.							

characteristics judged to be evidence of effectiveness. Examples of the items used to measure effectiveness are listed below:-

<u>Dimension</u>	<u>Definition</u>	<u>Items</u>
1. Student educational satisfaction	The degree of satisfaction of students with their educational experiences at the institution	x11 Manifested student dissatisfaction.
		x12 Received student complaints.
		x13 Attrition resulting from dissatisfaction.
		x14 School spirit displayed.
2. Student academic development	The extent of academic attainment, growth and progress of students at the institution	x21 Amount of extra work and study by student.
		x22 Level of student academic attainment.
		x23 Not going on to graduate school.
		x24 Amount of student academic development.
		x25 Emphasis on outside academic activities.

Full details of this questionnaire can be referred to in Cameron (1978: 30-31).

### 5.3 Measures of Goals Attainment in this Study

Since universities worldwide have much in common in the process and methods of achieving their objectives, and unless these objectives and their measures are well defined and stated both quantitatively and qualitatively, it is impossible to make a reasonable judgement on the effectiveness or the efficiency of an institution. Romney's (1976)

study aimed to provide quantitative and qualitative measures for institutional objectives. His findings provided consensus agreement on the appropriateness of these measures of objective achievement and, thus, it seemed logical to adopt the same approach to a similar situation elsewhere, i.e. to the universities in the Arab States. The questionnaire developed by Romney (1976) was adapted and reproduced by permission of NCHEMS (see Appendix 2).

However, the 20 objective areas and 125 measures used by Romney had to be extensively amended and modified in order to be relevant to the areas and objectives of the university and society being surveyed. Thus, objectives like Social Egalitarianism, Social Criticism/Activism, Democratic Governance, Community and Off-Campus learning were replaced by the following objectives: Preservation of Arab and Islamic Heritage, Fostering Links between Arab People, Good Citizenship, Healthy Organisational Climate and University Relationship with other Institutions. Moreover, several criteria statements were either omitted altogether or replaced by others. In addition, the instrument was extended to assess the extent to which each university was achieving its objectives. This is an area which had not been considered earlier by Romney. Providing the appropriate measures for objectives is not an end in itself; the measures must also be tested to provide



information on the achievement of institutional objectives.

#### 5.4 Pilot Study

A pilot test of the questionnaire was carried out between 15th August and 26th October 1983. A sample of 15 individuals were requested to answer the questionnaire and this sample comprised academic staff, department heads and administrators from five different Arab States, i.e. five from Bahrain, four Egyptians, two Iraqis, two Saudis, one Lebanese and one from Gambia. Each received either an Arabic or an English version of the questionnaire together with a handwritten covering letter and self addressed envelope for the return of the completed questionnaire.

The purpose of the pilot test was to obtain feedback on both versions of the questionnaire on the following points:

1. Clarity of the language of the questionnaire;
2. Suggestions on whether to include or exclude certain measures or objectives;
3. Repetition of statements;
4. Appropriateness of the measures to the existing situation in the Arab States.

In order to increase the percentage of responses, two follow-up letters were sent on 23rd September 1983. The total number of replies received up to 26th October was 11, thus pushing up the percentage of responses to 73.3%.

On reviewing all the responses, it seemed that none of the respondents had encountered any difficulty in answering the questionnaire, although two cases of misinterpretation of how to answer were identified; the author believes that this was due to a language difficulty as each of these individuals had received an English copy of the questionnaire. Helpful comments on how to improve the questionnaire were made by four respondents, particularly with regard to the Arabic version.

Following analysis of these comments, the following modifications were made to the pilot questionnaire::

1. The six measure scale was reduced to five by eliminating the "low" measure, in order to be symmetrical about the average.
2. The objective areas were classified into two categories: outcome goals from A to L (i.e. goals related to institutional functions) and process goals from M to T (i.e. goals related to the management function).
3. Some of the technical terms were clarified, e.g. cost criteria, information system.

4. New criteria were entered under the following objective areas: Personal Development, Fostering Religious Awareness, Dissemination of Knowledge, Encouraging Research and Adaptation to Change.
5. Some of the criteria statements have been eliminated to avoid repetition or to avoid unquantifiable criteria such as "citation of research published in this university in bibliography by other authors", due to the absence of citation indices for Arabic publications.
6. English and Arabic have been clarified.
7. Grammatical and stylistical amendments to some of the statements in the Arabic version of the questionnaire were introduced.

#### 5.5 Population of the Study

A total of 779 people were to be surveyed in the four universities who had accepted the invitation to take part in the study. (Details of the sample selection are given in the next chapter.) The universities who agreed to participate were King Saud University, University of Petroleum and Minerals, University of Jordan and Yarmouk University and the sample in each university was to include university council members, department heads and a random sample of faculty members.



## 5.6 Layout of the Questionnaire

In its final form the questionnaire consisted of two sections (see Appendix 3). The first section asked for general and personal data about the respondent and the second asked the respondent to (i) rate the appropriateness of 20 goals of his university from his point of view; (ii) rate the appropriateness of the measures to evidence of progress in goal achievement; and (iii) rate the degree of achievement in each criterion. (This final part is not included in Romney's (1976) study.)

CHAPTER VI

DATA COLLECTION AND PROCESSING

## 6.1 Selection of Institutional Sample

While the pilot study was being conducted, an initial contact was made with the Rectors and Presidents of eight universities in the Middle East requesting the inclusion of their institutions in this study.

1. Eight registered letters were sent on 15th September 1983 to Rectors and Presidents of five universities in Saudi Arabia, two universities in Jordan and Kuwait University. The letters briefly conveyed the following:

- the subject and nature of the study;
- the people to be involved in the study;
- the expected amount of time required to fill in the questionnaire;
- a guarantee of the anonymity and confidentiality of the data to be collected; and, finally,
- an offer to send a personal copy of the questionnaire before sending it to the population sample.

An English translation of the letter is provided in Appendix 4.

2. One month later a follow-up letter was sent to six of the above-mentioned universities along with a copy of the first letter.



3. Fifteen days later a second follow-up was carried out, this time by telephone to the secretarial office of the Presidents of two universities. Both promised to reply within ten days.

4. The last follow-up was on 21st November 1983 when a telex was sent to each of four universities.

The use of these follow-up techniques resulted in obtaining the approval of two universities in Saudi Arabia and two in Jordan, one apology and no reply at all from the rest.

## 6.2 Selection of the Population Sample

Following the agreement of four universities to take part in the study, more information was sought for the purpose of selecting the population sample. A further letter (see Appendix 5) was therefore sent to each of the universities explaining in more detail the nature of the study and requesting the following information:

- a current edition of the university bulletin in order to select the names of the respondents randomly;
- nomination of the person who will administer the distribution of the questionnaires to the respondent groups.

- a copy of the proposed covering letter, to be signed by the President of the University or any other senior administrator (Appendix 6).

(The purpose of this covering letter was to inform the respondents of the approval and support of the university administration concerning the inclusion of their university in this study.)

- the enclosure of a copy of the questionnaire prior to sending them out to the respondents.

Since the survey was to be of a cross-sectional type, the collection of data would be from a sample drawn from the various constituency groups in each university, i.e. the population sample would include: university council members, heads of departments and faculty members, and these were to be randomly selected from university bulletins and lists of names furnished by each of the four universities.

From a total of 2487 names, 779 were selected and stratified into three categories: university council members, heads of departments and faculty members. The faculty members were again stratified into Arab and Non-Arab sections. With the exception of the university council members, all names were selected on a random basis. A breakdown of the population sample in each university is shown in Table 6.2.1.

Table 6.2.1 illustrates the breakdown of the selected respondents in each university.

Univ.	Category		Faculty Members		- Total
	Univ Council	Dept. Heads	Non-Arab	Arab & Local	
A	22	29	25	74	150
B	40	39	16	154	249
C	16	15	32	81	144
D	23	46	35	132	236



For the purpose of anonymity, the four universities who agreed to participate in the study will be referred to from now on in this thesis as A, B, C and D. In addition, the respondents were asked not to identify themselves when answering the questionnaire and each respondent was requested to delete his/her name before returning the questionnaire.

Accordingly, on 28th November 1983, the first batch of questionnaires were despatched by parcel post to universities A and D - 150 to the former and 236 to the latter. On 2nd December 1983 another batch of questionnaires were despatched by the same method to university B - a total of 249 questionnaires. A short visit was paid by the researcher to university C to select the names of the proposed respondents and to deliver 144 questionnaires by hand to the person in charge of administering the questionnaire.

### 6.3 Gathering Responses

As indicated earlier, all the answered questionnaires were to be collected by the researcher towards the end of December 1983. Visits were therefore undertaken to the four universities between 30th December 1983 and 11th January 1984, with four purposes:

- 1) to gather the answered questionnaires, within the least possible time;
- 2) to encourage as many respondents as possible to answer the questionnaire;
- 3) to clarify any difficulty encountered in answering the questionnaire.
- 4) to gather as much information as possible about each university in the form of statistics or publications and to see at first hand their physical resources.

Unfortunately, even by the last day of the visit, 11th January 1984, university B had not received the posted questionnaires.

In spite of the senior administrators' support and their call for cooperation with the researcher, and their personal persuasiveness, the rate of response was disappointing. However, in a study which is dependent on data collected from volunteers, it is not unusual to encounter the problem of a low response rate. Difficulties which possibly led to failure to complete the questionnaire could be due to several factors:

- a) Non-Arab and Non Local faculty members, by virtue of their academic contract, tend to be extremely cautious when answering questionnaires in order not to jeopardise their present jobs.

- b) From the author's personal experience, people in the Middle East are not used to receiving questionnaires and therefore they tend to be reluctant to answer them.
- c) Unavailability of some of the selected respondents during the time of the visit; either they were on leave or had moved to another university or even another department in the same university, or they had had their contracts terminated.
- d) Some of the respondents made their apologies because of lack of time.
- e) Some senior administrators, as the author noticed, passed the questionnaires to their subordinates to be answered; but they never got around to the task.

#### 6.4 Follow-Up Actions

The most important part of the follow-up was the personal visit by the author to the four universities between 30th December 1983 and 11th January 1984. A total of nine working days were spent in two universities visiting various departments in the campus and collecting the questionnaires. A third university had not received the posted questionnaires and the fourth preferred to do the follow-up in their own way.

As a rule, in a survey such as this, follow-up techniques can yield a higher rate of responses. Thus,



between 12th January and 31st March 1984, the following actions were taken:

- 1) A total of six telephone calls were made to all universities over 14th, 15th, 22nd and 24th January 1984.
- 2) Three follow-up letters were sent to three universities dated 19th and 23rd January 1984.
- 3) Four telephone calls, one to each university, were made on 6th and 12th February 1984.
- 4) Three telephone calls were made to three universities on 3rd, 4th and 10th March 1984.
- 5) A Telex was sent to one university on 20th February 1984.
- 6) Four letters, one to each university, were sent by the supervisor on 15th March 1984 (Appendix 7).

However, the use of the above follow-up approaches brought additional returns from three universities only and nothing at all from the fourth. Table 6.4.1 shows the breakdown of the number of responses from each university. At this point university council members were excluded and the other categories combined to represent the academic staff only and analysis of the levels can be seen in Chapter seven.

Table 6.4.1 shows the breakdown of the number of responses in each university.

Univ.	Category	Pop. sample	Unavailable responses	Actual population sample	No. of responses
A	Univ. council	22		22	
	Heads of Dept.	29	2	27	2
	Non-Arabs	25	5	20	3
	Arabs	74	9	65	38
	Total	150	-16	134	43
B	Univ. Council	40		40	
	Heads of Depts.	39		39	5
	Non-Arabs	16		16	2
	Arabs	154		154	32
	Total	249		249	39
C	Univ. Council	16		16	
	Heads of Depts.	15		15	2
	Non-Arabs	32	9	23	8
	Arabs	81	11	70	6
	Total	144	-20	124	16
D	Univ. Council	23		23	
	Heads of Depts.	46	2	44	2
	Non-Arabs	35	18	17	3
	Arabs	132	21	111	32
	Total	236	-41	195	37

## 6.5 Entering and Processing Data

Clearly it was not possible to manipulate the collected data statistically in its current form and, therefore, the data had to be converted to a form that would permit statistical analysis. Thus, numerical scores were assigned to the observed data and the five point scales were given the following scores: Inappropriate/minimal = 1, Below Average = 2, Average = 3, Above Average = 4, and High = 5.

### 6.5.1 Steps of Data Processing

#### 1- Coding the variables:

As mentioned earlier, the questionnaire was designed to examine the importance of 20 objective areas, the appropriateness of 118 criteria for measuring the objective areas and, finally, the achievement of these criteria among the four universities. The coding of the dependent variables, i.e. data items, is a necessary step before entering the data scores in the computer, in order to make these variables adaptable to computer analysis procedure.

Starting with the 20 objective areas, each objective was coded by an alphabetic symbol followed by "OBJ", abbreviation for objective. All the appropriateness measures were coded and described by four characters, e.g.



A1AP, A2AP, C1AP, D3AP. The first letter refers to the objective area, the number following is the serial number of the criteria under that objective area and AP is the abbreviation for appropriateness. Similar coding was used for the achievement criteria, with AP being replaced by AC, e.g. A1AC, A2AC, C1AC, D3AC. Codes for all variables are listed in Appendix 8.

2- Creation of a system file:

Following coding and describing of all the variables, a system file was created to include these codes and descriptions for use in future analysis.

3- Creation of a data file:

The data were punched into the computer at the University of Stirling via the PSSE network from the University of Edinburgh using the terminals at George Square.

4- Creation of a computer programme file:

This file included a set of instructions to direct the computer to carry out certain computation by merging the data and system files.

5- Creation of a subprogramme file:

Once all the above files had been created and all the input data entered into the computer, the next step was to instruct the computer, through writing sub-programmes, to perform certain statistical procedures.

#### 6- Output file:

The SPSS package has been used to display or print the results in an output file and the statistical job as described in the subprogramme file mentioned above.

In this study frequency and ANOVA techniques were used to generate statistical tables for the analysis - the definition and purpose of the ANOVA test will be discussed later in Chapter seven. The tables are presented and discussed in the next chapter. For more details of the subprogrammes see SPSS Manual by Nie et al (1970: 410).

It should be mentioned that the procedures outlined above were checked on sample cases before being applied to all the data, thus ensuring the suitability of the programme for the analysis and allowing the author to familiarise himself with the procedure and thereby eliminating unnecessary error.

CHAPTER VII

RESULTS



## 7.1 Introduction

It seems that, with such a small number of sample universities and respondents, only limited conclusions can be drawn about Higher Education institution objectives and their achievement in the Arab States.

Nevertheless, the findings presented in this Chapter will introduce empirical evidence on the important preferences of the universities' objectives, appropriateness of measures of progress and degree of achievement of these measures. This empirical evidence could be useful as a feedback for future improvement of the studied universities and may have application to other institutions in the Arab States.

As has been stated earlier, this study is designed to answer the following questions:

1. Are there significant differences in the objective area preferences among the sample universities as well as among the categories of respondents?
2. To what extent the proposed criteria of progress are appropriate to measure the achievement of these objective areas.
3. How do the respondents see the achievement of these criteria in their universities?

4. Are there significant differences among the studied universities in the achievement of these criteria of progress?
5. Identify the criteria on which there is generally high achievement and those with generally lower achievement.

## 7.2 Data Analysis

Three sets of data analysis will be presented: The first part deals with the analysis of objective areas to identify areas of preference among the universities and among the respondents. Secondly, analysis of the appropriateness of the measures of progress, in order to predict the existence of internal consistency among the respondents and among the universities. The third part of the analysis focuses on identifying differences and similarities among the universities in achieving certain measures of progress, as reflected by the mean scores of their respondents. All these analyses were performed by using the SPSS package as noted in the previous chapter. It is worthwhile to point out that the study was planned to get responses from various constituencies involved in the universities, these include Administrators, University Council members, and Faculty members. Unfortunately for one reason or another, none of the University Council members has responded positively

and only a fraction of Administrators; the majority of the respondents being Academics. Therefore the academics will be categorised according to their rank, i.e. Professor, Associate Professor, Assistant Professor, Instructor, Graduate Assistant, and Others.

### 7.3 Analysis Procedure

The data analysis is based on three procedures, Frequency Analysis, Analysis of Variance (ANOVA), and Duncan's Multiple Comparison Technique. For the purpose of clarifying the usage of the statistical techniques, both ANOVA and Duncan's techniques are defined.

The term ANOVA is the acronym of the Analysis of Variance. Kendall and Buckland (1971, p.161) defined ANOVA as:

"The total variation displayed by a set of observations, as measured by the sums of squares of deviations from the mean, may in certain circumstances be separated into components associated with defined sources of variation used as criteria of classification for the observations."

(1971, p.161)

Lee, Wayne (1975) summarised the general purpose of ANOVA as to determine which factors of an experiment have noteworthy effects on the scores, and to provide



quantitative information about the relative importance of different factors and their levels. Description of ANOVA is given in Appendix 8.

The ANOVA test is then followed by Duncans' New Multiple Comparison Method, in order to determine which factor or the combination of factors have contributed to the significant differences among the sample institutions, or academic categories.

Duncan's method is one of few procedures used to compare pairs of means following the ANOVA test, sometimes it is called the "Studentised range method", and is defined as "the difference between the largest and the smallest treatment means divided by an estimate of the standard error associated with single treatment mean". (Ferguson (1971:271)).

Mathematically it is expressed as:

$$Q = \frac{\bar{X} \text{ max} - \bar{X} \text{ min}}{\sqrt{SW^2 / n}}$$

where Q represents the observed value

$\bar{X}$  max is the mean of the largest treatment

$\bar{X}$  min is the mean of the smallest treatment

$SW^2$  is the residual or within group standard error.

n is the number of the population in the sample size if the groups have equal numbers.

However if there are unequal numbers of cases among the groups, as in the case of this study, the harmonic mean is substituted instead. Harmonic mean is defined by Kendall and Buckland (1971:65) as "the reciprocal of the arithmetic mean of their reciprocals".

For the application of Duncan's New Multiple Comparison Method see Appendix No. 9.

## 7.4 Findings of the Study

### 7.4.1 Objective Areas preferences by universities

Measures of the respondents taken as a group in each university were examined across the twenty objective areas. It was found that different ratings were given to the twenty objective areas by the respondents at each university, i.e. no two universities have identically rated the twenty objective areas. Table 7.1 illustrates the mean average of ratings and ranking of the twenty objective areas as rated by the respondents of the four universities.

The numbers appearing in the mean average column are the average of the respondents scores of the five scales rating in the questionnaire, as follows:

Inappropriate/Minimal	1
Below Average	2
Average	3
Above Average	4
High	5

The numbers appearing in the rank column indicate the priority of each objective area in each university.

The higher the mean average of the objective area the higher the priority is given to it, i.e. lower number in rank, and vice versa. For instance Encouragement of Research has been ranked higher, i.e. first priority, by respondents in universities A, C and D because of higher average means in these universities.

Table 7.1 Means and Rank Order of the Twenty Objective Areas Among the Four Universities as rated by the Respondents in each University

University:

Objective Areas	A		B		C		D	
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
A. Vocational Preparation	3.977	6	3.308	7	4.563	2	4.297	6
B. Academic Development	3.814	10	3.333	5	4.313	4	3.892	18
C. Students' Personal Development	3.814	10	3.487	2	3.750	13	4.243	9
D. Intellectual Development	4.000	5	3.718	1	4.375	3	4.162	12
E. Good Citizenship	3.581	15	2.923	19	3.875	12	4.270	7
F. Religious Awareness	3.488	16	3.154	12	3.500	16	4.405	2
G. Humanism/Altruism	3.419	18	3.000	15	3.250	20	3.676	19
H. Cultural/Aesthetic	3.163	20	2.949	18	3.313	19	3.622	20
I. Encouragement of Physical Activities	3.767	13	2.974	17	4.125	7	4.000	17
J. Dissemination of Knowledge	4.070	3	3.179	11	4.063	11	4.054	15
K. Encouragement of Research	4.419	1	3.282	8	4.813	1	4.703	1
L. Public Service	3.884	7	3.359	3	4.313	4	4.378	4
M. Adaptation to Change	3.442	17	3.000	15	3.438	18	4.216	10
N. Innovation Climate	3.837	9	3.282	8	4.125	7	4.108	14
O. Academic Freedom	4.186	2	3.333	5	4.125	7	4.270	7
P. Preservation of Arab and Islamic Heritage	3.605	14	3.154	12	3.500	16	4.054	15
Q. Healthy Organisational Climate	4.023	4	3.128	14	4.125	7	4.324	5
R. Administrative Efficiency	3.884	7	3.359	3	4.188	6	4.189	11
S. University Relationships with other Institutions	3.814	10	3.256	10	3.625	14	4.405	2
T. Fostering Links between Arab People	3.419	18	2.821	20	3.563	15	4.135	13



On the other hand, Humanism/Altruism and Cultural/Aesthetic received lower ratings, i.e. less priority, induced by low mean scores average in all the universities.

The higher ranking of some objective areas by the respondent group in each university indicates that these are the general objectives of the university. Examples of these are: Encouragement of Research, Vocational Preparation, and Public Service.

However higher ranking of some objective areas by respondents of one university and its lower ranking in other universities indicate how much emphasis is given to that objective area by the university authority. An example of this kind is Religious Awareness, which is ranked highly in University D but lower in the other three universities; while Encouragement of Research ranked highly in universities A, C and D, but lower in University B.

On the other hand, the very low ranking of some objective areas by the respondent of each university indicates that these objective areas are neglected in teaching and learning situations in that university, for example Humanism/Altruism, Cultural/Aesthetic and Fostering links between Arab People.

Table 7.2 demonstrates the significant differences at  $P \leq 0.05$  as tested by the ANOVA test. Significant differences exist among the four universities on their weighting of eleven objective areas.

Table 7.2 Two-way analysis of variance for the objective areas with significant F-ratio where  $P \leq 0.05$  among institutions

Objective Area: Vocational Preparation  
Providing various courses geared to existing and anticipated needs of government development plan and society

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	6.884	3.721	0.014
A.Rank (Between)	5	0.693	0.375	0.865
2-way Interaction Instit. x A.Rank	12*	1.758	0.950	0.501
Residual (within)	112	1.850	-	-
Duncan's Multiple Comparison:**	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Objective Area: Good Citizenship  
Degree of individual obedience to laws enforced by government; degree of not encouraging others to disobey laws and readiness to participate in voluntary activities to serve the community

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	12.967	7.724	0.000
A.Rank (Between)	5	3.458	2.060	0.076
2-way Interaction Instit. x A.Rank	12	1.039	0.619	0.822
Residual (within)	112	1.679	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

\* Because of three empty cells, the figure 12 appears instead of 15 in all the ANOVA Tables.

\*\* The conventional method of illustrating the significant relationships between pairs of institutions, is to underline those pairs which show insignificant differences and leave the significant pairs.

Objective Area: Religious Awareness  
Enhancement of Religious Traditions and Ethics in Society

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	15.342	6.851	0.000
A.Rank (Between)	5	3.280	1.464	0.207
2-way Interaction Instit. x A.Rank	12	1.481	0.662	0.785
Residual (Within)	112	2.239	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	D

Objective Area: Encouragement of Physical Activities  
Physical development and abilities of students, academic and administrative staff under the supervision of trainers in P.E.

