ABSTRACT
         The purpose of this conference was to bring together
representatives of postsecondary education and State educational
agencies to coordinate efforts for securing the future of higher
education in Wisconsin. This publication contains general session and
workshop addresses presented during the 4-day meeting. Four workshops
provided information on the following problem areas: institutional
studies, academic planning, facilities, and finance. General sessions
stressed the need for coordination among these areas, and provided
summaries of workshop activities. Indexes list participants and
conference papers. (Appendixes I-V, pages 179-193, may be of poor
quality when reproduced because of marginal legibility). (RA)

JUNE 3-6 1968
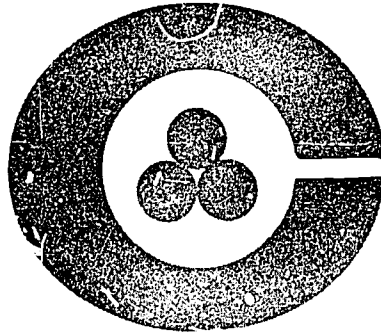
PROCEEDINGS OF STATEWIDE HIGHER EDUCATION CONFERENCE

ACADEMIC PLANNING · FACILITIES · FINANCE · INSTITUTIONAL STUDIES

WISCONSIN COORDINATING COUNCIL FOR HIGHER EDUCATION

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JUNE 3-6 1968

PROCEEDINGS OF STATEWIDE HIGHER EDUCATION CONFERENCE

ACADEMIC PLANNING · FACILITIES · FINANCE · INSTITUTIONAL STUDIES

PIGEON LAKE FIELD STATION · DRUMMOND, WISCONSIN

June 1968

Mr. Walter J. Kohler, Chairman
Coordinating Council for Higher Education
1236 North 18th Street
Sheboygan, Wisconsin

Dear Governor Kohler:

It is with pleasure that I transmit to you and the other members of
the CCHE this documentation of the conference held in Pigeon Lake
June 3-6.

This conference, as you know, was sponsored by the Coordinating Council
for Higher Education. Mr. Harold Konnak, Chairman of our Physical
Facilities Committee, gave the keynote address. A copy of his inspiring
address is included in this publication and clearly indicates the note
on which the entire conference was conducted.

We believe that the conference was highly productive in that it brought
together for the first time leaders in higher education and others who
have indicated their willingness to work together with the CCHE as we
strive to meet our common goals in Wisconsin. We were especially pleased
to have representatives from the State Legislature, Department of Admin-
istration, Higher Educational Aids Board, Bureau of Engineering, Depart-
ment of Public Instruction, and private higher education joining with the
leaders of our various systems.

It will be noted that certain recommended principles of operation have been
agreed upon in each of the major areas under discussion.

Our experience in Wisconsin in this effort is unique. We know of no other
anywhere that has been accomplished on this scale.

It is now our purpose to use the knowledge gained at the Pigeon Lake
Conference to improve the operations of the CCHE and those of the separate
systems as well.

I wish to give special credit to Frederick E. Schwehr of our staff who
fathered the idea and was primarily responsible for the physical arrange-
ments. I wish also to give credit to the other members of our staff and
those of the systems that provided the leadership which made the conference
productive. We are most grateful to Director Eugene McPhee and the State
University Board of Regents for having made the camp available to us.

We invite comment on the conference and will appreciate receiving criticism
as well as favorable statements in order that we may improve our procedures.

Respectfully yours,

Angus B. Rothwell
Angus B. Rothwell
Executive Director

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0-353

i

FOREWORD

The first Coordinating Council for Higher Education sponsored
Higher Education Conference conducted on a statewide basis was
held from June 3 - 6, 1968, at the Wisconsin State Universities'
Pigeon Lake Field Station

Four major areas of concern were dealt with in depth both in
general and workshop sessions. The areas included were: Aca-
demic Planning, Facilities, Finance and Institutional Studies.

Over 100 persons in attendance represented all post-high school
sectors both public and private education. In addition, all
state agencies involved in the immediate and long-range educa-
tional planning were represented.

The papers enclosed are indicative of the wholehearted effort
put forth by the authors to insure a successful conference.

The CCHE staff wishes to express its sincere appreciation to all
persons who made presentations for a job well done.

Frederick E. Schwehr
Conference Coordinator and
Associate Director, Coordinating
Council for Higher Education

CONTENTS

GENERAL SESSION SPEAKERS

HAROLD A. KONNAK, Member
Coordinating Council for
Higher Education

THE ROLE OF THE COORDINATING COUNCIL FOR HIGHER EDUCATION

Our able Executive Director, Mr. Angus Rothwell, or the competent chairman
of the Coordinating Council, former governor Walter J. Kohler could have been
assigned my role today, and either would have carried out my task with dis-
tinction and clarity.

Why I should have been picked for the role will remain shrouded in mystery
unless it could be that to trot out--alone and in person--a non-descript
member of the Coordinating Council at random might allay the fears of
professionals such as most of you are, that the Coordinating Council is
composed of ogres, political hacks, and home-made chefs with their own recipes
for educational pie--or, in short, ignorant fools who will rush in where
professional angels fear to tread! I run the risk, of course, that after
my talk is concluded, I will have substantiated these fears beyond any
reasonable doubt. But I set sail bravely for Scylla and Charybdis remembering
that the Konnak motto since my grandparents first set their feet in steerage
has always been, *Was muss sein, muss.* "What has to be has to be!"

To discuss the role of the Coordinating Council in Wisconsin requires some
reference to the conditions and problems which brought about the creation of
this agency. I shall not have to discuss the organization of higher education
in Wisconsin in depth with you people tonight because I have a right to assume
that there is an awareness of the geography, of the burgeoning student
populations, of the rising cost burden upon taxpayers, of the need for
qualitative excellence above quantitative high-water marks which make up the
living body of post-secondary education in Wisconsin.

We have 80 separate public schools, ranging from vocational schools offering
full-time post-high school instruction to 10 campuses of the Wisconsin State
University system and 13 campuses of the University of Wisconsin system and
offering doctoral degrees in 93 different fields, 87 on the Madison campus.
There are 15 two-year County Teachers Colleges in transition. There are in
addition 22 private colleges of various kinds and statures.

Let me refer briefly to enrollments--actual and projected--and budget
appropriations. The enrollments on the combined campuses of the University of
Wisconsin and State Universities have more than doubled during the past six
years. The projections of the CCHE indicate that these enrollments will in-
crease by over 51,000 in the next six years and by over 72,000 in the next
10 years.

SUMMARY OF ACTUAL AND PROJECTED ENROLLMENTS
UNIVERSITY OF WISCONSIN AND STATE UNIVERSITY SYSTEMS

Fall	University of Wisconsin	State Universities	Total
Actual			
1961	31,425	18,577	50,002
1964	41,033	30,064	71,097
1967	54,997	50,996	105,993
Projected			
1968	58,178	57,220	115,398
1971	69,873	72,877	142,750
1973	77,336	80,086	157,422
1977	87,461	90,754	178,215

Budgets for higher education also are increasing rapidly. The state tax appropriations for public institutions in the state for the 1965-67 biennium was $205 million as compared with $290 million for the 1967-69 biennium. The January 1967 CCHE *Provisional Long-Range Plan For Higher Education in Wisconsin* (p.66) estimates that the *annual* state tax expenditures for higher education about eight years from now *will equal the present biennial* appropriation.

SUMMARY OF HIGHER EDUCATION BUDGETS 1965-1969

	1965-67	1967-69
VOCATIONAL, TECHNICAL AND ADULT EDUCATION		
State Tax Appropriations	$ 8,123,690	$ 11,926,000
Total Post-High School Aids	$ 8,123,690	$ 11,926,000
STATE UNIVERSITIES		
State Tax Appropriations	$ 59,387,800	$ 96,206,000
Program Revenues	67,294,100	104,658,700
Total Operating Budget	$126,681,900	$200,864,700
UNIVERSITY OF WISCONSIN		
State Tax Appropriations	$136,059,718	$180,045,000
Program Revenues	193,207,122	207,827,792
Segregated Revenues	1,310,500	1,200,000
Total Operating Budget	$330,577,340	$389,072,792
COUNTY TEACHERS COLLEGES		
State Tax Appropriations	$ 1,351,179	$ 1,329,000
Total County College Aids	$ 1,351,179	$ 1,329,000
CCHE Operating Budget	$ 257,359	$ 474,000
Budget Total	$466,991,468	$603,666,492

The Systems

The University of Wisconsin is governed by a 9-member Board of Regents appointed by the Governor and the State Superintendent of Schools who serves as an ex-officio member. President Fred H. Harrington is the administrative head of the University campuses at Madison and Milwaukee, the University Center system and University Extension.

The Wisconsin State University system is governed by a 13-member Board of Regents appointed by the Governor plus the State Superintendent of Schools. Eugene R. McPhee is the executive secretary of the State University Regents and director of the State University system.

The Vocational, Technical and Adult Education system is headed by a 9-member state board appointed by the Governor plus the State Superintendent of Schools and a member of the Department of Industry, Labor and Human Relations. Clarence L. Greiber is director of the Board of Vocational, Technical and Adult Education.

All these boards--including the Coordinating Council for Higher Education--are made up of human beings appointed by governors of the party in power from time to time and no particular board ought of necessity be considered to have captured all the genius and creativity--or rightness or wrongness--at any particular time.

They need to establish their creditability and integrity. and willingness to work, and, once having established these criteria, they need to be respected by each other and to work with each other to accomplish the common goal of all--the post-secondary education of Wisconsin youth.

Wisconsin shares with all of America the problems which the unprecedented expansion of post-secondary education is presenting to the higher education community and to the public which must support the major share of this educational enterprise. Throughout America new colleges and universities are springing up at the unbelievable rate of one a week. Established universities have spawned new branch campuses, more than 300 since 1945, and many have created wholly new affiliated universities. Four year colleges--often now called universities, have enlarged their student bodies and curriculum, and many are stepping boldly into the field of graduate education. Local communities of any size, and some without, are determined to have their own community colleges, and 230 have been built since 1960. Currently, six million young men and women are in colleges and universities, and the U. S. Office of Education estimates that nine million will be seeking higher education by 1975.

Now those who are required to support this tremendous out-pouring in the funds of education--primarily the taxpayers--have a right to expect that their friends will be expended wisely and efficiently.

James Gilbert Paltridge in his recent *Conflict and Coordination in Higher Education* (1968, Center for Research and Development in Higher Education, University of California, Berkeley, California) has this comment:

> "Those who govern public institutions should have the right to bring about this expansion with a maximum loss of educational quality, academic freedom and institutional autonomy. Certainly the needs and goals of the instruments of government and higher

4

educaticn require resolute coordination to reach solutions to
these problems in education. Such coordination should be effected
in a manner conducive to innovation and enterprise rather than
to bureaucratic conformity. The dilemma of planning and co-
ordinating on a system-wide level is how to reconcile the political
pressure for control of higher education with the desire of educators
to preserve a certain freedom in education and research. Co-
ordinating agencies for higher education at the state level must
face all these problems because in most states they are the only
organizational entity charged with the over-all responsibility of
ordering the state's higher education effort."

As a life-long resident of Wisconsin and as one whose forebears were here
before Wisconsin became a state, I have a pride in Wisconsin, and a confidence
that this state can and will meet the challenges which its expanding educational
system and its ever more complex society will present to it. We have always
had a good educational system. A generous and widely available system of
higher education of fine quality has always existed. We have one of the
greatest state universities in the nation. The state's per capita expenditure
of $31.40 from its general tax fund for public higher education is seventh
(7th) highest in the nation. There is absolutely no reason why the new
coordinating mechanism cannot be made to work, and why it should not provide
an intelligent and fruitful dialogue between educational institutions and
their external supportive world--the public who are both clientele and sponsor
and that public's instrumentalities of government, the state legislature and
the state executives.

I am inclined to believe that over the long run educators have not assigned
sufficient credit to the faithful and yeoman support of higher education which
has been given by the legislative and executive branches of state government.
In the more than 30 years I have served my home community and the State of
Wisconsin as a member of one of their agencies dealing with public education
at all levels, I have rarely met with blind or stubborn opposition to the
cause of public education. The rebuffs or set-backs which were experienced
took place usually because the educational agency had failed to win public
support for what it proposed to do.

The final financial authority rests in the Legislature. It is beset on all
sides by demands for funds and programs. It is always being asked to provide
more state activity and less state taxes. In 1955, when the first CCHE was
established, I am told on good authority that it was the outgrowth of a
common sentiment, on the part of Democratic and Republican legislators alike,
that some agency had to be set up to attempt to sort out for the Legislature
and the Executive, the conflicting demands of higher education expressed through
the various systems.

L. A. Glenny (*Campus and Capitol: Higher Education and the State*, 1966, pp.
27-46) makes the point that governors and legislatures increasingly seek to
lead in planning major aspects of higher educational development. Yet collegiate

5

administrators and state government policy-makers do not have a clear conception of the leadership role to be played by the coordinating agency in the political milieu. Glenny sees the statutory charge for planning as the principal legal power allowing the coordinating agency some political leverage under a "scheme of balanced tensions." He says,

> "The coordinating process is a political one, involving powerful social agencies, such as colleges and universities with their historic intellectual independence and autonomy on the one hand and the central policy-formulating authorities of the governor and the legislature on the other.

> "The coordinating agency, situated between these two powerful forces, seeks to identify with both in order to achieve satisfactory solutions... (the exercise of its legal duty of long-range planning)..necessarily takes from both the universities and state authorities a valued traditional function; this, in turn, provides the coordinating agency the means to political leadership. ...in a sense, recommendations of the coordinating board, in the public interest, bar legislators from achieving parochial interests...collegiate administrators sometimes resent long-range plans recommended to the governor and legislature by the coordinating agency...[which] must then face tensions generated by universities and colleges through extension arousal means, such as alumni associations...on the other side, too, tensions arise from the legislative and executive branches whose local and statewide political constituencies are organized for support...

> "New tension is the key to the new leadership. Tensions among elements in the coordinating scheme do not entirely dissipate even in smoothly operating systems, and fortunately cannot. Indeed, the process is similar to the workings of the democratic society and may be described as a 'system of balanced tensions' among diverse elements." (Glenny, pp 29-32)

Wisconsin is one of forty states which has resorted to the coordinating mechanisim as a means of educational decision-making and long-term planning at the statewide, supra-institutional level. As an organizational tool, it will succeed to the extent it offers accommodation for conflict through respect for the differentiated goals of the participants. Certainly, the coordinating councils will be constantly dealing with conflict among powerful forces, but as a device to settle such conflict it is as American as the balancing of forces among the legislative, executive, and judicial branches of government.

You may feel that when I discuss the existence of conflict that I am referring to petty back-biting, personality clashes, and other like disagreeableness. I am not. I am referring to that conflict in interest which will be inevitable where larger educational systems such as the University of Wisconsin, the State Universities, and the Board of Vocational, Technical and Adult Education--

all acting independently and in a manner in which they earnestly feel they are charged and obligated by statute and by tradition--bring their plans and budget requests to the state for satisfaction of basic needs, new building requirements, new programs, innovations, expansions, or what have you! The essential core of the entire device will be to permit conflict without allowing such conflict to destroy the Council's equilibrium, or the working relationship among its constituent organizations.

I am convinced that under one guise or another some form of coordinating agency is here to stay in Wisconsin. If the present experience proves unsatisfactory or unworkable, there will be resort to either a legislative joint educational committee (which I submit will be another coordinating council) or a single board for higher education into which will be merged the University regents, the State University regents, and the members of the Board of Vocational, Technical, and Adult Education. Do you think for one moment that such a single board for higher education will be free from conflict? Do you believe that under a single board there will no longer be any attempts by one constituent organization or another to dominate the board or to become the favorite child of the legislature or the executives? The age old conflict of authority-versus-autonomy is a problem with which every coordinating agency for higher education must deal--whether it continues in its present form, or becomes a legislative committee, or becomes a single board.

The tremendous enrollment explosion and the continued and strengthened belief in the American dream of higher education for all has brought about the need for an overall responsibility for the state's higher education effort. The present Council offers a fine opportunity for meaningful participation by all parties and systems at each appropriate level in the decision-making process for statewide organization of public higher education.

The overall purpose of the Coordinating Council for Higher Education, as outlined in Chapter 39.024 of the Laws of 1965 is,

> "...to provide for the direction and co-ordination of the activities of the university of Wisconsin and the state colleges, schools of vocational, technical and adult education and county teachers colleges by providing a permanent joint committee to make a continuing study of the state-supported institutions of higher education under their jurisdiction and the relation thereto of the needs of the people of Wisconsin, to recommend necessary changes in programs and facilities, to provide for a single, consolidated, biennial budget request for the university of Wisconsin and the state colleges, and that portion of the budget request of the state board of vocational and adult education... and to report the result of its studies and recommendations to the governor and the legislature."

> "(a) *Educational planning*. The committee shall determine what over-all educational programs shall be offered..." in these institutions.

7

"No new educational program shall be developed or instituted at any institution of higher education except with the committee's approval."

"(b) *Physical plant.* The committee shall adopt a co-ordinated plan for the integration and most efficient use of existing facilities and personnel, and an order of priority for the construction of new facilities at the University of Wisconsin and the state colleges."

You have a list of all Coordinating Council members, and the Coordinating Council staff. The CCHE operates through six committees: Executive, Plans & Policies, Finance, Facilities, Higher Educational Aids and Student Affairs.

We are seeking to develop a professional staff of high ability, which will be independent of the staffs of the educational institutions as well as the staffs of the state administrative agencies.

We have ahead of us many difficult tasks--particularly among them the definition of the particular roles and distinguishing functions of the various institutions, and institutional systems--sometimes called generally "mission"; and if any attempt at adherence to these definitions is to be enforced, the council must be absolutely certain that provision is made for innovative change and for modification of the definitions.

If we are to make any significant attempt to regulate potential duplicative functions, a comprehensive plan defining institutional roles will be imperative. Perhaps also along with the authority already given the Council to approve all new educational programs, the Legislature should add the authority to discontinue or recommend discontinuance of unneeded, or costly duplicating, programs already in existence.

I hope that the Council will continue with the help and research of its staff its comprehensive planning and studying to bring order to relationships between the state and higher education institutions, to fulfill the state's higher education goals to assure fiscal efficiency and necessary economic prudence but to do all these things with a basic resolve to maintain an appropriate atmosphere for scholarly inquiry and for diverse and innovative teaching methods.

The worst thing that could happen to higher education in Wisconsin would be a chain of similar institutions cast from a single mold. The inherent right of the administration and faculty of every institution worthy to be called an institution of higher learning is to study and dream and plan--to see visions-- and to communicate their visions to others. No member of the Coordinating Council or its staff wishes to impair these inherent rights. But since those who pay the piper usually have some rights in calling the tune, the Coordinating Council will function best when it can help convey to the Legislature, and to the public whom the Legislature represents, that the goals and purposes of the academic world are being pursued in a world of fiscal reality without unfettered control in the hands of educators. The end result to be hoped for will leave broad decisions of public policy in the hands of the elected representatives of the people, but will also leave the detailed implementation of decisions relating to educational policy in the hands of professional educators.

So ought it be!   8

ANGUS B. ROTHWELL
Executive Director
Coordinating Council for Higher
Education

ALTERNATIVE APPROACHES

When this conference was first suggested, the idea seemed to be good, but we had no way of assessing what interest could be developed in making it a reality. Your prompt and enthusiastic response has been most heartening. We believe that this conference has in it the seeds for making our co-operative efforts a model for the nation. Fred Schwehr, who is really the father of this affair, deserves our sincere commendation for having so meticulously planned every detail. We will give him full credit if all proceeds well, but he knows that he is in for a rough time if our schedule is too tight or if we run out of food or if the weather isn't good.

This is probably the first time that some of you have had any close contact with the operations of the Coordinating Council for Higher Educatio We welcome this opportunity to acquaint you with our work and to solicit your help in meeting our common problems. I have found from experience that many of those involved in higher education have only a vague idea of how the CCHE is constituted and what its functions really are. This is readily understandable, for I was constantly reminded during my terms as State Superintendent that many teachers whose teaching certificates I had signed had very little accurate knowledge about how the system of public elementary and secondary education works.

I am sure that there are some who see the CCHE primarily as an obstructive device that is placed between the boards of regents and the legislature to lower budgets, reduce facilities requests, and delay program improvements. If the members of the Council or the staff viewed that as their assignment, I am sure that resignations would be submitted forthwith. One of our purposes is to have you understand the positive aspects of our work and to encourage you to work with us in the improvement of higher education.

As I view our efforts here, I see a unique opportunity in our working together to select the right alternative in the direction that the CCHE should take in fulfilling its obligations. In the United States there now are about 40 states that have some sort of coordinating board. There are no two exactly alike, but there can be little doubt that the trend toward giving a central state agency more responsibility is growing. With the tremendous growth in enrollments and the attendant requirements for bigger budgets and bigger building programs, it is only natural that competition between established systems and new types of organizations such as junior colleges should bring problems. These problems could be resolved in one of several ways. Each system could make its own presentation of requests to the governors and legislators and leave the decision to be

resolved by power politics and logrolling. Another way would be to combine all systems under one board which would require the full time of board members if they are to adequately perform their duties as lay members, and a third would be to establish a coordinating board such as ours. In the forty states having some type of coordinating board, legislation has provided for some with only advisory responsibility and others with considerable decision-making authority.