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	8.088	5.256	0.002
A.Rank (Between)	5	1.673	1.087	0.371
2-way Interaction Instit. x A.Rank	12	1.922	1.249	0.259
Residual (Within)	112	1.539	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Objective Area: Encouragement of Research  
Conducting research for Government, private organisations and/or advancement of knowledge

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	14.206	8.748	0.000
A.Rank (Between)	5	2.406	1.482	0.201
2-way Interaction Instit. x A.Rank	12	0.935	0.576	0.857
Residual (Within)	112	1.624	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>



Objective Area: Public Service  
 Making University resources available to Government,  
 Private agencies and Society, to use in solving problems

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	5.599	3.668	0.014
A.Rank (Between)	5	1.376	0.901	0.483
2-way Interaction Instit. x A.Rank	12	1.304	0.854	0.595
Residual (Within)	112	1.527	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Objective Area: Adaptation to Change  
 Ability of this University of adapt to environmental changes  
 outside its boundaries; flexibility of structure to permit  
 change

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	8.595	5.159	0.002
A.Rank (Between)	5	1.541	0.925	0.468
2-way Interaction Instit. x A.Rank	12	2.493	1.496	0.136
Residual (Within)	112	1.666	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	D

Objective Area: Innovation Climate  
 Provision of institutional climates whereby new processes or  
 techniques are regularly introduced and accepted, and where  
 there is experimentation with new approaches

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	4.751	2.806	0.043
A.Rank (Between)	5	1.063	0.628	0.679
2-way Interaction Instit. x A.Rank	12	2.219	1.311	0.222
Residual (Within)	112	1.693	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Objective Area: Organizational Climate  
 Degree of cooperation existing bwtween various members of the  
 University of achieve individual and organisational goals

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	8.336	6.017	0.001
A.Rank (Between)	5	1.383	0.998	0.422
2-way Interaction Instit. x A.Rank	12	1.569	1.133	0.341
Residual (Within)	112	1.385	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Objective Area: Relationships with other Institutions  
 Strengthening relationships with National, Arab and  
 International Higher Education Institutions

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	8.299	4.773	0.004
A.Rank (Between)	5	2.758	1.586	0.170
2-way Interaction Instit. x A.Rank	12	1.384	0.796	0.654
Residual (Within)	112	1.739	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Objective Area: Links Between Arab People  
 Providing opportunities for Arab people to either enrol  
 or get jobs in this University

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	10.889	5.271	0.002
A.Rank (Between)	5	2.276	1.102	0.363
2-way Interaction Instit. x A.Rank	12	1.904	0.922	0.528
Residual (Within)	112	2.066	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

These are:

Vocational Preparation  
 Good Citizenship  
 Religious Awareness  
 Encouragement of Physical Activities  
 Encouragement of Research  
 Public Service  
 Adaptation to Change  
 Innovation Climate  
 Organisational Climate  
 Relationships with other Institutions; and  
 Fostering links between Arab People of various  
 Arab States.

In order to identify more precisely which of these objectives differ significantly between pairs of universities, these results are tested by Duncan's New Multiple Comparison procedure. A description of this technique is provided in Appendix No. 9.

The results of that test were expressed in the conventional method by underlining those pairs of universities with no significant differences between them. Table 7.3 reports the findings of Duncan's New Multiple Conversion Procedure.

From Table 7.3 it is apparant that significant differences exist between Universities D and B in all the eleven objective areas, i.e. respondents at University D highly rated eleven objectives compared to the ratings of respondents at University B; while there are seven objective areas that differ significantly between universities C and B, where C ratings were higher. These objectives are:



Table 7.3      Objective areas with significant differences among pairs of universities

Universities	A	B	C	D
A				F, M
B	I, K, Q		A, E, I, K, L, N, Q	A, E, F, I, K, L, M, N, Q, S, T
C				F, M, S
D				

The letters in the boxes represent the objective area which rated higher by the respondents of the universities given in the column over the respondents of the universities, given by the correspondent row, e.g. F & M are two objective areas rated higher by respondents of university D over A.

The empty boxes indicate no significant differences on any objective area between pairs of universities, e.g. no significant differences in the boxes B on A, B on C and B on D.

Vocational Preparation  
Good Citizenship  
Encouragement of Physical Activities  
Encouragement of Research  
Public Service  
Innovation Climate; and  
Healthy Organisational Climate.

Similarly, significant differences appear to exist between D and A on one hand and D and C on the other, on the objective areas of Fostering Religious Awareness, Adaptation to Change, and Relationship with other institutions.

Possible explanations of these differences are the social and economic circumstances and the market needs in the region where the university is located. For instance University D is located in a highly strict unicultural religious society, having several higher education institutions, and a large market, which provide numbers of business opportunities and good earnings for university graduates, while University B is surrounded by a slowly growing economy and multi-cultural society.

On the other hand a possible explanation for University C showing significant differences in seven objective areas over University B is because of the degree of industrialisation of the region where University C is located. Thus this University produce predominantly scientific and vocational training courses and consultation services, to meet the demand of industry.

Such things do not exist in the surrounding environment of University B and the other universities.

An example of these objective areas is the vocational preparation courses which are geared to the market needs, especially in engineering and business.

#### 7.4.2 Objective areas preferences by respondent categories

Now attention will be focussed on the relative ranking of the twenty objective areas by type of respondent. Table 7.4 features the mean scores and the ranking of the twenty objective areas by Professors, Associate Professors, Assistant Professors, Instructors, Graduate Assistants, and Others.

The Table provides evidence of inconsistencies on objective areas priorities among the six categories of respondents. A Degree of variations was expected, because, as was mentioned earlier in the answers to the questionnaire, items are influenced by personal experience and the idiosyncratic judgement of the respondents. Significant differences would only show up if they were consistent across a category.

The main differences and similarities are summarised below.

1. Professors gave the following objective areas their highest ratings (in the following order):



Table 7.4 Relative Ranking of the 20 Objective Areas by type of Respondents

(122)

Objective Area	P (19)*		AP (26)*		AS (49)*		IN (22)*		GA (9)*		O (8)*	
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
A. Vocational Preparation	3.42	11	4.19	5	4.02	3	4.09	4	3.67	3	3.75	17
B. Academic Development	3.47	7	4.07	12	3.71	11	3.72	10	3.33	9	4.50	3
C. Students' Personal Development	3.63	2	4.08	11	3.71	11	3.95	5	4.00	1	4.00	13
D. Intellectual Development	3.73	1	4.42	2	3.92	5	3.95	5	3.33	9	4.50	3
E. Good Citizenship	3.47	7	4.11	10	3.32	18	3.72	10	3.00	14	4.12	9
F. Religious Awareness	3.53	4	3.69	17	3.53	15	3.64	14	3.78	2	4.25	6
G. Humanism/Altruism	3.26	17	3.61	19	3.14	20	3.54	18	2.89	18	4.12	9
H. Cultural/Aesthetic	3.11	19	3.24	20	3.31	19	3.14	20	2.56	20	4.12	9
I. Encouragement of Physical Activities	3.45	9	3.88	15	3.57	14	3.68	12	3.33	9	4.25	6
J. Dissemination of Knowledge	3.37	13	3.93	14	3.88	6	3.82	8	3.56	7	4.63	1
K. Encouragement of Research	3.53	4	4.66	1	4.26	1	4.38	1	3.33	9	4.62	2
L. Public Service	3.43	10	4.16	7	4.06	2	3.91	7	3.00	14	4.00	13
M. Adaptation to Change	3.31	15	4.03	13	3.42	16	3.27	19	3.00	14	3.87	16
N. Innovation Climate	3.63	2	4.15	8	3.67	13	3.63	16	3.66	4	4.12	9
O. Academic Freedom	3.52	6	4.19	5	4.02	3	4.18	2	3.66	4	3.50	18
P. Preservation of Arab and Islamic Heritage	3.16	18	3.65	18	3.82	8	3.64	14	3.45	8	3.38	20
Q. Healthy Organisational Climate	3.36	14	4.26	3	3.83	7	3.81	9	3.66	4	4.25	6
R. Administrative Efficiency	3.31	15	4.23	4	3.79	9	4.13	3	3.00	14	3.43	19
S. University Relationships with other Institutions	3.42	11	4.15	8	3.74	10	3.68	12	3.33	9	4.43	5
T. Fostering Links between Arab People	3.10	20	3.73	16	3.42	16	3.63	16	2.89	18	4.00	13

\* These figures represent the number of respondents in each category.  
P = Professor; AP = Associate Professor; AS = Assistant Professor, IN = Instructors;  
GA = Graduate Assistant; O = Others.

Intellectual Development  
Students' Personal Development  
Innovation Climate  
Fostering Religious Awareness.

In contrast, the Associate Professors, Assistant Professors and Instructors gave their highest ratings to:

Encouragement of Research  
Intellectual Development  
Academic Freedom  
Vocational Preparation.

The Graduate Assistants gave their highest ratings to

Students' Personal Development  
Fostering Religious Awareness  
Vocational Preparation.

The last category (Others), gave their highest ratings to

Dissemination of Knowledge  
Encouragement of Research  
Academic Development  
Intellectual Development.

The ANOVA Test gave no significant differences among all categories.

2. Similarities appear to exist among all the categories in giving lower ratings to four objective areas.

These are:

Humanism/Altruism  
Cultural/Aesthetic  
Adaptation to Change  
Fostering Links between Arab People of various Arab States.

Moreover, preservation of Arab and Islamic Heritage received lower ratings by all categories with the exception of Assistant Professors and Graduate Assistants who rated it a little higher.

3. Lowest ratings appear to exist among Associate Professors, Assistant Professors and the Instructors in three objective areas. These are:

Fostering Religious Awareness  
Encouragement of Physical Activities  
Academic Development.

4. The ratings of the remaining objective areas differ widely among the respondent categories. For example Innovation Climate rated 2, 8, 13, 16, 4 and 9 by Professors, Associate Professors, Assistant Professors, Instructors, Graduate Assistants and Others respectively. The previous results suggest the existence of differences on objective areas preferences among the academics because of their educational background and experience of institutional objectives. However, the ANOVA test showed that these differences are not statistically significant.



### 7.4.3 Appropriateness of the Measures of Progress

The second part of the analysis is to deal with the significant differences among the respondents and among the universities on the ratings of the appropriateness of the criteria for measuring the attainment of the objective areas, and will also indicate where there is agreement. The findings indicate that there are significant differences between the four universities on the ratings of 35 of the 118 measures of progress, i.e. 29.7%.

Respondents seem to show that percentage of significant differences on the criteria appropriateness associated with particular objectives, range between 100% to 12.5%. In the objective area Fostering Links between Arab people, all the criteria seem to have significant differences among the universities (100%) while in Academic Development it is only 12.5%, i.e. only one of the criteria exhibits significant differences (see Table 7.5).

But there are no significant differences among the respondents in the four universities on any measures of progress listed under the objective areas; Vocational Preparation, Students' Personal Development, Humanism/Altruism. Cultural/Aesthetic and Preservation of Arab and Islamic Heritage.

As far as the differences among the respondents categories, only minimal significant differences appear to exist, i.e. three criteria only - these are shown in Table 7.6.

Table 7.5      Percentage of criteria with significant differences among the universities in each objective area

Objective Area	No. of criteria in each objective	No. of criteria with significant differences in each objective	Percentage
<u>Outcomes goals:</u>			
B	8	1	12.5
E	5	1	20
F	6	2	33.3
I	6	5	83.3
J	4	2	50
K	10	4	40
L	6	2	33.3
<u>Process goals:</u>			
M	7	2	28.6
N	4	3	75
O	6	3	50
Q	5	1	20
R	13	4	30.8
S	7	2	28.6
T	3	3	100

In this Table, where the percentage is high, it indicates either the criteria are inappropriate for measuring that objective area, or the whole objective area does not exist in the four universities, e.g. Fostering Links between Arab People, and Innovation Climate.

**Table 7.6** Two-way analysis of variance showing the significant difference on the criteria appropriateness at  $P \leq 0.05$  among the academic rank

Criterion: Rate of academic achievement at the end of the Course  
Objective Area: Academic Development

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	1.429	0.744	0.528
A.Rank (Between)	5	6.668	3.469	0.006
2-way Interaction Instit. x A.Rank	12	1.467	0.763	0.687
Residual (Within)	112	1.992	-	-

Criterion: No. of Seminars, Conferences & Exhibitions held Annually  
Objective Area: Dissemination of Knowledge

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	2.061	1.945	0.126
A.Rank (Between)	5	2.970	2.805	0.020
2-way Interaction Instit. x A.Rank	12	1.136	1.072	0.390
Residual (Within)	112	1.050	-	-

Criterion: Rate of making use of recommendations & decisions taken by Ministers of Education & experts in Arab States  
Objective Area: Adaptation to Change

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	2.327	1.248	0.296
A.Rank (Between)	5	5.252	2.818	0.020
2-way Interaction Instit. x A.Rank	12	1.308	0.702	0.747
Residual (Within)	112	1.864	-	-



The 35 of the 118 measures of progress (29.7%), which showed significant differences among the four universities is similar to Romney's findings. In his MIGA study (1978) he states that there are significant differences on the ratings of the appropriateness for 56 of the 125 measures of progress (i.e. 44.8%) included in the questionnaire across the six types of institutions.

But the views of the respondents group differ only on eight instances, and the remaining occurred across the six types of institutions.

Further, analysis of the significant differences in the appropriateness of the measures among the four universities as rated by their respondents, is illustrated in the ANOVA Table No. 7.7, followed by the application of Duncan's New Multiple Comparison Procedure. The results of Duncan's procedure are presented in Table 7.8 to facilitate the discussion. This analysis is a very powerful way of identifying the differences among the four universities in the measures of progress as illustrated below:

- (1) Respondents at University C have rated eight measures higher than University A; those listed in Table 7.9. Eighteen over University B, of these seven measures are common between universities A and B. These are listed in Table 7.10.

Only one measure rated high over University D, which is common on all three universities.

**Table 7.7** Two-way analysis of variance showing the significant differences on the criteria appropriateness at  $P \leq 0.05$  among the Universities

Criterion: Availability and effective usefulness of teaching materials in various disciplines, e.g. textbooks, references, periodicals and educational technology equipment

Objective Area: Academic Development

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	3.215	3.659	0.015
A.Rank (Between)	5	1.115	1.268	0.283
2-way Interaction Instit. x A.Rank	12*	1.002	1.140	0.336
Residual (Within)	112	0.879	-	-
Duncan's Multiple Comparison:**	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Rate of acceptance of compulsory military service among students in the University

Objective Area: Good Citizenship

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	9.744	3.821	0.012
A.Rank (Between)	5	2.635	1.033	0.402
2-way Interaction Instit. x A.Rank	12	1.683	0.660	0.786
Residual (Within)	112	2.550	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

\* Because of three empty cells, the figure 12 appears instead of 15 in all the ANOVA Tables.

\*\* The conventional method of illustrating the significant relationships between pairs of institutions is to underline those pairs which show insignificant differences and leave the significant pairs.

Criterion: Number of compulsory courses offered to students in Islamic education  
Objective Area: Fostering of Religious Awareness

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	13.692	9.198	0.000
A.Rank (Between)	5	1.784	1.198	0.315
2-way Interaction Instit. x A.Rank	12	1.073	0.721	0.729
Residual (Within)	112	1.489	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	D

Criterion: Number of scholarships offered by the University to other non-Arab Islamic countries  
Objective Area: Fostering of Religious Awareness

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	11.158	5.709	0.001
A.Rank (Between)	5	1.649	0.843	0.522
2-way Interaction Instit. x A.Rank	12	1.783	0.912	0.537
Residual (Within)	112	1.955	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	D

Criterion: P.E. course being made compulsory for all students in this University  
Objective Area: Encouragement of Physical Activities

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	8.289	4.459	0.005
A.Rank (Between)	5	0.450	0.242	0.943
2-way Interaction Instit. x A.Rank	12	2.055	1.105	0.363
Residual (Within)	112	1.859	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	D



Criterion: Amount of availability of sports equipment and playfields  
 Objective Area: Encouragement of Physical Activities

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	4.198	4.140	0.008
A.Rank (Between)	5	0.402	0.396	0.850
2-way Interaction Instit. x A.Rank	12	1.089	1.074	0.369
Residual (Within)	112	1.014	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Number of tournaments held in the University in various kinds of sports  
 Objective Area: Encouragement of Physical Activities

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	6.041	2.818	0.003
A.Rank (Between)	5	1.295	1.032	0.402
2-way Interaction Instit. x A.Rank	12	1.548	1.235	0.268
Residual (Within)	112	1.254	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Number of coaches available to train students, academic and administrative staff  
 Objective Area: Encouragement of Physical Activities

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	7.624	5.132	0.002
A.Rank (Between)	5	1.199	0.807	0.547
2-way Interaction Instit. x A.Rank	12	1.990	1.340	0.206
Residual (Within)	112	1.485	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Number of students or graduates receiving national awards for their performance in athletics  
Objective Area: Encouragement of Physical Activities

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	7.242	2.796	0.044
A.Rank (Between)	5	4.155	1.604	0.165
2-way Interaction Instit. x A.Rank	12	1.270	0.490	0.917
Residual (Within)	112	2.591	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Number of publications issued by the University, whether in the form of periodicals, books etc.  
Objective Area: Dissemination of knowledge

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	4.793	3.186	0.027
A.Rank (Between)	5	1.372	0.912	0.476
2-way Interaction Instit. x A.Rank	12	1.132	0.753	0.697
Residual (Within)	112	1.504	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Involvement of academic staff in off-campus activities, e.g. participation in urban planning committees, anti-pollution committees and curriculum development committees  
Objective Area: Dissemination of knowledge

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	4.148	3.468	0.019
A.Rank (Between)	5	0.903	0.755	0.584
2-way Interaction Instit. x A.Rank	12	0.752	0.629	0.814
Residual (Within)	112	1.196	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Availability and usage of laboratory space for research  
expressed in square metres per research student  
Objective Area: Encouragement of Research

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	4.697	3.474	0.018
A.Rank (Between)	5	0.368	0.272	0.927
2-way Interaction Instit. x A.Rank	12	1.496	1.107	0.362
Residual (Within)	112	1.352	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Availability of research equipment and materials  
Objective Area: Encouragement of Research

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	6.101	2.042	0.003
A.Rank (Between)	5	0.489	0.404	0.845
2-way Interaction Instit. x A.Rank	12	1.210	1.000	0.454
Residual (Within)	112	1.210	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Availability of funds for research purposes expressed  
in percentage of the whole budget  
Objective Area: Encouragement of Research

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	5.004	4.308	0.006
A.Rank (Between)	5	0.848	0.730	0.602
2-way Interaction Instit. x A.Rank	12	1.602	1.379	0.186
Residual (Within)	112	1.162	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>



Criterion: Availability and efficiency of supportive research staff,  
e.g. technicians for equipment maintenance and laboratory  
demonstrators

Objective Area: Encouragement of Research

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	4.355	5.430	0.002
A.Rank (Between)	5	1.310	1.633	0.157
2-way Interaction Instit. x A.Rank	12	1.232	1.536	0.122
Residual (Within)	112	0.802	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Frequency of courses provided to update the knowledge of  
former graduates of this or other Universities

Objective Area: Public Service

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	4.918	3.452	0.019
A.Rank (Between)	5	1.603	1.125	0.351
2-way Interaction Instit. x A.Rank	12	1.288	0.904	0.545
Residual (Within)	112	1.425	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Number of courses provided which are not directed at  
gaining a University degree but rather are aimed at  
catering for local community interests

Objective Area: Public Service

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	5.347	4.707	0.004
A.Rank (Between)	5	1.649	1.452	0.211
2-way Interaction Instit. x A.Rank	12	2.056	1.810	0.055
Residual (Within)	112	1.136	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: High rate of response to change in academic units  
Objective Area: Adaptation to Changes

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	2.778	3.010	0.033
A.Rank (Between)	5	0.992	1.075	0.378
2-way Interaction Instit. x A.Rank	12	0.790	0.856	0.593
Residual (Within)	112	0.923	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Short chain of command in decision-taking in the University  
Objective Area: Adaptation of Changes

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	5.024	3.753	0.013
A.Rank (Between)	5	0.337	0.251	0.938
2-way Interaction Instit. x A.Rank	12	1.144	0.854	0.595
Residual (Within)	112	1.339	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: The use of research outcomes conducted locally in the Arab World, and internationally, by including them in the materials taught in such a way that they are relevant to the subject's content  
Objective Area: Innovative Climate

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	2.940	3.122	0.029
A.Rank (Between)	5	0.140	0.149	0.980
2-way Interaction Instit. x A.Rank	12	0.596	0.633	0.811
Residual (Within)	112	0.942	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Development by the University of its own instructional materials from the surrounding community  
Objective Area: Innovative Climate

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	4.068	2.754	0.046
A.Rank (Between)	5	0.878	0.595	0.704
2-way Interaction Instit. x A.Rank	12	0.701	0.475	0.926
Residual (Within)	112	1.477	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Number of hours devoted to curriculum design and improvement per academic staff per week  
Objective Area: Innovative Climate

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	5.306	3.911	0.011
A.Rank (Between)	5	1.934	1.426	0.221
2-way Interaction Instit. x A.Rank	12	0.600	0.443	0.943
Residual (Within)	112	1.357	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: A well defined institutional policy to protect the right of the individual in this University  
Objective Area: Academic Freedom

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	6.488	4.191	0.007
A.Rank (Between)	5	1.305	0.843	0.522
2-way Interaction Instit. x A.Rank	12	1.089	0.703	0.745
Residual (Within)	112	1.548	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>



Criterion: Power of the academic staff to choose the subject content of the disciplines taught by them

Objective Area: Academic Freedom

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	5.394	3.606	0.016
A.Rank (Between)	5	0.910	0.608	0.694
2-way Interaction Instit. x A.Rank	12	1.790	1.197	0.294
Residual (Within)	112	1.496	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Providing opportunities for informal discussion between students and academic staff

Objective Area: Academic Freedom

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	5.440	3.283	0.024
A.Rank (Between)	5	0.797	0.481	0.790
2-way Interaction Instit. x A.Rank	12	1.111	0.670	0.777
Residual (Within)	112	1.657	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Degree of cooperation among academics themselves, e.g. team teaching when required

Objective Area: Healthy Organisational Climate

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	4.539	4.131	0.008
A.Rank (Between)	5	0.368	0.335	0.891
2-way Interaction Instit. x A.Rank	12	1.426	1.297	0.230
Residual (Within)	112	1.099	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Availability of a University statute which spells out clearly the University structure, power hierarchy and procedure for getting membership on decision-making body  
Objective Area: Administrative Efficiency

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	1.904	2.730	0.047
A.Rank (Between)	5	1.292	1.853	0.108
2-way Interaction Instit. x A.Rank	12	1.546	2.217	0.015
Residual (Within)	112	0.697	-	-
Duncan's Multiple Comparison	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Speed of communication between administrative staff and academics, and speed of executing decisions taken  
Objective Area: Administrative Efficiency

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	5.819	4.117	0.008
A.Rank (Between)	5	1.302	0.921	0.470
2-way Interaction Instit. x A.Rank	12	0.941	0.666	0.781
Residual (Within)	112	1.413	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Availability and effective use of modern technology equipment in administration, e.g. computers, word processors, automated library systems etc  
Objective Area: Administrative Efficiency

Source of Variation:	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	4.226	4.260	0.007
A.Rank (Between)	5	0.794	0.801	0.551
2-way Interaction Instit. x A.Rank	12	0.871	0.878	0.571
Residual (Within)	112	0.992	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Availability and effective use of a highly organised information system, i.e. availability of data needed for action to be taken, such as data on academic staff contracts, students' achievements etc.

Objective Area: Administrative Efficiency

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	3.699	2.633	0.053
A.Rank (Between)	5	1.186	0.844	0.521
2-way Interaction Instit. x A.Rank	12	0.960	0.683	0.764
Residual (Within)	112	1.405	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Number of exchange visits of academic and non-academic staff between this University and other similar local Institutions

Objective Area: University Relationships

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	3.476	3.390	0.021
A.Rank (Between)	5	0.524	0.511	0.767
2-way Interaction Instit. x A.Rank	12	1.053	1.027	0.430
Residual (Within)	112	1.025	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Number of organised visits arranged for students to similar Institutions

Objective Area: University Relationships

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	4.201	3.444	0.019
A.Rank (Between)	5	0.824	0.676	0.643
2-way Interaction Instit. x A.Rank	12	0.840	0.689	0.759
Residual (Within)	112	1.220	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>



Criterion: Number of places offered to Arab students from other Arab States by this University  
Objective Area: Fostering Links between Arab People

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	5.395	3.181	0.027
A.Rank (Between)	5	1.395	0.823	0.536
2-way Interaction Instit. x A.Rank	12	3.163	1.865	0.046
Residual (Within)	112	1.696	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Number of scholarships offered to those from other Arab States who financially need them  
Objective Area: Fostering Links between Arab People

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	9.135	4.501	0.005
A.Rank (Between)	5	2.653	1.307	0.266
2-way Interaction Instit. x A.Rank	12	1.087	0.536	0.887
Residual (Within)	112	2.030	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Number of Arabs on the academic and non-academic staff at this University  
Objective Area: Fostering Links between Arab People

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	6.244	4.755	0.004
A.Rank (Between)	5	1.664	1.267	0.283
2-way Interaction Instit. x A.Rank	12	2.500	1.904	0.041
Residual (Within)	112	1.313	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Table 7.8 Measures of appropriateness with significant differences among pairs of Universities as resulting from Duncan's Multiple Comparison Test

Universities	A	B	C	D
A			I <sub>1</sub> , I <sub>6</sub> , K <sub>3</sub> , K <sub>4</sub> , K <sub>10</sub> , O <sub>2</sub> , R <sub>3</sub> , R <sub>7</sub>	F <sub>1</sub> , F <sub>3</sub> , K <sub>4</sub> , K <sub>9</sub> , N <sub>2</sub> , O <sub>2</sub> , Q <sub>2</sub> , R <sub>1</sub> , R <sub>3</sub> , R <sub>7</sub> , R <sub>12</sub> , S <sub>5</sub> , T <sub>2</sub> , T <sub>3</sub>
B	I <sub>5</sub> , L <sub>6</sub>		I <sub>1</sub> , I <sub>4</sub> , I <sub>5</sub> , I <sub>6</sub> , J <sub>1</sub> , K <sub>3</sub> , K <sub>9</sub> , K <sub>10</sub> , L <sub>5</sub> , M <sub>1</sub> , O <sub>2</sub> , O <sub>4</sub> , O <sub>6</sub> , R <sub>3</sub> , R <sub>7</sub> , S <sub>1</sub> , T <sub>2</sub> , T <sub>3</sub>	B <sub>7</sub> , F <sub>1</sub> , F <sub>3</sub> , I <sub>2</sub> , I <sub>4</sub> , I <sub>5</sub> , J <sub>1</sub> , J <sub>4</sub> , K <sub>4</sub> , K <sub>9</sub> , K <sub>10</sub> , L <sub>5</sub> , L <sub>6</sub> , M <sub>5</sub> , N <sub>3</sub> , N <sub>4</sub> , O <sub>2</sub> , O <sub>4</sub> , O <sub>6</sub> , Q <sub>2</sub> , R <sub>1</sub> , R <sub>7</sub> , S <sub>1</sub> , S <sub>5</sub> , T <sub>1</sub> , T <sub>2</sub> , T <sub>3</sub>
C	E <sub>2</sub>	E <sub>2</sub>		F <sub>1</sub> , F <sub>3</sub>
D	E <sub>2</sub>	E <sub>2</sub>	I <sub>1</sub>	

The letters in the boxes refer to the objective area and the number refers to the criterion associated with that objective.

These criteria which are highly rated by the respondents of the universities shown on different columns over the respondents of the universities given by the correspondent rows, e.g. I<sub>5</sub> & L<sub>6</sub> are the two criteria rated higher by the respondents of university A over university B while the respondents at university B showed higher rating on only one criteria over universities C and D and none on university A etc.

Table 7.9     The Eight Measures of Progress rated higher by Respondents in University C over University A

1.     Physical Education course being made compulsory for all students in this University. (Obj. Area: Physical Activities.)
2.     Number of students or graduates receiving national awards for their performance in athletics. (Obj. Area: Physical Activities.)
3.     Availability and usage of laboratory space for research expressed in square metres per research student. (Obj. Area: Research.)
4.     Availability of research equipment and materials. (Obj. Area: Research.)
5.     Availability and efficiency of supportive research staff, e.g. technicians for equipment, maintenance and laboratory demonstrators. (Obj. Area: Research.)
6.     A well defined institutional policy to protect the right of the individual in this University. (Obj. Area: Organisational Climate.)
7.     Speed of communication between the administrative staff and the academics, and the speed of executing decisions taken. (Obj. Area: Administrative Efficiency.)
8.     Availability and effective use of modern technology equipment in administration, e.g. computers, word processors, automated library systems etc. (Obj. Area: Administrative Efficiency.)



Table 7.10      Measures rated higher by respondents in University C over University B, in addition to those listed in Table 7.9.

1.      Number of tournaments held in the University in various kinds of sports. (Obj. Area: Physical Activities.)
2.      Number of coaches available to train students, academic and administrative staff. (Obj. Area: Physical Activities.)
3.      Number of publications issued by the University, whether in the form of periodicals, books, etc. (Obj. Area: Dissemination of Knowledge.)
4.      Availability of funds for research purposes expressed in percentage of the whole budget. (Obj. Area: Research.)
5.      Frequency of courses provided to update the knowledge of former graduates of this University or other universities. (Obj. Area: Public Service.)
6.      High rate of response to change in academic units. (Obj. Area: Adaptation to Change.)
7.      Power of the academic staff to choose the subject content of the disciplines taught by them. (Obj. Area: Academic Freedom.)
8.      Providing opportunities for informal discussion between students and academic staff. (Obj. Area: Academic Freedom.)
9.      Number of exchange visits of academic and non-academic staff between this University and other similar local institutions. (Obj. Area: Link between Arab.)
10.     Number of scholarships offered to those from other Arab states who financially need them. (Obj. Area: Link between Arab.)
11.     Number of Arabs on the academic and non-academic staff at this University. (Obj. Area: Link between Arab.)

The only measure of progress which University C respondents rated higher over the other three universities is Physical Education being made compulsory for all students in that University.

(ii) Respondents in University D rated two measures of progress higher than universities A, B and C.

These are:

1. Number of compulsory courses offered to students in Islamic Education.
2. Number of scholarships offered by the University to other non-Arab Islamic countries.

Also, there are twelve measures highly rated by respondents in University D over University A.

These are listed in Table 7.11. Moreover, the respondents in University D have rated highly fifteen measures over University B. These are listed in Table 7.12.

(iii) Both respondents in universities A and B have rated one measure of progress higher than universities C and D; that is, rate of acceptance of compulsory military service among students in the University. This measure is not applicable to universities C and D, because of non-existence of military service in that country.

Table 7.11      Measures rated highly by Respondents in University D over University A

1. Availability of research equipment and materials. (Obj. Area: Research.)
2. Availability of funds for research purposes expressed in percentage of the whole budget. (Obj. Area: Research.)
3. The use of research results conducted locally in the Arab world, and internationally, by including them in the materials taught in such a way that they are relevant to the subject's content. (Obj. Area: Innovation.)
4. A well defined institutional policy to protect the right of the individual in this University. (Obj. Area: Academic Freedom.)
5. Degree of cooperation among academics themselves, e.g. team teaching when it is required. (Obj. Area: Organisational Climate.)
6. Availability of a university statute which spells out clearly the university structure, power hierarchy and the procedure for getting membership on a decision-making body. (Obj. Area: Organisational Climate.)
7. Speed of communication between the administrative staff and the academics and the speed of executing decisions taken. (Obj. Area: Administrative Efficiency.)
8. Availability and effective use of modern technology equipment in administration, e.g. computers, word processors, automated library systems etc. (Obj. Area: Administrative Efficiency.)
9. Availability and effective use of highly organised information system, i.e. availability of the data needed for any action to be taken, such as data on academic staff contracts, students' achievement, etc, by establishment of a data bank or documentation centre. (Obj. Area: Administrative Efficiency.)
10. Number of organised visits arranged for students to similar institutions. (Obj. Area: Relationships with other institutions.)
11. Number of scholarships offered to those from other Arab states who financially need them. (Obj. Area: Link between Arab.)
12. Number of Arabs on the academic and non-academic staff at this University. (Obj. Area: Link between Arab.)



Table 7.12      Measures rated higher by Respondents in University D over University B

1. Availability and effective use of teaching materials in various disciplines, e.g. textbooks, references, periodicals and educational technology equipment. (Obj. Area: Academic Development.)
2. Amount of availability of sports equipment and playfields. (Obj. Area: Physical Activities.)
3. Number of tournaments held in the University in various kinds of sports. (Obj. Area: Physical Activities.)
4. Number of coaches available to train students, academic and administrative staff. (Obj. Area: Physical Activities.)
5. Number of publications issued by the University, whether in the form of periodicals, books etc. (Obj. Area: Dissemination of Knowledge.)
6. Involvement of academic staff in off-campus activities e.g. participation in urban planning committees, anti-pollution committees and curriculum development committees. (Obj. Area: Dissemination of Knowledge.)
7. Availability and efficiency of supportive research staff, e.g. technicians for equipment, maintenance and laboratory demonstrators. (Obj. Area: Research.)
8. Frequency of courses provided to update the knowledge of former graduates of this University, or other universities. (Obj. Area: Public Service.)
9. Number of courses provided which are not directed at gaining a university degree but rather are aimed at catering for local community interests, e.g. languages, computer courses, secretarial courses etc. (Obj. Area: Public Service.)
10. Short chain of command in decision-taking in the University. (Obj. Area: Adaptation to Change.)
11. Development by the university of its own instructional materials from the surrounding community, e.g. making films about the wild life of animals and plants in the surrounding environment, or a change in the way of living in the community. (Obj. Area: Innovation.)
12. Number of hours devoted to curriculum design and improvement per academic staff per week. (Obj. Area: Innovation.)
13. Power of the academic staff to choose the subject content of the disciplines taught by them. (Obj. Area: Academic Freedom.)
14. Providing opportunities for informal discussion between students and academic staff. (Obj. Area: Academic Freedom.)
15. Number of exchange visits of academic and non-academic staff between this university and other similar local institutions. (Obj. Area: Relationships with other institutions.)
16. Number of places offered to Arab students from other Arab states by this University. (Obj. Area: Link between Arab.)

- (iv) Although respondents in University A have rated two measures of progress higher than University B, still both ratings are lower than University D and one is lower than University C. These two measures are;
1. Number of coaches available to train students, academic and administrative staff.
  2. Number of courses provided which are not directed at gaining a university degree but rather are aimed at catering for local community interests (community education), e.g. languages, computer courses, secretarial courses etc.

An important conclusion to be drawn from the results presented in Table 7.8 is that respondents at Universities C and D account for most of the significant differences in the ratings of the measures of progress over the other two universities. Another important finding is that the majority of significant differences in appropriateness ratings correspond to the differences in objective areas ratings by the respondents associated with different universities. This means that if the respondent as a group in one university perceived the importance of one or more objective areas differently from respondents of another university, the possibility of finding significant differences in the appropriateness of measures between the same universities also exist.

For instance, Encouragement of Physical Activities has been rated 10, 12, 6 and 14 by respondents in Universities A, B, C and D respectively. However, to this objective area the respondents showed differences on five of the six measures listed under it. On the contrary, objective areas with no significant differences among the respondents of the four universities such as Academic Development, Students' Personal Development and Intellectual Development, showed no differences in the ratings of the appropriateness measures, an indication of general agreement. The above findings strongly support the findings of Romney's Study (1976) when he stated:

"Significant differences in appropriateness ratings correlated highly with differences in goal area ratings, whether rated by respondents group according to role or according to institutional association."

(Romney, 1976, p. 28)



Moreover, the suggested criteria seems in certain cases seems to be a reasonable yardstick for measuring the university objective achievement as is apparent from the close correlation between objectives and their measures.

#### 7.4.4 Achievement of the Measures of Progress

The third part of the analysis is centred on explaining the significant differences among the four universities on the degree of achievement of the measures of progress. Of the 118 measures of progress used in the questionnaire, 45 are to have significant differences, i.e. 38.1%. These are shown in the ANOVA Table, No. 7.15 and Table 7.14 summarises the percentage of those measures with significant differences under each objective.

The ANOVA results indicate that respondent categories seem to have significant differences only on a very small number of criteria; these are illustrated in Table 7.13. This indicates a consensus agreement on the rate of achievement between respondents categories. However, respondents as a group by university showed no significant differences on all the criteria associated with four objective areas. These are:

Table 7.13 Two-way analysis of variance showing the significant differences on the criteria achievement at  $P \leq 0.05$  among the academic rank

Criterion: Availability and effective usefulness of teaching materials in various disciplines, e.g. textbooks, references, periodicals and educational technology equipment

Objective Area: Academic Development

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	3.371	3.143	0.028
A.Rank (Between)	5	2.809	2.619	0.028
2-way Interaction				
Instit. x A.Rank	12	1.223	1.140	0.335
Residual (Within)	112	1.073	-	-

Criterion: High rate of response to change in academic units

Objective Area: Adaptation to Changes

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	3.407	2.733	0.047
A.Rank (Between)	5	3.346	2.684	0.025
2-way Interaction				
Instit. x A.Rank	12	1.932	1.549	0.117
Residual (Within)	112	1.247	-	-

Criterion: Amount of orders dictated by superordinates to subordinates such as technicians, secretaries and officers

Objective Area: Administrative Efficiency

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	2.225	1.497	0.219
A.Rank (Between)	5	3.509	2.361	0.045
2-way Interaction				
Instit. x A.Rank	12	1.163	0.783	0.667
Residual (Within)	112	1.487	-	-

Criterion: Number of Arabs on the Academic and Non-Academic staff  
at this University  
Objective Area: Fostering of Links between Arab People

Source of variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	13.647	12.150	0.000
A.Rank (Between)	5	3.108	2.767	0.021
2-way Interaction				
Instit. x A.Rank	12	0.702	0.625	0.817
Residual (Within)	112	1.125	-	-



Table 7.14 Percentage of criteria achievement with significant differences among the institutions in each objective area

Objective Area	No. of criteria in each objective	No. of criteria with significant differences in each objective	Percentage
<u>Outcomes goals:</u>			
A	9	4	44.4
B	8	4	50
C	5	3	60
E	5	2	40
F	6	6	100
G	3	1	33
I	6	5	83
J	4	2	50
K	10	1	70
L	6	2	33
<u>Process goals:</u>			
M	7	2	28.6
N	4	1	25
P	3	2	66.7
R	13	1	7.7
S	7	1	14.3
T	3	3	100

Table 7.15 Two-way Analysis of variance showing the significant differences on the criteria achievement at  $P \leq 0.05$  among the universities

Criterion: Mastering certain vocational skills and techniques  
Objective Area: Vocational Preparation

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	5.641	2.014	0.009
A.Rank (Between)	5	1.147	0.817	0.540
2-way Interaction Instit. x A.Rank	12*	1.063	0.758	0.692
Residual (Within)	112	1.404	-	-
Duncan's Multiple Comparison:**	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Devising new courses when the need arises, e.g. a shift from subject teacher to class teacher system in primary education requires the introduction of drastic changes in curricula courses in education to satisfy the new need  
Objective Area: Vocational Preparation

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	6.509	4.245	0.007
A.Rank (Between)	5	0.554	0.362	0.874
2-way Interaction Instit. x A.Rank	12	1.179	0.769	0.681
Residual (Within)	112	1.533	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

\* Because of three empty cells, the figure 12 appears instead of 15 in all the ANOVA Tables.

\*\* The conventional method of illustrating the significant relationships between pairs of institutions, is to underline those pairs which show insignificant differences and leave the significant pairs.

Criterion: High demand in the specific market for graduates of this University  
Objective Area: Vocational Preparation

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	6.443	5.475	0.002
A.Rank (Between)	5	2.378	2.020	0.081
2-way Interaction Instit. x A.Rank	12	1.706	1.450	0.154
Residual (Within)	112	1.177	-	-
Duncan's Multiple Comparison:	A	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: High value placed on the graduates' certificates of this University by other educational institutions, especially in postgraduate studies  
Objective Area: Vocational Preparation

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	7.060	4.169	0.008
A.Rank (Between)	5	1.136	0.673	0.645
2-way Interaction Instit. x A.Rank	12	0.575	0.340	0.980
Residual (Within)	112	1.694	-	-
Duncan's Multiple Comparison:	A	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Rate of academic achievement at the end of the course  
Objective Area: Academic Development

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	4.385	2.813	0.043
A.Rank (Between)	5	0.903	0.579	0.716
2-way Interaction Instit. x A.Rank	12	0.904	0.580	0.855
Residual (Within)	112	1.559	-	-
Duncan's Multiple Comparison:	A	<u>B</u>	<u>C</u>	<u>D</u>



Criterion: Staff/student ratio  
Objective Area: Academic Development

Source of Variance	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	14.857	12.543	0.000
A.Rank (Between)	5	1.809	1.527	0.187
2-way Interaction Instit. x A.Rank	12	0.939	0.793	0.657
Residual (Within)	112	1.184	-	-
Duncan's Multiple Comparison:	A	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Academic reputation of this University  
Objective Area: Academic Development

Source of Variance	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	6.264	5.233	0.002
A.Rank (Between)	5	1.448	1.210	0.309
2-way Interaction Instit. x A.Rank	12	0.528	0.441	0.943
Residual (Within)	112	1.197	-	-
Duncan's Multiple Comparison:	A	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Availability and effective usefulness of teaching materials  
in various disciplines, e.g. textbooks, references,  
periodicals and educational technology equipment  
Objective Area: Academic Development

Source of Variance	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	3.371	3.143	0.028
A.Rank (Between)	5	2.809	2.619	0.028
2-way Interaction Instit. x A.Rank	12	1.223	1.140	0.335
Residual (Within)	112	1.073	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Availability of extracurricular activities  
Objective Area: Students' Personal Development

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	5.677	3.891	0.011
A.Rank (Between)	5	1.396	0.957	0.448
2-way Interaction Instit. x A.Rank	12	1.061	0.727	0.722
Residual (Within)	112	1.459	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Rate of students' participation in these activities  
Objective Area: Students' Personal Development

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	3.173	2.634	0.053
A.Rank (Between)	5	1.241	1.030	0.404
2-way Interaction Instit. x A.Rank	12	1.744	1.448	0.155
Residual (Within)	112	1.205	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Students' perception and evaluation of personal development opportunities offered to them in this University  
Objective Area: Students' Personal Development

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	3.596	2.653	0.052
A.Rank (Between)	5	1.178	0.869	0.504
2-way Interaction Instit. x A.Rank	12	1.736	1.281	0.240
Residual (Within)	112	1.356	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Respect, and stimulation of respect, for the laws and regulations governing their behaviour in everyday life  
Objective Area: Good Citizenship

Source of Variation	DF.	Mean Sq.	F	Significance of F
Instit. (Between)	3	5.470	3.440	0.019
A.Rank (Between)	5	1.283	0.807	0.547
2-way Interaction Instit. x A.Rank	12	2.191	1.378	0.187
Residual (Within)	112	1.590	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Rate of acceptance of compulsory military service among students in the University  
Objective Area: Good Citizenship

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	15.060	7.763	0.000
A.Rank (Between)	5	2.760	1.422	0.222
2-way Interaction Instit. x A.Rank	12	1.695	0.873	0.576
Residual (Within)	112	1.941	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Number of compulsory courses offered to students in Islamic Education  
Objective Area: Fostering of Religious Awareness

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	31.787	23.307	0.000
A.Rank (Between)	5	1.457	1.069	0.382
2-way Interaction Instit. x A.Rank	12	2.002	1.468	0.147
Residual (Within)	112	1.364	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>



Criterion: Number of students participating in religious events,  
either through organisation of these events or giving talks  
Objective Area: Fostering of Religious Awareness

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	5.086	3.005	0.033
A.Rank (Between)	5	0.848	0.501	0.775
2-way Interaction Instit. x A.Rank	12	2.849	1.684	0.080
Residual (Within)	112	1.692	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Number of scholarships offered by the University to other  
non-Arab Islamic countries  
Objective Area: Fostering of Religious Awareness

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	23.530	13.499	0.000
A.Rank (Between)	5	0.883	0.506	0.771
2-way Interaction Instit. x A.Rank	12	1.252	0.719	0.731
Residual (Within)	112	1.743	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Number of students enrolled in religious programmes  
Objective Area: Fostering of Religious Awareness

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	9.058	4.271	0.007
A.Rank (Between)	5	1.813	0.855	0.514
2-way Interaction Instit. x A.Rank	12	2.722	1.283	0.238
Residual (Within)	112	2.121	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Offering courses that prepare students to take part in dissemination of Islamic Religion in non-Moslem Areas  
Objective Area: Fostering of Religious Awareness

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	4.344	2.689	0.050
A.Rank (Between)	5	1.172	0.726	0.606
2-way Interaction Instit. x A.Rank	12	1.389	0.860	0.590
Residual (Within)	112	1.616	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Number of students or graduates holding positions in religious organisations inside and outside the University  
Objective Area: Fostering of Religious Awareness

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	4.078	2.647	0.053
A.Rank (Between)	5	2.688	1.745	0.130
2-way Interaction Instit. x A.Rank	12	2.445	1.587	0.105
Residual (Within)	112	1.541	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Availability of courses on the beliefs and civilisation of other races and ethnic groups  
Objective Area: Humanism/Altruism

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	12.459	7.379	0.000
A.Rank (Between)	5	0.551	0.326	0.896
2-way Interaction Instit. x A.Rank	12	0.733	0.434	0.946
Residual (Within)	112	1.688	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: P.E. course being made compulsory for all students  
in this University

Objective Area: Encouragement of Physical Activities

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Bwtween)	3	15.141	11.771	0.000
A.Rank (Between)	5	2.682	2.085	0.072
2-way Interaction Instit. x A.Rank	12	1.900	1.477	0.143
Residual (Within)	112	1.286	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Amount of availability of sports equipment and playfields

Objective Area: Encouragement of Physical Activities

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	5.833	3.880	0.011
A.Rank (Between)	5	2.230	1.484	0.201
2-way Interaction Instit. x A.Rank	12	1.244	0.827	0.622
Residual (Within)	112	1.503	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Usage of sports equipment and playfields

Objective Area: Encouragement of Physical Activities

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	4.193	3.127	0.029
A.Rank (Between)	5	1.593	1.188	0.320
2-way Interaction Instit. x A.Rank	12	1.498	1.117	0.354
Residual (Within)	112	1.341	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>