You are well aware of the fact that when the CCHE was reorganized the hands of the agency were strengthened materially. By inserting the word "direct" in the statutes and by rewording several other sections, the CCHE was made an independent agency with great responsibility in the areas of budgets, facilities and programs. Along with these specified duties was added the charge that the CCHE should make a continual assessment of state needs in higher education and put forth its best efforts to see that programs are implemented to meet these needs. The CCHE has several alternatives of procedure which it may adopt to fulfill its obligations. We could exert no leadership and simply act upon proposals submitted to the CCHE by the systems. In the minds of some members of the systems, this would be a preferable course to adopt--even to the point where it would appear desirable that no negative action should ever be taken. It is clearly apparent that this method of operation was not in the minds of the Governor and Legislature when the CCHE was reorganized. A second alternative would be to wield full authority through the use of the word "direct" and, by this means, order the systems to follow the mandates of the Council. I am sure that this procedure would meet with some favor in the Legislature and with some editorial writers, but not with the systems.

We have selected a third alternative. We believe that the word "coordinate" should play a significant role in our operations. We know that we have the reserve power to "direct" and that when all attempts to arrive at an acceptable solution to our problems through coordination fail, it may become necessary to use it. After all, a decision must be made somewhere, and the statutes say that in certain aspects of the operation of higher educational systems, final authority rests with the CCHE.

In our efforts to truly coordinate, we believe that we have the best chance for ultimate success. This kind of effort doesn't make headlines. Conflict does. But we believe that our function is not to seek headlines, rather that it is to provide our state with the finest system of higher education that is possible within our resources. To build an efficient system we need to call upon all of the experts that we have available. It is inconceivable that anyone would expect the CCHE to develop a staff with all of the expert knowledge necessary to make sound recommendations to the CCHE members. Such a staff would need to include literally hundreds of people. Consequently, we have adopted a procedure which employs advisory committees composed of experts from within or without the systems, consultants who are specialists in the area under consideration, and staff members to coordinate the work of all those involved and to bring to the CCHE committees, and finally, to the

whole Council what appears to be the best information upon which they may make their decisions.

We believe that our system is working well. Many of you are participating as hard-working members of our advisory committees. For the first time, specialists in each of the systems are coming to understand the problems and opportunities of specialists in other systems. There is no one "looking down his nose" at another. Genuine respect for the contributions of each person is accorded. For example, on our Facilities Advisory Committee we have not only the representatives of the systems working together but representatives from the State Building Commission and the Bureau of Engineering as well. Within the memories of all of us prior to this time it was not uncommon for each of the agencies to publicly criticize the other. This made interesting reading in the newspaper, but did little to promote the cooperation we need so badly if we are to use our top talent most efficiently. I could cite program after program that is being worked upon by various committees who are conscientiously giving us all that they have to offer. We could ask no more.

This conference, then, is further evidence that we are pursuing our objectives by having chosen the alternative that uses "coordination" as our basic principle of operation. We trust that you will find our proceedings here both beneficial and enjoyable. If we're successful, we'll invite you to participate again.

L. JOSEPH LINS
Director of Research
Coordinating Council
for Higher Education

INSTITUTIONAL RESEARCH -- THE CORNERSTONE FOR PLANNING

Research in the whole field of education is relatively new.
Developments have been principally during the twentieth cen-
tury. The early emphasis was on educational problems and
administration of public schools--elementary and secondary.

Institutions of higher education have been relatively slow
in establishing offices for investigation of institutional
problems by research methods. Industry, in contrast, has
relied heavily on research to guide its development.

The recent growth of all types of educational research, how-
ever, is almost incomprehensible in its size and impact. In
the past 10 years, more time, talent, and money have been in-
vested in pushing outward the frontiers of educational know-
ledge than ever before in history. In those same 10 years,
the findings of productive scholarship have had a profound in-
fluence on the scope and character of educational programs
and methods. In the next 10 or 20 years, we can confidently
expect even more significant developments.

We are at the growing edge of productive scholarship in sound
educational planning. We need to cooperate more fully in
these types of research and to make available to others the
findings which we have in hand. Based on those findings, we
should be able to take the next steps toward solution of major
issues in higher education. In thinking toward the future and
the needs of the future, we must research all educational
systems and the various aspects of the endeavors of those
systems. Our theme well might be, "Anything worth doing is
worth evaluating."

Institutional Research -- What is It?

Institutional research has been variously defined, but each
definition includes in it the primary purpose of this branch

of institutional endeavor. That purpose, in a few words, is to provide those who have the responsibilities for institutional decisions with the background data essential to those decisions being made on the most intelligent and well-informed bases possible.

Our institutions are becoming more complex with greater proliferation of disciplines; with a wider variety of teaching, research, and service functions; and with expansion necessitated by rising enrollments. As changes become desirable or necessary, the institutional research office collects and disseminates facts about the institution. But the office of institutional research is not merely a statistics-gathering office. That office must do basic research; must interpret the facts and research results; must indicate the meaning and implications of the facts and research results; and must recommend modifying action, if appropriate, or offer alternatives for action to the decision-making individuals or bodies.

Institutional research does not make the decisions on courses of actions. It only affords a basis on which sound decisions can be made. It does not supplant the need for sound administrative judgment, but only makes that judgment better informed and more intelligent. This I submit is the fundamental purpose of institutional research.

I subscribe to the definition of Dr. A. J. Brumbaugh who, in his booklet, *Research Designed to Improve Institutions of Higher Learning,* states, "Institutional research . . . consists of studies and investigations focused on current problems and issues in institutions of higher education. It also consists of studies and investigations of problems and issues that are basic to long-range planning or that may ultimately have implications for institutional operations. The former is typically applied research; the latter is basic research in higher education."[1]

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1. A. J. Brumbaugh. *Research Designed to Improve Institutions of Higher Education.* (Washington, D. C.: American Council on Education, 1960), pp. 2-3.

The extremes of the positions regarding the nature of in-
stitutional research are vividly differentiated by Henry
S. Dyer,[2] Vice President of the Educational Testing Service,
in his contrast of the viewpoints of Nevitt Sanford and John
Dale Russell. Sanford indicates that the research is charac-
terized by "intensive, theoretically-orientated, long-term
studies of the inner workings of educational institutions."
He contends that such studies should be "free or relatively
free of demands from its host institution for information
relevant to its immediate problems." In contrast, John Dale
Russell expresses a more pragmatic philosophy as he defines
an office of institutional research as "an agency . . .
attached directly to . . . the office of the president or
executive vice president; it is assigned specific responsi-
bility for carrying on studies needed for the making of im-
portant decisions about policy and procedures; and it works
toward the primary goal of finding out how to save money that
can be used to better advantage."

My position is between these two views. Until recently, it
is true that institutional researchers were most concerned
with applied research and that the social scientists concerned
themselves primarily with basic research. Today, institutional
research persons have developed sufficient sophistication, or
should have, that they now are concerned with the support
of "basic" research. By the same token, research and develop-
ment centers and centers for the study of higher education,
through social scientists, are becoming involved in research
on administrative problems. It follows logically that this is
a correct direction for the cooperative efforts to proceed.
The applied is supported by the "basic" type of research.

Broadly conceived, then, institutional research results in
continuing self-studies of all aspects of the institutional
operation. Any or all subject matter areas and their inter-
relationships are of concern, as well as the institutional
clientele, personnel, and organization. Involved are many
persons--the faculty, the administration, the students, the
alumni, and governmental bodies including the trustees or

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2. Henry S. Dyer. "Can Institutional Research Lead to a
   Science of Institutions?" *The Educational Record,* Fall
   1966, pp. 452-456.

14

regents. Each individual is important for his contribution; likewise, the improved service of the institution resulting from careful analyses reflects itself in the individual, community, state, national, and international welfare.

In institutional research, it is important to collect and analyze many types of data. As a partial list, I cite enrollment projections; projections of social and economic change; a determination of the educational programs that will be needed to meet the normal and emergency local, national, and international situations; and the determination of physical facilities required for instruction, for housing and boarding students, for health and recreation, for research and experimentation, and for administration.

It is the function of management to facilitate the achievement of the basic purposes for which an institution exists, namely, the provision of high quality instruction, research and service. If colleges and universities are to perform these activities effectively, a number of prerequisite conditions must be met.

There must be a student body competent to profit by the program of instruction, and disciplines which meet the needs of the students. There must be a qualified and dedicated faculty. There must be well-equipped classrooms and laboratories of a size conducive to most fruitful learning and the operation of the best teaching methods. There must be a sense of security on the part of the faculty derived from adequate salaries, fringe benefits, and security of position. There must be money wisely budgeted and efficiently spent. There must be public relations programs alerting the public to the needs of higher education.

These statements emphasize the importance of institutional research and of each discipline evaluating its program carefully. If we do not look ahead and if we do not introduce new methods of instruction and find ways of more efficient operation, we may soon find ourselves in the untenable position of a tremendous job, to do but, because of lack of sound planning for the job, inadequate means of performing the job. We need to conduct evaluative and research studies in attempting

to find solutions to the problems of (1) how to secure enough dollars, libraries, laboratories, classrooms, and teachers for existing and new institutions or branch institutions to provide for the students who will attend college in the years ahead and (2) how to maintain quality, in other words how to guarantee that the educational programs of the future will be rigorous and strong enough to stimulate the fullest development of the individuals being educated. At the risk of over-emphasizing the obvious, I would note a few specific questions requiring research.

What are the characteristics of the students? What is the relationship between student characteristics and their achievement? How effective are admissions policies and procedures and student aid programs in assuring that the person who can profit from higher education will be given the opportunity for continued education? Will the highly qualified be sufficiently encouraged to pursue advanced studies? Will there be maximum use made of the talents of married women after their families are grown? What are the evidences of quality instruction? What relationships can be identified between the characteristics of the faculty and quality of instruction? Can better use be made of high quality teachers through improved instructional media such as television and taped demonstrations? Will teaching machines improve the learning process?

What is the relationship between space utilization and space needs? How is the income dollar spent? What relationship exists between income from various sources and the purposes for which it is used?

Are curricular revisions and innovations consonant with the changing goals of education? What is the proper balance between general and professional education? Is the need for development of leisure-time activities being met?

Time does not permit my answering these questions even if there were answers which would fit all institutions. The answers, in fact, will vary from institution to institution and from discipline to discipline within the institution.

These questions may appear too broad to be of concern to all institutions. It should be kept in mind, however, that the

total educational endeavor of the state is equal to the sum
of its parts; that each institution is made up of a variety
of disciplines; that each discipline is important in its own
way and yet also is important in its contribution to the sum
total educational effort.

Each discipline bears evaluation. A global approach to eval-
uation is not sufficient for, in the process, values of the
integral parts may be lost.

In the evaluation, it is important to understand that which
bears investigation. Understandable and correct definitions
are imperative, for the results can be interpreted only on
the basis of the meaningful data which are part of the in-
vestigation.

Institutional researches are becoming more and more important
because of expanding enrollments and mounting costs of higher
education. The results of research and studies should help
to improve the efficiency of operations.

Institutional Research -- Why Delayed?

Institutional research is too often delayed until it is pre-
cipitated by a crisis. A crisis situation invariably results
in conditions so complicated that the development of a research
design and of executing the research is almost impossible with-
in the time limits. There must be long-range planning and
sufficient lead time prior to the need for the results of
research. Institutional research offices cannot function pro-
perly under a scheme of continually "putting out fires."
Rather, institutional research should be used as a preventive
measure of the fires ever being kindled.

Long-range planning is hazardous because of the uncertainties
of the future, but the alternative is even more hazardous. Too
many colleges and universities have long proceeded on an
opportunistic basis without guidelines to give them directions
and to establish boundaries. Long-range plans must be made,
but they must also be reviewed from time to time and must be
revised when new data do not substantiate the original general-
izations or decisions. The importance of long-range plans can

not be overemphasized. The necessity for adequate research
data should immediately be obvious to those responsible for
making such plans.

We need research based on anticipation of future needs. We
cannot afford to waste manpower. We should prepare individuals
for the fields in which they will be needed. Why, then, has
institutional research in many of our institutions been so slow
in developing or been given such a low priority as a basis
for long-range planning?

Brumbaugh,[3] I believe, provides the answers to this question
when he contends that:

"(a) Administration is a continuing process of decision
      making. Decisions that must be made day by day are
      so pressing that the administrator finds little
      time to consider long-range planning and the studies
      that are needed for planning.

"(b) The administrator lacks a clear conception of the
      values inherent in institutional studies.

"(c) Financial limitations force the institutional
      studies into a low priority position in the oper-
      ating budget.

"In a word, the administrative climate in many colleges and
some universities is not conducive to the conduct of institu-
tional studies. Increases in faculty salaries, pressing library
needs, maintenance and improvement of physical facilities--
these are immediate and dramatic. To divert funds from them
to studies that appear to be concerned with more remote needs
is a difficult decision for an administrator to make."

I submit that if the administrators responsible for all aspects
of a college or university operation do not continuously
evaluate those operations and seek more effective and more

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3. A. J. Brumbaugh, (in L. Joseph Lins, Editor. *The Role of
   Institutional Research in Planning*. Madison: University
   of Wisconsin, Office of Institutional Studies, 1963, pp.
   15-16).

efficient means of carrying out the educational responsibilities, they will soon find that outside consultants or outside agencies will be asked to come in and make the evaluation. This, I believe, would be highly unfortunate. I believe that the individuals who should be most qualified to make evaluations are those individuals who are closest to the scene of operation. I believe also that continuous study is necessary and that a "one-shot" type of research is far inferior in its implications to a study-implement-study approach.

It might be unfair to imply that some institutional operations take on the form of a misguided physical fitness program of:

"--jumping to conclusions.

"--side-stepping responsibility.

"--pulling a fast one.

"--reaching for the moon.

"--skipping over facts.

"--pitching a curve

"--running down fellow educators."[4]

This would be unfortunate if true. I believe it becomes less true under a situation of a functional and adequately used institutional research office.

Institutional Research -- What are Its Functions?

A functional institutional research office can be expected to:

1. design and conduct independent institutional studies and research.

2. facilitate institutional studies by providing assistance to members of the institution's staff in the design

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4. Adapted from Project Public Information "Monthly Report", April 1968.

and conduct of projects. Such assistance may include help in planning the investigation, in selecting or developing appropriate research instruments, in collecting and processing the required data and in preparing or editing reports of the completed investigation. In some cases this help may be as limited as that of giving advice as to where data may be located or in steering the research person to studies already in process or completed.

3. cooperate in the development of and execution of plans for cooperative research on problems of higher education with inter-institutional, statewide, and national agencies provided such research promises to contribute to the institution's own educational program and/or that of other higher educational institutions.

4. prepare and edit bibliographies in higher education and critical summaries of institutional research pertaining to topics related to current problems in higher education. These should have values for other than purely instructional purposes.

5. disseminate results of institutional studies.

6. identify areas of the institutional program which need study, and

7. aid selected graduate students by providing apprentice training in the techniques and execution of research.

Implied is that the office of Institutional Research will set up and maintain a library of institutional reports and research. This will include reports from other institutions and agencies and appropriate reports by faculty and administrators of the respective institution. Such a library will tend to:

1. effect less repetition of studies assuming that studies are being unnecessarily repeated, and

2. keep the administration and faculty informed so the results of these studies can be used in institutional

planning and in the interpretation of the institution
to the public.

I would propose, therefore, that the faculty, including the
administration, be asked to submit institutional studies to a
central office; that those studies be summarized and reported
back; and that copies of the studies be categorized and made
available in a central office.

If the results of institutional research are to justify the
effort, the results must be put into the hands of those who
are concerned with institutional needs. Important though they
are, the collection, analyses, and evaluation of data are
quite unimportant unless something is done as the result of
the findings. This calls for a close association between the
administration, the faculty, the students, and the public.

I have been and continue to be amazed at the limitations of
responsibilities of institutional research offices. The
term has come into wide usage. Institutions are jumping on
the bandwagon and are setting up offices of institutional
research apparently because it seems the right thing to do,
not because a well thought-out program has shown a need.
Offices have developed as crises develop in single areas.

So in one institution we find that institutional research is
directed almost exclusively to faculty-load and faculty per-
sonnel studies. In another, the basic responsibility rests
with budget studies. In a third institution, the institut-
ional research staff is concerned with brick and mortar, in
other words with planning buildings. And yet in another in-
stitution, the staff works on problems concerned with campus
planning--essentially providing a plant aesthetically planned.
For still another institution, the institutional research
staff is concerned only with studies dealing with students. I
cannot overemphasize that the institutional research effort
should be a coordinated effort.

Institutional I _earch -- What Organization?

As we look at the current organizations for institutional re-
search, we find that the person to whom the institutional

research person reports also varies from institution to institution. It may be the President, the Dean of Faculties or Vice President of Academic Affairs, the Vice President of Business and Finance, the Director of Campus Planning, the Institutional Architect, or the Dean of Students.

In institutions where the institutional research office has a limited role, many administrative units may be independently researching their own problems. The basic difficulty I find is that the various administrative units within an institution do not keep each other informed. A coordination of efforts is lacking. Several units work at cross-purposes; their efforts are not integrated.

I can see only one really sensible organization for institutional research. The head of the office, whatever his title, must be given institution-wide responsibility and must have the respect of the administration, the faculty, the students, the Board of Control, and the alumni. He should report directly to the top administrative person in the institution be he the president, chancellor, or provost. He must be a member of that person's Cabinet; in other words, he must be among that person's close advisers. It is desirable that he have faculty rank or status. He should be a member of all important planning committees or serve in an ex-officio advisory capacity on those committees.

All of the institutional research need not be done in one office; in fact, I advise against this arrangement. Each unit of the institution should be concerned with its own problems but should seek the advice of the institutional research office before initiating the particular research. The institutional research office must have the responsibility for coordination of the total administrative research efforts. That office should work with all administrative units and should provide the best climate for constructive, well-integrated, total institutional planning. That office should have on file all of the college reports of an institutional research nature and should include in the file reports from other institutions. Any office planning research into its own operations should review the research reports on file prior to commencing the research. This will help to eliminate duplication of efforts and will give a broad base to the research, since that research then can be planned in terms of the on-going decisions

which have resulted from previous research efforts. I advise
that all questionnaires and all data reported flow through the
person, under the president, who has the responsibility for
institutional research.

I find for some campuses a lack of coordination in reporting
efforts. As an illustration, for the first semester of this
year, there was a difference of over 3,000 in the new fresh-
men reported by one campus to the U. S. Office of Education,
in the official enrollment report, and in the distribution by
county, state, and foreign country of home address submitted
to the Coordinating Council. On investigation, it was found
that reports were submitted by different offices of the campus.
The numbers should have been the same since the requested
cut-off data on enrollment did not vary.

Were I the president of that institution, I would be greatly
concerned about the errors in the statistics. I question how
an administrator can function without accurate information
basic to the decision-making process, and how he can justifi-
ably permit an erroneous image of the institution. I point
out that the data submitted to the U.S. Office of Education
are not used merely for group reporting; the questionnaires
go into the archives and are referred to when grants are
requested by the institution.

I would point out also that the staff of the Coordinating
Council for Higher Education should not have to check every
addition and every detail of a report submitted at its request.
If that report is compiled by the campus and flows through
the central office of the system, the CCHE staff should be
able to assume that the data are correct. The data requested
by the CCHE staff do serve as a base for decision-making by
the CCHE. We find all too many errors, for some campuses,
in addition, or errors through omission, or errors because of
not thoroughly checking data before submission to the CCHE
staff. I might add that the data submitted by some campuses
are excellent.

In the short time available, I cannot outline a wide group of
organizational patterns for institutional research. Plans
necessarily will vary from one institution to another depending

upon the needs--the size of the institution, the complexity
of the institution, the requirement or lack of requirement for
growth or change to meet the mission of the institution, and
the quality and interests of staff associated with the various
administrative units.

Let us assume that the institution under consideration is a
university of relatively large size and having only one major
campus but expected to absorb enrollment, research, and service
increases. The plan of organization for research on admin-
istrative problems would call for a Vice President for Adminis-
trative Research, or a Dean of Administrative Research, or
a Director of Planning, or a Director or Coordinator of
Institutional Research reporting directly to the President. He
would coordinate all administrative research and be kept ad-
vised at all times of changes in policy decisions affecting
the institution. Immediately responsible to him would be
four coordinators: one for *facilities research,* one for
academic research, one for *budget research,* and one for *student
research.* These coordinators would work closely with each
other and with the Vice President, Dean, Director, or Coordin-
ator in providing an integrated, total administrative research
effort. The need for this integration becomes apparent as
one notes the inter-relationships between areas falling under
one coordinator and those falling under other coordinators.

Examples of research areas which would come under the immediate
jurisdiction of the various coordinators are as follows:

Coordinator of Facilities Research: student and auto traffic
and parking; student housing facilities; space needs and
utilization; physical plant; campus planning including archi-
tectural and engineering planning; and equipment.