Criterion: Number of coaches available to train students, academics and administrative staff  
 Objective Area: Encouragement of Physical Activities

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	10.725	7.680	0.000
A.Rank (Between)	5	1.378	0.987	0.429
2-way Interaction Instit. x A.Rank	12	2.697	1.931	0.038
Residual (Within)	112	1.397	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Number of students or graduates receiving national awards for their performance in athletics  
 Objective Area: Encouragement of Physical Activities

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	4.440	2.797	0.043
A.Rank (Between)	5	2.214	1.395	0.232
2-way Interaction Instit. x A.Rank	12	1.765	1.112	0.358
Residual (Within)	112	1.587	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Number of publications issued by the University, whether in the form of periodicals, books etc  
 Objective Area: Dissemination of Knowledge

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	4.313	3.744	0.013
A.Rank (Between)	5	2.328	2.021	0.081
2-way Interaction Instit. x A.Rank	12	1.338	1.161	0.320
Residual (Within)	112	1.152	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Frequency of appearance of the academic staff of this University in the media, e.g. T.V., radio etc  
Objective Area: Dissemination of Knowledge

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	4.021	4.126	0.008
A.Rank (Between)	5	1.562	1.603	0.165
2-way Interaction Instit. x A.Rank	12	1.348	1.383	0.184
Residual (Within)	112	0.974	-	-
Duncan's Multiple Comparison:	A	<u>B</u>	<u>C</u>	D

Criterion: Quantity and Quality of research work conducted by students or academic staff for the government and private sectors such as industries, farms, constructions etc.  
Objective Area: Encouragement of Research

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	3.326	2.915	0.037
A.Rank (Between)	5	1.304	1.143	0.342
2-way Interaction Instit. x A.Rank	12	1.580	1.385	0.184
Residual (Within)	112	1.141	-	-
Duncan's Multiple Comparison:	A	<u>B</u>	<u>C</u>	D

Criterion: Availability and usage of laboratory space for research expressed in square metres per research student  
Objective Area: Encouragement of Research

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	7.853	5.761	0.001
A.Rank (Between)	5	1.663	1.220	0.304
2-way Interaction Instit. x A.Rank	12	1.494	1.096	0.370
Residual (Within)	112	1.363	-	-
Duncan's Multiple Comparison:	A	<u>B</u>	<u>C</u>	D

Criterion: Availability of research equipment and materials  
Objective Area: Encouragement of Research

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	13.614	11.283	0.000
A.Rank (Between)	5	1.574	1.305	0.267
2-way Interaction Instit. x A.Rank	12	1.439	1.193	0.297
Residual (Within)	112	1.207	-	-
Duncan's Multiple Comparison:	A	B	C	D

Criterion: Rate of usage of research materials and equipment  
Objective Area: Encouragement of Research

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	7.493	4.461	0.005
A.Rank (Between)	5	0.705	0.420	0.834
2-way Interaction Instit. x A.Rank	12	1.404	0.836	0.613
Residual (Within)	112	1.680	-	-
Duncan's Multiple Comparison:	A	B	C	D

Criterion: Amount of time allocated for research expressed in  
number of hours per week per academic staff  
Objective Area: Encouragement of Research

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	5.148	4.295	0.007
A.Rank (Between)	5	1.318	1.099	0.365
2-way Interaction Instit. x A.Rank	12	0.705	0.588	0.848
Residual (Within)	112	1.199	-	-
Duncan's Multiple Comparison:	A	B	C	D



Criterion: Degree of incentive and encouragement for carrying out research expressed in rate of academic promotions per year among the academic staff  
 Objective Area: Encouragement of Research

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	5.584	5.085	0.002
A.Rank (Between)	5	1.632	0.486	0.200
2-way Interaction Instit. x A.Rank	12	1.642	1.496	0.136
Residual (Within)	112	1.098	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Availability of funds for research purposes expressed in percentage of the whole budget  
 Objective Area: Encouragement of Research

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	6.774	4.509	0.005
A.Rank (Between)	5	0.685	0.456	0.808
2-way Interaction Instit. x A.Rank	12	1.614	1.074	0.389
Residual (Within)	112	1.502	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Ease of access to the University library By non-University members, e.g. alumni graduate, students from other universities  
 Objective Area: Public Service

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	7.058	4.601	0.004
A.Rank (Between)	5	0.800	0.521	0.760
2-way Interaction Instit. x A.Rank	12	1.951	1.272	0.245
Residual (Within)	112	1.534	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Number of courses provided which are not directed at gaining a University degree but rather are aimed at catering for local community interests, e.g. languages, computer courses, secretarial courses etc  
Objective Area: Public Service

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	8.328	4.551	0.005
A.Rank (Between)	5	0.567	0.310	0.906
2-way Interaction Instit. x A.Rank	12	0.856	0.468	0.930
Residual (Within)	112	1.830	-	-
Duncan's Multiple Comparison:	A	B	C	D

Criterion: High rate of response to change in academic units  
Objective Area: Adaptation to Change

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	3.407	2.733	0.047
A.Rank (Between)	5	3.346	2.684	0.025
2-way Interaction Instit. x A.Rank	12	1.932	1.549	0.117
Residual (Within)	112	1.247	-	-
Duncan's Multiple Comparison:	A	B	C	D

Criterion: High rate of collecting information on new trends, attitudes and needs that develop in the society  
Objective Area: Adaptation to Change

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	3.801	2.905	0.038
A.Rank (Between)	5	0.407	0.311	0.905
2-way Interaction Instit. x A.Rank	12	1.027	0.785	0.665
Residual (Within)	112	1.309	-	-
Duncan's Multiple Comparison:	A	B	C	D

Criterion: Number of hours devoted to curriculum design and improvement per academic staff per week  
Objective Area: Innovative Climate

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	4.078	2.959	0.035
A.Rank (Between)	5	1.222	0.887	0.493
2-way Interaction Instit. x A.Rank	12	0.872	0.633	0.810
Residual (Within)	112	1.378	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Number of compulsory courses offered on the contribution of Arabs and Moslems to Sciences and Arts in the past  
Objective Area: Preservation of Arab and Islamic Heritage

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	4.289	3.559	0.017
A.Rank (Between)	5	1.332	1.106	0.362
2-way Interaction Instit. x A.Rank	12	3.512	2.915	0.002
Residual (Within)	112	1.205	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Amount of old literature and manuscripts on Arab and Islamic heritage available in the library  
Objective Area: Preservation of Arab and Islamic Heritage

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	5.550	3.004	0.033
A.Rank (Between)	5	3.836	2.076	0.074
2-way Interaction Instit. x A.Rank	12	2.103	1.138	0.337
Residual (Within)	112	1.848	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>



Criterion: Availability and effective use of modern technology equipment in administration, e.g. computers, word processors, automated library systems etc.  
Objective Area: Administrative Efficiency

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	15.321	13.309	0.000
A.Rank (Between)	5	0.471	0.409	0.842
2-way Interaction Instit. x A.Rank	12	0.842	0.732	0.718
Residual (Within)	112	1.151	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	C	D

Criterion: Number of exchange visits of academic and non-academic staff between this University and other Arab institutions  
Objective Area: University Relationships with other Institutions

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	4.616	3.796	0.012
A.Rank (Between)	5	0.479	0.394	0.852
2-way Interaction Instit. x A.Rank	12	1.712	1.408	0.173
Residual (Within)	112	1.216	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	C	D

Criterion: Number of places offered to Arab students from other Arab States by this University  
Objective Area: Fostering of Links between Arab People

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	6.298	4.107	0.008
A.Rank (Between)	5	3.389	2.210	0.058
2-way Interaction Instit. x A.Rank	12	1.445	0.942	0.508
Residual (Within)	112	1.534	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	C	D

Criterion: Number of scholarships offered to those from other Arab States who financially need them  
 Objective Area: Fostering of Links between Arab People

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	19.732	13.558	0.000
A.Rank (Between)	5	2.794	1.920	0.097
2-way Interaction Instit. x A.Rank	12	1.999	1.374	0.189
Residual (Within)	112	1.455	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>

Criterion: Number of Arabs on the academic and non-academic staff at this University  
 Objective Area: Fostering of Links between Arab People

Source of Variation	DF	Mean Sq.	F	Significance of F
Instit. (Between)	3	13.647	12.150	0.000
A.Rank (Between)	5	3.108	2.767	0.021
2-way Interaction Instit. x A.Rank	12	0.702	0.625	0.817
Residual (Within)	112	1.125	-	-
Duncan's Multiple Comparison:	<u>A</u>	<u>B</u>	<u>C</u>	D

Intellectual Development  
Cultural/Aesthetic  
Academic Freedom  
and Healthy Organisational Climate.

This indicates similarities on the rate of achievement of these criteria in the four universities.

The 45 criteria which differ significantly among the four universities were tested using Duncan's Multiple Comparison Test, in order to identify the pairs of universities that differ significantly. The results of that test are presented in Table 7.16. However, the main differences and similarities among the respondents of the four universities are summarised below.

- (i) Respondents at University C gave higher ratings to twelve measures of achievement over all the other three universities. These measures when related to their highly rated objectives suggests an indication of good performance, or at least performances are perceived to be better on these measures compared to the other universities. These measures are listed in Table 7.17.
- (ii) Respondents at University D gave higher ratings to three measures over the other respondents in all the three remaining universities. These are listed in Table 7.18.



Table 7.16 Measures of achievement with significant differences among pairs of universities as resulting from Duncan's Multiple Comparison Test

Universities	A	B	C	D
A		A <sub>2</sub> ' A <sub>6</sub> ' A <sub>7</sub> ' B <sub>4</sub> ' B <sub>5</sub> ' C <sub>1</sub> ' C <sub>2</sub> ' C <sub>5</sub> ' F <sub>4</sub> ' J <sub>3</sub> ' K <sub>4</sub> ' P <sub>3</sub>	A <sub>2</sub> ' A <sub>3</sub> ' A <sub>6</sub> ' A <sub>7</sub> ' B <sub>4</sub> ' B <sub>5</sub> ' B <sub>7</sub> ' C <sub>1</sub> ' C <sub>2</sub> ' C <sub>5</sub> ' E <sub>1</sub> ' F <sub>1</sub> ' F <sub>3</sub> ' I <sub>1</sub> ' I <sub>2</sub> ' I <sub>3</sub> ' I <sub>5</sub> ' I <sub>6</sub> ' K <sub>1</sub> ' K <sub>3</sub> ' K <sub>4</sub> ' K <sub>5</sub> ' K <sub>6</sub> ' K <sub>7</sub> ' L <sub>2</sub> ' M <sub>4</sub> ' N <sub>4</sub> ' P <sub>1</sub> ' R <sub>7</sub> ' S <sub>2</sub> ' T <sub>2</sub>	A <sub>6</sub> ' B <sub>4</sub> ' B <sub>5</sub> ' B <sub>7</sub> ' E <sub>1</sub> ' F <sub>1</sub> ' F <sub>2</sub> ' F <sub>3</sub> ' F <sub>4</sub> ' F <sub>5</sub> ' F <sub>6</sub> ' J <sub>1</sub> ' K <sub>4</sub> ' K <sub>9</sub> ' P <sub>1</sub> ' P <sub>3</sub> ' R <sub>7</sub> ' T <sub>1</sub> ' T <sub>2</sub> ' T <sub>3</sub>
B	L <sub>6</sub>		A <sub>3</sub> ' B <sub>4</sub> ' F <sub>1</sub> ' I <sub>1</sub> ' I <sub>2</sub> ' I <sub>3</sub> ' I <sub>5</sub> ' I <sub>6</sub> ' K <sub>1</sub> ' K <sub>3</sub> ' K <sub>4</sub> ' K <sub>5</sub> ' K <sub>6</sub> ' K <sub>7</sub> ' K <sub>9</sub> ' M <sub>4</sub> ' P <sub>1</sub> ' R <sub>7</sub> ' S <sub>2</sub> ' T <sub>2</sub>	F <sub>1</sub> ' F <sub>3</sub> ' K <sub>7</sub> ' K <sub>9</sub> ' L <sub>6</sub> ' R <sub>7</sub> ' T <sub>1</sub> ' T <sub>2</sub> ' T <sub>3</sub>
C	E <sub>2</sub> ' G <sub>2</sub> ' L <sub>6</sub>	E <sub>2</sub> ' G <sub>2</sub> ' J <sub>3</sub>		F <sub>1</sub> ' F <sub>3</sub> ' L <sub>6</sub> ' T <sub>3</sub>
D	G <sub>2</sub>	A <sub>2</sub> ' E <sub>2</sub> ' G <sub>2</sub>	A <sub>2</sub> ' A <sub>3</sub> ' I <sub>1</sub> ' I <sub>2</sub> ' I <sub>3</sub> ' I <sub>5</sub> ' I <sub>6</sub> ' K <sub>1</sub> ' K <sub>3</sub> ' K <sub>5</sub> ' L <sub>2</sub> ' M <sub>4</sub> ' R <sub>1</sub> ' S <sub>2</sub>	

The letters in the boxes indicate the objective areas and the numbers refer to the measure associated with that objective area. These measures which are highly rated by the respondents of the universities shown on different columns over the respondents of the universities given by the correspondent rows, e.g. measures like A<sub>2</sub>' A<sub>6</sub>'.....K<sub>4</sub>' P<sub>3</sub> are rated higher by the respondents of university B over A, and E<sub>2</sub>' G<sub>2</sub>' J<sub>3</sub> over C etc.

Table 7.17 Measures of Achievement rated Higher by Respondents at University C over Universities A, B and D

1. P.E. course being made compulsory for all students in this University.  
(Objective Area: Encouragement of Physical Activities)
2. Amount of availability of sports equipment and playfields.  
(Objective Area: Encouragement of Physical Activities)
3. Usage of sports equipment and playfields.  
(Objective Area: Encouragement of Physical Activities)
4. Number of coaches available to train students, academic and administrative staff.  
(Objective Area: Encouragement of Physical Activities)
5. Number of students or graduates receiving national awards for their performance in athletics.  
(Objective Area: Encouragement of Physical Activities)
6. Quantity and quality of research work conducted by students or academic staff for the government and private sectors such as industries, farms, construction industry etc.  
(Objective Area: Encouragement of Research)
7. Availability and usage of laboratory space for research expressed in square metres per research student.  
(Objective Area: Encouragement of Research)
8. Rate of usage of research materials and equipment.  
(Objective Area: Encouragement of Research)
9. Devising new courses when the need arises, e.g. a shift from subject teacher to class teacher system in primary education requires the introduction of drastic changes in curricula courses in education to satisfy the new need.  
(Objective Area: Vocational Preparation)
10. High rate of collecting information on new trends, attitudes, and needs that develop in the society.  
(Objective Area: Adaptation to change)
11. Availability and effective use of modern technology equipment in administration, e.g. computers, word processors, automated library systems etc.  
(Objective Area: Administrative Efficiency)
12. Number of exchange visits of academic and non-academic staff between this University and other Arab institutions.  
(Objective Area: University Relationships with other Institutions).

Table 7.18      Measures of Achievement rated Highly by Respondents  
at University D over Universities A, B and C

1.    Number of compulsory courses offered to students in Islamic Education.  
      (Objective Area: Fostering of Religious Awareness)
2.    Number of scholarships offered by the University to other non-Arab Islamic countries.  
      (Objective Area: Fostering of Religious Awareness)
3.    Number of Arabs on the academic and non-academic staff at this University.  
      (Objective Area: Fostering of Links between Arab People from the various Arab States)



Moreover, there are four measures of achievement on which performance rated higher by respondents of University D, over those respondents in Universities A and B. There are listed in Table 7.19.

- (iii) Four measures of performance were rated higher by respondents of Universities B, C and D and rated lower by respondents at University A. These are listed in Table 7.20.
- (iv) There are eight measures rated highly by the respondents at University C and received lower ratings by respondents at University A. Five of these measures also rated higher by respondents at University B, while the remaining three rated highly by respondents at University D. These are listed in Table 7.21.
- (v) Only one measure was rated highly by respondents in both Universities A and B, and rated lower by respondents in Universities C and D. The measure is G2, Availability of courses on the beliefs and civilisation of other races and ethnic groups (Objective Area: Humanism/Altruism).

On the other hand, respondents in both Universities A and D gave high ratings to one measure associated with public service, while respondents in both Universities B and C gave it lower ratings.

Table 7.19      Measures of Achievement rated Higher by Respondents  
at University D over Universities A and B

1.    Availability of funds for research purposes expressed in percentage of the whole budget.  
      (Objective Area: Encouragement of Research)
  
2.    Availability and effective use of modern technology equipment in administration, e.g. computers, word processors, automated library systems etc.  
      (Objective Area: Administrative Efficiency)
  
3.    Number of places offered to Arab students from other Arab States by this University.  
      (Objective Area: The fostering of links between Arab people from the various Arab States)
  
4.    Number of scholarships offered to those from other Arab States who financially need them.  
      (Objective Area: The fostering of links between Arab people from the various Arab States)

Table 7.20     Measures of Achievement rated Higher by Respondents  
at Universities B, C and D over University A

1. High demand in the specific market for graduates of this University.  
(Objective Area: Vocational Preparation)
2. Staff/Student Ratio  
(Objective Area: Academic Development)
3. Academic reputation of this University  
(Objective Area: Academic Development)
4. Availability of research equipment and materials.  
(Objective Area: Encouragement of Research)



Table 7.21      Measures of Achievement with Mix Ratings Among  
the Respondents of the Four Universities

1. Mastering certain vocational skills and techniques.  
(Objective Area: Vocational Preparation)
2. High value placed on the graduates' certificates of this university by other educational institutions, especially in postgraduate studies.  
(Objective Area: Vocational Preparation)
3. Availability of extra-curricular activities.  
(Objective Area: Students' Personal Development)
4. Rate of Students' participation in these activities.  
(Objective Area: Students' Personal Development)
5. Students' perception and evaluation of personal development opportunities offered to them in this University.  
(Objective Area: Students' Personal Development)
6. Availability and effective use of teaching materials in various disciplines, e.g. textbooks, references, periodicals, and educational technology equipment.  
(Objective Area: Academic Development)
7. Respect, and stimulation of respect, for the laws and regulations governing their behaviour in everyday life.  
(Objective Area: Good Citizenship)
8. Number of compulsory courses offered on the contribution of Arabs and Moslems to sciences and Arts in the past.  
(Objective Area:

This measure is L6, Number of courses provided which are not directed at gaining a University degree, but rather are aimed at catering for local community interests, e.g. languages, computer courses, secretarial courses etc.

- (vi) Finally, there are several measures which were highly rated by respondents in one University and rated lower by respondents of another University. For example F6, number of students or graduates holding positions in religious organisations inside and outside the University, was rated higher by respondents in University D and lower by respondents in University A.

It is worth while pointing out that the highly rated measures discussed in points i-vi above could be ascribed to the following factors:

1. The amount of resources used as in the case of all the measures rated high at University C. This University is receiving a large financial support, than any other University. Next, comes University D.
2. The historical and traditional role of the University as in the measures related to Religious Awareness Objective at university D.
3. The amount of support of the University management in the formation of manpower needed, e.g. vocational preoparation measures as in University B and C.

CHAPTER VIII  
DISCUSSION OF THE FINDINGS



## 8.1 Introduction

The findings presented in the previous Chapter should help in understanding the differences and similarities in the ranking of the twenty objective areas, criteria appropriateness, and their achievement.

These objective areas (and their associated criteria) could be in consensus or in conflict among the respondents categories depending on the interest of the groups at the University, e.g. some people regard academic development more important than intellectual development or research and so on.

Therefore, these similarities and differences between the groups of various universities are briefly discussed below.

## 8.2 Interpretation of differences and similarities in objective areas preferences

1. Similarities in high ratings of objective areas among the four universities are found in Academic Development, Intellectual Development, Students' Personal Development and Dissemination of Knowledge.

These universities are characterised by their traditional role by which they provide the basic academic and professional obligations towards the society and supply the manpower and leadership needed. This role is still emphasised by those bodies governing

higher education institutions. Thus uniformity does exist among the four universities in the previously mentioned objective areas. Moreover, no sign of statistically significant differences on those objective areas when the ANOVA technique was applied was noticed. These findings coincide with Jammazs' findings in 1973 on Riyadh University (recently King Saud University). Jammazs stated that 98% of respondents cited the university function as preparation of specialised manpower. Moreover, the existence of uniformity on objective areas Academic Freedom and Administrative Efficiency, is partly characterised by the similarities in the political structure of the two countries and partly to the similarities of the internal structure of those universities.

Furthermore, uniformity on objective areas like Humanism/Altruism, Cultural/Aesthetic Awareness and Preservation of Arab and Islamic Heritage exists. These objective areas received lower ratings because they might be neglected from the general university objectives or it may be regarded unimportant even if it is the objective of the various disciplines taught in the university. For instance Cultural/Aesthetic Awareness is one of the aims of teaching Design and Architecture. Also, preservation of Arab and Islamic Heritage is one of the aims of Religious Education, etc.

## 2. Differences:

The existence of significant differences among the four universities in objective areas: Vocational Preparation , Good Citizenship, Religious Awareness, Encouragement of Physical Activities, Encouragement of Research, Public Service, Adaptation to Change, Innovative Climate, Organisational Climate, Relationships with other institutions, and Fostering Links Between Arab People; are related to one of the following:

- (i) Technically oriented university as in the case of University C. where vocational courses are dominant.
- (ii) Historical background, as in the case of University D.

This was established as a college of Arabic and Islamic Studies to provide the society with teachers, judges and religious men. Probably this could account for higher ratings of the objective area Fostering Religious Awareness, in University D, while University B was started by the establishment of a College of Arts to provide society with white-collar people needed in the Government sector.

- (iii) Though no attempt will be made to list the indicators of additional resource allocations that influence the achievement of objective areas, like Healthy Organisational Climate, Innovation and Relationships with other institutions. It is appropriate to highlight what seem to be signs of support to the positive correlation between resource allocation and achievement of these objective areas, such as:



1. Security of employment as reflected on the satisfaction of the academic and administrative staff, because they are well paid. (Objective Area: Organisational Climate).
2. Acquisition of teaching materials and necessary equipment in response to innovation or adaptation to change. (Objective Area: Innovation).
3. Because of the tradition of hospitality and generosity to visitors in the Arab States, the number of exchange visits by academic or administrative staff and students between universities, is related to the university budget devoted for such purposes; the more funds allocated, the more visits are organised.  
(Objective Area: Relationships with Other Institutions)
4. Differences on Good Citizenship and Fostering of Links Between Arab People from the various Arab States, probably accounted for by respondents in Universities A and B as the role of the schools and religious institutions, while respondents at Universities C and D believe it is the role of the University.

The foregoing comments suggest that it is likely that consensus agreement and disagreement among the respondents of the universities could help in selection of the appropriate objective areas for similar institutions in the future.

### 8.3 Interpretations of the findings with respect to criteria

An important finding of the study is the close correlation between the ratings of the objective areas and their measures of appropriateness on one hand, and the degree of achievement on the other hand. This is best illustrated by saying that if a certain objective area rated by respondent group in University A differed from their counterparts in University B, it is more likely that measures of appropriateness for that objective area will also be rated differently. A concrete example is the high ratings of respondents in University D, to the objective area Fostering Religious Awareness, and so all the associated measures were rated high. On the contrary, the same objective area and its measures were rated lower in University A.

On the other hand, if an objective area received almost similar ratings by the respondents in the four universities, it is more likely the ratings of its measures will be more or less similar, for example the objective area Cultural/Aesthetic awareness and its measures were rated lower in all the universities. This type of findings suggest the acceptability of the measures as appropriate for measuring the achievement. Also, it suggests that the criteria proposed in identifying preferences of objective areas and their measures is in line with the intuition of the respondents.

#### 8.4 Comparison of the findings with Romney's findings

An essential element on the findings is to compare the survey information results of this study with Romney's findings in the United States. However, it is important to point out several items of dissimilarities:

1. Romney included in his study 45 institutions of six types and 1,150 respondents of three categories.
2. High percentage of response achieved.
3. Romney sought to investigate the rate of importance of twenty objective areas and 138 measures of appropriateness, but did not include the rate of achievement.

Irrespective of these differences between the two studies, there has been some similarity in results. These are:

1. Statistical significant differences on the objective areas among the institutions, but not among the respondent categories. It is interesting to note, as mentioned in Chapter 4, that the findings of Kashmeeri, 1977, on his study of colleges and universities goals in Saudi Arabia, are dissimilar to the above. Kashmeeri stated that no significant differences in the perceived importance of institutional goals at the three major universities in Saudi Arabia were apparent.
2. Statistical significant differences on the appropriateness measures, differ among the institutions but not among the respondent categories.
3. Significant differences in ratings of measures of appropriateness are correlated highly with differences in objective areas ratings, whether rated by respondent categories or universities. To make this point clear,

respondents in both Romney's study and this study, believe that certain objective areas which are either neglected or not applied in their institutions, responded at a lower rate to that objective area and to the measures associated with it.

4. Respondents of the public doctoral institutions in Romney's study have almost similar ranking to that given by the respondents of Arab universities in the following objective areas: Research, Innovation Climate, Academic Freedom and Religious Awareness.
5. A very small number of criteria were considered by the respondents to have lower appropriateness.

Despite the social, cultural and educational differences of the respondent groups in the study by Romney and this current study, the pattern of response to the measures of progress of institutional objectives was almost similar. This would provide evidence of usefulness of this approach in an attempt to rank and measure the progress of institutional objectives in higher education.

#### 8.5 Achievement of Institutions

1. It was obvious from the results that significant differences among the four universities in the two countries as well as among the universities in each country, appear to exist in ratings of the importance of objective areas.



2. There are a number of criteria which have been rated higher in appropriateness and achievement by all respondents in the four universities, while other measures have been rated high in appropriateness and low in achievement by all the respondents in the four universities. Therefore, it is quite reasonable to suggest that respondent consensus on higher ratings of both appropriateness and achievement of certain measures, in line with higher objective ratings, provide empirical evidence of strengths. While respondents consensus on high ratings of objective areas and their several measures of appropriateness but low achievement provide empirical evidence of weaknesses; this is illustrated in the sections following.

#### 8.5.1 Measures indicating Strengths

- a. Availability of a wide number of courses which are career oriented and relevant to the needs of the society.  
(Objective area: Vocational Preparation)
- b. Gaining mastery over one or two disciplines.  
(Objective area: Academic Development)
- c. Availability and effective usefulness of teaching materials in various disciplines, e.g. textbooks, references, periodicals and educational technology equipment.  
(Objective area: Academic Development)
- d. Amount of availability of sports equipment and playfields.  
(Objective area: Encouragement of Physical Activities)

- e. Number of seminars, conferences and exhibitions held at the University annually.  
(Objective area: Dissemination of Knowledge)
- f. High rate of response to change in academic units.  
(Objective area: Adaptation to Change)
- g. Rate of introduction and design of new curricula and textbooks to correspond with knowledge and technology development.  
(Objective area: Innovation climate)
- h. Power of the academic staff to choose the methods of teaching and assessment for their courses.  
(Objective area: Academic Freedom)
- i. Power of academic staff to choose the subject content of the disciplines taught by them.  
(Objective area: Academic Freedom)
- j. Power of the academic staff to choose their own research fields.  
(Objective area: Academic Freedom)
- k. Degree of cooperation among academics themselves, e.g. team teaching when it is required.  
(Objective area: Healthy Organisational Climate)
- l. Availability of a university statute which spells out clearly the university structure, power hierarchy and the procedure for getting membership on a decision-making body.  
(Objective area: Administrative Efficiency)

Since the information emerged from this study is intended to provide evidence of the existing situation and direction to improve decision-making processes in the university, it is possible to say that the above measures provide clear indications that commitment of the universities to instructional roles were given precedence over other roles such as research and public service etc. Therefore, University management should do more to achieve a reasonable balance in achieving other university roles, related to the institutional objectives.

#### 8.5.2 Measures indicating Weaknesses

As indicated earlier, some measures were rated high in terms of appropriateness and low in terms of achievement, if related to highly rated objectives, provide possible indications of weaknesses. Examples of these are:

- a. Self-reliance in gathering and evaluating information or extracting knowledge from primary sources such as collecting data from the field, or secondary sources, e.g. using library references and periodicals.  
(Objective area: Intellectual Development)
- b. Ability of students to think in a scientific way based on identifying a problem, analysing it, synthesising and application, as it has been expressed in their essays, theses or dissertation.  
(Objective area: Intellectual Development)
- c. Critical evaluation or critical analysis of their own work and also the work of others, including that of their colleagues, e.g. evaluation of their study programmes, piece of student work etc.  
(Objective area: Intellectual Development)

- d. Rate of student participation in intellectual debate through organised panels or seminars etc.  
(Objective area: Intellectual Development)
- e. Conducting conferences and seminars which are concerned with matters like world peace.  
(Objective area: Humanism/Altruism)
- f. Quantity and quality of research work conducted by students or academic staff for the Government and private sectors such as industries, farms, construction industry, etc.  
(Objective area: Encouragement of Research)  
Only University C seems to have done better than the other universities.
- g. Number of personal research projects carried out by students or academic staff to gain degrees.  
(Objective area: Encouragement of Research)
- h. High rate of collecting feedback information on the graduates' work performance.  
(Objective area: Adaptation to Change)

Although, as indicated earlier, universities have more commitment to the teaching role, it appears that the methods of teaching used in universities showed poor achievement in the measures associated with the objective area Intellectual Development, as shown above.

These findings are similar to Khashan (1984), studying students' academic perception at King Saud University, the study described earlier in Chapter 4. Khashan stated that "the problem of mechanistic method of absorbing academic knowledge inhibits the student's development of their analytical skills". (p.29)



However, it is not possible to examine in more detail the factors related to such poor achievement in these measures, but it is possible to highlight some of the issues which have influenced that poor achievement, to mention:

1. The dominant method of teaching is the lecture form in all kinds of disciplines, no discussion, no tutorials etc. Nevertheless, the students are not used to this form of teaching in secondary schools. The teaching method in secondary school is of didactic form, i.e. students have the knowledge spoon fed to them by their teachers or textbooks. No encouragement is given to independent study and obtaining information from references or from field work.
2. Most of the faculty members hold teaching jobs at the university without background in teaching method, and they tend to be extremely conservative in changing their methods of teaching.

With respect to Encouragement of Research, perhaps the incapability of universities of promoting research and encouraging postgraduate studies are not constrained by funds and incentives which are all available especially in universities C and D. Factors contributing to this incapability are as follows:

1. Inadequate policy on research; no obligations to question where the funds allocated for research must be spent in directions congruent with the university and the Government's objectives, and also lack of accountability.

2. The academic staff are not obliged to do research and are not held accountable for their contributions in their field of speciality.
3. University research might be influenced by the absence of high quality staff.
4. Academic staff dissatisfaction with the existing pattern or procedure of motivation and encouragement to conduct research.
5. Short period contract with the expatriate academic staff, makes it hard to set up a plan for future research.

### 8.5.3 Inappropriate Measures

Several measures appear to be inappropriate, therefore the poor achievement on these measures is not important. A probable explanation for inappropriateness of these measures might be attributed to the unavailability of some information or data to the respondents, and unimportance of the objective areas related to these criteria, so these criteria were weighted exceptionally low, such as:

1. Number of students enrolled in religious programmes.  
(Objective area: Fostering Religious Awareness)
2. Number of students or graduates holding positions in religious organisations inside and outside the University.  
(Objective area: Fostering Religious Awareness)
3. Number of students or graduates who receive national awards for their performance or creativity.  
(Objective area: Cultural/Aesthetic Awareness).

## 8.6 Limitations of the Study

Practical difficulties always lower the effectiveness of a piece of research; Researchers always encounter constraints emerging, either from the design of the study or imposed on the researcher while the study is being conducted. This study is no exception; some of these constraints are given below:

1. The negative response from the University Council members and administrators.
2. Low percentage of response among the academic staff.
3. The market sector or in part of the community in general is not represented in the sample. Their representation could have provided better judgement on the universities' outputs.
4. The study needs more time and money in order to gather more data during visits to sites.

In spite of these difficulties, important results were obtained and it will benefit higher education institutions in the Arab States in general, and those included in this Study in particular.

CHAPTER IX

CONCLUSIONS AND RECOMMENDATIONS



## 9.1 Conclusions

This study has examined higher education objectives and their achievement in a number of Arab States. Using the goal approach to investigate their achievement, the conclusion of the empirical analysis of this study has revealed that:

- 1- There is a wide diversity of goal preferences regarding universities' objectives. This finding indicates that different institutions have different objective priorities.
- 2- There is also a wide diversity of opinions on objective preferences among the respondent categories. This finding is important as it reflects the various personal weightings or values given by various categories to each objective area.
- 3- Furthermore, the study revealed that the consensus among the respondents as a group on the appropriateness of the criteria to measure the progress of a particular objective area correlated positively with the rating of that objective area. This correlation seems to indicate reliability of these criteria in measuring the qualitative aspects of the objective areas.
- 4- Another important area revealed by the study is the homogeneity among the respondent categories on the degree of achievement of these criteria. This indicates that perception of achievement represents the reality of their understanding

and awareness of the existing situation at their institution.

5- Although the researcher has been unable to judge the degree of achievement of each objective area in each individual university, there is clear evidence that little attention has been paid by any of the universities to research and students' academic performance, i.e. ability and skills in analysing and synthesising knowledge. Thus, the most important objectives of the universities require much more work to be done by the management to achieve more.

## 9.2 Recommendations

The results of the study, despite inadequate information, are simply the first steps to carry out a survey of this kind on higher education institutions' objectives and achievement in the Arab States. However, it has shed light on a number of issues which should be of interest to other researchers in this area. These are:

1- The study should be replicated in several other universities in the Arab States on a larger scale of respondents - to include people from industry, commerce, university governance and alumni.

2- Universities must be more concerned with a high standard of academic achievement and genuine involvement in research activities. These requirements could be met

through further investigation with people responsible for implementation at the workplace. Personnel like academic administrators and heads of departments must be held accountable for their contributions in research and the promotion of academic excellence. However, it must be emphasised that the poor academic performance and absence of vital activities in research that exist can be ascribed mainly to management problems rather than inadequate resources.

3- Special investigations should be carried out on poor achievement in intellectual development. It is likely that a wide gap exists in the methods of teaching at university level compared to the teaching methods employed in secondary schools. It may be that the early learning in secondary schools has not prepared students for a more independent approach to study. Thus, most of the faculty members are obliged to use a didactic method in teaching their students. This gap can only be narrowed by closer links between universities and schools than exists at present, and training of university staff on new methods of teaching.

4- There is no doubt that there is a number of objective areas and measures which are not covered by this study. Therefore, more research is needed to identify more precisely the appropriate measures of the objectives of the universities in the Arab States. This could perhaps be carried out by calling for suggestions on measures and objective areas from university council members, heads of



departments and academic staff. Such suggestions could then be scrutinised and tested for appropriateness. A design for an instrument to collect such information could be developed.

5- No evidence that poor performance caused by lack of resources.

There is a need to review the current courses provided by each university in order to use the available resources more efficiently and to avoid wastage. To achieve the desired outputs of skilled personnel and manpower needed, and using the available resources more effectively, the university management should implement certain techniques which permit the evaluation of the going on process and provide feedback for improvement.

6- High appropriate measures of progress associated with highly ranked objective areas provide a basis for investigating effectiveness in other similar institutions, and any study later can concentrate on this basis.

Finally, it seems to the researcher that this study has been a straightforward attempt to identify the universities' objectives and their achievement in the Arab States. Although, it has to be said that, for such a study to be worthwhile, it needs to be supported by subsequent studies to consider mainly the objectives of government, faculty members and students - issues which require further investigation.



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Appendix No. 1

INSTITUTIONAL GOALS INVENTORY

EDUCATIONAL TESTING SERVICE



PRINCETON, N.J. 08541

609-921-9000

CABLE-EDUCTESTSVC

August 16, 1983

INSTITUTIONAL RESEARCH PROGRAM  
FOR HIGHER EDUCATION

Jalil Halwachi  
9 Grange Loan Gdns.  
Edinburgh EH9 ZEB  
Scotland, U.K.

Dear Jalil Halwachi:

Thank you for your letter requesting permission to quote statements from the Institutional Goals Inventory. We are glad to give you permission to quote from the IGI. Just be sure to acknowledge the source of any of the goal statements (From the Institutional Goals Inventory, Copyright © 1972 by Educational Testing Service, Princeton, NJ 08541). I have enclosed a copy of the IGI along with a list of the 20 goal areas with brief descriptions.

I hope you find this helpful.

Sincerely yours,

A handwritten signature in cursive script, appearing to read 'Nancy Beck'.

Nancy Beck  
Program Director

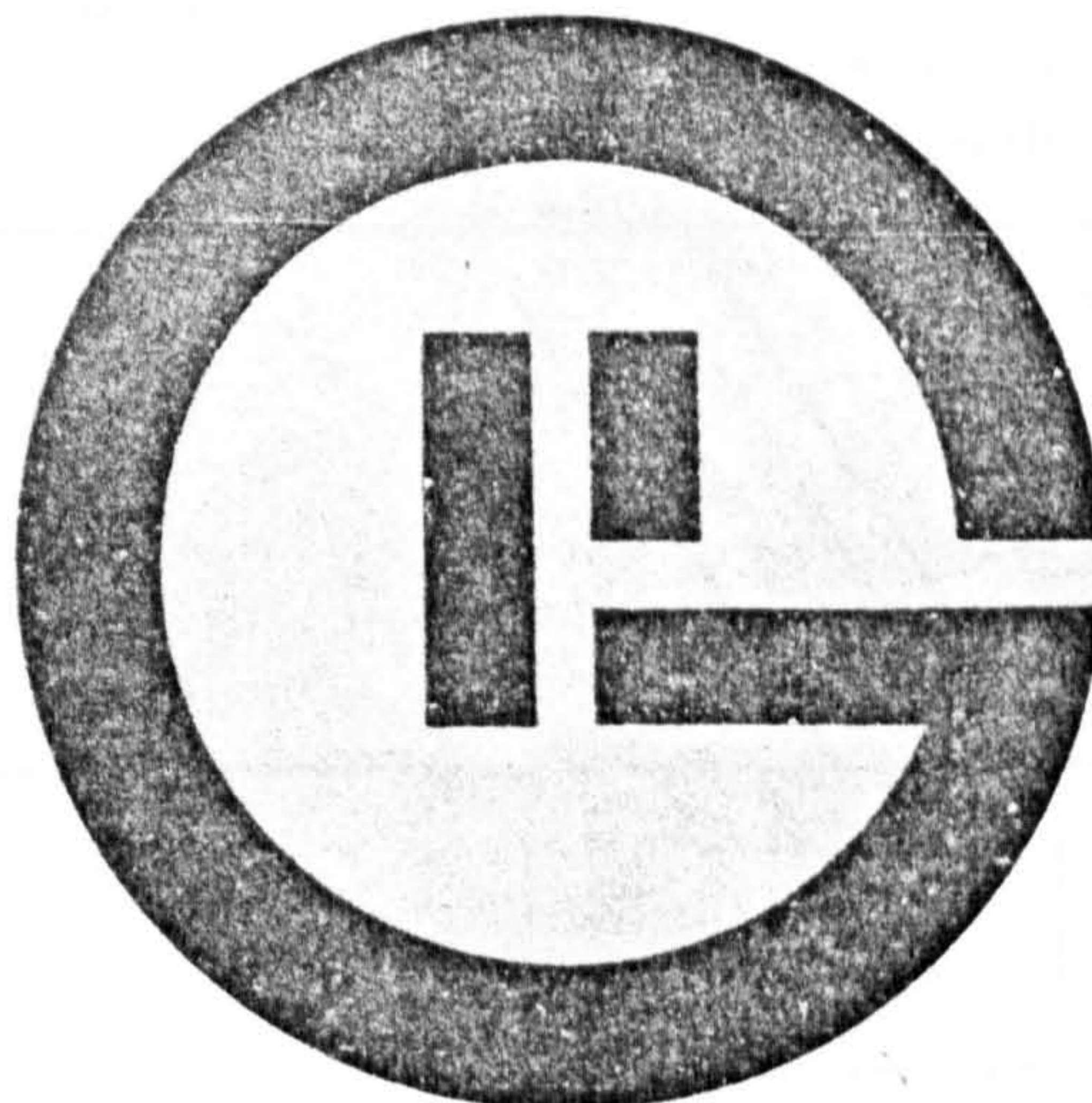
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Enclosures



## INSTITUTIONAL GOALS INVENTORY

(Form 1)

**To the respondent:**

Numerous educational, social, and economic circumstances have arisen that have made it necessary for many colleges and universities to reach clear, and often new, understandings about their goals. During the late 1960s there were new demands, especially from the students, for colleges and universities to assume new roles and serve new interests. Now, in the 1970s a widespread financial crisis is making it imperative for these institutions to specify the objectives to which limited resources may be directed.

The Institutional Goals Inventory (IGI) was developed as a tool to help college and university communities delineate goals and establish priorities among them. The *Inventory* does not tell institutions what to do in order to reach the goals. Instead, it provides a means by which many individuals and constituent groups can contribute their thinking about desired institutional goals. Summaries of the results of this thinking then provide a basis for reasoned deliberations toward final definition of institutional goals.

The *Inventory* was designed to embrace possible goals of all types of higher education institutions—universities, church-related colleges, community colleges, and so forth. Most of the goal statements in the *Inventory* refer to what may be thought of as "output" or "outcome" goals—substantive objectives institutions may seek to achieve (e.g., qualities of graduating students, research emphases, kinds of public service). Statements toward the end of the instrument relate to "process" goals—goals having to do with campus climate and the educational process.

The IGI is intended to be completely confidential. Results will be summarized only for groups—faculty, students, administrators, boards, and so forth. In no instance will responses of individuals be reported. The *Inventory* should ordinarily not take longer than 45 minutes to complete.

NAME OF INSTITUTION: \_\_\_\_\_



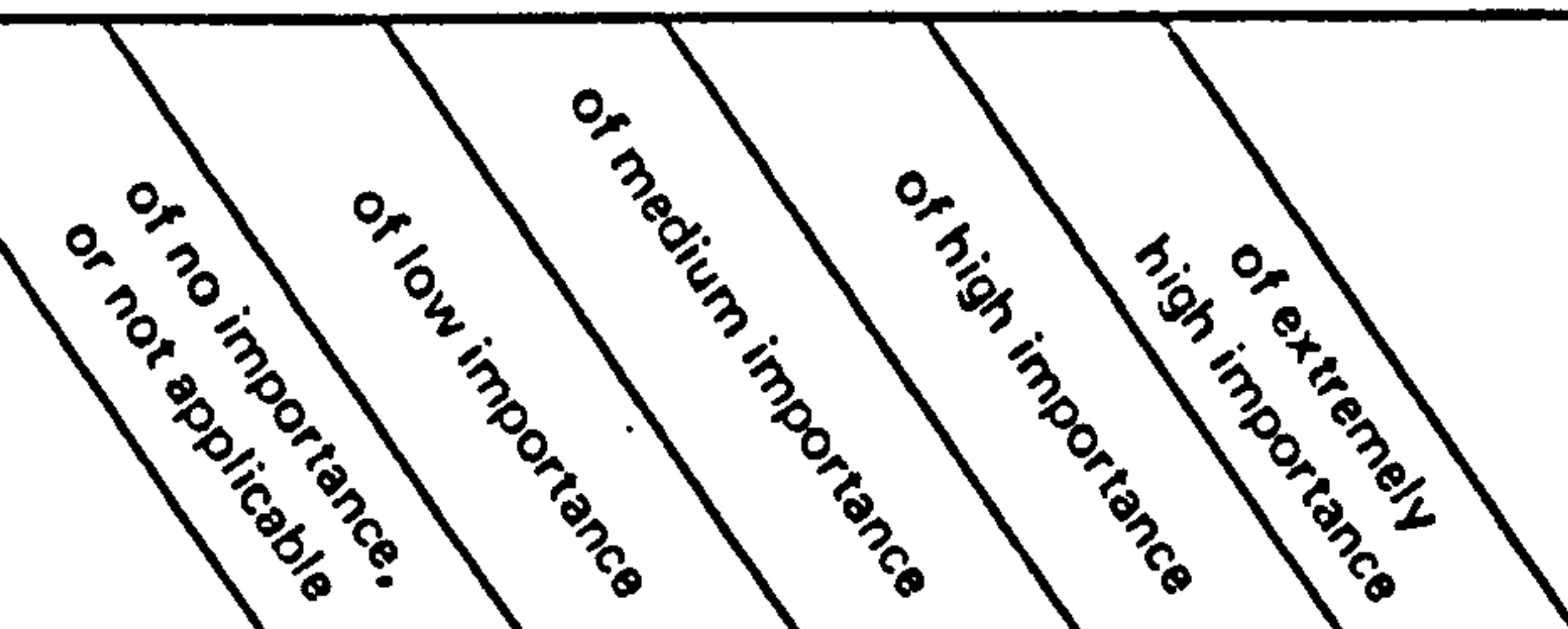
DIRECTIONS

The *Inventory* consists of 90 statements of possible institutional goals. Using the answer key shown in the examples below, you are asked to respond to each statement in two different ways:

First — How important *is* the goal at this institution at the present time?

Then — In your judgment, how important *should* the goal *be* at this institution?

EXAMPLES



A. to require a common core of learning experiences for all students...

is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
should be	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

In this example, the respondent believes the goal "to require a common core of learning experiences for all students" is presently of extremely high importance, but thinks that it should be of medium importance.

B. to give alumni a larger and more direct role in the work of the institution...

is	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

In this example, the respondent sees the goal "to give alumni a larger and more direct role in the work of the institution" as presently being of low importance, but thinks that it should be of high importance.

- Unless you have been given other instructions, consider the institution as a whole in making your judgments.
- In giving *should be* responses, do not be restrained by your beliefs about whether the goal, realistically, can ever be attained on the campus.
- Please try to respond to every goal statement in the *Inventory*, by

blackening one oval after *is* and one oval after *should be*.

- Use any soft lead pencil. Do not use colored pencils or a pen—ink, ball point, or felt tip.
- Mark each answer so that it completely fills (blackens) the intended oval. Please do not make checks (✓) or X's.

- Additional Goal Statements (Local Option) (91-110): A section is included for additional goal statements of specific interest or concern. These statements will be supplied locally. If no statements are supplied, leave this section blank and go on to the Information Questions.
- Information Questions (111-117): These questions are included to enable each institution to analyze the results of the *Inventory* in ways that will be the most meaningful and useful to them. Respond to each question that applies.
- Subgroups and Supplementary Information Questions (118-124): If these sections are to be used instructions will be given locally for marking these items. If not, please leave them blank.