Coordinator of Academic Research: faculty and classified
salaries; promotion and personnel policies; faculty recruitment,
orientation, and fringe benefits; teaching, research, and
service loads; curricular research; integration of courses;
new program development; community and state services (Exten-
sion education); and calendar.

Coordinator of Budget Research: budgeting techniques; support; expenditures; tuition; and gifts and grants.

Coordinator of Student Research: counseling and testing; background characteristics; high school-college articulation; registration procedures; enrollment and projected enrollment; grading practices; performance and attrition; credits carried; income, financial aids, and expenses; work-study programs; student government; co-curricular or extra-curricular activities; and alumni follow-up.

This type of organization for institutional research will function best if administrative offices are centralized geographically on the campus. You will note that I have designated each of the heads of the institutional research divisions as a coordinator, rather than a director. This is a functional title since, as I indicated previously, the respective administrative office should be directly involved in the evaluation of the areas falling immediately under its jurisdiction.

If the administrative offices are not centralized geographically on the campus, there still could be the same four divisions of research effort. In this situation, general units of administrative endeavor might each have a director of research. The director of Facilities Research might be directly responsible to the Director of Planning and Construction, the Director of Academic Research to the Vice President of Academic Affairs, the Director of Budget Research to the Vice President of Business and Finance, and the Director of Student Research to the Dean of Students. In this type of organization, it is very important that the central person in charge of institutional research have an advisory-coordinating committee with membership including the four directors named. He would keep those directors informed of the on-going administrative policy decisions and questions on which decisions might be reached. The advisory-coordinating committee should likewise include faculty and student representatives, for again I emphasize the importance of a total institutional research effort--integrated so as to bring together all available and pertinent information bearing upon the problem at hand.

I would like to stress again at this point that the decision-making process in any institution is not the sole responsibility of persons with administrative titles. It would be a grave mistake not to involve the faculty and the students in recommended policy changes.

Faculty committes are very important in the administrative structure if for no other reason than to solicit the support of the faculty. But this is not the major reason for involving faculty members. These are people also who become involved when administrative decisons have been made. It is an error to assume that the faculty member's thinking and interests are confined to the classroom, his particular discipline, and his particular research interest. If a change in calendar were under investigation, for example, the administration, the faculty, and the students would all be concerned.

If change to a "trimester" or four-quarter calendar were anticipated, there must be many hours devoted to determining the feasibility of such a calendar. The committee appointed might be a faculty committee, but certainly the head of the institutional research office should sit with the committee. He has a grave responsibility to bring together or have brought together all possible information on the pros and cons of the proposed calendar revision. It is important to know whether students would be attracted to a more extensive summer program; whether year-round education would require eliminating summer institutes, workshops, and conferences; whether faculty members would be willing to teach in the summer "trimester" or quarter; whether building maintenance work could proceed under a year-round operation, and so on. I need not dwell on the problems involved for I am sure that most of you are aware of the hours upon hours of time spent at the University of Pittsburgh in their calendar change. Yet their decision to go to a "trimester," I understand, was to great degree an administrative decision and the time spent was primarily for implementation not for determining whether the change was educationally sound. The evaluation, I believe, came after implementation of the system. As you know, the calendar venture was somewhat less than successful.

I am sure, at this point, that the thought has crossed your
mind that the head of an institutional research office must be
a pretty capable individual. He must be a generalist; he must
be able to converse intelligently with specialists in many
areas just as the President of the institution must be able
to do this. He should have had classroom experience, experience
in student personnel work, been involved in budget planning,
have had some experience in building and campus planning, and
have had administrative experience. He is not just an educational
statistician, but he must have a basic knowledge of statistics.
He must have a knowledge of higher education--its history and
the current problems facing higher education. He must be able
to speak and write effectively and must be willing to work
long hours especially at certain periods when background for
rapid decisions must be obtained in a brief period of time.
He must be able to anticipate questions that will be asked,
since basic research is time-consuming and cannot be done
on the spur of the moment as crises develop. He must know
what is happening in education in his own state and nationally.

To this point, I have dwelled principally on within-campus
institutional research. I would like to conclude by saying a
few words about statewide planning.

Institutional Research -- Will it Affect Statewide Planning?

I believe that statewide planning is here to stay and that
coordination of higher educational efforts will become in-
creasingly important in the years to come. Therefore, an
increasing amount of data will be needed to assist in policy
and decision-making at the statewide level. Institutional
research, thought of in its broadest sense, will be the tool--
the cornerstone--for many of the changes which will come
about. The Director of Institutional Research will become
more and more the person who will be depended upon to see that
the institutional data are available and submitted.

In statewide planning, all persons involved and interested in
higher education within the state should have the opportunity
to contribute thought and effort to the accomplishment of goals.
The experiences important to, and methods of, reaching the
goals involve representatives from all types of post-secondary
schools, colleges, and universities. There must be adequate

background data and research to arrive at goals, and adequate means of periodically evaluating the progress toward the goals. Not all persons interested can be directly involved, but their thinking and work can be reflected through the institutional representative to the state-wide planning agency; that person well could be the person who has the ultimate responsibility for the coordinated institutional research of the campuses making up an educational system. If numerous persons serve as the liaison between the campuses and the statewide co-ordinating agency and if those persons do not work closely with each other, the result will be confusion for the campuses, confusion for the system, and confusion for the statewide agency. The result, in brief, is inadequate, ill-defined, and ill-conceived total planning. The staff of the coordinating agency also is not functioning properly if there were not integration of their activities.

It is very important, prior to requesting information, that the coordinating agency, along with the proper committees of institutional personnel, agree upon the kinds of data which must be submitted by institutions. Definitions must be arrived at which will insure that data are comparable among the various institutions. After definitions have been arrived at, another function of the coordinating agency is to develop manuals and forms on which data would be submitted. Unless it discharges this function, one might expect that institutions might submit data which are far from being comparable. Along with this function, the coordinating agency has the responsibility of keeping the reporting and study on schedule, of involving the proper educational and non-educational personnel in the evaluation, of involving consultants in special problem areas if necessary, and of continually working with the institutions and lay members of the board or council in implementing the study results.

We in higher education should be and are involved in developing long-range plans the results of which some of us will never experience. But there will be those who follow us who, if we cooperatively plan well, will reap the benefits of those plans. I can perhaps express this best through the words of W. A. Dromgoole, in his "Building the Bridge for Him" (Turtle Island Camp).

An old man, traveling a lone highway,
Came at the evening cold and grey,
To a chasm deep and wide.

The old man crossed in the twilight dim,
For the sullen stream held no fears for him.
But he turned when he reached the other side,
And builded a bridge to span the tide.

"Old Man," said a fellow pilgrim near,
"You are wasting your strength with building here;
Your journey will end with the ending day,
And you never again will pass this way.

You have crossed the chasm deep and wide.
Why build you a bridge at eventide?"
And the builder raised his old grey head:
"Good friend, on the path I have come," he said,
There followeth after me today
A youth whose feet will pass this way.

This stream which has been as naught to me,
To that fair-haired boy may a pitfall be;
He, too, must cross in the twilight dim --
Good friend, I am building this bridge for him."

WILLIAM E. WHITE, Associate Director
Programs & Studies, Coordinating
Council for Higher Education

CURRICULAR PLANNING - PROBLEMS AND PROSPECTS

As recently as two years ago, while involved in campus planning on the
Oshkosh Campus, I was still considered some what "respectable" in the
eyes of my colleagues in the academic community. I was a university
professor who had temporarily lost his way--or his mind--and stumbled
into university administration. As a faculty member and later a depart-
mental chairman, I had been under the naive impression that academic
planning either was or certainly should be the exclusive prerogative of
the faculty whose decisions would refelct not only the best interests
of the department but that of the institutions, its students and the
state as well.

I was at that time confident that all the guys with the white hats were
on the campuses and the black hat boys were all in Madison. A year ago,
as a speaker at the Facilities Conference, I found that in the short
period of less than a year, the white hats were also made to fit the
Madison planners, particularly those on the staff of the Coordinating
Council for Higher Education. Now, after nearly two years in the office,
I find myself increasingly isolated from those individuals most important
to the academic planning function. I remain in a perpetual limbo, shunned
by both camps. Faculty members see me as part of the bureaucracy primarily
interested in budget cutting and disinterested in quality education.
Conversely, those charged with the ultimate responsibility for educational
budgets at times view the CCHE staff as soft-hearted, dizzy-headed, dis-
placed educationalists. As my children read the local press, they may very
well subscribe to the old saw about the child of a college professor who,
when asked what her father did replied "My father is a 'doctor' but not
the kind that does anybody any good."

In order to try to do some good for all involved, I am going to focus on
three aspects of academic planning:

    1. The rationale for academic planning;

    2. the issues and problems in academic planning;

    3. the prospects for academic planning.

A speaker at a recent conference observed that legislation is like sausage-
if you like it, don't watch them make it; after watching academic planning
at the departmental, curriculum committee, institutional, board, and
Coordinating Council level, I am not so sure that the same observation
might not at times apply to efforts to develop a meaningful curriculum.

Understandsbly, academi. planning becomes less acceptable to the faculty member as it involves a broader and more removed agency.

At the DEPARTMENT level . . . . it is ACCEPTABLE

At the INTERDISCIPLINARY level . . . . . . it is SUSPECT

At the SYSTEMS level . . . . it is DANGEROUS

At the CCHE level . . . . it is ANTI-EDUCATIONAL

At the LEGISLATIVE level . . . . it is INSANE

Strangely, from an inverse point of view, continuance of full local authority would also result in at least boundless confusion. Given this absence of faculty support, what have been the forces stimulating most states to create comprehensive agencies for higher education? Many factors are undoubtedly involved but it would appear that three positive forces are relevant to our discussions:

1. The growing public interest in higher education. Faced with the growth of knowledge and the accompanying technological and social advances, the public has looked to higher education for leadership. Each community has come to believe that its future is to be found in bringing higher educatiional opportunities to its area. Once such an institution is established, institutional, local, and political pressures have operated to insist that each campus be the most comprehensive of its type in the state.

2. The escalating cost of higher education. This factor, to be discussed more fully in other sessions, has demanded a closer look at the contribution that the public institutions provide.

3. Vigorous competition to achieve excellence. This competition had developed in programs, in number and quality of students, and in research and public service activities.

In Wisconsin, higher education has had an enviable history of state support which has prompted the creation of three systems, each of national reputation involving the operation of over fifty separate institutions, each striving for excellence and autonomy. Excellence in one of our 13 public universities cannot develop without institutional and state planning because no institution or system is likely to attract a disproportionate share of state funds, and any unusual support for one institution must have some negative impact on the others. As Logan Wilson has observed, "Entrenched views of institutional autonomy not only increase unnecessarily the price we pay...but also decrease the efficiency and effectiveness in serving the nation as a whole." Wayne Reitz, director of graduate programs in higher education in the United States Office of Education, contends that the "planning efforts are necessary to protect the developing institutions from themselves."

The heyday of the 1955-65 decade is past, when institutions, striving to expand their limited programs rapidly enough to meet the dramatically increasing demands for undergraduate education, could do no wrong. We now face a period of controlled adjustment rather than massive annual growth and this transition has caused agencies at various levels to stake their claim for a role in the academic planning process. We have witnessed a proliferation of agencies each demanding a role. To list but a few indicates the complexity of the problem. At the state educational level we have the CCHE, the boards of regents, central administration, the institutional president and his administrative staff, deans, curriculum committees, graduate councils, departmental chairmen, faculty, and students, each seeking to establish its prerogative. Other state agencies involved include the Governor, the Legislature, the Joint Finance Committee, the State Educational Committee, the State Affairs Committee, the Building Commission, the Bureau of Engineering, and the Department of Administration. Various national and professional agencies represent a third level of participation. Included are such agencies as HEW, the NEA, the AAUP, the campus architects and the long-range planners, ALGC&U, the North Central Association and a multitude of accrediting agencies related to departmental or institutional type.

Finally, the fourth level of participation is the fourth estate. The press, particularly the "home town" variety injects itself vigorously into the planning process when a new program for "their" campus is under consideration.

Academic planning as related to institutional development is here to stay and I am sure that each of us has come to accept, albeit reluctantly, the participation of some of the agencies. We contend that the cooperative efforts of at least the institutions, the respective boards, and the CCHE are *valuable* to you in achieving your goals. If you cannot accept state planning as a valuable function, perhaps you can endorse its *importance* in maximizing the use of resources and services allocated to higher education. If you cannot subscribe to either of these appeals, and while each of us from a different premise might prefer a *laissez faire* approach to planning, I would submit that statewide direction and coordination of higher education in Wisconsin is *inevitable*.

Accepting the premise that academic planning is inevitable, if not desirable, and that an educational agency such as CCHE is least objectionable in coordinating cooperative efforts, what are some of the problems Wisconsin faces in academic planning? From my vantage point I can identify five major problem areas: the problems of sameness, the problems of differences, the problems of role definition, the problems of measuring quality, and the problems brought about by explosions of students, costs and knowledge.

The criticism of the surprising sameness in higher education, levied by Harold Howe and others at the national level is also apparent in Wisconsin's institutions (*Higher Education & National Affairs*, August 25, 1967). The long-range plans of most of our universities reflect institutional goals of broadened curricula typical of "major" university status. With the possible

refreshing exception of one campus, each of the 13 institutions plans the development of comprehensive graduate schools with masters' degree programs in the "basic" disciplines and aspirations for PhD work in selected disciplines. Each feels constrained to become much more deeply involved in research, extension and public service. Most want ETV stations on campus as well as sophisticated computer hardware.

On university campuses, new specialities and sub-specialties continue to be introduced primarily to attract and hold PhD faculty. A review of ongoing curricular developments would tend to support at least in part the statement of Paul Dressel from Michigan State University, that "proliferation of courses, majors and minors is unnecessarily expensive and may result from faculty self-interests and self-indulgence rather than student needs."

The mee-too-ism, deplored by Gardener and others, the sameness, the seeking of excellence through the same route, has introduced the terms *proliferation* and *duplication* into the jargon of the educational planner. Institutions may be attempting too much with too little--too many courses in too many fields-- too many marginal programs which are deemed important to the internal development of the university. Institutions are sapping their strength to support minimal enrollment programs, the continuance of which may ultimately operate to the disservice of students.

It has been observed that while universities boldly reshape the world outside the campus, corresponding adaptive changes have not taken place within the ivy halls. In contrast to the dramatic changes in an increasingly liberal society has been the innate conservatism of university departments in matters of academic change. Each innovation is interpreted either as an invasion of the sanctity of the classroom or is accepted as an added ingredient to traditional practices replacing nothing but requiring substantial budgetary support.

At least among students there is a growing consensus that the rigid departmental structures are preventing the universities from undertaking problem-oriented curricular change. Until very recently, many of our universities have, except in a token fashion, ignored programs adapted to individual differences, independent study, modular scheduling, team teaching, non-graded classrooms, and other educational practices which have found general acceptance in our elementary and secondary schools.

The staff of the Coordinating Council continues to support the concept that the expertise of the universities should be used in an advisory capacity in dealing with problems related to academic planning. However, advisory committees on campus lab schools, extension education, and two-year campuses, at least in their initial deliberations, have articulated essentially a "no change" philosophy.

An example of the conservative attitude is found in results of a comprehensive study undertaken outside Wisconsin by a responsible director of institutional research with the full cooperation of the university English department. Carefully selected control and experimental groups were selected to measure whether the values attributed to the Freshman composition sequence were achieved. The

study indicated that the Freshman composition program had relatively little effect upon either skills or concepts it was intended to enhance. Yet the report was shelved because of its impact upon English department staffing, building needs, and historical attachments to the traditional pattern of English instruction. I do not assume an anti-Freshman composition posture, as I can discover very little more about this particular study, but I would applaud the University of Wisconsin-Green Bay in its efforts to experiment with a different approach to one of the ritualistic features of university academic curricula.

If the sameness of our higher educational establishment is cause for concern, strangely, so are also the carefully preserved differences. The general philosophy articulated by both educational and political leaders is that higher education should provide, insofar as possible, equal opportunities for a broad range of potential students from varying socio-economic, intellectual and cultural back-grounds. Yet, in Wisconsin, typical of higher education, and perhaps for reasons both educationally and financially defensible, we find:

1. Differences in admissions standards which "exclude out" rather than "include in." Each system and institution arrives at its own formula. Consequently in the name of standards we have pretty effectively fenced out the children of the poor and disadvantaged. Our massive student aid programs have not as yet had an impact upon bringing substantial numbers of the excluded group into higher education. It is becoming more apparent that "equal opportunities" will not be sufficient and that higher education must discover and implement ways to compensate for prior inequalities. We find ourselves struggling mightily to meet a problem that has reached crisis proportions while resisting statewide efforts by the CCHE that would have encouraged broader based responsive programs. Programs for the disadvantaged cannot be based upon a "hit or miss," "year by year" basis depending upon available surplus resources on each campus.

2. Differences in transferability patterns which inconsistently discriminate against a student who spends his first year or two in a technical institute, a branch campus, a center, a different system, or even a different institution within the same system. Wisconsin institutions along with others have been slow to accept the concept that "what you know" is at least as important as "where you learned it." The number of credits you have duly recorded in the registrar's office of an "acceptable" institution still is the primary criterion.

3. The differences in our definition of excellence. I would concur with the statement in the recent Bundy report, "We would like to see more [institutions] whose superior quality is evidenced by their ability to develop to their maximum capacity students whose potential was not developed in their secondary years" (*New York State and Private Higher Education*, p. 54). These and other

problems of differences were identified in the CCHE Provisional Long-Range Plan and while separate systems and in some cases isolated institutions are reacting imaginatively to these differences, higher education generally has been reluctant to deal with them except on a systems' basis rather than through a coordinated state approach.

4. Differences in acceptance of the integration of liberal arts in technical education. Unwarranted sensitivities among both "academic" and "technical" staffs have promoted a protective philosophy preventing the full utilization of the resources of both types of institutions. Obviously, some liberal arts education must be a part of any technical associate degree program and the quality of and support for such programming cannot be at a lower level than the courses forming part of a traditional university curriculum.

Related to the sameness and the differences has been the continuing difficulty at all levels to define not only for students and faculty but for the general public as well, the goals and responsibilities that should be assumed by higher education.

Higher education traditionally and perhaps correctly has been unwilling to submit to a limiting role or quantifiable measure of its product. We have been unable to communicate effectively the rationale for our oft-repeated premise that higher education should consist of an appropriate balance of instruction, public service and research. As the focus of the academic workshops at this conference will be devoted to some of the specific problems related to this concern, I will raise but a few of the issues and leave to our specialists the opportunity to take issue or suggest solutions:

1. Critical publicity assumes that higher education supports the view that the great teacher cannot achieve significant recognition in higher education unless he devotes a considerable portion of his time to research and publications. Is this criticism rabid?

2. Should research be expected on an "across the board" basis or on a deferential standard with greater expectation for a particular system, institution, or individual?

3. Can a standard teaching load and student-teacher ratio be formulated which applies to comparable undergraduate programs regardless of system?

4. Should all institutions assume a role in extension and public service activities or can such programs be best administered through a single state agency?

5. Are our graduate schools as archaic, particularly in their responsibility for the preparation of teachers, as some educational critics have suggested?

35

6. Is undergraduate instruction becoming less responsive to student needs as a result of the graduate school orientation of university departments? Is the student criticism that we fail to deal with "real" problems justified?

7. Should all undergraduate university departments be encouraged to aspire to the development of graduate degree programs?

8. Has the Pied Piper of federal and private grant supports tended to lead our universities away from their instructional mission?

9. Are the traditional termination points in university education meaningful in light of attrition rates at the several levels? Should alternative and meaningful one-two-and three-year programs be encouraged, at least on an experimental basis, at one or more university campuses?

Central to all of the issues is the perennial and perhaps unanswerable question of the measurement of quality in higher education. The quality of higher education is better judged than measured, but professional articles and books continue to attempt the measurement of the greatness of a university through quantitative factors. Some reservations concerning a few such attempts are suggested in the following six questions:

1. Can the quality and contribution of a library be measured by the total number of volumes unrelated to the nature and use of these holdings?

2. Can the instructional program of an institution or a department be measured by its faculty PhD ratio?

3. Can the contribution of a university research program to the education of its students and to the needs of the state be judged by the number of federal grants it receives?

4. Is the number of students graduated or turned away a meaningful yardstick in the evaluation of a professional school or a graduate program?

5. Is quality of higher education directly or inversely related to the size of the institution?

6. Does graduate school rule the roost?

The measurement of quality poses a significant task for the institutional researcher but it is these types of data that will be more and more demanded by those who allocate an increasing share of state and federal tax dollars to higher education. At times we have been guided by either hunches or what has proved successful in widely different situations. As none of us has the evidence

we need, I submit that institutional excellence is a function of people, not buildings, and it is most directly related to the ability of the institution to attract and hold a faculty of distinction.