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No part of the Institutional Goals Inventory may be adapted or reproduced in any form without permission in writing from the publisher.



## Descriptions of the 20 Goal Areas in the Institutional Goals Inventory

### OUTCOME GOALS

**Academic Development**—this goal has to do with acquisition of general and specialized knowledge, preparation of students for advanced scholarly study, and maintenance of high intellectual standards on the campus. (1,4,6,9)\*

**Intellectual Orientation**—this goal area relates to an *attitude* about learning and intellectual work. It means familiarity with research and problem solving methods, the ability to synthesize knowledge from many sources, the capacity for self-directed learning, and a commitment to lifelong learning. (2,5,7,10)

**Individual Personal Development**—this goal area means identification by students of personal goals and development of means for achieving them, enhancement of sense of self-worth and self-confidence. (3,8,11,13)

**Humanism/Altruism**—this goal area reflects a respect for diverse cultures, commitment to working for world peace, consciousness of the important moral issues of the time, and concern about the welfare of man generally. (14,17,20,23)

**Cultural/Aesthetic Awareness**—this goal area entails a heightened appreciation of a variety of art forms, required study in the humanities or arts, exposure to forms of non-Western art, and encouragement of active student participation in artistic activities. (15,18,21,24)

**Traditional Religiousness**—this goal area is intended to mean a religiousness that is orthodox, doctrinal, usually sectarian, and often fundamental—in short, *traditional* rather than “secular” or “modern.” (16,19,22,25)

**Vocational Preparation**—this goal area means offering: specific occupational curriculums (as in accounting or nursing), programs geared to emerging career fields, opportunities for retraining or upgrading skills, and assistance to students in career planning. (26,30,36,38)

**Advanced Training**—this goal area can be most readily understood simply as the availability of postgraduate education. It means developing and maintaining a strong and comprehensive graduate school, providing programs in the professions, and conducting advanced study in specialized problem areas. (27,31,32,41)

**Research**—this goal area involves doing contract studies for external agencies, conducting basic research in the natural and social sciences, and seeking generally to extend the frontiers of knowledge through scientific research. (28,34,35,37)

**Meeting Local Needs**—this goal area is defined as providing for continuing education for adults, serving as a cultural center for the community, providing trained manpower for local employers, and facilitating student involvement in community-service activities. (29,33,39,40)

**Public Service**—this goal area means working with governmental agencies in social and environmental policy formation, committing institutional resources to the solution of major social and environmental problems, training people from disadvantaged communities, and generally being responsive to regional and national priorities in planning educational programs. (44,47,50,51)

\*The numbers in parentheses are the four Goal Statements that make up each Goal Area.

**Social Egalitarianism**—this goal area has to do with open admissions and meaningful education for all admitted, providing educational experiences relevant to the evolving interests of minority groups and women, and offering remedial work in basic skills. (42,45,48,52)

**Social Criticism/Activism**—this goal area means providing criticisms of prevailing American values, offering ideas for changing social institutions judged to be defective, helping students learn how to bring about change in American society, and being engaged, as an institution, in working for basic changes in American society. (43,46,49,53)

### PROCESS GOALS

**Freedom**—this goal area is defined as protecting the right of faculty to present controversial ideas in the classroom, not preventing students from hearing controversial points of view, placing no restrictions on off-campus political activities by faculty or students, and ensuring faculty and students the freedom to choose their own life styles. (54,57,60,63)

**Democratic Governance**—this goal area means decentralized decision-making arrangements by which students, faculty, administrators, and governing board members can all be significantly involved in campus governance; opportunity for individuals to participate in all decisions affecting them; and governance that is genuinely responsive to the concerns of everyone at the institution. (55,58,61,64)

**Community**—this goal area is defined as maintaining a climate in which there is faculty commitment to the general welfare of the institution, open and candid communication, open and amicable airing of differences, and mutual trust and respect among students, faculty, and administrators. (56,59,62,65)

**Intellectual/Aesthetic Environment**—this goal area means a rich program of cultural events, a campus climate that facilitates student free-time involvement in intellectual and cultural activities, an environment in which students and faculty can easily interact informally, and a reputation as an intellectually exciting campus. (66,69,73,76)

**Innovation**—this goal area is defined as a climate in which continuous innovation is an accepted way of life; it means established procedures for readily initiating curricular or instructional innovations; and, more specifically, it means experimentation with new approaches to individualized instruction and to evaluating and grading student performance. (67,70,74,77)

**Off-Campus Learning**—this goal area includes time away from the campus in travel, work-study, VISTA work, etc.; study on several campuses during undergraduate programs; awarding degrees for supervised study off the campus; awarding degrees entirely on the basis of performance on an examination. (68,72,75,78)

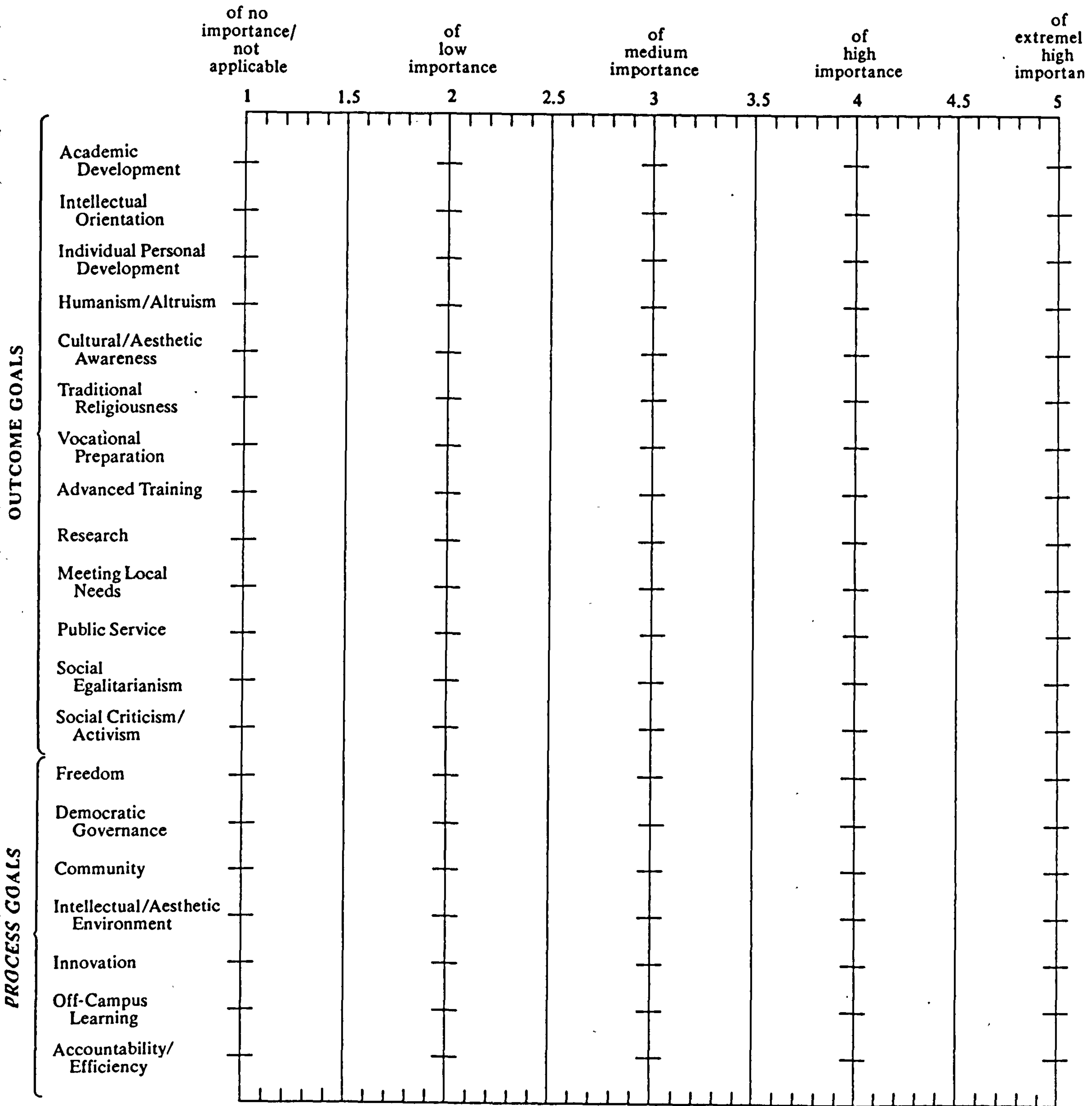
**Accountability/Efficiency**—this goal area is defined to include use of cost criteria in deciding among program alternatives, concern for program efficiency, accountability to funding sources for program effectiveness, and regular submission of evidence that the institution is achieving stated goals. (79,81,83,87)

Miscellaneous goal statements not included in goal areas (12, 71, 80, 82, 84, 85, 86, 88, 89, 90)



PROFILE FOR \_\_\_\_\_

### INSTITUTIONAL GOALS INVENTORY PROFILE CHART



Institutional Goals Inventory  
Institutional Research Program for Higher Education  
Educational Testing Service, Princeton, New Jersey 08540

See other side for descriptions of the 20 Goal Areas.



Please respond to these goal statements by blackening one oval after is and one after should be.

			of no importance. or not applicable	of low importance	of medium importance	of high importance	of extremely high importance
1.	to help students acquire depth of knowledge in at least one academic discipline...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.	to teach students methods of scholarly inquiry, scientific research, and/or problem definition and solution...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3.	to help students identify their own personal goals and develop means of achieving them...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.	to ensure that students acquire a basic knowledge in the humanities, social sciences, and natural sciences...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.	to increase the desire and ability of students to undertake self-directed learning...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.	to prepare students for advanced academic work, e.g., at a four-year college or graduate or professional school...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.	to develop students' ability to synthesize knowledge from a variety of sources...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8.	to help students develop a sense of self-worth, self-confidence, and a capacity to have an impact on events...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9.	to hold students throughout the institution to high standards of intellectual performance...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10.	to instill in students a life-long commitment to learning...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11.	to help students achieve deeper levels of self-understanding...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12.	to ensure that students who graduate have achieved some level of reading, writing, and mathematics competency...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13.	to help students be open, honest, and trusting in their relationships with others...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please respond to these goal statements by blackening one oval after is and one after should be.

of no importance, or not applicable  
of low importance  
of medium importance  
of high importance  
of extremely high importance

4. to encourage students to become conscious of the important moral issues of our time...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. to increase students' sensitivity to and appreciation of various forms of art and artistic expression...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. to educate students in a particular religious heritage...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. to help students understand and respect people from diverse backgrounds and cultures...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. to require students to complete some course work in the humanities or arts...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. to help students become aware of the potentialities of a full-time religious vocation...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. to encourage students to become committed to working for world peace...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. to encourage students to express themselves artistically, e.g., in music, painting, film-making...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. to develop students' ability to understand and defend a theological position...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. to encourage students to make concern about the welfare of all mankind a central part of their lives...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. to acquaint students with forms of artistic or literary expression in non-Western countries...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. to help students develop a dedication to serving God in everyday life...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. to provide opportunities for students to prepare for specific occupational careers, e.g., accounting, engineering, nursing...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Please respond to these goal statements by blackening one oval after is and one after should be.

		of no importance, or not applicable	of low importance	of medium importance	of high importance	of extremely high importance
27.	to develop what would generally be regarded as a strong and comprehensive graduate school...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28.	to perform contract research for government, business, or industry...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29.	to provide opportunities for continuing education for adults in the local area, e.g., on a part-time basis...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30.	to develop educational programs geared to new and emerging career fields...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31.	to prepare students in one or more of the traditional professions, e.g., law, medicine, architecture...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32.	to offer graduate programs in such "newer" professions as engineering, education, and social work...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33.	to serve as a cultural center in the community served by the campus...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34.	to conduct basic research in the natural sciences...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35.	to conduct basic research in the social sciences...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36.	to provide retraining opportunities for individuals whose job skills have become out of date...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37.	to contribute, through research, to the general advancement of knowledge...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38.	to assist students in deciding upon a vocational career...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39.	to provide skilled manpower for local-area business, industry, and government...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Please respond to these goal statements by blackening one oval after is and one after should be.

of no importance or not applicable

of low importance

of medium importance

of high importance

of extremely high importance

40. to facilitate involvement of students in neighborhood and community-service activities...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
41. to conduct advanced study in specialized problem areas, e.g., through research institutes, centers, or graduate programs...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42. to provide educational experiences relevant to the evolving interests of women in America...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43. to provide critical evaluation of prevailing practices and values in American society...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44. to help people from disadvantaged communities acquire knowledge and skills they can use in improving conditions in their own communities...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45. to move to or maintain a policy of essentially open admissions, and then to develop meaningful educational experiences for all who are admitted...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46. to serve as a source of ideas and recommendations for changing social institutions judged to be unjust or otherwise defective...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
47. to work with governmental agencies in designing new social and environmental programs...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
48. to offer developmental or remedial programs in basic skills (reading, writing, mathematics)...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
49. to help students learn how to bring about change in American society...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
50. to focus resources of the institution on the solution of major social and environmental problems...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
51. to be responsive to regional and national priorities when considering new educational programs for the institution...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
52. to provide educational experiences relevant to the evolving interests of Blacks, Chicanos, and American Indians...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please respond to these goal statements by blackening one oval after is and one after should be.

		of no importance or not applicable	of low importance	of medium importance	of high importance	of extremely high importance
53.	to be engaged, <u>as an institution</u> , in working for basic changes in American society...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
54.	to ensure that students are not prevented from hearing speakers presenting controversial points of view...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
55.	to create a system of campus governance that is genuinely responsive to the concerns of all people at the institution...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
56.	to maintain a climate in which faculty commitment to the goals and well-being of the institution is as strong as commitment to professional careers...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
57.	to ensure the freedom of students and faculty to choose their own life styles (living arrangements, personal appearance, etc.)...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
58.	to develop arrangements by which students, faculty, administrators, and trustees can be significantly involved in campus governance...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
59.	to maintain a climate in which communication throughout the organizational structure is open and candid...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
60.	to place no restrictions on off-campus political activities by faculty or students...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
61.	to decentralize decision making on the campus to the greatest extent possible...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
62.	to maintain a campus climate in which differences of opinion can be aired openly and amicably...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
63.	to protect the right of faculty members to present unpopular or controversial ideas in the classroom...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
64.	to assure individuals the opportunity to participate or be represented in making any decisions that affect them...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
65.	to maintain a climate of mutual trust and respect among students, faculty, and administrators...	is <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Please respond to these goal statements by blackening one oval after is and one after should be.

		of no importance, or not applicable	of low importance	of medium importance	of high importance	of extremely high importance
6. to create a campus climate in which students spend much of their free time in intellectual and cultural activities...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. to build a climate on the campus in which continuous educational innovation is accepted as an institutional way of life...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. to encourage students to spend time away from the campus gaining academic credit for such activities as a year of study abroad, in work-study programs, in VISTA, etc...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. to create a climate in which students and faculty may easily come together for informal discussion of ideas and mutual interests...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. to experiment with different methods of evaluating and grading student performance...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. to maintain or work to achieve a large degree of institutional autonomy or independence in relation to governmental or other educational agencies...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. to participate in a network of colleges through which students, according to plan, may study on several campuses during their undergraduate years...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. to sponsor each year a rich program of cultural events--lectures, concerts, art exhibits, and the like...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. to experiment with new approaches to individualized instruction such as tutorials, flexible scheduling, and students planning their own programs...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. to award the bachelor's and/or associate degree for supervised study done <u>away</u> from the campus, e.g., in extension or tutorial centers, by correspondence, or through field work...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. to create an institution known widely as an intellectually exciting and stimulating place...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. to create procedures by which curricular or instructional innovations may be readily initiated...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. to award the bachelor's and/or associate degree to some individuals solely on the basis of their performance on an acceptable examination (with no college-supervised study, on- or off-campus, necessary)...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Please respond to these goal statements by blackening one oval after is and one after should be.

			of no importance, or not applicable	of low importance	of medium importance	of high importance	of extremely high importance
79.	to apply cost criteria in deciding among alternative academic and non-academic programs...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
80.	to maintain or work to achieve a reputable standing for the institution within the academic world (or in relation to similar colleges)...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
81.	to regularly provide evidence that the institution is actually achieving its stated goals...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
82.	to carry on a broad and vigorous program of extracurricular activities and events for students...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
83.	to be concerned about the <u>efficiency</u> with which college operations are conducted...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
84.	to be organized for continuous short-, medium-, and long-range planning for the total institution...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
85.	to include local citizens in planning college programs that will affect the local community...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
86.	to excel in intercollegiate athletic competition...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
87.	to be <u>accountable</u> to funding sources for the effectiveness of college programs...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
88.	to create a climate in which systematic evaluation of college programs is accepted as an institutional way of life...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
89.	to systematically interpret the nature, purpose, and work of the institution to citizens off the campus...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
90.	to achieve consensus among people on the campus about the goals of the institution...	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- If additional locally written goal statements have been provided, use page ten for responding and then go on to page eleven.
- If no additional goal statements were given, leave page ten blank and answer the information questions on page eleven.

ADDITIONAL GOAL STATEMENTS  
(Local Option)

If you have been provided with supplementary goal statements, use this section for responding. Use the same answer key as you use for the first 90 items, and respond to both *is* and *should be*.

		of no importance, or not applicable					of low importance					of medium importance					of high importance					of extremely high importance																																																																																																																					
		of no importance, or not applicable					of low importance					of medium importance					of high importance					of extremely high importance																																																																																																																					
91.	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	101.	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	92.	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	102.	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	93.	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	103.	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	94.	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	104.	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	95.	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	105.	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	96.	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	106.	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	97.	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	107.	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	98.	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	108.	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	99.	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	109.	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	100.	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	110.	is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		should be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>																																																																						



Please mark one answer for each of the information questions below that apply to you.

111. Mark the one that best describes your role.

- 1 Faculty member
- 2 Student
- 3 Administrator
- 4 Governing Board Member
- 5 Alumna/Alumnus
- 6 Member of off-campus community group
- 7 Other \_\_\_\_\_

112. Faculty and students: mark one field of teaching and/or research interest, or for students, major field of study.

- 1 Biological sciences
- 2 Physical sciences
- 3 Mathematics
- 4 Social sciences
- 5 Humanities
- 6 Fine arts, performing arts
- 7 Education
- 8 Business
- 9 Engineering
- 10 Other \_\_\_\_\_

113. Faculty: indicate academic rank.

- 1 Instructor
- 2 Assistant professor
- 3 Associate professor
- 4 Professor
- 5 Other \_\_\_\_\_

114. Faculty: indicate current teaching arrangement.

- 1 Full-time
- 2 Part-time
- 3 Evening only
- 4 Off-campus — extension only, etc.
- 5 Other \_\_\_\_\_

115. All respondents: indicate age at last birthday.

- 1 Under 20
- 2 20 to 29
- 3 30 to 39
- 4 40 to 49
- 5 50 to 59
- 6 60 or over

116. Students: indicate class in college.

- 1 Freshman
- 2 Sophomore
- 3 Junior
- 4 Senior
- 5 Graduate
- 6 Other \_\_\_\_\_

117. Students: indicate current enrollment status.

- 1 Full-time, day
- 2 Part-time, day
- 3 Evening only
- 4 Off-campus only — e.g., extension, correspondence, TV, etc.
- 5 Other \_\_\_\_\_

118. **SUBGROUPS—one response only.**

Instructions will be given locally for gridding this subgroup item.

If instructions are not given, leave blank.

- 1 One
- 2 Two
- 3 Three
- 4 Four
- 5 Five

**SUPPLEMENTARY INFORMATION QUESTIONS.**

If you have been provided with additional information questions, use this section for responding. Mark only one response to each question.

119.	120.	121.	122.	123.	124.
<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1
<input type="radio"/> 2	<input type="radio"/> 2	<input type="radio"/> 2	<input type="radio"/> 2	<input type="radio"/> 2	<input type="radio"/> 2
<input type="radio"/> 3	<input type="radio"/> 3	<input type="radio"/> 3	<input type="radio"/> 3	<input type="radio"/> 3	<input type="radio"/> 3
<input type="radio"/> 4	<input type="radio"/> 4	<input type="radio"/> 4	<input type="radio"/> 4	<input type="radio"/> 4	<input type="radio"/> 4
<input type="radio"/> 5	<input type="radio"/> 5	<input type="radio"/> 5	<input type="radio"/> 5	<input type="radio"/> 5	<input type="radio"/> 5
<input type="radio"/> 6	<input type="radio"/> 6	<input type="radio"/> 6	<input type="radio"/> 6	<input type="radio"/> 6	<input type="radio"/> 6
<input type="radio"/> 7	<input type="radio"/> 7	<input type="radio"/> 7	<input type="radio"/> 7	<input type="radio"/> 7	<input type="radio"/> 7
<input type="radio"/> 8	<input type="radio"/> 8	<input type="radio"/> 8	<input type="radio"/> 8	<input type="radio"/> 8	<input type="radio"/> 8
<input type="radio"/> 9	<input type="radio"/> 9	<input type="radio"/> 9	<input type="radio"/> 9	<input type="radio"/> 9	<input type="radio"/> 9
<input type="radio"/> 10	<input type="radio"/> 10	<input type="radio"/> 10	<input type="radio"/> 10	<input type="radio"/> 10	<input type="radio"/> 10

THANK YOU

Comments and complaints regarding any aspect of the inventory are welcomed; please send them to:

Institutional Goals Inventory  
ETS College and University Programs  
Princeton, NJ 08541



Appendix No. 2



National Center for Higher Education Management Systems  
P.O. Drawer P/Boulder, Colorado 80302/(303) 447-1980  
*An Affirmative Action/Equal Opportunity Employer*

July 25, 1983

Jalil Halwachi  
9 Grange Loan Gardens  
Edinburgh EH02EB  
Scotland, U.K.

Dear Mr. Halwachi:

Thank you for your letter of July 5, 1983 regarding MIGA report.

NCHEMS is most interested in making a contribution to the field of knowledge about higher-education management systems, and would be pleased to have you quote material from this report. However, there is a copyright on the Survey material by the Education Testing Service. The address for ETS is:

Education Testing Service  
Rosedale Road  
Princeton, NJ 08541

NCHEMS cannot give permission for you to use anything that is copyrighted by ETS.

If I can be of any further help to you, please contact me.

Yours truly,

A handwritten signature in cursive script, appearing to read "Linda Kemnitzer".

Linda Kemnitzer  
Publications Secretary

P.S. Your refund check for \$4.00 is being made out to your name and will be sent to you soon.

Appendix No. 3

QUESTIONNAIRE ON MEASUREMENT OF HIGHER EDUCATION  
INSTITUTION OUTCOMES IN THE ARAB STATES

# QUESTIONNAIRE ON MEASUREMENT OF HIGHER EDUCATION INSTITUTION OUTCOMES IN THE ARAB STATES

## Introduction

This questionnaire is designed to obtain comprehensive information from the academic staff and the academic administrators on perception, appropriateness of progress measures and degree of achievement of institutional objectives.

The study aims to identify the appropriateness of the criteria for assessing institutional objectives. Another major aim of the study is to pinpoint aspects of differences as well as similarities among the Arab Universities in their attempts to achieve their objectives. The approach has been developed from a similar study conducted on some American institutions in 1976.