Of a somewhat more pragmatic nature, but central to the curricular plans for higher education in Wisconsin are the knowledge, cost and enrollment explosions of which we are already well aware. At least two of these concepts will receive fuller attention in other workshop deliberations but the academic planning we undertake must recognize the practical implications imposed by each of these explosions.

Concerning the students, we must ask, what are the challenges to academic planning imposed not alone by the numbers of students but more importantly by the implication as to types of students if higher education is to attract the projected 80% of Wisconsin's high school graduates? We should remember in our planning that our current attrition rates with selected students are already subject to criticism.

Money for education represents a substantial portion of an ever-spiralling state and federal budget. While the percentage of the gross national product allocated to higher education may not be high in comparison to expenditures in other fields, we will more and more be called upon to demonstrate efficient utilization of these resources dedicated to the promotion of quality in educational institutions. We need to document the significant economic contribution that education provides in increased productivity and also to show that through education we may find the major key to the solution of the persistent and growing social problems we are experiencing.

Speaking of the knowledge explosion to a group of professional educators is both unnecessary and repetitive. There just does not seem to be any new or novel way to present these well-known, startling facts. Our concern at this conference and in our subsequent academic planning is to relate the academic programs at the institutional, departmental, and course level to this explosion. It is no longer possible to merely add courses that reflect new information in a particular field. We must now begin to re-evaluate not only existing courses but entire programs which may tend to follow ritualistic curricular patterns.

We are presented with more problems than solutions. We have more questions than we have answers. While the issues outlined above represent but a few of our present concerns, I am sure that this conference will achieve major significance if it can encourage definitive answers to some of these perennial issues. With this in mind, let us crystal-ball concerning the prospects for higher education in Wisconsin.

In this role I feel somewhat in the same position as Lucy counseling Charlie Brown. Lucy observed that Charlie looked rather depressed that particular day. Charlie admitted that this was true. Lucy then commented that she knew what was wrong. "The trouble with you, Charlie Brown, is that *you're you*," she said. "What in the world will I ever be able to do about that?" asked Charlie. Lucy, the counselor, responded, "I don't pretend to give advice-- I merely point out the problem."

I, like Lucy, do not pretend to give advice and would deliberately avoid labelling the subsequent portion of this speech as *solutions*. What I would like to do is to set down a few of the prospects that might be considered as higher education in Wisconsin adjusts to changing conditions over the next several years.

I believe that one of the most promising prospects for improving the scope and quality of higher education in Wisconsin will be expanded cooperative efforts. The success of consortia of various kinds on the regional, national and international level, involving quasi-formal arrangements among institutions of widely varying sizes and capabilities supports the enlargement of those alliances promoting shared use not only of resources such as libraries and computers but also of eminent scholars and great teachers.

Wisconsin's pattern of educational growth has demonstrated that students are portable and a further extension of cooperative efforts in a meaningful intrastate exchange of students could make the total higher educational resources of Wisconsin more available to the student from any institution. This is not a new suggestion because recent developments in Wisconsin already demonstrate the viability for expanded cooperative efforts designed to put the student into the most appropriate educational experience at the right time regardless of the registrar's office in which his records are being held. Even the great universities, such as the University of Wisconsin-Madison, and the University of Chicago, recognize that they cannot be all things to all students and have provided, through the CIC, opportunities for their students to captitalize on the unique institutional strengths on several campuses. If such arrangements can be developed on an inter-state and international basis, I am confident that Wisconsin's commitment to higher education will promote such exchange programs not only within but also among the systems of higher education, particularly at the graduate level.

Institutional sharing could broaden and quicken the development of quality graduate opportunities in the 13 institutions seeking to move rapidly into degree programs at the post-baccalaureate level. This full sharing of resources is responsive to both educational needs and to the legitimate concern for fuller use of highly sophisticated equipment.

Attention towards inter-dependence rather than independence presupposes a far greater knowledge and appreciation of the strength and plans of the separate units of the state. Lincoln, in his house-divided speech at Springfield, said "If we could just know where we are and whither we are tending, we could better judge what to do and how to do it." So, too, in Wisconsin, the first step in fuller cooperative efforts is a full re-evaluation supported by free communications which will apprise all agencies not only of the structure of the status quo but of the firm academic plans of each institution as well.

In response to some of the problems identified in this and other critiques of higher education, I would suggest that some of the cooperative trends might well include the following:

1. Establishment of local, regional, and state councils and compacts designed to be more responsive to the specific educational needs of the clientele to be served.

   Such councils could more effectively bring to bear the state's educational resources upon the unique human, socio-economic, business, agricultural and industrial characteristics of a region. The positive results of such joint efforts involving all educational agencies and the public would be a common focus upon recognized needs rather than frag-mented and marginal responses from each of several agencies.

2. Flexible interdisciplinary curricular planning at both the course and degree levels.

   The area of concentration concept recently approved as a substitute for the traditional major for UW-Green Bay may well provide academic planners with an opportunity to view cooperative efforts crossing traditional departmental lines. Such goal and problem oriented pan-disciplinary efforts may well improve the articulation of university academic plans with its various publics, particularly the restless student groups.

3. Joint inter-system as well as inter-institutional planning.

   The framework for such planning already exists, and the expansion of these efforts should include not only fuller discussion of projected academic plans but meaningful joint agreements involving counseling and guidance, testing, trans-ferability of credits, financial aids and other student services. In the academic area, I submit that it is un-realistic for each of the 13 public universities in the state to continue comprehensive majors in several scientific and technological fields in light of the knowledge explosion and its annual documented demands for replacement of sophisticated equipment.

   Even in the humanities staffing problems may preclude any single campus from having recognized scholars in the full range of traditional departmental offerings.

4. Improved communications and cooperation among academic planners at the institutional and state level.

   The faculty and the students will inevitably be the main loser from a reluctance to share planning efforts with some state agency. I would submit that the Coordinating Council is concerned with excellence in curricular developments and

will support enthusiastically those programs which demonstrate imaginative planning. While I have suggested that statewide planning is inevitable, it can best be enhanced through the mutual respect of the operating and planning agencies. Only through such solid cooperation can it be demonstrated to our many critics that educational agencies are best prepared to undertake curricular reform.

While the descriptive term "innovation" has fallen into disrepute, higher education undoubtedly will utilize those "technological advances" designed to broaden the impact of the great teacher and to relate educational experiences more directly to the capabilities and needs of the students.

In Wisconsin, we now have a unique opportunity as we plan from scratch two new universities, two branch campuses, a dual-track institution, an experimental one-year campus, and several technical institutes. We will watch these developments with interest and hope that these institutions will not become copies of existing institutions of a similar nature or micro-images of their parent institutions. Green Bay, Parkside, Fond du Lac, Baraboo, Rhinelander and Medford hopefully will provide imaginative educational leadership reflective of the very best of the new processes in education. While existing institutions with their traditional facilities, time-honored traditions, and conservative faculties must limit their innovative planning to small patches, it is hoped that the new institutions, while profiting from the historical experiences, will weave a whole new cloth incorporating the best of new methodology.

We continue to read of innovative processes in other states with the following representing but a brief sample:

. At Wright Junior College in Chicago, credit courses are being offered to thousands through ETV with the students only required to appear on campus to pay their fees and take the exams, and plans are underway to eliminate these two appearances.

. It is reported that Oakland Community College in Michigan has over 5000 students with only three "traditional" classrooms.

. Students taking a full physics course taught by a computer at Florida State achieved better grades than a control group enrolled in a traditional course.

. Delayed re-play providing double exposure has dramatically reduced the attrition rate in the engineering program at the University of Texas.

. Radio and television tutoring for mass section courses has produced substantial improvement in the achievement of college students.

These are but a few of the innovations that have become a part of instructional patterns in higher education, and while I am sure that substantial innovations are being practiced in Wisconsin institutions, the dissemination of the experiences has not been publicized. What we need is a fuller communication of these efforts even when they fail to produce the desired results. As in the case of the study of freshman composition, "unfavorable" conclusions tend to "get lost" in the process of interpretation and dissemination.

As many as 25,000 students may be enrolled in similar freshman composition courses at any one time in Wisconsin. This course accounts for a substantial proportion of the attrition rate on each campus. Whether it is called "communications" or "freshman composition," with any one of several appended numbers, the content and concepts to be taught are, or at least should be, essentially the same. The faculty, facilities and fiscal demands generated by this single course are staggering and justify carefully controlled experimentation exploring possible innovative procedures. Such suggestions may represent heresy at the departmental level but perhaps this too is needed. Over 50 years ago, Philip Coombs, then director of the Fund for the Advancement of Education, suggested that each institution might well appoint a vice president of "heresy." Practically every educational writer of the past decade has adopted his recommendation but few institutions have implemented administrative leadership charged with the promotion of educational innovation.

A third prospect for higher education in Wisconsin which plagues the imaginative and ambitious administrator is not only pragmatically inevitable but also represents the only defensible path through which at least 12 of the public universities and the vocational institutions can achieve excellence. Not an excellence based upon imitation but an excellence responsive to individuality. Individuality as expressed through increased specialization and the development of definitive institutional missions.

The concept that each institution should attempt only those programs for which it is uniquely prepared, and which are not readily available on other state campuses will provide the major conflict in the planning of Wisconsin higher education over the next several years. It is on this issue that the divergent views of "institutional autonomy" and "state planning" turn. Delineation of mission and the accompanying identification of strengths hopefully will evolve through deliberate, reasoned faculty action under the leadership of informed and imaginative administrators. Informed judgment will require continual, careful planning of new programs and also a hard look at established majors and degree programs. Merely because a program has existed on a campus for 20 years is not in itself a rationale for its continuance. The provisional long-range plans of the public institutions in the State of Wisconsin indicate that as a first step existing programs must be strengthened and expanded. Only one institution indicated specific plans to phase out existing programs not related to what they judge to be the institutional mission. They indicate, correctly I believe, that the elimination of some programs would allow them to concentrate maximum efforts on a more effective curriculum. Such a hard choice involving the allocation of institutional resources is of particular importance in establishing programs designed to achieve recognized stature. Campus politics

with its many pressures may well tempt the administrators to "pass the buck" by referring each department's ambitious plans for graduate education to the board or to the Coordinating Council where the blame can be placed at a level well-removed from the local scene. The weakness of such an approach is that it puts in the hands of the state planners decisions concerning priorities that can be more intelligently made on each campus.

About a year and a half ago, each of the State Universities and the University of Wisconsin campuses prepared long-range documents which were valuable in identifying institutional aspirations. These "dream books" prepared independently of other institutions in the state must now be reviewed in terms of total state capabilities, and I am confident that within the next few months each campus will have priorities established that will enable the CCHE to move forward in the preparation of a realistic but viable master plan that will not only attract political support for higher education but which will also strengthen institutional capabilities to move imaginatively at both the undergraduate and graduate levels.

A further factor which I believe will have a positive impact upon role definition is the renewed interest in some form of per-campus enrollment ceilings and physical boundaries. Beyond a basic core necessary for the development of a comprehensive program, there appears to be no evidence relating academic excellence to size. Neither the large nor the small campus has proved its superiority. A campus size and enrollment limitation, however, would cause each institution to take a more careful look at program plans to determine whether the proposed curricular development would have a qualitative or merely a quantitative impact upon campus development and whether it would clearly relate to established or projected peaks of excellence.

Given the challenging problems and prospects as a background for academic planning, I shall conclude with specific recommendations which we envision as important in the future planning efforts of the CCHE.

1. We need review procedures, undertaken with the cooperation of the systems and institutions, that include study of the present low enrollment-high cost programs, particularly those duplicated on several campuses. Somewhere in the planning process a justification for the continuance of uneconomical programs must be documented. Approved programs must also be reviewed at some later date to either affirm or deny the prior endorsement given by the institution, the board, and the CCHE. If, for example, the forestry program does not fulfill the promises upon which approval was predicated, questions concerning future support must be considered.

2. No new minor or cluster of courses not part of the incremental growth of an existing department, division, or school should be implemented without review. A way must be provided to avoid the "camel's nose under the tent" approach to incremental curricular planning.

3. The review of federal grants predicated upon a commitment to develop a specific program requiring CCHE approval must also proceed through established channels.

4. The lead time for approval of graduate programs as outlined in CCHE #78 of 1966 and CCHE #85 of 1967 must be considerably increased.

5. Fuller documentation of need, cost, and demand criteria and of the relation of proposed programs to existing programs in other state institutions must become a part of program requests. The requests must also contain realistic developmental costs which can be isolated and periodically reviewed through the programmed budgeting procedures.

6. Expanded use of advisory committees consisting primarily, if not exclusively, of the best subject matter experts available and with a minimum of institutional or system allegiance will be requested. The CCHE staff does not presume qualifications in the diverse subject matter fields. The alternative to objective intra-state advisory committees is the expanded use of consultants to assist the CCHE staff in making important judgmental recommendations to the Council in such complex areas as graduate education, teacher education, technical education, business administration, agriculture, computers, and libraries.

7. An inventory of unique resources must be developed along with supporting materials demonstrating the use and availability of such campus equipment.

8. Hopefully the emerging offices of institutional research will more and more direct their considerable potential to the study and dissemination of information concerning qualitative factors in Wisconsin's higher education. When such information becomes available I propose to lead the academic planners in a revolution designed to take over the control of higher education from the facilities and budget agencies.

In conclusion, I submit that academic planning is only important to those departments, institutions, and systems that are going somewhere. We may some day be thankful for the explosions which prompted educational reforms. I anticipate and support a future that will see the campus academic planners, recognizing the importance of cooperative state planning, putting the planners at the board and CCHE level out of business.

In good company with John Gardner and Harold Howe II, I believe that the pieces of the educational revolutions are all lying about unassembled. The CCHE or some other state agency is going to insist that these pieces be put together into a meaningful but continuously viable "Master Plan for Higher Education in Wisconsin."

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THE BUDGET AS A PLANNING-PROGRAMMING VEHICLE

To many of you assembled here today, the topic of budgeting
will probably be received in the same way the salesman received
new instructions from the district manager on completing more
sales reports and time reports. After getting directions,
the salesman went out on the town and then decided to call his
boss in the wee hours of the morning to tell him that he was
writing him a letter regarding the directions, but was stuck
on how to spell the word p---------. Some of you know that
I belong to the local Optimist Club. A Member of the club
is the president of Optimist International for 1967-68. He
was told that to become an accomplished speaker, one should
start with a mouth full of marbles and after each speech re-
move one marble. After he lost all his marbles, he would be
an accomplished speaker.

The budget as a planning-programming vehicle is the real topic
to be discussed this next hour. I will, if possible restrict
my comments to not more than 40 to 45 minutes allowing some
time for a few pertinent questions which I hope to raise in
your mind this morning.

I would like to briefly recap the history of budgeting in
Wisconsin in the past twenty years. Mr. McPhee has stated
that his first exposure to the budget process occurred in the
fall of 1948 when the Assistant Director of Budget and Accounts
asked how he was proceeding on his budget requests for the
next two years. This was approximately one month prior to the
time that the budget was due for submission. The budget sub-
mitted was primarily a history of expenditures listed by ob-
ject class and projected for two years and it was done with
a limited amount of factual data.

In the early 1950's, Professor William Young, of the University
of Wisconsin, while serving as a financial secretary to
Governor Rennebohm, introduced budget analysts into state

government operations. This was the beginning of what later was to become the Department of Administration. Some of these early analysts were Howie Kopp, Joe Nussbaum, and Walt Gerken (who is now a top executive of Northwestern Mutual Life Insurance Company). This was later followed by the organization of the Department of Administration in 1959.

Undoubtedly the reason for the analysts and the Department of Administration was the tremendous increase in government services and needs which was taking place in the late 50's and was clearly in the picture for the 60's. Both the executive and legislative branches of government had to have full-time professional services available to aid in the decision-making process.

Following the organization of the Department of Administration in 1959, the budget requests of the various agencies were organized under the common titles of continuing costs, work load increases, and improvements. There was a general de-emphasis of major object lines, along with introduction of functional headings such as instruction, student services, physical plant, etc. These functional headings were used operationally by higher educational institutions in annual operating budgets many years prior to their acceptance in the biennial budget process, particularly in the appropriation structure.

The 1967-69 biennium introduced some program budgeting and for 1969-71 attempts are being made to fully implement program budgeting in Wisconsin state government.

The major strength of the line budgeting concept used prior to 1960 was that it made comparisons with past experience as well as between agencies very easy. It was also simple to work with and was relatively easy to control on an annual operating basis. The major weaknesses were:

1. It emphasized dollars and not responsibilities.

2. It was difficult to measure the effectiveness of the operation.

3. Unit costs were difficult to obtain because they normally cut across all lines.

45

4. The comparisons with past experience and between agencies were generally unfair.

5. The line budget did not relate cost information to key policy issues or objectives.

6. Generally the basis for fiscal controls differed from the way the agencies developed and approved the budget on an annual basis.

7. It encouraged expenditures in the areas where the need was not the greatest.

In any budget process, particularly in higher education, certain assumptions have to be made; these are:

1. Higher education institutions cannot possibly do everything that is requested by faculty, students and the public.

2. The objective should be to achieve the greatest return for efforts expended. Stated in another way-- taking the available resources and getting the greatest possible return.

3. A third and final factor which must be kept in mind is that the competition for tax resources will become more and more keen as the needs for government services are expanded.

Frank B. Dilley contributed an article to the *Educational Record* in the fall of 1966 in which he stated that an optimal budget process involves at least these factors:

1. Detailed planning should encompass all areas of a university operation.

2. Planning should be in a written form.

3. Planning should be in a time perspective.

4. Planning should be in such form as to make visible accomplishments of an institution in relation to its expenditure of resources.

Making visible the accomplishments of an institution brings
to mind a story that was told to me about Ted Kuether: It
seems that Ted was ushering in his local church one morning
when a topless girl came into church. Ted confronted her
and told her that she couldn't come into church dressed that
way. She looked Ted right in the eye and said she had a
perfect right. Ted looked her right back in the eye with
that look he is noted for and said she had a divine left too,
but she still had to wear a hat to come into church!

I have briefly outlined: a history of budgeting in Wisconsin,
some of the strengths and weaknesses of the line budgets of
the past, some assumptions which I feel we have to make re-
garding budgets of the future, and some factors what one
author feels an optimal budget process must include.

The budget as a planning and programming vehicle should be
clearly understood by all who are involved in administering
higher educational institutions. There is no other time when
the administration can get so much cooperation from so many
people as when their financial resources are being discussed.
The budget, in my estimation, is still the most important tool
that administrators have available to them to make improve-
ments, to encourage change and to accomplish work which other-
wise would be very difficult to get done.

The Department of Administration recently distributed a
document titled *Prospective Integrated Planning-Budgeting
System for Wisconsin State Government*. It outlined seven
major planning budgeting reports. They are:

1. A long-range functional plan intended to be a long-
   range plan for 10 or more years in the future.

2. Program Plan for a 6 year span.

3. Capital Improvements Program.

4. Program Policy Reports.

5. The two-year budget requests.

6. The annual operating budget.

7. Program Performance Reports.

It will be noted that the budget is intended to be the fifth
report to be submitted. However, because of the time and a
desire to avoid duplication of effort, many agencies will, I
am sure, combine several of the first five reports into one
report. For higher educational institutions, the greatest
difficulty in the program planning process is the extensive
amount of time and personnel needed to do an effective job.
It is costly in both time and dollars. Unfortunately those
who are most effective in a program budgeting process are
those who are already overtaxed in responsibilities. The
budget should be the vehicle to implement the university's
long-range operating plan.

It is not too surprising that the request being heard most
frequently is the need to develop a planning department, or
the employment of a person specifically to perform in the
planning-program process. Those agencies, universities or
divisions which obtain such specialists should realize that
the real planning work will still rest on the shoulders of
the managers.

The difficulties encountered in program planning should be no
surprise to those involved in administering higher education.
Higher educational institutions have traditionally not had
to explain in detail by department and by objective what they
want to do and then report how effectively they have accom-
plished the objective.

It was a real eye-opener to me to sit in on a local school
board meeting and hear the high school science department
chairman explain:

1. The objectives of an integrated science program.

2. How they are meeting the objectives.

3. Steps being considered to determine whether or not
    the objectives listed were relevant.

The major difficulty of using the budget as a planning-pro-
gramming vehicle concerns the levels at which decisions will
be made. For a high school normally it only has to be con-
cerned with the administration and the local school board.
However, in Wisconsin, higher education institutions must be
concerned with decision makers at these levels:

1. The department head.

2. The dean and vice-president of academic affairs of
   the college.

3. The various university committees involved in
   curriculum and programs.

4. The university president or chancellor.

5. Central administration - such as Mr. McPhee's or
   Dr. Harrington's office.

6. The Coordinating Council for Higher Education.

7. The Department of Administration and the executive
   branch of government.

8. The legislative analysts.

9. The Legislature and its various committees.

If the budget is to serve as a vehicle for the planning and
programming process, some understanding must be reached as
to what kinds of decisions will be made at the various levels.

One of our business officers in discussing this problem at
a meeting of WSU business officers suggested that the decision
making at the various levels would undoubtedly be as follows:

1. The instructor - on his classroom performance.

2. The department head - the courses to be offered and
   the allocation of the resources to these various
   courses.

3. At the dean's level - allocation of the resources to departments and requests for new majors.

4. At the president's level - the distribution of the available resources between broad functional areas and the determination of the major strength of the university.