At the outset of this questionnaire, I would like to express my advance appreciation and thankfulness to the respondent in devoting some of his precious time to answering the questionnaire.

(219)

Your name has been selected randomly by the researcher, which is a common procedure in choosing the population sample in such studies.

Please note the following points when answering the questionnaire:

- 1- Do not sign or write your name on any part of the questionnaire.
- 2- Please be objective in answering the questionnaire to ensure reduction of bias.

The questionnaire consists of two sections. The first asks for general information about the respondent, while the second deals with twenty objective areas and measures of progress.



**HOW TO ANSWER THE QUESTIONNAIRE:**

1. Please tick or enter the information that best describes your case in Section One.
2. Please tick the response which reflects your assessment of the appropriate objective area of your Institution. All objective areas are numbered alphabetically.
3. Under each objective is a list of measures which are meant to give a guide as to how far your University has met this objective:
  - (i) Indicate the extent to which these criteria are appropriate measures of goal achievements.
  - (ii) Tick the response which in your view indicates how successful your Institution has been in achieving this criterion. All measures are in Arabic numbers.

**Example:** Application of points 2 and 3 in answering the questionnaire:

**B. ACADEMIC DEVELOPMENT:** This objective area includes encouraging students to acquire general and specialised knowledge in Medicine, Science, Engineering and Arts, which is relevant to the need of society and to prepare students for advanced studies. This is achieved by:

1. Flexibility of course choices to help students identify their abilities and interests.
2. Gaining mastery over one or two disciplines.

**Explanation:** In this illustrative example, the respondent believed that the objective area is below average importance for his Institution and he believed that the first criterion is inappropriate to measure that objective because flexibility of courses does not help students to acquire specialised knowledge but helps them to identify their abilities and interests. On the contrary, he believed the second criterion is highly appropriate because it allows students to acquire depth in one or two disciplines. But, in measuring the achievement of that objective in the second column, the respondent believed that the University had been unsuccessful in achieving the first criterion - below average - this means that he believed there is no wide flexibility of courses in that Institution. He believed, however, that University was more successful in terms of the second criterion - high - because the academic achievement of the student is high in one or two subjects.

DEGREE OF ACHIEVEMENT  
FOR YOUR INSTITUTION

HIGH	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ABOVE AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>
AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>
BELOW AVERAGE	<input checked="" type="checkbox"/>	<input type="checkbox"/>
MINIMAL	<input type="checkbox"/>	<input type="checkbox"/>

APPROPRIATENESS

HIGH	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ABOVE AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>
AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>
BELOW AVERAGE	<input checked="" type="checkbox"/>	<input type="checkbox"/>
INAPPROPRIATE	<input type="checkbox"/>	<input type="checkbox"/>

SECTION 1: GENERAL INFORMATION

Please tick and/or enter the information that best describes your case in the following:

- 1. University ..... 2. College of ..... 3. Department of .....
- 4. Nationality: Jordanian  Saudi  Kuwaiti  Arab  Non-Arab  Single  7. Age .....
- 5. Male  Female  6. Married

8. Degrees held, date and subject (research area):

- B.A.  Date ..... Subject ..... M.A.  Date ..... Subject .....
- B.Sc.  Date ..... Subject ..... Ph.D.  Date ..... Subject .....
- M.Sc.  Date ..... Subject .....
- Others  Please specify:
  - Date ..... Subject ..... Date ..... Subject .....
  - Date ..... Subject ..... Date ..... Subject .....

9. Subject(s) taught ..... (221)

- 10. Academic Rank: Professor  Instructor
- Associate Professor  Graduate Assistant
- Assistant Professor  Others (please specify)

11. Job title:

- Dean  Head of Department  Others (please specify)
- Assistant Dean  Academic Member

12. Tenure: - on secondment

- fixed term renewable contract (please state no. of years)
- non-renewable fixed term contract (please state no. of years)
- permanent contract
- others (please specify): .....

13. When did you first become an employee in this University? .....

14. Please list your previous employers .....







DEGREE OF ACHIEVEMENT  
FOR YOUR INSTITUTION

HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ABOVE AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BELOW AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MINIMAL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPROPRIATENESS

HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ABOVE AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BELOW AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INAPPROPRIATE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 8. Number of enrolments in vocational programmes.
- 9. Knowledge that graduates of vocational courses are well paid.
- B. ACADEMIC DEVELOPMENT  
This objective area includes encouraging students to acquire general and specialised knowledge in Medicine, Science, Engineering, Arts etc.; preparation of students for advanced studies. This is achieved by:
  1. Flexibility of course choices to help students identify their abilities and interests.
  2. Gaining mastery over one or two disciplines.
  3. Rate of academic achievement at the end of the course.
  4. Staff/student ratio.
  5. Academic reputation of this University.
  6. Rate of quality and quantity of publications produced by students and alumni of this University.
  7. Availability and effective usefulness of teaching materials in various disciplines, e.g. textbooks, references, periodicals and educational technology equipment.
  8. Careful screening of students before being accepted in specialised courses.

DEGREE OF ACHIEVEMENT  
FOR YOUR INSTITUTION

HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ABOVE AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BELOW AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MINIMAL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPROPRIATENESS

HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ABOVE AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BELOW AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INAPPROPRIATE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C. STUDENTS' PERSONAL DEVELOPMENT

Aims included in this area are to provide students with opportunities in order to stimulate their talents and identify the means to achieve their concealed abilities and interests such as leadership, self-reliance etc. These are achieved by:

1. Availability of extracurricular activities.
2. Rate of students' participation in these activities.
3. Providing an opportunity for student participation in the planning of curricular and extracurricular activities.
4. Availability of short courses, lectures or seminars to help students develop their personality on subjects such as: how to conduct a meeting; how to build self-reliance; how to develop certain skills, etc.
5. Students' perception and evaluation of personal development opportunities offered to them in this University.

D. INTELLECTUAL DEVELOPMENT

Aims included in this area are: development of a positive attitude towards learning; familiarity with research techniques and problem solving procedures; ability to synthesise knowledge from its sources. These are achieved by:





DEGREE OF ACHIEVEMENT  
FOR YOUR INSTITUTION

HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ABOVE AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BELOW AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MINIMAL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPROPRIATENESS

HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ABOVE AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BELOW AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INAPPROPRIATE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 3. Number of students taking active part in the organisation of national events.
- 4. Number of students or graduates that take part in voluntary contributions campaign, e.g. illiteracy campaign, public health and anti-smoking campaign, cleaning beaches from oil pollution etc.
- 5. Number of students or graduates involved in philanthropic work, e.g. Red Crescent or Cross Society.

F. FOSTERING OF RELIGIOUS AWARENESS

This area includes the enhancement of religious traditions and ethics in the society and is achieved by:

- 1. Number of compulsory courses offered to students in Islamic education.
- 2. Number of students participating in religious events either through organisation of these events or giving talks.
- 3. Number of scholarships offered by the University to other non-Arab Islamic countries.
- 4. Number of students enrolled in religious programmes.
- 5. Offering courses that prepare students to take part in dissemination of Islamic religion in non-Moslem areas.
- 6. Number of students or graduates holding positions in religious organisations inside and outside the University.

DEGREE OF ACHIEVEMENT FOR YOUR INSTITUTION

HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ABOVE AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BELOW AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MINIMAL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPROPRIATENESS

HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ABOVE AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BELOW AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INAPPROPRIATE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

G. HUMANISM/ALTRUISM

This area includes fostering the awareness that knowledge is not restricted to one race only, but is for all mankind; awareness of respect for other cultures and rejection of prejudice. This is achieved by:

1. No restriction to any job or enrolment in any discipline due to racial or religious beliefs.
2. Availability of courses on the beliefs and civilisation of other races and ethnic groups.
3. Conducting conferences and seminars which are concerned with matters like world peace.

H. CULTURAL/AESTHETIC AWARENESS

This area includes appreciation of human behaviour and experience in various kinds of Arts, i.e. music, literature, painting, photography etc. This is achieved by:

1. Availability of courses and facilities which stimulate students' Interest in Arts.
2. Number of societies available in the University for active participation in cultural/aesthetic activities, e.g. Music society, Poetry society, Drama society, etc.
3. Rate of student attendance at galleries, concerts or plays held in this University.
4. Number of students or graduates who receive national awards for their performance or creativity.



DEGREE OF ACHIEVEMENT  
FOR YOUR INSTITUTION

HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ABOVE AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<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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BELOW AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MINIMAL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPROPRIATENESS

HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ABOVE AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BELOW AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INAPPROPRIATE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I. ENCOURAGEMENT OF PHYSICAL ACTIVITIES

This is an area which includes the physical development and abilities of students, academic and administrative staff under the supervision of trainers and experts in P.E. This is achieved by:

1. P.E. course being made compulsory for all students in this University.
2. Amount of availability of sports equipment and playfields.
3. Usage of sports equipment and playfields.
4. Number of tournaments held in the University in various kinds of sports.
5. Number of coaches available to train students, academic and administrative staff.
6. Number of students or graduates receiving national awards for their performance in athletics.

J. DISSEMINATION OF KNOWLEDGE

This area includes the participation in the transfer of useful data and information to people both inside and outside the Institution. This is achieved by:

1. Number of publications issued by the University, whether in the form of periodicals, books etc.
2. Number of seminars, conferences and exhibitions held at this University annually.
3. Frequency of appearance of the academic staff of this University in the media, e.g. T.V., radio etc.



DEGREE OF ACHIEVEMENT  
FOR YOUR INSTITUTION

APPROPRIATENESS

	HIGH	ABOVE AVERAGE	AVERAGE	BELOW AVERAGE	MINIMAL
HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ABOVE AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BELOW AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INAPPROPRIATE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Involvement of academic staff in off-campus activities, e.g. participation in urban planning committees, anti-pollution committees and curriculum development committees.

K. ENCOURAGEMENT OF RESEARCH

This includes conducting research for government, private organisations and/or for the advancement of knowledge. This is achieved by:

1. Quantity and quality of research work conducted by students or academic staff for the government and private sectors such as industries, farms, constructions etc.
2. Number of personal research projects carried out by students or academic staff to gain degrees.
3. Availability and usage of laboratory space for research expressed in square metres per research student.
4. Availability of research equipment and materials.
5. Rate of usage of research materials and equipment.
6. Amount of time allocated for research expressed in number of hours per week per academic staff.
7. Degree of incentive and encouragement for carrying out research expressed in rate of academic promotions per year among the academic staff.

DEGREE OF ACHIEVEMENT  
FOR YOUR INSTITUTION

HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ABOVE AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<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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MINIMAL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPROPRIATENESS

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ABOVE AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BELOW AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INAPPROPRIATE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 8. Number of academic staff who receive a national award for their outstanding research work done in this University.
- 9. Availability of funds for research purposes expressed in percentage of the whole budget.
- 10. Availability and efficiency of supportive research staff, e.g. technicians for equipment maintenance and laboratory demonstrators.

L. PUBLIC SERVICE

- This area includes making the University resources available to the government, private agencies and society at large, to use in solving their problems. This is noticeable through:
- 1. Amount of consultancy work to help the government, private agencies, etc.
  - 2. Ease of access to the University library by non-University members, e.g. alumni graduate, students from other universities.
  - 3. Permission granted by the University to outside bodies to make use of its premises for galleries and museums.
  - 4. Number of in-service training courses provided by this University, e.g. in-service training for school teachers.
  - 5. Frequency of courses provided to update the knowledge of former graduates of this University or other universities.



APPROPRIATENESS	DEGREE OF ACHIEVEMENT FOR YOUR INSTITUTION										
	HIGH	ABOVE AVERAGE	AVERAGE	BELOW AVERAGE	MINIMAL						
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<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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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<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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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Number of courses provided which are not directed at gaining a University degree but rather are aimed at catering for local community interests, e.g. languages, computer courses, secretarial courses, etc.

M. ADAPTATION TO CHANGES

This area includes the ability of this University to adapt to the environmental changes outside its boundaries; flexibility of structure to permit change when the need arises. This is achieved by:

1. High rate of response to change in academic units.
2. High rate of change of selection criteria of students to join this University.
3. High rate of collecting feedback information on the graduates' work performance.
4. High rate of collecting information on new trends, attitudes and needs that develop in the society.
5. Short chain of command in decision-taking in the University.
6. Rate of keeping abreast with international scientific developments at this University.
7. Rate of making use of the recommendations and decisions taken by ministers of education, higher education and experts in the Arab States.



DEGREE OF ACHIEVEMENT  
FOR YOUR INSTITUTION

HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ABOVE AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BELOW AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MINIMAL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPROPRIATENESS

HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ABOVE AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BELOW AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INAPPROPRIATE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

N. INNOVATIVE CLIMATE

This area includes the provision of institutional climates whereby new processes or techniques are regularly introduced and accepted, and where there is experimentation with new approaches. This is achieved by:

1. Rate of introduction and design of new curricula and textbooks to correspond with knowledge and technology development.
2. The use of research outcomes conducted locally in the Arab World, and internationally, by including them in the materials taught in such a way that they are relevant to the subject's content.
3. Development by the University of its own instructional materials from the surrounding community, e.g. making films about the wild life of animals and plants in the surrounding environment, or a change in the way of living in the community.
4. Number of hours devoted to curriculum design and improvement per academic staff per week.

O. ACADEMIC FREEDOM

This area includes the right of academic staff to present their personal views both inside and outside the University without fear of termination of their contract or prosecution, as well as not prohibiting students from participation in controversial issues nor from ultimately teaching in their own way. This is achieved by:

	APPROPRIATENESS					DEGREE OF ACHIEVEMENT FOR YOUR INSTITUTION				
	INAPPROPRIATE	BELOW AVERAGE	AVERAGE	ABOVE AVERAGE	HIGH	MINIMAL	BELOW AVERAGE	AVERAGE	ABOVE AVERAGE	HIGH
1. Rate of academic staff involvement in contemporary controversial issues which appear in the media, symposiums and lectures.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. A well defined institutional policy to protect the right of the individual in this University.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Power of the academic staff to choose the methods of teaching and assessment for their own courses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Power of the academic staff to choose the subject content of the disciplines taught by them.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Power of the academic staff to choose their own research fields.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Providing opportunities for informal discussion between students and academic staff.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>P. <u>PRESERVATION OF ARAB AND ISLAMIC HERITAGE</u></b>										
This area includes the development of an awareness on the part of students of the role played by earlier Arabs and Moslems in the advancement of knowledge in ancient civilisation, especially in Philosophy, Science, Medicine and Algebra. This is achieved by:										
1. Number of compulsory courses offered on the contribution of Arabs and Moslems to Sciences and Arts in the past.										



DEGREE OF ACHIEVEMENT  
FOR YOUR INSTITUTION

HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ABOVE AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BELOW AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MINIMAL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPROPRIATENESS

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ABOVE AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BELOW AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INAPPROPRIATE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Number of seminars and conferences held under the auspices of this University, both inside and outside the Campus, on Arab and Islamic heritage.
3. Amount of old literature and manuscripts on Arab and Islamic heritage available in the Library.

Q. HEALTHY ORGANISATIONAL CLIMATE

This area includes the degree of co-operation existing between various members of the university in their attempts to achieve both individual and organisational goals. This is achieved by:

1. Degree of co-operation between academic staff and administrators.
2. Degree of co-operation among academics themselves, e.g. team teaching when it is required.
3. Degree of co-operation among the administrative staff themselves.
4. Degree of satisfaction among academics observed through rate of voluntary resignations in this University.
5. Degree of satisfaction among administrators observed through rate of staff turnover.

R. ADMINISTRATIVE EFFICIENCY

This area includes the clearly defined administrative procedure; evidence of the achievement of organisational objectives and more effective usage of available resources. This is achieved by:



DEGREE OF ACHIEVEMENT  
FOR YOUR INSTITUTION

HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ABOVE AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<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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MINIMAL	<input type="checkbox"/>	<input type="checkbox"/>	<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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ABOVE AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BELOW AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INAPPROPRIATE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1. Availability of a University statute which spells out clearly the University structure, power hierarchy and the procedure for getting membership on a decision-making body.
2. Availability of rules and regulations for academics and administrators covering such things as sabbatical leave, sick leave, allowances for conference attendance, etc.
3. Speed of communication between the administrative staff and the academics and the speed of executing decisions taken.
4. Amount of power assigned to the members of the University administration committee, e.g. the right to veto certain decisions while presiding over a meeting.
5. Degree of follow-up of the implementation of decisions taken at the point of action.
6. Proportion of academic staff representation in decision-making bodies.
7. Availability and effective use of modern technology equipment in administration, e.g. computers, word processors, automated library systems, etc.
8. Amount of orders dictated by superordinates to subordinates such as technicians, secretaries and officers.

DEGREE OF ACHIEVEMENT  
FOR YOUR INSTITUTION

HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ABOVE AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BELOW AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MINIMAL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPROPRIATENESS

HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ABOVE AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BELOW AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INAPPROPRIATE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 9. Number of administrative staff enrolled or allocated in long or short courses for the purpose of improving their efficiency and performance, whether in this University or outside.
- 10. Proportion of qualified supportive staff, e.g. librarians, laboratory technicians, etc.
- 11. Using a cost-criteria approach for non-academic and academic programmes, i.e. calculating the unit cost of the programme before implementation.
- 12. Availability and effective use of a highly organised information system, i.e. availability of the data needed for any action to be taken, such as data on academic staff contracts, students' achievements, etc. by establishment of a data bank or documentation centre.
- 13. Availability and effective use of certain tools to allocate the space available in this University to various users.

S. UNIVERSITY RELATIONSHIPS WITH OTHER INSTITUTIONS

- This area includes strengthening relationships with national, Arab and international higher education institutions. This is achieved by:
- 1. Number of exchange visits of academic and non-academic staff between this University and other similar local institutions.
  - 2. Number of exchange visits of academic and non-academic staff between this University and other Arab institutions.



(237)

DEGREE OF ACHIEVEMENT  
FOR YOUR INSTITUTION

HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ABOVE AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BELOW AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MINIMAL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPROPRIATENESS

HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ABOVE AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BELOW AVERAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INAPPROPRIATE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Number of exchange visits of academic and non-academic staff between this University and non-Arab higher education Institutions.
4. Rate of exchange of publications through accepting and donating books or journals or through inter-library loan systems.
5. Number of organised visits arranged for students to similar Institutions.
6. Number of joint approaches or experiments conducted with other Institutions.
7. Number of personnel from other Institutions involved in assessing or formulating policies for this University and vice versa, e.g. membership of the Board of Trustees.

T. THE FOSTERING OF LINKS BETWEEN ARAB PEOPLE FROM THE VARIOUS ARAB STATES

This includes providing opportunities for Arab people to either enrol or get jobs in this University provided that they meet the requirements. This is achieved by:

1. Number of places offered to Arab students from other Arab States by this University.
2. Number of scholarships offered to those from other Arab States who financially need them.
3. Number of Arabs on the academic and non-academic staff at this University.



Dear President

I am an ex-director of administration and finance at the University College of Bahrain, and am currently pursuing a doctoral degree at the University of Stirling in the U.K. The purpose of this letter is to request your permission to include your University in my proposed study "Objectives and outcomes of higher education institutions in some Arab States" and in which it is hoped to include a number of Universities in Saudi Arabia, Kuwait, Jordan and Bahrain.

The study will require that a number of the University council members, college council members and academic staff complete a questionnaire concerning the appropriateness of the objectives and the proposed criteria of measures of progress as well as the degree of achievement of these objectives in the institution.

The estimated time to complete the questionnaire should not exceed one hour, and all the individual responses, as well as the name of your University, will remain strictly confidential. Towards the end of the study, I will provide you with a copy of the analytical data which might be useful as a feedback for future planning.

It is my intention to collect the data before the end of December 1983 and I would therefore very much appreciate if you could let me know as soon as possible whether or not you are interested in including your University in this study.

2.....

(239)

- 2 -

A copy of the final questionnaire will be sent to you together with a copy of the data sheet.

Many thanks for your kind attention to this request.

Yours sincerely,

J. Halwachi

## Appendix No. 5

Dear President

I would like to express my grateful thanks and appreciation to you in accepting the inclusion of your University in the study to be carried out on "Objectives and outcomes of higher education institutions in some Arab States".

The study will focus on the outcomes of the University as a whole, and not on the personal behaviour of the various constituencies or certain members of academic staff or administrators.

It is the aim of the study to identify the appropriate criteria for assessing higher education objectives and achievements, and also to pinpoint differences as well as similarities among some Universities in some Arab States. The sample population in each University will include: the president and the vice-president of the University, some of the deans of Colleges, some heads of departments and a portion of the academic staff.

For the purpose of selection of a random sample, and to facilitate the data collection at your University, I would appreciate getting the following:

- 1- A copy of all members of University council, administrators, deans, heads of departments and academic staff as they are listed in the University Bulletin, and from this list a random sample will be selected.

- 2- Nomination of a person upon whom I can rely to distribute the questionnaire to the sample population. All



the completed questionnaires will be collected by me personally during my proposed short visit to your University towards the last week in December 1983.

3- A covering letter either signed by you or your deputy which I will have duplicated at the University of Stirling, thereafter attaching one copy to each questionnaire. The purpose of the covering letter is to provide evidence to the questionnaire recipients of your awareness of the study, as well as your acceptance and support.

I enclose a proposed covering letter which I hope will be acceptable to you and, if so, I would be very grateful if it could be typed, signed by you and then posted to me for duplicating.

Once again, I am most grateful that you have agreed to participate in this study and I trust that its outcomes will be of use and of value to your University.

Since it is planned to send the questionnaire out some time during early December 1983, I would much appreciate receiving your reply as soon as possible.

With kind regards,

Yours sincerely,

Jalil Halwachi

Draft Covering Letter

Jalil Halwachi is a doctorate candidate in the Department of Management Science and Technology at the University of Stirling in the U.K. He is currently conducting research into "Objectives and outcomes of higher education institutions in some Arab States".

Following his earlier request, we have authorized him to include (the name of the University) in his study.

We have been assured that all questionnaire recipients will remain anonymous and all the data will be kept confidential, including the name of the University.

Since it is the researcher's intention to collect the questionnaire responses personally during his proposed visit towards the end of December 1983, there will be no access whatsoever to any person's responses in this university by another person.

A feedback report will be provided to us after the data have been compiled and analysed.

It is our principle to encourage you to cooperate with the researcher by completing the attached questionnaire at your earliest convenience, and keeping it with you until it is collected by the researcher himself late December 1983.

Thank you for your cooperation.

Yours sincerely,

President .....

or Vice-President .....

UNIVERSITY OF STIRLING STIRLING FK9 4LA SCOTLAND | TELEPHONE: STIRLING (0786) 3171  
Telex: 777759 STUNIV G

Dr. Adnan Afram,  
Dean of Faculty of Research,  
University of Jordan,  
P.O. Box 1682,  
JORDAN.

cc: J. Halwachi  
M. Jackson  
(Sociology)

Our Ref: RB/CLM  
15th March 1984

Dear Dr. Afram,

I am writing as supervisor of Mr. Jalil Halwachi who is a PhD student at this University. I believe that you have very kindly been undertaking the task of co-ordinating the replies to his questionnaire from your University and I would like to thank you for your assistance in the matter.

Unfortunately the response rate that we have received so far (between 10 and 20%) is disappointingly low and it is very doubtful if worthwhile results can be drawn from such a small return.