5. At the central administration level - division of responsibility between institutions and distribution of resources between universities and operating units.

6. At the CCHE level - major policy questions, levels of support between various systems, and major program emphasis.

7. At the legislative and executive level - very broad educational policies, such as: How broadly should higher education be available in Wisconsin. What are appropriate levels of support for education as related to other state needs?

It is not intended that the above serve as a guide to the distribution of decision making responsibility; rather I'm trying to emphasize the fact that the higher up the ladder we go in administration, the broader the policy question under consideration should be.

There appears to be a real fear that higher education is being requested to bare its soul in the program budget process. It is being asked to point out its weaknesses and to reveal that it has not done a very good job in defining, or stating in written form what accomplishments or objectives are intended and how well the objectives are being achieved.

It is generally agreed by all who are invo'ved in any budget process that the end product will vary directly in quality with the effort put forth in preparing the budget. And, it should be added, the budget will be no better than the planning and programming that has preceded it within a university. It also supports the statement "A man who attracts luck carries with him the magnet of preparation."

Program budgeting for the State of Wisconsin seems to be firm-
ly in the picture for the next decade. Higher education, in
my estimation, has more to gain than lose by getting on the
planning-programming bandwagon early and doing the best job
possible in using it as a means to obtain needed financial
support. The budget is *the* vehicle to put planned programs
into motion.·

Some distinction should be made between how the vehicle oper-
ates in a biennial budget, in an annual budget process and
in the execution of the operating budget after approval.

All agencies in State of Wisconsin Government are currently
working on the 1969-71 biennium budget requests. This spring
the voters approved annual sessions of the legislature. Many
interpret this to mean that annual legislative budgets will
follow replacing the present biennial budget. However, it is
interesting to note that state agency administrators have
generally been less than enthusiastic about the idea. Un-
doubtedly this lack of enthusiasm is primarily due to the need
for continuous budget contact with the legislature as well
as internal budgeting responsibility. The fact that final
budget adoptions have generally extended into the first year
of a biennium also accounts for the lack of enthusiasm.

If annual budget sessions are approved, they should be
accompanied by a more realistic schedule of final approval by
the legislature of the budget.

Generally, the biennial budget has been the most important
vehicle for planning-programming. It formally submits for
executive and legislative approval, the agency plan of
operation for a 2-year period, and requests the financial re-
sources to support the program. Until changed, it will con-
tinue to be the most important step in the programming pro-
cess. This step in the past has also included most of the
formal planning done by state agencies. In the future, the
legislative budget process should be primarily used to re-
view past accomplishment and to identify that part of the
program or operating plan to be effective for the period of
time the legislative budget is to cover.

The annual operating budget has been used to implement the program approved by the legislature. It also serves as a tool to review internal operations as well as to sharpen and adjust the programs to current conditions and needs. This latter purpose has and will continue to be the area where most conflict will arise. This will be particularly true as legislative staff services expand. As staff services expand, the desire for them to get into more detailed agency planning will occur.

Execution of the annual operating budget is generally being overlooked in the program-planning process. This, in my opinion, is the process that will benefit most from a well defined operating program and review procedure. One of the greatest benefits to be realized from program budgeting is the emphasis to be placed on objectives and accomplishments. The desire to get the most out of the resources allocated assumes more delegation of responsibility on how funds can best be used to accomplish what has to be done. This not only requires a change on the part of some central office administrators, presidents and vice-presidents, but it also requires an improvement in the understanding of the program budgeting process by department and division heads. It is my firm belief that some of the critical needs of today can in part be financed with existing funding through more effective fiscal management.

Many of our top administrators are still operating within the rigidity of the line budget concept. This is due to a number of reasons:

1. Control of funding is more easily accomplished under a line budget concept and it is therefore comfortable to operate within.

2. Many difficult decisions can be avoided if one can say, "no it cannot be done!"

The execution of an operating budget with an approved operating plan should ease and expedite the day-to-day administrative process in our higher educational institutions. If the budget is to be the vehicle to put into motion a program-planning concept, a critical review of administrative performance would

appear to go hand in hand. With the competition for funding becoming more difficult, it is incumbent on all to get the most out of what is already available.

The budget as a vehicle for planning-programming will or will not do the following:

1. It will not in itself require a change in the organizational structure as now constituted but it will require that personnel be assigned on a continuous basis to coordinate the planning and programming process both inside and outside the university operation.

2. The budget process will, if the program budgeting concept is fully implemented, be but one step and perhaps the most important step in the planning and programming process. It is the step that puts the plan into operation and it determines how far the plan can or should go into operation.

3. A management information system will have to be developed that will more quickly and completely satisfy the needs of our decision-makers.

4. Higher education will have to do a better job of explaining what objectives are desired and how well the objectives are being achieved.

JOHN YURKOVICH
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THE INTEGRATION OF DATA SYSTEMS AS A TOOL FOR MANAGEMENT
AT THE CAMPUS, SYSTEM AND STATE LEVELS

In view of the fact that the Institutional Studies Workshop topic for
this conference is titled "Integrated Data Systems--A Conceptual Approach,"
I have modified my presentation to avoid unnecessary duplication of
subject matter. I have chosen, instead, to talk briefly and in a general
way about information sub-systems, major information systems, and a total
university information system from the standpoints of space management
and facilities planning, and, then, to describe in some detail, by a
slide presentation, the national educational information system referred
to as ERIC. Lastly, I will provide you information on the ERIC Clearing-
house on Educational Facilities located on the Madison Campus of the
University of Wisconsin. ERIC/CEF is one of seventeen clearinghouses
which comprise the ERIC family. Its main objective is the structuring
of the field of space management and facilities planning and the
development of specific information systems for this area of college
and university operation.

The need for accurate and timely information is known to us all. It is
required for day-to-day housekeeping operations, general reporting
(internal and external), and for immediate and long-range decision-making.
Over the years independent information systems have evolved in our colleges
and universities in isolation from each other, with a consequential lack
of consistency and uniformity and inevitable duplication and overlapping
of effort.

More recently, state and federal agencies have forced uniformity of
information and reporting in many areas of institutional administration.
And, indeed, as we look to the future, expansion and reorganization in
higher education will require even more sophisticated information systems
if we are to plan intelligently for the years before us. There is an
ever-increasing need for coherent patterns of data-gathering, processing,
and reporting. Data files need to be created and structured for easy
integration into any major system, total university system, state,
regional, or national system--for a variety of purposes. Data linkage--
through the construction of uniform codes--is the key to the integration
of data systems.

Information sub-systems required for space management and facilities
planning, developed in-house, are: (1) the room inventory file (a record
of existing space--university owned and university leased and/or rented
space); (2) a file containing the space approved and space under construction;
(3) a project status file (a record of buildings approved, in design, in

preliminary planning, in final planning, or under construction); (4) a file containing space to be released (temporary structures and space scheduled for razing); and (5) a building inventory file (a record giving the assignable and gross square feet by floor and building, cubage by floor and building, date of building construction and record of remodelings, assessment of building quality--physical and technical aspects, environmental aspects, and academic adequacy).

Information sub-systems developed by other operating units which are required for space management and facilities planning are: (1) the academic program file (a detailed record of the organization and projection of instructional, research, and extension and public service programs); (2) the instructional data file (a record of instruction by department by course, type of instruction, hours and days, section size, room, building, etc.); (3) a file containing current and projected enrollments; (4) a file containing current and projected staff; and (5) a file containing operating budget information.

The sub-systems identified in the foregoing comprise the major information system for space management and facilities planning. For example, in generating a room utilization study, the departmental instructional file is merged with the room inventory file. The output resulting from such a study is the basic for improving room scheduling, achieving proper distribution of rooms by capacity, and deriving space guidelines (factors) for projecting space requirements. Of major importance in facilities planning are space projection techniques which incorporate all of the information sub-systems identified above.

Similarly, major information systems--each made up of several sub-systems-- are found in the areas of admissions, registration, student records, accounting, budgeting, personnel, etc. Varied groupings and arrangements of sub-systems, to form major information systems within and across operating units, must be assured. With such a level of compatibility, the sub-systems can be integrated to form a total university information system.

As mentioned earlier, the demand for uniformity of information on the part of state and federal agencies is increasing steadily. The systems of public higher education in Wisconsin have responded by devising and implementing uniform sub-systems for space management and facilities planning within each system. During the past year the Coordinating Council for Higher Education for the State of Wisconsin, in cooperation with a technical advisory committee on facilities (comprised of representatives of the systems of higher education and governmental units) has sought to bring about uniformity of space and facilities data at the state level to insure that tax dollars for both capital and operating needs will be adequately provided and equitably distributed among the three systems of public higher education. Our independent colleges and universities, also, are a part of the picture at the state level and at the

federal level, inasmuch as they, along with the public systems, vie for grants under the Titles of the Higher Education Facilities Act.

National committees have been constituted to structure a level of uniformity for facilities information sub-systems across the nation. Witness the national space classification system which was developed about a year ago and which is presently being implemented nationally by the U.S. Office of Education. A second committee at the national level is presently involved in the development of uniform criteria for conducting and reporting room utilization studies. Uniformity of information can be achieved in some measure at all levels--campus, system, state, and national--by classifying, defining, and linking data so that compatibility is assured.

. . . .

Slide presentation of the ERIC system

ERIC Clearinghouse on Educational Facilities

ERIC brochures and other printed materials

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Washington, D.C.   20036

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DONALD R. MC NEIL
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Madison, Wisconsin

PROBLEMS IN EXTENSION EDUCATION

There are many outside forces promoting an academic revolution within institutions of higher education. Among these are a new concept of life-long learning; the technological revolution with its knowledge explosion; the need for new skills and the upgrading of old skills; the vast amount of wasted male and female talent, both in slums and in suburbia; a realization of what a poorly informed citizenry we are on matters of social, political, and economic problems at the local, state, national, and international levels; the increased demands of leisure time; and a genuine need to cure some of the social ills as we move from a rural to an urban society. Pollution, health, economic development, poverty, and professional re-education are only a few of the problems we must face and in which institutions can play a hand.

In addition, the impact of the federal government is creating new demands upon institutions of higher learning, as is that of state and local governments and voluntary associations. There is a need for training of administrators, social workers, conservation wardens, policemen, hospital workers, management personnel, labor leaders, and a variety of others.

The real problems facing institutions of higher education, as they increase their outreach capacities, are these:

1. Structure. Institutions can go one of two ways. They can integrate the function into every department and every college of the institution, or they can set up an autonomous unit within the framework of the institution and have full responsibility for budget, appointing authority, and programming for the entire institution. I favor the more autonomous unit, as the integrated concept is fine if everyone is committed to extension and adult education, but many departments are not. The second important point is that even if the structure is autonomous, it must build bridges to departments engaged in research and undergraduate and graduate teaching. And, merely because the autonomous unit has its separate budget and program personnel, it does not necessarily follow that there should be a complete split between extension and resident functions. Therefore, the joint appointment route within the institution is often a good one.

2. Self Support. This is the most vicious part of most extension operations in the United States. Unlike the other functions,

research and teaching, the extension function is required
to bring in a high level of self support to undertake pro-
grams. The problem is compounded in those institutions which
have no money to hire professors for assignments in the exten-
sion field. They then move in and skim the cream of the
extension offerings, catering only to those who can afford
to pay. It then puts the university in the position of making
educational decisions, based not on need, but on whether some-
body can afford to pay. It tends toward an elitist program
eventually.

3. Rewards System. A rewards system must be devised for institu-
    tions to make sure that when they engage in extension activity,
    they are judged by their peers who know something about exten-
    sion and that they can have a career line all the way to
    professor for engaging in this activity. In most universities,
    research and teaching are the basic ingredients for promotion
    to tenure and salary increases. Extension personnel must have
    the same opportunities, and, until the value system within the
    institution takes into account extension in the rewards system,
    good young men will simply not go into it. The university too
    often pays lip service to research, teaching, and public
    service; but when it comes to public service, they insist upon
    research and undergraduate teaching experience and capability.
    At times, it works in reverse. There are professors in insti-
    tutions who can teach undergraduates and do research, but who
    are incapable of doing extension work. This ties in very
    closely to having a separate structure within the institution
    which can make judgments in light of the adult population's
    demands--not just those of undergraduate or graduate students.

4. Recruitment. Different talents will be needed in the outreach
    function. There is no reason why a person has to have a Ph.D.
    or a long publication list to teach a particular course in
    social work or to handle a conference on middle management or
    to work with the people in the inner city or on the Indian
    reservation. Different kinds of talents will be needed in
    institutions, and this, too, is tied to the rewards system
    in that the traditional requirements for a professor will
    have to change to enable universities to really reach out
    to the communities.

5. Ignorance of Clientele Groups. This is a basic problem as
    universities move toward reaching more segments of society.
    In many cases, we do not even know how to communicate with
    these groups, let alone know how to teach them or to work
    with them in the solution of problems. It means that univer-
    sities are going to have to get off the campuses and among
    these groups and work with them on a day-to-day basis.

6. Overload. The trouble with the overload system is that there
    is no real commitment by the institution. Salaries for over-
    load teaching are lower and tend eventually to depress salaries
    in that the overload opportunity becomes a part of the negotia-
    tions when a professor is first hired. Professors then come to
    depend on overload as part of their salaries. If the university
    is going to have a commitment, work in extension, whether credit
    or noncredit, should be part of the assignment of that professor.

7. The Part-Time Student. Nobody is taking care of the part-time
    student in America. There are few scholarship funds, no work-
    study money, no loans, few special courses, no design of courses
    at the times of day or over periods of time that are convenient
    to the part-time student. Sometimes they may want to condense
    all of their learning into a vacation period or the summer
    months or holidays, but there is no opportunity for them to do
    so. There are literally hundreds of thousands of people who
    would like to continue learning, but who have no opportunity
    because they are part-time students. Higher education right
    now is interested only in the full-time student. Yet the
    benefits to society of engaging a part-time student in an
    intelligent pursuit of knowledge are tremendous.

8. Media. Universities are going to have to learn how to use the
    telephone, the television, the radio, programmed instruction,
    and the computer in ways they have not used them previously.
    Media can be more economical, can enrich learning, and can
    bring more segments of society into direct contact with the
    institutions of higher education.

9. Research. In all cases, universities should tie their research
    to the action or public service or extension programs. This is
    what has made Cooperative Extension so viable. The research
    that is done will be more of the applied research and will have
    direct effect upon the programs undertaken by the institutions,
    but research should never be divorced from the action programs;
    they interrelate. Moreover, the experience gained by Extension
    personnel provides a good feedback to institutions, improves
    their graduate and undergraduate teaching, and directs new
    research lines for the professors who have this interaction
    between society and the institution.

10. Coordination. There simply must be coordination between all
    institutions of higher education. The joint appointment route
    is one possibility. The joint planning of programs, with
    definite areas of endeavor, is another. Some duplication, if
    aimed at different clientele groups, is all right, but there
    should be coordination, both voluntary and by agreement, be-
    tween the various jurisdictional units. If one unit is on a

high self-support basis (State Universities and the University
of Wisconsin) and another unit is on a low self-support basis
(the Vocational and Adult Educational Districts), we have
problems in providing equal service to the people of the
state. The University has worked out joint appointments with
State Universities very successfully. In addition, we have
provided certain services for vocational schools, with both
units being in on the planning and the implementation and both
units receiving the proper visibility.

If these problems are taken care of and there is a new spirit of cooperation
and coordination, then the few cases of duplication (of which there are not
many real ones) will be eliminated.

There is enough for all institutions of higher education to do. We should
have some criteria, and in the University of Wisconsin we ask ourselves five
questions when we undertake new programs:

1. Is it educational?

2. Is it innovative?

3. Is anyone else doing it?

4. Can the University contribute?

5. Does it make a difference?

I believe we can bunch our resources in higher education to make a maximum
impact upon this state if the spirit of cooperation continues.

WILLIAM L. CARTER
President, Wisconsin State
University, Whitewater

NEEDED: A HIGHER PRIORITY FOR EXTENSION EDUCATION

Expanding Opportunities for Higher Education

The opportunities for higher education have expanded rapidly in Wisconsin during the sixties as evidenced by the:

1. growth of UW--its major campuses, centers, University Extension,

2. growth of the WSU system--its nine universities and two branches,

3. growth of the VTAE system,

4. growth of the WAICU.

The *growth in enrollment* of each of these segments of higher education has been phenomenal and has exceeded the expectations of all of us. It could be argued that growth in student enrollment alone, however, does not prove that opportunities have been expanded to meet the ever increasing and changing educational needs of a state's total adult population.

Not only have the sixties seen growth in student population, but of equal importance for evidence of expanding opportunities are other developments in each segment of higher education--developments that are often not so well publicized as enrollment growth, but important nonetheless. These developments are represented by *organizational changes;* such as,

1. the strengthened role of the Coordinating Council for Higher Education,

2. the greater effort of the WAICU to coordinate the work of its colleges and universities and to cooperate with the state systems,

3. the reorganization of the VTAE districts,

4. the internal organizational changes in the UW and WSU systems.

Expanding opportunities are also represented by the *new, changed, and expanded missions* assigned to the different segments of higher education in the state; namely, (examples only)

1. the increased responsibility for graduate work in the WSU system (masters programs in fields other than education),

2. the development of additional doctoral programs in the UW system, plus the new undergraduate programs planned for the Green Bay and Parkside Campuses,

3. the opening of additional branches by the UW and WSU systems,

4. the new programs in all segments of higher education (example: forestry at UW-Madison and WSU-SP).

Much more could be said to give evidence that opportunities for higher education have expanded in Wisconsin during the sixties. Let these examples suffice for now, however, because this audience does not have to be convinced. You have been a part of at least one of the segments of higher education that has gone through these:

1. enrollment expansions,

2. organizational changes, and

3. curriculum modifications and changes.

You also know that the state's higher educational resources in personnel and physical facilities have been hard pressed to accomplish these things.

Notice that very little has been said about extension education to this point in this presentation. This has been deliberate. Now for the reasons. What has been said thus far should help us rationalize, somewhat, those things we have not been able to do in extension education.

Extension Education in the WSU System

The remarks in this section will deal only with the nine state universities.

The early efforts in extension by the state universities were limited to credit courses for teachers. No apology is offered for this because teacher education was the unitary mission of these schools. Each college did assume the responsibility for teaching courses off campus in its "speciality" when there was a need and demand. The number of courses taught was few, however, and each college stayed mostly in its "region" of the state.

Extension education during the normal school, teachers college, and state college stages of development of these institutions received limited emphasis for several reasons; some of which were:

1. the colleges had "special program emphases" which restricted their ability to respond to extension needs,

2. travel was difficult and expensive, and distances were great--to teach extension classes in their specialties in their region of the state called for great effort,

3. funding for residence programs and instruction always had a higher priority than for public service or extension education,

4. since college faculties generally held extension course credit in low esteem--would not equate it with residence credit--and since these colleges were "developing institutions" and needed or wanted to gain "stature", there was reluctance on their part to fully develop their extension potential,

5. UW Extension was better funded, comprehensive, and successful--many people questioned whether there was a need for further extension work than was being offered.

The situation described here and the attitudes it reflects may be only an approximation of the true picture of extension education in these institutions prior to their being assigned university status. This analysis is modestly offered and results from discussions, limited study, and impressions gained by one who has had only six months of service in one of the institutions.

There have been renewed emphases in recent years by the state universities to take a more active part in extension work:

1. Now that the universities are more comprehensive in their offerings, they can meet many more of the extension needs of the state.

2. The universities' plans for extension education continue to reflect a "regional" emphasis geographically.

3. The financing of extension work continues to be a problem--extension should no longer be expected to pay its way from course fees, and should be treated as other university units and programs.

4. Credit courses (and these primarily in teacher preparation) continue to be equated with extension education.

It is a Matter of Priority

The state universities should assign a higher priority to extension needs in the state.

1. The meaning of extension education should be expanded to include non-credit courses, institutes, and conferences.

2. Also, some services should be provided to the people of the state that are non-course in nature. Two brief examples are:

a. economic counseling and research service to many
    of the smaller cities in the service area of
    each university.

b. a senior citizens education center in the cities
    where the state universities are located to serve
    senior citizens of the total area (or region).

    (Many more examples could be given.)

3. Credit courses are still in demand, even though opportunities
    for residence work have increased as described earlier. The
    young people and adults who must work, but still would like to
    advance their education need access to credit courses. There
    are still some unmet needs in teacher education which extension
    could help us solve, also.

4. Greater efforts must be made to coordinate extension offerings
    by the University of Wisconsin, Wisconsin State Universities,
    and the Vocational, Technical and Adult Education systems and
    in cooperation with the Wisconsin Association of Independent
    Colleges and Universities. A consortium on extension could be
    started immediately to work out plans for such coordination.

EUGENE LEHRMANN
Assistant State Director
Wisconsin Board of Voca-
tional, Technical and
Adult Education

EXTENSION AND FIELD SERVICES OF THE WISCONSIN BOARD

OF VOCATIONAL, TECHNICAL AND ADULT EDUCATION

Extension services of the Wisconsin Schools of Vocational, Technical and Adult Education are provided as an integral part of the comprehensive educational program. Extension and field service therefor is treated in the context of comprehensive service. Reference to various aspects of the full time school is in relation to its impact on the administration and operation of the extension service.

It should also be understood that organization of the districts is not complete and the design for outreach is not complete at this time.

The word "comprehensive" is used within the range of the assigned responsibilities of the agency and with respect to the population we serve. This is one segment of a truly comprehensive or total educational program accomplished by the combined efforts of the educational agencies.

One concern that we share is the tendency at both federal and state levels to fragment the educational function. While the cooperation of all agencies is important, the central and coordinated thrust of an educational program has vanished if the responsible agency is by-passed or cannot command the essential resources. Other authorities which have become involved in the educational program under state and federal acts have come to educators to accomplish the task, either through subcontracting the job to existing agencies or by drawing professional personnel from those agencies. In this category may be listed such federal programs as MDTA, ARA, Basic Adult Education, On-the-Job Training Programs, Title V Work Experience of EOA, and Job Corps.

The problem of fragmented responsibilities may be remedied
in part at the state level with attention to agency respon-
sibilities through the assurance of the necessary resources
and coordinative efforts. The Coordinating Council for
Higher Education is in a strategic position to bring this
to pass.

Roles must be clearly defined and methods of relationship
established whereby the task of education may be accomplished.
Wisconsin Schools of Vocational, Technical and Adult Educa-
tion have a comprehensive inventory of services covering the
broad range of interest which recognize every ability level
between institutions of confinement and professional education.

While comprehensive opportunity has existed, a vigorous pro-
gram of outreach is considered necessary if the problems of
urban and rural disadvantagement are to be attacked.

This effort must be coordinated from the standpoint of health,
welfare, housing, transportation, and social revitalization.
Accordingly, a basic role function of the Wisconsin Board of
Vocational, Technical and Adult Education must be a coordina--
tive capability sufficient in scope among the agencies to
support the educational programs. Beyond this, the historic
and legal role of the agency must be sustained with the auth-
ority to establish programs within the above ranges to accom-
plish a systems approach to education for all of the people.

Three basic dimensions describe a system of education needed
in order that all of the educational needs of the people be
serviced. The public system of primary, elementary and
secondary education provides the foundational program. The
system of universities supplemented by private institutions
capably fulfills the needs for professional education leading
to the baccalaureate and higher degrees. It is in this con-
text that the Wisconsin Board of Vocational, Technical and
Adult Education accepts the responsibility of the remaining
populations, some yet undefined, in its promise to assure
continuous educational opportunity of career development for
all of the people.

The flexible and responsive structures of vocational, techni-
cal and adult education must be preserved in order that emerging
needs and changing demands resulting from the changing technol-

ogy, changing interests, and changing educational standards may be met. The federal interest in national security, economic vitality, and the development of human potentials to a high level comes into focus as a responsibility of the state. These imperatives must be melded with the overriding concerns of government of, by and for the people together with the American heritage of individual fulfillment and the four basic freedoms. It is the educational system which is concerned with the development of individuals to contributing levels of citizenship and in providing them with the tools for their own fulfillment through participation in productive society.

Knowledge concerning the world of work has become equally abstract with science, mathematics and the other classic disciplines. An organized and purposeful system is necessary if the people are to discover their own abilities, develop interests, understand opportunities and establish purposeful goals. Clearly, educational program opportunities are not enough. They must be integral with intensive efforts in career counselling and guidance and work experience, in addition to the other functions supportive to this sound educational program.

Wisconsin is now acquiring, through district area organization, the administrative capability and the local association of resources which for the first time, makes possible a comprehensive program offering equal opportunity to all of the people in all areas of the State.

Social unrest and the rising educational demands for participation in our culture bring unprecedented challenges to organizations concerned with education. The inability of great numbers of people to compete successfully for their basic needs has brought sudden and widespread realization that educational programs must be purposeful and effective at all levels for all people.

While agencies exist within this broad range of responsibilities, their efforts have been casual except where they have been selective. Our current problems have developed in this framework. While the problems have become inflamatory in the large urban centers, they are of deep concern throughout the nation.

Remedial programs in recent years have been directed to jobs,
to urban renewal, to housing, to health, to transportation and
almost incidentally to a supporting educational effort frag-
mented among more than forty federal agencies.

Education has not functioned effectively as a continuously
correcting mechanism for social progress, nor has it been
seen in this role. Recent research and current literature
increasingly place the responsibility for correcting social
problems upon education. Yet, the same research shows clearly
that the family condition and the community environment can
veto the educational effort.

The impact of this information can not be escaped. The com-
munity environment is a product of the behavior of its resi-
dents. The extension education concept provides a structure
through which the family and its membership may be reached in
the effort to effect the essential behavioral changes. One
of the most critical of these changes is an improved level of
employability.

Vocational, Technical and Adult Education Schools, now relieved
of the barrier of city limits, can legally extend their services
beyond the city limits to encompass an entire district. Many
schools are now engaged in a vigorous movement in field serv-
ices to extend a comprehensive service to all of the citizens
in the area. This is accomplished through cooperating centers
which already exist in the area which offer a variety of full,
part-time and evening programs and through a newly developed
cooperative effort with secondary schools in evening and exten-
sion offerings. These elements all become part of the communi-
cation and referral system which makes available all of the re-
sources and services of the comprehensive center throughout the
district. Close cooperation is increasingly necessary, not
only with the secondary schools but with the Wisconsin State
Employment Service, the University and State Universities, the
University Extension, civic and private organizations, regional
planning and resource development groups, public welfare and
all other affected agencies. Districts are now waiving tuition
on reciprocal agreements for part time enrollments.

Every district will not be able to provide the total program.
Only those programs of high demand can be offered in all dis-
tricts. Many programs considered basic will not find demand

levels in the near future to justify 18 separate programs.

The Wisconsin Board of Vocational, Technical and Adult Educa-
tion, therefore, has a policy which encourages the easy re-
ferral of students from one district to other districts where
unique individual requirements may be met. Vigorous effort
is being undertaken to develop a basic capability in each of
the eighteen areas, several of which presently lack a central
facility. The latter, during the time of development, will
be totally dependent upon neighboring comprehensive centers
to meet the full-time needs of their students. It is antici-
pated, however, that most districts will continue to have
demands which lie outside of their immediate capability.
These demands will be met with no additional cost to the
student through the sharing of state and federal aids and
tuition policies by referral to other areas, with the appro-
priate offerings.

Each district not having already done so is being encouraged
to identify personnel in research and planning functions.
These persons provide leadership in meeting the local needs
and provide liaison with the Research Coordinating Unit of
the State Board staff. They also provide field support and
work in advisory capacities to state research personnel.
Directors of student and personnel services, business admin-
istration and instructional supervisors have already been
named in many of the districts. Such supporting personnel
play a major role in assuring quality programs and sound
operation, and in the orientation and assimilation of new
staff. Area coordinators are assigned to assure field
services throughout all parts of each reorganized district.

The enrollment increases which have been occuring over the
past five years have presented great challenges in the pro-
cess of staff assimilation and in welding the membership into
an integrated, educational team. Enrollment projections in-
dicate even greater challenges lying ahead. The finest ad-
ministration cannot cope with this kind of situation without
a strong, professional, in-service training program. Sound
education demands this capability, yet these requirements
are particularly challenging in the case of part time and
extension staff.

The development of comprehensive service, coupled with the
demands of technology, place increasing demands upon curric-

ulum services. Specialists are assigned in this responsi-
bility who are not only providing leadership in curriculum
development, but also are providing liaison with other
agencies, including higher education and the public schools
as well as with business, industry and the total community.
Curriculum planning and development must be commensurate
with the population served. Duplication and overlapping of
services must be avoided.

The full contribution of vocational, technical and adult
education cannot be achieved without successfully coordinating
the available resources. Many programs have been initiated
at federal, state and local levels which bear directly upon
the educational program or upon its clientele. Many of
these programs have been assigned to other agencies. An
immediate purpose of the State Board is the coordination of
these agencies and programs into a unified systems approach.
This must be achieved through effective communication and
cooperation with the agencies involved and with the support
of the legislature and the Coordinating Council for Higher
Education.

Wisconsin Schools of Vocational, Technical and Adult Educa-
tion are heavily dependent upon the University of Wisconsin
for the professional preparation and development of teaching
supervisory and administrative personnel. They also recog-
nize the valuable contribution made by the University in
supervisory, management and other professional problems.
The staff of the University has been called upon frequently
for consultation services at both state and local levels.
The Wisconsin schools are also dependent upon the University
for the assistance in the fulfillment of their basic research
needs through professorial studies as well as through consul-
tation. We are eager to cooperate with the University in
the extensive field testing and the dissemination of research
information which is necessary toward the fulfillment of
these important responsibilities.

University Extension services provide important capabilities
for in-service education. They have cooperated through the
years with the Wisconsin schools in providing contract serv-
ices in special course offerings, including courses which
carry off-campus credit. These services are in an area of

expanding needs and indicate closer working relationships be-
tween the agencies in meeting those needs. The adult educa-
tion program of the University Extension is seen in the light
of its existing services, which emphasize professional and
cultural programs.

The Wisconsin State Universities play a partnership role in
functions comparable to those listed for the University of
Wisconsin, namely teacher education and professional develop-
ment, consultation and graduate studies.

Excellent service has been rendered through the years in
off campus professional courses and long range part time de-
gree programs for non-degree teachers. Sponsorships for and
consultations in workshops seminars and conferences have been
many. Internships have been established and successfully
administered in our schools. Professional and graduate
studies have dealt with administrative and instructional
issues and with evaluation. Through these and the many other
efforts, both agencies have grown.

Consistent with the challenges indicated in the legislation
cited above; the needs of the State of Wisconsin as they have
been analyzed; and the historic responsibilities accepted by
the Wisconsin Board of Vocational, Technical and Adult Educa-
tion, the approach to role definition of agency must be with
the cognizance of a comprehensive Educational service to the
people of this state. Traditional and existing services of
the other agencies leave majority populations unserved and a
great spectrum of needs and interest without organized educa-
tional support. These have been accepted as responsibilities
by the Wisconsin Board. Since 1911, Wisconsin schools have
served the state with extension education for employed workers
in programs designed to upgrade them in their present posi-
tion as well as programs for retraining. The specific content
varies from district to district, and from school to school;
however, with the development of area organization, resources
now exist to fulfill the basic functions in most areas. The
following basic services are seen as essential components of
a systems approval to the fulfillment of the above challenge:

1. General education and lower division programs
   Associate Degree and College Transfer
   Preparatory and Extension

2. Educational Programs for Para-professional and
   Technical Personnel
   Associate Degree and Diploma

3. Programs for the Preparation and Extension of Service
   and Clerical Workers
   Associate Degree and Diploma

4. Programs for the Preparation and Extension of Skilled
   and Semi-Skilled Workers
   Associate Degree and Diploma including Apprenticeship

5. Programs for Preparing and Upgrading Operatives and
   Other Specialized Personnel

6. Educational Programs for Youth and Adults

   a. Basic Education

   b. Adult High School

   c. Programs for Cultural Development

   d. Programs for Home Improvement

   e. Programs for Citizenship

   f. Programs for Safety

   g. Programs for Economic Responsibility

   h. Programs for Worthy Use of Leisure

7. Cooperating with Educational Agencies to Establish
   Educational Continuity for all of the People

8. Community Services

The Wisconsin schools relate with a large variety of other agencies including private schools, charitable organizations, churches and civic groups. A number of our private schools are concerned with the same areas in which vocational, technical and adult schools are involved. Cooperation and support are considered highly desirable, and in the public interest, wherever the organization evidences worthy goals, professional responsibility, and a high ethical standard. Other agencies are properly concerned with the recreational and non-educational oriented, avocational and cultural programs which are generally considered outside of the responsibility of the Wisconsin Schools of Vocational, Technical and Adult Education.

We recognize the interdependence of educational agencies in the accomplishment of the total task. We recognize our dependence upon our sister agencies for the preparation and development of our own personnel as well as in the other respects previously cited. We are eager cooperators in the accomplishment of our mutual goal and responsibility for the accomplishment of a complete educational opportunity for the people of Wisconsin.

ROBERT R. POLK
Assistant Director
Wisconsin State
Universities

THE STATE UNIVERSITY SYSTEM:

A STATEMENT REGARDING ITS PHILOSOPHY AND MISSION

The Wisconsin State University system, now sixth largest in
the United States counting full-time equivalent students, is
not unique in its development as an American educational
phenomenon. The nine "emerging universities" comprising the
State University system were founded as teacher preparation
institutions. They remained of modest size until the 1950's
when they expanded their curricular offerings to meet the
increasing demands made upon them by the youth of Wisconsin who
expressed a desire for regional educational opportunity of
high quality at reasonable cost. Now, in the late 1960's,
the multicampus State University System, home to over 50,000
students in the fall of 1967, is coming of age.

Multicampus university systems are not unique even in the
state of Wisconsin, which has two such great systems. These
two giants of public higher education in Wisconsin, the
State University and the University of Wisconsin systems, are
only superficially similar. Differences in concept at the
time of establishment, educational heritage, historical evolution
and breadth of mission could be remarked upon in detail, but
the factor that sets the two multicampus systems apart most
significantly is the philosophy upon which each is based.

Since my assigned subject was the State University System, I
shall narrow the focus at this point and aim my remarks on
educational philosophy and mission in the direction of the
State Universities.

The multicampus State University System is here to stay in the
foreseeable future. The operational effectiveness which the
system displays in meeting educational objectives is not
affected by size or growth, but by the demonstrated efficacy
of its accepted philosophy.

Local automony is the philosophy of the office of the Board of Regents of State Universities in guiding the administrative and academic development of the nine regional universities and four branch campuses. There is no desire to build stereo-typed academic offerings, common building facades, or to restrict on-campus administrators to remote control decisions. In this time of increasing participation in decision-making by faculty and student bodies, it is important that officially-constituted campus advisory groups be aware of local policy options, but also the responsibilities that attend the delegation of such autonomy. Calculatedly, there are now evolving in nine separate locations in the state, nine distinctive cam-puses with widely varying academic, administrative and architectural profiles. Consistent with this differentiation in form is the development of individualized educational ob-jectives which should represent the collective thinking of the institution.

From individualized educational objectives comes a range of distinctive curricular capabilities which creates a broad spectrum of educational opportunities for the students of Wisconsin. No attempt to straightjacket academic program development for the sake of conformity exists. There is no nine-needle syringe in the office of the Board of Regents which is used to give simultaneous injections of academic adrenalin to all universities. It is the function of the Board staff to guide, coordinate, and assist the several universities in the achieving of the disparate roles each has projected for itself in the development of statewide educational opportunities, graduate and undergraduate.

In the definition of these disparate roles, pragmatism de-mands that the system as a unit present to the citizens of the state, and to the state legislature in particular, "an image of usefulness, essential service, and the complete utilization of the resources available to it."[1] Prime con-siderations in evaluation of system academic program proposals will continue to be:

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1. Statement by Chancellor John D. Millett of Ohio Board of Regents quoted in bulletin of the Association of State Colleges and Universities entitled "Memo To: The President"; Page 6, Volume 7, No. 20, November 28, 1967.

a. Avoidance of duplication of educational opportunity
    when need cannot be demonstrated;

b. Cost of implementation of quality programs; and

c. Commitment of resources by a university to offer a
    particular program.

But just as the individualism and separatism resulting from
delegation of authoity to the local campus represent one side
of the coin, the concomitant responsibility for the educational
establishment is clearly stamped on the other. Before pro-
ceeding to explore some implications of local autonomy via
four examples, some overall limitations to this policy should
be made clear. Only the Board of Regents of State Universities
is a legal entity and can act officially for a particular
university. In an extension of this authority found in the
Wisconsin statutes, the central administration finds it essen-
tial for economy and efficiency to maintain one staff for
planning university buildings and for payroll/accounting pur-
poses. Personnel records, purchasing, space inventories and
public information are further examples of operations which
it has been found necessary to maintain in the Madison office.
Upon occasion, the universities themselves have relinquished
their autonomy voluntarily to a system representative such as
the WSUC athletic commissioner.

Now to return to the four examples of the implications of
local autonomy: First, the university must accept the re-
sponsibility for evaluating and upgrading existing programs.
An assessment of the quality of current undergraduate/graduate
programs should be made before attempting to develop new majors
or minors which may spread strained resources to the breaking
point. It may be difficult to resist the petitions of a
faculty pressure group within a department to develop a new
program consistent with some specialized training capability it
may possess. Such developments are frosting on the academic
cake and may be implemented if they are indeed studied exten-
sions of existing programs; but if they are oblique spin-offs,
the courage to refuse the request must be at hand. Budget
requests by academic departments with on-going programs of
studies should be weighed carefully by university administrators
in the light of standards of quality appropriate to the particular

undergraduate or graduate program. *Upreach before outreach
should be the guiding academic policy of the universities.*
A pertinent example of the application of this policy is the
concern one university expressed about its readiness for
moving into MA/MS work at this time. The central administra-
tion does not expect any university to request a program
before the institution feels it is ready. The motto of the
Confederate cavalry general, Nathan Bedford Forrest, "Get
thar fustest with the mostest". may have its place on the
battlefields of the War Between the States, but should not be
used by the universities in submitting a wide range of pro-
gram proposals in the hope of staking claims in virgin aca-
demic territory.

A second responsibility of the university attendant to the
delegation of authority by the Board of Regents is the need
to provide for maximum utilization of assigned faculty re-
sources. Institutional latitude to develop new methods and
techniques of instruction has always been present but needs
underscoring. Academic departments should be continuously
rethinking the methods in which they meet their instructional
commitments. In-service courses in data processing, cinescoping,
computer services, mass communications and audio-visual tech-
niques should be taught on a cycled basis by each university
and required of department members as appropriate. Departments
should exercise the measure of self-determination they are
accorded to upgrade the quality of their departmental peers.
With responsible decision-making at the all-important depart-
ment level, the necessity of exercising administrative pre-
rogatives in ruling on the internal affairs of departments will
disappear.

If departments feel a growing commitment to research, and they
must if they expect to mount a quality master's degree pro-
gram, blocks of time must be allocated to those departmental
members who are actively pursuing scholarly studies. This
may require the temporary absorbing of loads by other members
of the department; it may involve larger classes, rescheduling
of class meeting times, or cycling of low-demand courses. The
point is that such autonomy is accorded the universities; the
effective utilization of the instructional faculty by each
university must be the institutional pledge to the Board in
response to the authority delegated.

84

A third facet concerning the implications of local university autonomy is self-study of all aspects of the university operation. Inherent in the delegation of authority by the Board of Regents is its conviction, as expressed in the recent Sachtjen decision dismissing the suit of the Students for a Democratic Society, that university officials "are in a much better position and better equipped than any court to weigh the pertinent factors that enter into the administrative decisions that must be made in the course of every day."[2] By the same token, the Board reserves to itself the responsibility of evaluating the efficiency of operation of the total university.

It is expected that administrative and service organizations and personnel will be continuously subject to the same searching scrutiny by the presidents that they direct to academic program development, faculty and departmental affairs, and official student organizations. It is further expected that the president, non-tenured himself, acting as the direct representative of the Board of Regents on each university campus, will from time to time re-assess and re-align his annual administrative appointments in order to maintain the highest order of operational efficiency.

A final example of an area of responsibility in which the universities must make critical judgments in the exercise of local autonomy is the structuring and implementation of graduate programs.

In implementing the MA/MS degree programs, care should be taken by each university to follow the letter and the spirit of the "Graduate Guidelines" which were the result of a cooperative writing effort involving the deans of the graduate schools of the nine universities, the presidents, and the Board Office staff. The intent of the document is to ensure that directed study programs of high quality, consistent with the university's

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2. Memorandum Decision #123-165 of Circuit Court, Dane County, Rendered by The Honorable William C. Sachtjen, Circuit Court Judge, Dated May 21, 1968.

mission, will be proposed for consideration by the Board of Regents, the Coordinating Council for Higher Education and the North Central Association. Paraphrasings of broadly structured programs similar to those now offered by other universities in Wisconsin are not consistent with the spirit of the legislation enabling the State Universities to enter the liberal arts graduate area.

It should be clearly understood that the State University system is not engaged in a race to keep up with the "educational" Joneses. The system does seek the opportunity to provide quality educational opportunity to as large a component of the State of Wisconsin as can make productive use of the experience. It must be succeeding in this general mission or the acceptance by the student/parent population of Wisconsin would not be of its present order of magnitude.

The number of approved programs of study offered by the State University system is impressive. In terms of graduate offerings, 156 master's degree programs in 49 subject areas are now in operation. These, in turn, are based on the academic support afforded by 381 majors and 307 minors in 154 subject areas. There is, however, a difference in degree of support of these programs by the several universities. This leads one to question whether or not an audit of these offerings should be made by each institution to the end that outmoded programs receiving minimum support be dropped. The additional resources thus reclaimed could be used to bulwark important new academic thrusts.