It is essential for Mr. Halwachi's prospects of obtaining his PhD that he gets an adequate response to his questionnaire (say 50% or above) and I'm sure you would agree that it would be a pity if he failed to get his degree for this reason only. Thus, I am writing to ask you to please try again to persuade those members of your staff who have not yet responded to do so. Mr. Halwachi will be sending additional Arabic questionnaires in case some have been lost.

We are most grateful for your assistance in this matter.

Yours sincerely,

DR. R. BALL MA (Oxford) Msc. (Birmingham) PhD (Stirling)  
(SUPERVISOR)



Appendix No. 8

ANALYSIS OF VARIANCE TECHNIQUE

### Analysis of Variance Technique

The common use of Analysis of Variance Technique (ANOVA) is to demonstrate, that, the aggregated observed scores of respondents of different organisations are responses describing the actual situation and not related to idiosyncratic judgement or it happened by coincidence, Ramsey, VJ (1979)

However, in this study, the purpose of the ANOVA technique is to determine whether significant differences exist between institutions and among the respondent categories on the objective areas and their measures.

To apply the ANOVA techniques the following procedure is followed:

1. Calculate the variance - i.e. the mean of sums of squares - between the groups and within the groups. The variance is expressed mathematically as follows:

$$V = \frac{SS}{n} = \frac{\text{Sums of Squares}}{\text{Number of Cases}} = \frac{\sum_{i=1}^n 1 (X_i - \bar{X})^2}{n}$$

To calculate sums of squares:

- (a) Calculate the mean  $\bar{X}$  of all the scores in each item.
  - (b) Calculate the difference between every observed score  $X$  and the mean  $\bar{X}$ .
  - (c) Square each difference in (b) individually.
  - (d) Sum together all the squared differences in (c).
2. Compute the F-ratio, by dividing the calculated variance between groups over the calculated variance within groups as shown in the following table from the computer output.

Analysis of variance table for Vocational Preparation  
Objective by Institution and Academic Rank

Source of Variation	Sum of Squares	DF	Mean Squares	DF	Significance of F
Institutions (Between)	20.652	3	6.884	3.721	0.014
Academic Rank (Between)	3.466	5	0.693	0.375	0.865
Residual (Within)	207.222	112	1.850	-	-

3. The resulted F-ratio is compared with critical tabled value. The critical value of F is looked up in the F-distribution table at the desired significant level. Such comparison will provide evidence of the statistical significance of the parameter tested. Interpretation of this comparison is well-stated by Lee, W (1975), p.136-137. "If the Ratio exceeds the tabled value, that term is said to be significant. If a term is significant, at least some of its parameters are considered to deviate sufficiently from zero so that the term must be considered in accounting for the experimental results. If a term is not significant, all its parameters are considered to be zero, or virtually zero for any theoretical or practical purposes. In essence, when a key term is considered to be non-significant, it can be eliminated from the score model."
4. From the table, the F-ratio at institution is 3.721 and the significant level is 0.014, this means that only 1.4% is occurring due chances.



While the F-ratio at Academic Rank is 0.375 which is very low, and the significant level is 0.865, indication of non-significant and this is eliminated from the discussion of the results.

In some cases the significant level is equal to 0.000 as in the objective area Good Citizenship, in such cases this means the significant differences are very high and on approximation of the figure to three digits, it came to 0.000, i.e.

0.0003 approximated to 0.000  
or 0.00006 approximated to 0.000

5. Where the F-ratio is statistically significant, multiple comparison test will be applied to determine which pair of means among the group differ significantly from another.

There are several multiple comparison tests, the one to be used in this study is the Duncan's New Multiple Comparison test which is discussed in Appendix 9.

Appendix No. 9

DUNCAN'S NEW MULTIPLE COMPARISON TEST

### Duncan's New Multiple Comparison Test

The multiple comparison method is usually applied after the significant findings of the variables in the ANOVA test. The purpose of using the multiple comparison test is to identify the mean scores or pairs of means which seem to influence the significant differences appeared in the ANOVA test. Moreover, it helps to ensure drawing inferences concerning the hypothesis tested. Sometimes the null hypothesis is true but the ANOVA test leads to reject it and vice versa.

There are different procedures for the multiple comparison test, summaries of these are available in Winer: (1962; p185-196).

The procedure to be considered here is called Duncan's New Multiple Comparison Test. Duncan's test developed in 1955, and 1957, which is similar to Newman-Keuls (1939, 1952) procedure, but "it differs, however, in the level of significance used", Ferguson (1971; P273) and it requires the use of special tables given by Edwards (1968). For comparison of the two procedures refer to Ferguson, G A (1971). Illustration of the various steps in Duncan's test are presented in the following example.

The figures (3.977, 3.308, 4.563, 4.297) are the means of the objective area "vocational preparation" as rated by respondents as grouped in each university.



1. Rank the means of the universities from low to high as in Figure 1 below.

Figure 1

University	B	A	D	C
Means	3.308	3.977	4.297	4.563

- 2.a Find out the difference between the first lowest and the other higher means.
- 2.b Find out the difference between the second lowest and the other higher means, and so on for the third.
- 2.c Arrange these differences as in Figure 2 below:

Figure 2

		B	A	D	C
B	3.308	-	0.669	0.989	1.255
A	3.977		-	0.320	0.586
D	4.297			-	0.266
C	4.563				-

3. Divide each number in Figure 2 on the product of  $\sqrt{MSW^2/n}$  to generate the numbers in Figure 3 below.
- Where  $MSW^2$  is the residual number appears in ANOVA table if the "AOBJ" variable and it is 1.850. The n is the number of the group size if all the groups are equal, otherwise it is equal to the harmonic mean of all the population sample.

$$\text{In this case, } n = \frac{4}{\frac{1}{42} + \frac{1}{38} + \frac{1}{37} + \frac{1}{16}} = \frac{4}{0.1397}$$

$$\therefore \sqrt{\text{MSW}^2/n} = \sqrt{1.850/28.633} = 0.254$$

∴ The observed studentised range for all the mean differences in Figure 2 are shown, in Figure 3.

Figure 3

	B	A	D	C	Critical value of Q*
B	-	2.634	3.894	4.941	3.045
A		-	1.260	2.307	2.947
D			-	1.047	2.800
C				-	

4. The numbers computed in step 3 are the observed studentised range and it is usually symbolised by Q.
  
5. Comparing each of the generated numbers in Figure 3 in each row with the critical value of the studentised range at 0.05 significance, given by Edwards (1968; P431) using the formula  $Q_{0.05}(K,n)$  where (k,n) is the df of the treatment rank the population sample (within).

\* The critical value of the studentised range at 0.05 significance obtained from Edwards (1968; P431)

$$Q_{0.05}(4,112) = 3.045, \quad Q_{0.05}(3,112) = 2.947$$

$$\text{and } Q_{0.05}(2,112) = 2.800$$

6. The higher the observed value of Q compared to the critical value obtained from the table, the more significant is the treatment rank. In this example the comparison indicates that:

(i) In the first row the calculated values of Qs 3.894 and 4.941 exceed the critical values of Qs 3.045, 2.947 and 2.800. Therefore, C and D are declared to be significant with B only.

(ii) On comparing the calculated values of Qs in the second row, none of these exceed the critical values of Qs, therefore it is declared non-significant.

(iii) The non-significant differences between the compared pairs of institutions are expressed by drawing a line linking these pairs as shown in Figure 4. The pairs with significant differences are not underlined.

Figure 4





Appendix No. 10

CODES AND DESCRIPTION OF ALL VARIABLES

## VAR LABELS

RESPNO	,RESPONDENT NUMBER	/
A0BJ	,VOCATIONAL PREPARATION OBJECTIVE	/
A1AP	,AVAILABILITY OF COURSES	/
A2AP	,MASTERING SKILLS	/
A3AP	,DEVISING NEW COURSES	/
A4AP	,AVAILABILITY OF EQUIPMENT	/
A5AP	,GUIDANCE AND COUNCELLING	/
A6AP	,DEMAND IN THE MARKET	/
A7AP	,HIGH VALUE ON THE GRADUATES	/
A8AP	,NUMBER OF ENROLMENTS	/
A9AP	,KNOWLEDGE OF WELL PAID	/
B0BJ	,ACADEMIC DEVELOPMENT	/
B1AP	,FLEXIBILTY	/
B2AP	,MASTERY	/
B3AP	,ACADEMIC ACHIEVEMENT	/
B4AP	,RATIO	/
B5AP	,REPUTATION	/
B6AP	,STUDENT PUBLICATIONS	/
B7AP	,USEFULNESS OF MATERIALS	/
B8AP	,SCREENING OF STUDENT	/
COBJ	,STUDENTS PERSONAL DEVELOPMENT	/
C1AP	,EXTRACURRICULAR	/
C2AP	,STUDENTS PARTICIPATION	/
C3AP	,PROVIDING OPPORTUNITY	/
C4AP	,SHORT COURSES	/
C5AP	,STUDENTS PERCEPTION	/
DOBJ	,INTELLCTUAL DEVELOPMENT	/
D1AP	,SELF RELIANCE	/
D2AP	,ABILITY	/
D3AP	,CRITICAL	/
D4AP	,RATE OF PARTICIPATION	/
EOBJ	,GOOD CITIZENSHIP	/
E1AP	,RESPECT	/
E2AP	,RATE OF ACCEPTANCE	/
E3AP	,ACTIVE PARTICIPATION	/
E4AP	,VOLUNTARY CONTRIBUTIONS	/
E5AP	,PHILANTHROPIC WORK	/
FOBJ	,RELIGIOS AWARENESS	/
F1AP	,ISLAMIC EDUCATION	/
F2AP	,RELIGIOUS EVENTS	/
F3AP	,SCHOLARSHIP TO NON-ARAB MOSLEM	/
F4AP	,ENROLLEMENTS IN RELIGIOUS PROGRAMMES	/
F5AP	,DISSEMINATION OF ISLAM	/
F6AP	,RELIGIOUS ORGANIZATION	/
GOBJ	,HUMANISM\ALTRUISM	/
G1AP	,NO RESTRICTION	/
G2AP	,BELIEFS OF OTHER RACES	/
G3AP	,WORLD PEACE	/

H0BJ	,CULTURAL\AESTHETIC	/
H1AP	,COURSES IN ARTS	/
H2AP	,CULTURAL\AESTHETIC ACTIVITIES	/
H3AP	,ATTENDANCE TO GALLERIES	/
H4AP	,AWARDS FOR PERFORMANCE	/
I0BJ	,ENCOURAGEMENT OF PHYSICAL ACTIVITIES	/
I1AP	,COMPULSORY P.E.	/
I2AP	,SPORTS EQUIPMENT	/
I3AP	,USAGE OF EQUIPMENT	/
I4AP	,TOURNAMENTS	/
I5AP	,COACHES	/
I6AP	,ATHLETICS AWARDS	/
J0BJ	,DISSEMINATION OF KNOWLEDGE	/
J1AP	,UNIVERSITY PUBLICATIONS	/
J2AP	,ANNUAL CONFERENCES	/
J3AP	,APPEARANCE OF STAFF IN MEDIA	/
J4AP	,OFF-CAMPUS ACTIVITIES	/
RESPN02	,RESPONDENT NUMBER	/
K0BJ	,ENCOURAGEMENT OF RESEARCH	/
K1AP	,RESEARCH FOR PRIVATE SECTORS	/
K2AP	,RESEARCH FOR DEGREES	/
K3AP	,LAB SPACE FOR RESEARCH	/
K4AP	,RESEARCH EQUIPMENT	/
K5AP	,USAGE OF RESEARCH EQUIPMENT	/
K6AP	,TIME FOR RESEARCH	/
K7AP	,INCENTIVE AND ENCOURAGEMENT	/
K8AP	,OUTSTANDING RESEARCH	/
K9AP	,FUNDS FOR RESEARCH	/
K10AP	,SUPPORTIVE STAFF	/
L0BJ	,PUBLIC SERVICE	/
L1AP	,CONSULTANCY WORK	/
L2AP	,ACCESS TO LIBRARY	/
L3AP	,USE OF PREMISES	/
L4AP	,IN-SERVICE COURSES	/
L5AP	,UPDATE FORMER GRADUATES	/
L6AP	,COMMUNITY INTERESTS COURSES	/
M0BJ	,ADAPTATION TO CHANGES	/
M1AP	,ACADEMIC UNITS	/
M2AP	,CHANGE OF CRITERIA	/
M3AP	,FEEDBACK INFORMATION	/
M4AP	,NEW TRENDS INFORMATION	/
M5AP	,DECISION-MAKING COMMANDS	/
M6AP	,KEEPING ABREAST	/
M7AP	,RECOMMENDATIONS BY MINISTERS	/
N0BJ	,INNOVATION CLIMATE	/
N1AP	,NEW CURRICULA AND TEXTBOOKS	/
N2AP	,RESEARCH OUTCOMES	/
N3AP	,OWN INSTRUCTIONAL MATERIALS	/
N4AP	,CURRICULUM IMPROVEMENTS	/



00BJ	,ACADEMIC FREEDOM	/
01AP	,INVOLVEMENT IN CONTEMPORARY ISSUES	/
02AP	,INSTITUTIONAL POLICY	/
03AP	,METHOD OF TEACHING	/
04AP	,SUBJECT CONTENT	/
05AP	,FIELDS OF RESEARCH	/
06AP	,INFORMAL DISCUSSION	/
RESPNO3	,RESPONDENT NUMBER	/
POBJ	,ARAB AND ISLAMIC HERITAGE	/
P1AP	,CONTRIBUTIONS OF ARABS	/
P2AP	,CONFERANCES ON HERITAGE	/
P3AP	,LITERATURE AND MANUSCRIPTS	/
QOBJ	,ORGANIZATIONAL CLIMATE	/
Q1AP	,ACADEMIC\ADMINISTRATORS COOPERATION	/
Q2AP	,ACADEMICS COOPERATION	/
Q3AP	,ADMINISTRATORS COOPERATION	/
Q4AP	,ACADEMICS SATISFACTION	/
Q5AP	,ADMINISTRATORS SATISFACTION	/
ROBJ	,ADMINISTRATIVE EFFICIENCY	/
R1AP	,UNIVERSITY STATUTE	/
R2AP	,RULES AND REGULATIONS	/
R3AP	,SPEED OF COMMUNICATIONS	/
R4AP	,POWER ASSIGNED	/
R5AP	,IMPLEMENTATION OF DECISIONS	/
R6AP	,REPRESENTATION OF ACADEMICS	/
R7AP	,USE OF TECHNOLOGY	/
R8AP	,ORDERS BY SUPERORDINATES	/
R9AP	,ADMINISTRATIVE EFFICIENCY	/
R10AP	,QUALIFIED SUPPORTIVE STAFF	/
R11AP	,USING COST-CRITERIA	/
R12AP	,INFORMATION SYSTEM	/
R13AP	,SPACE ALLOCATION TO USERS	/
SOBJ	,RELATIONSHIPS WITH OTHER INSTITUTIONS	/
S1AP	,VISITS EXCHANGE WITH LOCAL INSTITUTIONS	/
S2AP	,VISITS EXCHANGE WITH ARAB INSTITUTIONS	/
S3AP	,VISITS EXCHANGE WITH NON-ARAB INSTITUTIO	/
S4AP	,EXCHANGE OF PUBLICATIONS	/
S5AP	,VISITS ARRANGED FOR STUDENTS	/
S6AP	,JOINT EXPERIMENTS	/
S7AP	,PERSONNEL FROM OTHER INSTITUTIONS	/
TOBJ	,LINKS BETWEEN ARAB PEOPLE	/
T1AP	,PLACES OFFERED	/
T2AP	,SCHOLARSHIPS OFFERED	/
T3AP	,ARABS IN THIS UNIVERSITY	/
RESPNO4	,RESPONDENT NUMBER	/
A1AC	,AVAILABILITY OF COURSES	/
A2AC	,MASTERING SKILLS	/
A3AC	,DEVISING NEW COURSES	/
A4AC	,AVAILABILITY OF EQUIPMENT	/
A5AC	,GUIDANCE AND COUNCELLING	/
A6AC	,DEMAND IN THE MARKET	/
A7AC	,HIGH VALUE ON THE GRADUATES	/
A8AC	,NUMBER OF ENRULMENTS	/
A9AC	,KNOWLEDGE OF WELL PAID	/

B1AC	,FLEXIBILITY	/
B2AC	,MASTERY	/
B3AC	,ACADEMIC ACHIEVEMENT	/
B4AC	,RATIO	/
B5AC	,REPUTATION	/
B6AC	,STUDENT PUBLICATIONS	/
B7AC	,USEFULNESS OF MATERIALS	/
B8AC	,SCREENING OF STUDENT	/
C1AC	,EXTRACURRICULAR	/
C2AC	,STUDENTS PARTICIPATION	/
C3AC	,PROVIDING OPPORTUNITY	/
C4AC	,SHORT COURSES	/
C5AC	,STUDENTS PERCEPTION	/
D1AC	,SELF RELIANCE	/
D2AC	,ABILITY	/
D3AC	,CRITICAL	/
D4AC	,RATE OF PARTICIPATION	/
E1AC	,RESPECT	/
E2AC	,RATE OF ACCEPTANCE	/
E3AC	,ACTIVE PARTICIPATION	/
E4AC	,VOLUNTARY CONTRIBUTIONS	/
E5AC	,PHILANTHROPIC WORK	/
F1AC	,ISLAMIC EDUCATION	/
F2AC	,RELIGIOUS EVENTS	/
F3AC	,SCHOLARSHIP TO NON-ARAB MOSLEM	/
F4AC	,ENROLLEMENTS IN RELIGIOUS PROGRAMMES	/
F5AC	,DISSEMINATION OF ISLAM	/
F6AC	,RELIGIOUS ORGANIZATION	/
G1AC	,NO RESTRICTION	/
G2AC	,BELIEFS OF OTHER RACES	/
G3AC	,WORLD PEACE	/
H1AC	,COURSES IN ARTS	/
H2AC	,CULTURAL/AESTHETIC ACTIVITIES	/
H3AC	,ATTENDANCE TO GALLERIES	/
H4AC	,AWARDS FOR PERFORMANCE	/
I1AC	,COMPULSORY P.E.	/
I2AC	,SPORTS EQUIPMENT	/
I3AC	,USAGE OF EQUIPMENT	/
I4AC	,TOURNAMENTS	/
I5AC	,COACHES	/
I6AC	,ATHLETICS AWARDS	/
J1AC	,UNIVERSITY PUBLICATIONS	/
J2AC	,ANNUAL CONFERENCES	/
J3AC	,APPEARANCE OF STAFF IN MEDIA	/
J4AC	,OFF-CAMPUS ACTIVITIES	/
RESPN05	,RESPONDENT NUMBER	/
K1AC	,RESEARCH FOR PRIVATE SECTORS	/
K2AC	,RESEARCH FOR DEGREES	/
K3AC	,LAB SPACE FOR RESEARCH	/
K4AC	,RESEARCH EQUIPMENT	/
K5AC	,USAGE OF RESEARCH EQUIPMENT	/
K6AC	,TIME FOR RESEARCH	/
K8AC	,INCENTIVE AND ENCOURAGEMENT	/
K8AC	,OUTSTANDING RESEARCH	/
K9AC	,FUNDS FOR RESEARCH	/
K10AC	,SUPPORTIVE STAFF	/
L1AC	,CONSULTANCY WORK	/



L2AC	, ACCESS TO LIBRARY	/
L3AC	, USE OF PREMISES	/
L4AC	, IN-SERVICE COURSES	/
L5AC	, UPDATE FORMER GRADUATES	/
L6AC	, COMMUNITY INTERESTS COURSES	/
M1AC	, ACADEMIC UNITS	/
M2AC	, CHANGE OF CRITERIA	/
M3AC	, FEEDBACK INFORMATION	/
M4AC	, NEW TRENDS INFORMATION	/
M5AC	, DECISION-MAKING COMMANDS	/
M6AC	, KEEPING ABREAST	/
M7AC	, RECOMMENDATIONS BY MINISTERS	/
N1AC	, NEW CURRICULA AND TEXTBOOKS	/
N2AC	, RESEARCH OUTCOMES	/
N3AC	, OWN INSTRUCTIONAL MATERIALS	/
N4AC	, CURRICULUM IMPROVEMENTS	/
O1AC	, INVOLVEMENT IN CONTEMPORARY ISSUES	/
O2AC	, INSTITUTIONAL POLICY	/
O3AC	, METHOD OF TEACHING	/
O4AC	, SUBJECT CONTENT	/
O5AC	, FIELDS OF RESEARCH	/
O6AC	, INFORMAL DISCUSSION	/
RESPNO6	, RESPONDENT NUMBER	/
P1AC	, CONTRIBUTIONS OF ARABS	/
P2AC	, CONFERANCES ON HERITAGE	/
P3AC	, LITERATURE AND MANUSCRIPTS	/
Q1AC	, ACADEMIC\ADMINISTRATORS COOPERATION	/
Q2AC	, ACADEMICS COOPERATION	/
Q3AC	, ADMINISTRATORS COOPERATION	/
Q4AC	, ACADEMICS SATISFACTION	/
Q5AC	, ADMINISTRATORS SATISFACTION	/
R1AC	, UNIVERSITY STATUTE	/
R2AC	, RULES AND REGULATIONS	/
R3AC	, SPEED OF COMMUNICATIONS	/
R4AC	, POWER ASSIGNED	/
R5AC	, IMPLEMENTATION OF DECISIONS	/
R6AC	, REPRESENTATION OF ACADEMICS	/
R7AC	, USE OF TECHNOLOGY	/
R8AC	, ORDERS BY SUPERORDINATES	/
R9AC	, ADMINISTRATIVE EFFICIENCY	/
R10AC	, QUALIFIED SUPPORTIVE STAFF	/
R11AC	, USING COST-CRITERIA	/
R12AC	, INFORMATION SYSTEM	/
R13AC	, SPACE ALLOCATION TO USERS	/
S1AC	, VISITS EXCHANGE WITH LOCAL INSTITUTIONS	/
S2AC	, VISITS EXCHANGE WITH ARAB INSTITUTIONS	/
S3AC	, VISITS EXCHANGE WITH NON-ARAB INSTITS	/
S4AC	, EXCHANGE OF PUBLICATIONS	/
S5AC	, VISITS ARRANGED FOR STUDENTS	/
S6AC	, JOINT EXPERIMENTS	/



S7AC ,PERSONNEL FROM OTHER INSTITUTIONS /  
 T1AC ,PLACES OFFERED /  
 T2AC ,SCHOLARSHIPS OFFERED /  
 T3AC ,ARABS IN THIS UNIVERSITY /  
 AOBJ TO J4AP,KOBJ TO 06AP,POBJ TO T3AP,  
 A1AC TO J4AC,K1AC TO 06AC,P1AC TO T3AC  
 (0001)INAPPROPRIATE  
 (0002)BELOW AVERAGE  
 (0003)AVERAGE  
 (0004)ABOVE AVERAGE  
 (0005)HIGH

VALUE LABELS

VALUE LABELS

INSTIT  
 ( 01)  
 (0002)  
 ( 03)  
 ( 04)

VALUE LABELS

NATION  
 ( 01)  
 ( 02)

VALUE LABELS

STATUS  
 ( 01)DEAN  
 ( 02)HOD  
 ( 03)ACAD

VALUE LABELS

ARANK  
 ( 01)P  
 ( 02)AP  
 ( 03)ASSP  
 ( 04)INST  
 ( 05)GASST  
 ( 06)OTHS

READ INPUT DATA  
 SAVE FILE  
 FINISH