It might be helpful at this point to spell out briefly a hypothetical example of what is intended by the phrases "directed study program" and "consistent with the university's mission" which were used three paragraphs previous to this one. An institution indicating in its mission statement a major thrust by its College of Agriculture might make the decision that the field of agri-business was where its primary resource commitment should be made. It would, therefore, be consistent with this mission of expansion of an established College of Agriculture that an interdisciplinary program might be proposed in the area of marketing of food products, with emphasis on certain agricultural commodities. This might require the

upgrading of the offerings in business at once and the eventual establishment of a College of Business Administration. Student demand and industrial/regional need for the proposed program, along with resource input, desired output, and program structure information would be supplied in quantified form. The program package developed in this manner becomes a logical outgrowth of the institutional mission, utilizes existing strengths of the university, and is focused on a definite objective not duplicated elsewhere in the system.

Basic to the process of academic planning is a knowledge of the goals of an institution, the intended developmental plan, the timetable for program implementation, the inventorying of resources and the university's commitment to the *academic program plan,* the embodiment of the university *mission.*

The academic program plan or university mission statement should be thoughtfully structured and "agonized over" by appropriate administration, faculty and student representatives before being established as policy. As the key document representing the educational philosophy and intended developmental scheme of the university, distinctive in its direction of thrust, conceptually sound, pragmatically defensible, a mission statement should be decided upon with a sense of responsibility not unlike that which a family might display before adopting a new child. The analogy does not end here. Just as the family with limited resources must take care not to overcommit itself, so must the university not program too extensive a curricular outreach simply for the sake of the facade of an expanded offering.

In 1966, in response to a request by the CCHE, institutional academic plans were prepared by the nine universities in a crash writing program. These "Mission 66" statements were processed through the office of the Board of Regents and received without endorsement as informational items by the CCHE. An extract, titled *Toward New Educational Horizons* was prepared by Dr. Robert DeZonia. This condensation of each university's academic purpose and intended program development was more useful than the tome-like compilations assembled on each campus, but it is now in need of updating and revision in form to be consistent with new budget procedures. For

example, two-year and five-year academic plans are now being developed by the State Universities as part of the biennial budget submission.

The universities will shortly be given format suggestions for the updating of their educational mission statements. These revised statements will be reviewed in detail by the Board staff and coordinated in areas of overlap with the plans of sister institutions to the end that the resulting document will serve as part of the model for evaluating subsequent academic program proposals.

In sum, the recipe I have been outlining for the orderly development of a quality academic establishment for the State University system is composed of many ingredients: Highly trained personnel; adequate budget for public service, instructional and research operations, specialized space and equipment; but above all, an understanding, up and down the line, of the university mission and the developmental plan, consistent with that mission, that is to be pursued in the future.

The Board Office staff will cooperate with the university staff as needed in the formulating of the long-range academic plans. In this context, the central administration does not conceive its role to be a restrictive, negative one, but rather that of a partner in a pathfinding operation, a partner who may because of information at his disposal be called upon to inform the university of certain constraints and additional opportunities which may result in a redirecting of institutional energies.

The end result of this mutual effort will be realistic, individualized statements and plans by each university of its commitment to the development of quality educational opportunities for the citizens of Wisconsin.

WALLACE LEMON
Director, Planning & Facilities
University of Wisconsin

SYSTEMS AND INSTITUTIONAL MISSIONS

Let me say first of all how pleased I am to participate in this confer-
ence. As far as I know, it is the first such conference involving repre-
sentation from all of higher education and dealing with the major plan-
ning problems and opportunities facing us all. In writing to me about
the conference, Bill White said: "We expect the conference to provide
an excellent opportunity for productive discussions of the several facets
of planning which must proceed cooperatively at the institutional, board,
and Wisconsin Coordinating Council for Higher Education levels." The
word "cooperatively" here is very significant to me because it says some-
thing very important about how statewide planning for higher education is
conducted in this state. I will say more about this later. I am proud
to be able to represent the University as a vital component and to have
the opportunity to work with all of the components in the planning and
coordination of higher education in Wisconsin.

My assignment today is to tell you something about the mission of the
University of Wisconsin and its individual campuses. My assignment falls
under the category, "Systems and Institutional Missions." Webster's
Dictionary defines a system as a "regularly interacting or interdepend-
ent group of items forming a unified whole." It defines the term "mission"
in several ways, but the most applicable would seem to be "a task or func-
tion assigned or undertaken." When you put these definitions together,
then, I should try to tell you something about the task or tasks of the
University of Wisconsin and the various regularly interacting units that
go to make it up.

The task of the University is that of higher education, namely, to search
for truth. This has been well stated by the University Faculty Council
in a report presented to our Board of Regents recently. That document
says, "The purpose of higher education is to search for truth. This
search has two parts and for some scholars a third. First, there is the
attempt to gain an accurate knowledge of the world in which the scholar
lives, its history and the evolution of human ideas. Second, the scholar
draws from this knowledge personal conclusions that will guide him during
his life. These conclusions are modified as his knowledge grows. Third,
there is the attempt to add to the sum of human knowledge--whether this
be the finding of new facts and relationships, the creation of new con-
cepts and ideas, or the artist's expression of human thought and experi-
ence." The report goes on to say that "the purpose of an institution of
higher education is to provide a framework within which the search for
truth can be pursued by all scholars, be they students or faculty, in an

atmosphere of freedom, tolerance, and mutual respect." And further adds that "The search for truth has been and must remain the fundamental purpose of institutions of higher education."

The report makes a very important distinction between the *purposes* and the *goals* of higher education. It points out that, "it is important to distinguish the fundamental purpose of a university from the goals that may be achieved if that purpose is fulfilled, namely, improvement in material conditions and cultural resources of society, training of men and women for useful employment in various walks of life, solution of specific problems that currently beset society, and the like. These are important goals, but they are not the ultimate purpose of an institution of higher education. That great purpose is the search for truth. The modern institution of higher education is the only one in our society in which this search, untrammeled by the need for specific solutions, can possibly take place. The converse of this is that no institution that does not provide a favorable environment for the search for truth can be more than an institution for the application of knowledge and techniques already accumulated from the past." Such an ideal as expressed in this faculty report has actually guided the development of the University of Wisconsin since its founding in 1849.

The University Board of Regents recently adopted the recommendations of a special Regent committee which had studied the University of Wisconsin of the future for over a year. Their conclusions on the "Scope of the University" bear repeating here:

> "The University of Wisconsin is one of the nation's greatest and largest multi-campus collegiate systems, offering a broad spectrum of highest quality undergraduate and graduate programs in the arts and sciences and professional fields; it is an internationally recognized center for basic studies and productive scholarship and the principal research arm of the state; it has achieved such prominence in extension and public service that these functions are widely known as the 'Wisconsin Idea.'

> "Some of the guidelines which have shaped this institution are here restated, endorsed, and projected for future development.

> "THE OPEN DOOR--The University makes available a diversity of highest quality programs to all Wisconsin young people who have the ability and desire for them, reducing economic barriers as much as possible by locating campuses within commuting distance of major population centers, facilitating home study, and holding costs to students as low as possible.

"UNIQUE STRENGTHS--The University, while one of the most
complete in the nation, maintains a sound core of fundamental
programs at the highest quality level throughout the system,
and concentrates its special efforts on building unique
strengths on each campus to husband its resources and focus
its energies.

"RESEARCH CENTER--The University, as the state's center for
research and productive scholarship, carries on, in all its
branches, such studies as will expand mankind's knowledge
and understanding, invigorate instruction, and help solve
the most pressing problems of the people of the state.

"EXTENSION--To take its unique resources and its commitment
to human betterment to the people of Wisconsin, the University
provides a broad array of specialized educational opportunities
throughout the state to a wide range of citizens, and action
programs to help solve those problems of society which yield to
University level initiative.

"LEADERSHIP--The University cooperates with all other educa-
tional institutions in the state, public and private, to
improve both the quality and quantity of educational services
at every level."

To give you a little background on the evolution of the present UW system,
let me cite a few landmarks in the University's 119-year history. The
Constitution of the State of Wisconsin, adopted in 1848, provides that,
"Provision shall be made by law for the establishment of a State Univer-
sity at or near the seat of state government and for connecting with the
same from time to time such colleges in different parts of the state as
the interests of education may require." The University began official
operation on February 5, 1849, when Prof. John W. Sterling called the
first class to order in borrowed quarters in the Madison Female Academy
Building. What followed this simple inaugural was a slow but sure period
of Madison campus growth that reached a consolidation of achievement when
the University entered what has been called its first "golden age" at the
beginning of the twentieth century under the leadership of President
Charles I Van Hise.

This was   .e era that saw the development of the now famous Wisconsin
Idea--that concept which holds that it is the duty and natural mission
of a university to serve the public which supports it, that educational
idea which is mirrored in the slogan: "The boundaries of the state are
the boundaries of the campus."

It was during the Van Hise administration that the University's first
official outreach arm was formed when, in 1907, the Wisconsin Legislature

became the first in the nation to appropriate funds for a general exten-
sion in a state university. Extension became the important organizational
means for putting the Wisconsin Idea into action.

Meanwhile, the Madison campus continued to grow, experiencing, as it did,
those normal ups and downs that characterize the growth of any institution.
Wisconsin, like the rest of the country, experienced the euphoria of the
Jazz Age, suffered through the privations of the Depression, and then saw
the boys march off to World War II. When the veterans returned, the Uni-
versity experienced its first and unprecedented enrollment bulge during
the 1946-47 academic year, when enrollment jumped from 9,802 to 23,892.
This was a portent of the enrollment surge that came with the late fifties
and continued into the sixties.

The postwar period was also the time that produced a resurgence of the
University's Center System. Originally begun in 1923, when the Univer-
sity offered a combination of freshman-sophomore day courses and adult
education evening courses in Milwaukee, the Center concept flourished
following World War II, when 29 local Centers accommodated 2,600 students
outside Madison and Milwaukee.

In the late 40's and early 50's, the Centers decreased in number, but
began to evolve into strong regional freshman-sophomore campuses re-
flecting the basic purposes of the Madison campus but also taking on
their own identities.

The next major step in broadening the University system took place in
1955, when the Legislature created the University of Wisconsin Milwaukee
through the merger of the Milwaukee Extension Division and the Wisconsin
State Teachers College, Milwaukee.

The most recent expansion has seen the creation of new four-year, degree-
granting campuses at Green Bay and at Parkside in the Racine-Kenosha area.

Thus, at this point in time, after 119 years of evolution in the life of
a higher educational institution, the University of Wisconsin has emerged
as a system of institutions composed of the following major components--
degree-granting campuses at Madison and Milwaukee and soon to be opened
at Green Bay and Parkside, eleven freshman-sophomore campuses located in
various communities around the state, and a University Extension which
serves as the University's major outreach arm. As this multi-campus op-
eration has developed and the volume of business of the University has
grown in size, scope, and function, the University has continued to change
its administrative organization to adapt to the new conditions. We now
have the "central administration" and "chancellor" system in which the
Board of Regents is responsible for policy control, the President and cen-
tral administration for planning and development of the total University,
and the chancellor for administration of a campus. Strong faculty partic-

ipation in policy making is provided through individual campus faculty committees and all-University faculty council and assembly.

While the Constitution created the University, it is Chapter 36 of the Wisconsin Statutes which identifies the functions of the University as teaching, research, extension, and public services. A 1949 faculty report summarizes that "the major purposes of the University are instruction at the level of higher education, productive scholarship, public services intimately connected with scholarship. All this implies that the University should be a community of scholars made as useful as possible--scholars are first of all productive as investigators and secondly, useful in bringing the results of their scholarship and that of others to the education of the citizens and to the service of the public." Our Regents, in a report on "The University of Wisconsin of the Future," adopted last March, state that "there shall be a continuing Regent effort to make the University of Wisconsin in all its branches both a community of scholars and a useful social, cultural, and scientific force. We see no contradiction in these goals. The University must be a critic of society and must shelter and nourish intellectual endeavor in every discipline, but it also must hold itself responsible for implementation of its ideas. Learning for learning's sake is good. The application of wisdom to the solution of mankind's problems fills an even greater need."

All units in the University share in carrying out these functions. The units of the University comprise one total University system, not a group of autonomous units tied together loosely administratively and functionally. Though the goals are related and contribute to the total purpose of the University, each unit has set and will likely continue to set goals which emphasize particular areas of scholarly responsibility.

Now to the components of the system.

Madison Campus

We could discuss the Madison campus all day, but I don't plan to dwell on it because I think you all generally know the Madison campus story. Madison is one of the world's great institutions. It is the oldest and the largest of the state's public institutions of higher education. Its mission entails comprehensive programs in teaching, research, and public service. It provides graduate and undergraduate programs in a broad range of subjects. It is the major center for basic and applied research in the state. It has been rated as "distinguished" or "strong" by the ACE in 26 of 29 graduate fields surveyed and rated as the best in the big ten in a recent "Newsweek" evaluation.

The two major strengths of the Madison campus are its completeness and its balance. I don't intend to overload you with statistics, but I do think some figures will help to explain what I mean. Madison has ten

schools and colleges offering courses in subjects ranging from Advanced
Topics in Algebraic Topology to Invertebrate Zoology. More than 3,000
faculty members are involved in teaching these courses as well as in
conducting the more than 3,000 research projects which are supported by
an annual research budget of approximately $45 million.

In addition, Madison has a library which contains more than 1.6 million
books. And the UW ranks second in the nation in the awarding of doctoral
degrees over the last four decades. Madison is and will continue to be a
model for the large, democractically conceived and oriented state univer-
sity. The University will continue to stress balance at Madison, insuring
that no one aspect gains dominance over the other.

UW-Milwaukee

The Regents of the University in April of this year adopted a statement
on the mission of the UWM in response to a request from the Coordinating
Council for Higher Education for clarification of the future role of the
UWM. The following excerpts from that statement will help to explain
UWM's mission. The Regents' statement says that the proper goal of the
University of Wisconsin Milwaukee remains major university status within
ten years. The reasons for this are dictated by the unique geographic,
economic, and social problems, needs, and opportunities of urban America.
Recognizing that metropolitan Milwaukee is a vital social and industrial
force in the state of Wisconsin, a primary element in setting this goal
is to attain distinction for UWM as an urban university, one with genuine
relevance and attention to urban problems.

A special part of our mission at UWM will be to build teaching, research,
and public service programs that are appropriate to this goal.

The UWM already offers a wide variety of undergraduate programs. Certain
programs will have to be added, but at the undergraduate level it is in-
tended now to devote increased attention to optimizing the effectiveness
of present programs in reaching and retaining students. As the only state-
supported, degree-granting campus of the University in the populous area
of the state, we recognize the need to reach and serve students who in the
past have not been identified or offered the services of the University.
This has been particularly true among the disadvantaged and minority groups.
Advanced degree programs will be offered in many areas, particularly in pro-
fessional fields. Manpower needs, student demand, and University develop-
ment will be the basic criteria in establishing such programs. We already
have broad offerings in most professional program areas, such as business
administration, education, engineering, fine arts, nursing, library, and
information science, and so forth, to give us a base for this development.
Because doctoral programs create very stringent demands for research facil-
ities, library holdings, and qualified staff, we plan to utilize our avail-
able resources to the best advantage in developing Ph.D. programs, and they

will be developed only in connection with carefully chosen "areas of excellence." We do not anticipate or propose to develop Ph.D.'s across the board. Four areas of excellence have been identified as relevant to the urban industrial society:

1. *Urban Studies*--Programs of instruction, research, and public service associated with major metropolitan areas and their patterns of behavior, organization, and systems are necessary for an urban university. The social sciences, natural sciences, and humanities all have a role to play in solving the problems of the city. Doctoral work in anthropology, communication, economics, education, geography, history, political science, psychology, and sociology are fundamental. All of these would be undertaken with an urban emphasis. We have already undertaken doctoral programs in geography, political science, psychology, and education.

2. *Contemporary Humanistic Studies and Fine Arts*--Our concern here is for humanistic studies in an urban and industrial era. Within this framework we intend to develop an international, interdisciplinary focus on the contemporary arts and humanities. Primary areas of concentration include comparative literature and criticism, English, other language and literature fields, and the performing arts. Of these only English is so far developed to the Ph.D. level.

3. *Lake Studies*--Research and instruction on the physical, chemical, and biological events occurring in aquatic environments and the socio-economic importance of water bodies form the basis of this area of concentration. Problems of pollution, for example, deserve special attention. Full development of this field requires strength in chemistry, and biological sciences, geology, geography, and certain engineering specialties, as well as economics, history, and political science. Ph.D. work is already authorized in botany, geography, and political science. A request is currently before the Coordinating Council for a Ph.D. in chemistry.

4. *Surface Studies*--Common interests in atomic, molecular, and electronic processes that take place at surfaces unify this cross-disciplinary program. Chemists, physicists, and engineering scientists already pool their talents in this area at UWM. There is future promise in the biological sciences as well. Our Ph.D. programs in mathematics and physics provide strong support for this development. Our surface studies laboratory was recently awarded a special development grant of over a half million by the National Science Foundation.

We are proposing that our Ph.D. developments be concentrated in these four major areas, probably necessitating somewhere in the neighborhood of twenty

to twenty-five doctoral programs in the basic disciplines. It is clear that UWM is not going to try to excell in every field of study, but has defined areas of excellence into which its development will be channeled.

Green Bay and Parkside

The University's two newest elements--the four-year campuses at Green Bay and Parkside--afford the opportunity for the development of higher educational institutions which specifically address themselves to rapidly changing aspects of our modern society. Programs at both of these institutions contain innovations in curriculum planning and emphasis on interdisciplinary aspects. Both campuses are designed in part to level off enrollment growth at Madison and Milwaukee.

The structure of these two institutions is based on responding to the needs of a specific region of the state and to taking full advantage of the human and natural resources in their respective regions, while serving as well the general education needs of all Wisconsin young people.

The Green Bay academic plan, for example, states that "It is the philosophy of the University of Wisconsin-Green Bay that man's problems should be observed firsthand and experienced, not just studied through books or in the classroom, laboratory, or studio."

The main focus of Green Bay's course of study will be on man's ecological problems, specifically concerned with the physical environment, the social environment, the impingement of the environment on an individual, and the individual's impingement on or contribution to the environment. Programs will be clearly interdisciplinary and organized by colleges based on the environmental themes rather than grouped according to disciplines. Under this approach, for example, there will be no academic departments of the traditional type, such as a department of history or of English.

Each college in the new university will be responsible for a coordinated program of undergraduate studies, research, and public service. It will be common for several professors, specialists in different subjects, to work together to "team teach" a course that combines several subjects to focus on a significant problem.

A student in the college of community sciences, for example, may "major" in one of four "concentrations"--cultural change, world-wide modernization processes, regional analysis or urban analysis. On an optional basis, he may take specific courses in anthropology, economics, geography, political science, psychology, or sociology to supplement his "concentration," but none of those can be selected as a major.

At UW-Green Bay, all students will have at least one seminar every semester.

In their sophomore and junior years the seminars will be in topics cutting across the specialties of their own college.

In the freshman and senior years the seminars will be university-wide, focusing on values and environment.

In connection with the second semester of the student's sophomore seminars, he will spend about 10 weeks--six hours a week--off campus in a special project relating to the problem around which his seminar is built.

In the junior seminar the student will concentrate on problems that are found in areas of the world outside the northern Great Lakes region, and some students will have the opportunity for carrying out projects in other parts of the country or abroad.

Other unusual aspects of the UW-Green Bay plan:

Multicampus University--The UW freshman-sophomore centers in Green Bay, Marinette, Manitowoc and Menasha, as well as the new campus in Green Bay, will be parts of the same university. Students will be able to take courses at any of the campuses, in any combination or proportions, without the red tape of transferring.

Catch Up Programs--Two different programs will be available: One for high school seniors who do not meet the university's normal entrance requirements; the other for older students who have been away from college for years and wish to return to complete work on a degree.

The preliminary academic plan for the Parkside Campus derives its form and substance from the status of the campus as a unit of the University of Wisconsin, from the known educational and vocational preferences of students in the region to be served, from a philosophy of education that exalts the individual, and from the industrial character of the society and economy of southeastern Wisconsin.

The Parkside plan is based "on the assumption that society fares best when the individual is free to choose his vocational goals, pursue his special interests, and develop his unique talents." The Parkside campus will, therefore, "attempt to fit its program to the student, rather than the other way around." Majors and other degree requirements will be tailored to the educational and vocational needs of the individual student, as determined by academic counselling. Not all students will be able to pursue their goals at Parkside because of the special mission of the campus. For example, students whose interests run to agriculture, forestry, archeology will not find suitable programs at Parkside.

The Parkside plan further states that, "A university gains strength by relating itself to the region in which it is located." Southeastern

Wisconsin is many things, among them a fast-growing interurban area standing between two great metropolitan centers, Chicago and Milwaukee. But the most striking characteristic of the area is its industrial character. Industrial activity provides the economic base for the region and underwrites its future growth. It also identifies the society of southeastern Wisconsin as a distinctly industrial society. The Parkside campus will therefore give special program emphasis to the economic, technological, scientific, social, and cultural needs of modern industrial society.

"In keeping with the University's practice of seeking to apply knowledge, as well as discover it, the Parkside campus will concern itself with the social and economic uses of knowledge in an industrial society. Its interests will be contemporary and problem-oriented. Faculty and students will attempt to discover what knowledge is most relevant to modern industrial society, and how that knowledge is generated, disseminated, and applied. Members of the staff will, through research, develop new knowledge relating to industrial technology, production, and management. And they will work with regional and state industries on applications that will solve immediate problems and promote long-term economic growth.

"In the process of creating a new educational resource for the state by developing an academic program that bears a functional relation to the industrial character of southeastern Wisconsin, the Parkside campus will build basic program strength in the theoretical sciences, social sciences, and humanities. To flourish, modern industrial society needs theoretical as well as applied science. It needs knowledge of itself, through the social sciences. And it needs art and culture. In the range of its offerings the Parkside campus will be broad, not narrow, but its broad offerings will support and relate strongly to its industrial society mission."

The preliminary academic plan calls for a simple organizational structure that emphasizes the unity and inter-relatedness of knowledge and provides for a College of Science and Society, to house the basic academic disciplines, and a School of Modern Industry, to stress applications. The two-units would be linked through joint appointments, shared requirements, double-listed offerings, and similar devices. From the curriculum viewpoint, 1968-69 will be a transitional year in which the Racine and Kenosha Centers will be integrated into the Parkside complex, with course offerings continuing the inherited pattern. Parkside will begin in 1969 with offerings in fields of high student interest. Additional courses will be phased into the curriculum as enrollment grows and majors are expanded. Within each general field of knowledge (science, for example) the student will always have a choice of traditional majors (chemistry, mathematics) or a broad field major representing a combination of disciplines (the earth sciences). Before geology becomes a full major in its own right, geology courses will count toward an interdisciplinary earth science major. Thus each field, while developing specialized offerings along

traditional lines, will simultaneously be involved in interface programs with other disciplines, reflecting modern curricular trends. And at all points the theoretical work of the College of Science and Society will be strongly related to the applied work of the School of Modern Industry.

So, as you can perceive, the University has defined and is in the process of developing distinctive functions for Green Bay, Parkside, and UWM.

The Center System

The first formal University of Wisconsin Center was established in Milwaukee in 1923. The UW Center System now includes eleven two-year campuses. In the fall of this year it will be reduced to seven freshman-sophomore campuses as the Fox Valley, Manitowoc County, Marinette County, and Green Bay Centers are linked to the UW-Green Bay and the Racine and Kenosha Centers are administratively joined to the UW-Parkside. At that time, the Center System will be composed of the current Marathon County, Marshfield-Wood County, Rock County, Waukesha County, and Sheboygan County campuses and the two newest campuses scheduled to be opened this fall-- the Baraboo-Sauk County Center in Baraboo, and the Washington County Center in West Bend.

The mission of the Centers is to provide high quality, fully transferable freshman-sophomore programs to students on a commuting basis. B.A. programs in other liberal arts or professional schools require a basic arts and science curriculum during the first two college years. The Centers bring this basic core to Wisconsin communities where a four-year degree program could not be justified.

The Centers, along with State University branches, have tended to provide good geographical distribution of higher education. Under study by a Wisconsin Coordinating Council for Higher Education committee is the question of expanding the mission of the Centers and branches to provide more associate degree and collegiate transfer programs for a wider range of high school graduates than currently served.

University Extension

Taking the University to the people--the Wisconsin Idea--is the function of University Extension. Since early in the twentieth century three major agencies of the University have served as the outreach arms: general extension, agricultural extension, and radio and television. In October, 1965, these three were merged into one unit--University Extension. University Extension operates on a statewide basis, utilizing the resources of all the University campuses. This represents a new model for extension programming, one which is designed to allow the University to respond more effectively in serving the people of Wisconsin--"rural, urban, and suburban alike." The result of this reorganization has been

the establishment of "a mechanism which supports University Extension's two goals: providing educational opportunity for adults of varying educational and vocational backgrounds and applying UW resources to society's educational, environmental and economic problems."

The Board of Regents of the University recently proclaimed in their document on "The University of Wisconsin of the Future" that:

"In common with other land-grant institutions, the University of Wisconsin has served agriculture well through its system of county staffs and campus specialists for more than half a century. Beyond this traditional approach, Wisconsin has served the needs of labor, business, the professions, and the general community through programs of continuing education, some of which date back three-quarters of a century, and through pioneering work in broadcasting that earned its radio station the title, 'The Oldest Station in the Nation.'

"The reorganization of these efforts into a single force, and their reorientation toward new problems and fresh approaches, have now been accomplished.

"With the change has come some change in emphasis; a shift from rural problems to urban, from middle class clientele to lower class, from the middle aged to the old and young. But the basic mission remains the same: To put knowledge to work for and through people who are not reached by the usual residence credit programs.

"To do this Extension serves in three areas:

"1. The world of work--increasing the knowledge and skills of people who are threatened with job obsolescence by the rapid rate of change in technology and job requirements;

"2. Community life--equipping people to deal more effectively with the accelerated rate of change and the new problems facing communities;

"3. Constructive leisure--helping people to find opportunity for intellectual growth and fulfillment through more effective use of leisure time.

"The greatest need for expanding Extension services in the future will lie mainly in those areas of lowest income, and those areas farthest away from other educational opportunities."

My assignment has been to give you a quick overview of the University's missions. I have attempted to be factual about how the University views itself. I haven't covered all areas of University programming--for example, international and regional programs we conduct and cooperate with. I have not dealt with some of the burning issues of the day, such as responsiveness to student needs, role of the faculty, administration, Board of Regents, e'c., because this has not been my assignment. However, there are problems currently facing higher education relating to the roles of the various systems and institutions which will require the utmost cooperation and coordination among us. Let me discuss a few of them.

First, the expansion of graduate programs. Enrollments of graduate students will certainly escalate even more dramatically than undergraduate in the years ahead. Graduate programs should only be developed with a high degree of excellence. This means they put a heavy demand on faculty and budgets. The investment in limited manpower and resources is so great that it needs to be carefully weighed. In my opinion we have made considerable progress in the examination made of such investments. The format in which we now review and report to the CCHE on new academic programs requires a careful examination and justification of all factors affecting the need for the requested program. For example, besides a complete description of all the courses, the faculty, the facilities needed, the factors of student and manpower demands must be examined. Perhaps more importantly, we now require that any new program be essential to the mission cf the institution. For example, we would not today approve a program in Early English in an institution with a mission focused on contemporary English. Not only would we not approve a new program as such, we presently screen appointments to assure that new faculty will contribute to the mission. We have made great progress in becoming more selective in our institutional missions. As I described to you earlier, the missions of Green Bay, Parkside, and Milwaukee are focused on certain areas and do not encompass undertakings in all areas of knowledge. The CCHE has played a major role in the development of the issues and the review processes which have contributed to a sharper definition of the role of our institutions. And while we have not always been in agreement with CCHE on these program matters, I would commend them for the leadership they have shown in resolving some of the differences in the best interests of higher education.

Second, Extension. The CCHE has created a study committee to look at the potential conflicts of interest and effort in the multiple development of industrial, business, and service occupation-oriented programs by the Vocational-Technical schools, the State Universities, and the University of Wisconsin. The committee has delved into the programs of all the systems with a view to any actual or potential wasteful duplication of effort. The committee has identified and reviewed the various roles of all the systems and is working on recommendations for developing further mechanisms for improving cooperation. Under consideration are recommendations

for a State Joint Extension Committee to be concerned with guidelines for coordination; area committees to focus on regional needs; information exchange between the systems; sharing of services and facilities and joint appointments.

This is a significant attempt by all the systems and the CCHE to cooperate in carrying out programs in a coordinated way. I have been impressed by the face-to-face discussions between the systems on difficult problems. The CCHE has been instrumental in identifying the problems and focusing the attention of the systems on them in a constructive and cooperative way. I believe the work of this group will contribute significantly to the future state plan.

Third, Two-Year Institutions. The CCHE staff has recommended that the two-year campuses and centers study ways to extend higher educational opportunities. A committee of institutional representatives has been established and is examing the problem. There is no doubt that Wisconsin needs to expand educational opportunities, particularly to the disadvantaged and minority groups. The question of how to do it is a most difficult one and may require a change in some institutional missions. Above all, it will require a greatly increased level of funding.

I have briefly stated these three problems--there are many more--to point up our awareness of the need to define missions, but more to indicate that we are not immobilized by these problems. The cooperative spirit and effort in Wisconsin is very good, and this is basic to coordination. In his report on "Conflict and Coordination in Higher Education," James C. Paltridge puts forth the general proposition, based upon his review of various organization forms and practices employed in coordination, that:

> "Any lasting interinstitutional agreement must satisfy legitimate institutional goals and ambitions. Agreement upon statements of differentiated institutional goals which broadly define the essential roles of institutions and systematic assignment of distinctive functions to individual institutions are essential to a coordinated statewide plan. A plan lacking such statements or agreements is likely to be ineffective and short lived. Such a plan does not preclude 'healthy competition' between institutions which strive to present more challenging instructional programs. It assumes that interinstitutional competition will continue to encourage educators to devise better programs in general education, the humanities, and liberal arts, as well as stronger and continually modernized programs in the applied fields such as business administration and teacher preparation."

This proposition by Paltridge is pretty much in keeping with the way in which the CCHE and the systems of higher education are working in this state. It certainly would seem to be a more productive way than to cast plans into concrete.

It is interesting to note in M. M. Chambers' May newsletter an item on the report of the California Legislature's Joint Committee on Higher Education, after study of the organization, governance, and financing of the state's universities and colleges, which states that:

> "It is at least tentatively critical of the over-*rigid* features of the much publicized and greatly overrated 'Master plan' of 1960, partly ossified into law in the Donohoe Act. The plan layer-caked the public institutions into a three-tiered structure: the Junior Colleges, the State Colleges, and the multi-campus University....
>
> "The most odious feature is the effort to 'cork up' the ambition of any institution to expand upward or downward to meet urgent local needs. Each one is frozen into a limited mold from which it is apparently never expected to escape.
>
> "Of this, the Joint Legislative Committee says pointedly: 'Functional assignments to classes of institutions rather than to individual institutions may be a bar to flexible educational planning.' It proposes to study alternative ways of 'breaking down the barriers that have been built up.' "

I am confident that with the kind of cooperative planning we now have, we can avoid this kind of result.

LEE SHERMAN DREYFUS, President
Wisconsin State University
Stevens Point

THE EVOLUTION AND PROMISE OF EDUCATIONAL TECHNOLOGY[1]

If one is to address himself to a discussion of the development and the
future of technology, it is necessary to define what he means by educational
technology. In one sense, technology can be looked on as pertaining to an
applied science, whereas education is the specific science which deals with
the practices and the principles of teaching and learning. Thus educational
technology may cover a discussion of learning systems and the processes by
which such systems are validated and utilized in the teaching-learning situa-
tion. There are others at this conference who are better equipped than I to
discuss a systems approach to learning. It is fully my intent to discuss
under the title given me the new "hardware." I am referring to the growing
array of exciting teaching tools which have come to us as a result of the
electronic and aerospace age. I am not an educationist, but I do consider
myself an educator and a scholar in the mass-communications field, a most
exciting field. Therefore, it seems strange that, as one looks about the
teaching field, he can find almost anywhere a situation whereby we are pro-
viding eighteenth-century teaching techniques in nineteenth-century rooms
located within twentieth-century buildings. The real problem facing us is
that we are beginning to teach young people who will spend the majority of
their lives in the twenty-first century.

Isn't it odd that professional educators are so notoriously slow to accept
change? If medical innovations had been adopted at the rate which you and I
seem to prefer, there is every reason to believe our health problems would be
handled at a 1937 level. To be sure there is a cult of innovation within the
educational community. Too often, as in the case of the teaching machine,
some moves are made too rapidly. A few examples of this sort may be what has
created the built-in lag in education. We must shed our prejudices about new
media, about our roles in the teaching-learning process, and about the value of
"good old Yankee education." There are those who point to the record of
achievement made by this country and take the position that our education can't
be too bad since it has brought us to the very top in the more recent fields of
communications, space, and nuclear power. However, when one looks at the
pioneer and innovative people in these fields we see the names of Zworykin,
Von Braun, Einstein, Fermi, and Teller. Make no mistake about it: these minds
were not the product of good old Yankee education. With this in mind, I ask
you to take an objective look at the educational technology coming upon the scene.

The first impact of such technology is change. In my experience, there seems
to be a noticeable fear of change among those who teach. This is understandable;
but as we make greater use of the educational tools provided to us by our
industrial colleagues, we will return teaching to its most important roles

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[1]This paper is a reprint of a paper delivered to the National Research Council
of the National Academy of Sciences at their Symposium on Undergraduate Teaching
held in Reno, Nevada. It is reprinted with permission from the Journal of
Animal Science, July, 1968 issue.

of inspiration and guidance. This technology can teach us that teachers in all fields are not dispensers of information. It is undoubtedly true that a man first teaches what he is rather than what he knows. Another impact of technology will be that it will afford us the opportunity for some imaginative and daring thinking concerning the entire process of education, including the teaching of animal science. This is an opportunity which you and I and all our colleagues cannot afford to miss. We grew up in the telephone age, and that instrument was not used to enhance, enrich, and improve our education. We cannot afford now to do the same thing or rather to do nothing with the new technology.

Research. You are undoubtedly aware of the tremendous number of studies related to the effectiveness of programmed instruction, teaching machines, instructional television and the like. I will certainly not suggest that all of that research has been valid and reliable; however, as of this date there have been, to my knowledge, 463 studies alone comparing the use of instructional television with the "conventional" classroom. Certainly no teaching tool has ever been investigated so thoroughly and so completely. Most of the results report "no significant difference." One cannot be certain if it is really the result of a fair comparison or simply the result of putting an avalanche of statistical instrumentation into the midst of a pooling of inaccurate and meaningless data.

Technological Tools. When I speak of the tools of education or the new educational technology, I refer to things other than teaching machines and television. Of course these are both important in the vast array of technology available to the educator today. Besides these, however, one finds the computer as a major instrument in the educational process. Some of its utility will be discussed later. Some other equipment with which you may not be so familiar will include the electro-writer, slow-scan television, the dataphone, facsimile, radio, tele-lecture, video file and the teletype.

The electro-writer is an instrument which looks like a huge praying mantis and which in simple form will reproduce in script that which is handwritten at a remote location. The reproduction capability of this instrument today is good enough that one would recognize his own handwriting or signature when he saw it reproduced by the machine.

Slow-scan television is rather like your home television with the exception that it may take as long as 6 seconds to inscribe the picture on the screen. Consequently, it has very little value where there is a necessity for a moving image. If one has need for a single slide or stationary picture every 6 seconds, he would then have utility for this instrument. The great value of slow-scan television over the regular television process is that its signals can be transmitted over a regular telephone line rather than expensive coaxial cable.

Most of the other hardware referred to is generally known, with the possible exception of the video file. This is an automated storage and retrieval system in which the data are stored in electronic bits of information on video tape rather than in printed bits of information on paper. The value of this system is that one can store a good deal of information in a very samll amount of physical space. For example, a quarter of a million pages of material can be

stored on one regular 14 inch reel of video tape. Upon request the machine will automatically stop at a precise page of information, which can then be viewed on a video screen. An additional capability is the possibility of printing out hard copy of the information if needed.

Three Stages of Technology. As one observes various instances of technological innovation on the American scene, he can begin to distinguish a pattern of sociological adaptation, which takes place in three distinct stages. The first stage would be that of racing the old against the new. If one looks on the automobile as a technological injection into our society at the turn of this century, one can follow the three stages with ease. It is well know that automobiles were set in competition with every known form of transportation. There were cross-country races, speed trials, etc. In fact, society with its regard for the tried and true resisted the automobile. It was viewed as a replacement for the horse, and people recognized that it lacked some of the desirable humanistic qualities of the horse. Here was a perfect example of stage one, comparing the old with the new.

The second stage can best be characterized as the process of adopting the new technology to meet the needs of the current society. In the case of the automobile, we increases its speed; we enclosed the cab; we put in heaters and radios and shades; and we even included mohair upholstery. In short, we created a mobile living room for the American family; and in this way we adapted this new technology to the needs of a society which lived in a nation three thousand miles long and one thousand miles wide.

The third and last stage of technological injection appears to be the reverse of stage two, namely, that society begins to adapt itself to the new technology rather than the other way around. This is very clearly the case in the nineteen-sixties as related to the automobile. The very appearance and functions of our society have been adapted to the automobile. We are in almost all ways an automotive society. For example, we have built the expressway, which is clearly an adaptation to the automobile. We have built drive-in movies, drive-in churches, drive-in motels, restaurants, shopping centers, and so on. The very expanse of our cities and the size of the lot on which we can build homes is a function of the technological injection of the automobile.

One must now look at the injection of the new media into our society to begin to observe the three distinct stages. In the instance of television it is clear that we raced the old against the new in the 463 studies of television versus the conventional classroom. We're no longer in that stage but have passed on to stage two, where we have begun to adapt television and the other media to the needs of our educational society. For example, we are now utilizing television to meet the needs of teacher shortages and to transmit instruction on an extension basis to remote locations. Computers are being used to handle the programming and scheduling of school systems. Most large university classes are now scheduled in terms of room location by means of computer. There are countless other examples which illustrate the fact that the new media are now in stage two. We have not yet moved into

stage three, which will be the adaptation of our educational society to technology. When this occurs school buildings will be different if built at all; teacher functions will be changed radically as compared to most current teaching processes today. Texts will be changed and may well become a "walk-in" kind of museum approach rather than the current three-quarter billion printed textbooks which we turn out in this country every year. In a recent book, the noted Canadian theorist Professor Marshall McLuhan says that, "...electric means of moving of information are altering our typographic culture as sharply as print modified medieval manuscript and scholastic culture."[2] McLuhan suggests that we are beginning now to enter stage three as far as the electronic media are concerned. However, there is every indication that this is true in all aspects of society other than education. Therefore, one must conclude that if education continues to operate on a reactionary and resistive basis it may well find itself out of step with the rest of society in very short order.

Demonstrations. Both the current status and the future promise of the new technology can best be illustrated by a description of the demonstrations which have gone on up to this point. These are, for the most part, single or limited-distribution examples of what can become standard in the relatively near future. One of the changes made against the use of *technological instruction* is that the instrumentation is impersonal. One supposedly cannot provide motivation for learning to students through any medium other than the *vis-à-vis* situation. Starting with this premise, I organized an instructional project in 1965 which was to deal primarily with the problem of motivating high-school students to learn foreign language. Through the Early Bird Satellite, we interconnected the high school in West Bend, Wisconsin, with the famous *Lycée Henri IV* in Paris, France. The American students spoke only French, and the French students spoke only English. The students could see and hear each other simultaneously. They could see the informality of the American classroom compared to the formal class in the French school. We utilized the video hook-up for one hour with the French Broadcasting System providing the facilities in Paris. This was no planned program. The students simply talked to each other about the kinds of things people their age prefer to discuss, namely, cars, popular music, sports, school, girls, boys, books, and a host of other subjects.

For some students, this was the first time they understood the value and purpose of three years of study. One young fellow epitomized the entire demonstration for me. Before the telecast, he reluctantly agreed to ask one question. He simply wasn't motivated to participate and attempt to utilize his newly acquired language skills. In the course of the demonstration, he became so vitally interested in the discussion that he pressed to get in his question. The French students responded; the American boy asked another question, and a discussion began which continued for almost five minutes. The young American was clearly startled that the students in France understood him and were able to communicate with him. After the conclusion of the telecast he verbalized his attitude when he said, "They really understood what I said." He was quite literally ready to leave on the next aircraft for France. When this kind of involvement becomes a commonplace

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[2]Marshall McLuhan. 1964. <u>Understanding Media: The Extensions of Man.</u> (New York: McGraw-Hill Book Company, 1964), p. 171

experience in classrooms all over this land, the learning of foreign language will leap ahead at a fantastic rate. Once we have enough satellites in orbit, the problem of interconnection around the world will be gone because the concept of long distance will be eliminated. It is a matter of lineal fact that there is very little difference between the distance from Madison, Wisconsin, to Paris, France, and Madison to Milwaukee when one travels via a stationary orbiting vehicle 22 thousand miles out in space over the equator.

To stay for a moment with the foreign language teaching situation, let me suggest another possibility for improvement in that field which I would consider an example of creative thinking involving the new media. If student motivation is a key problem to be attacked rather than the teaching methods which have been stressed so much in the last decade in that field, one must address himself to the question of the availability of material that will provide students with self-motivation in the area of utilizing and learning foreign language. In my opinion, we may have one of the greatest resources in the area of foreign language teaching available in the commercial television programs that have been produced in this country for distribution elsewhere in the world. As you may or may not know, most of the top-rated entertainment programs which students normally view are available in most of the so-called standard languages. There is almost no program in the top twenty-five of the Nielson rating index which is not available in French, Spanish, Portuguese, and German. There are, of course, some labor-union problems to be thrashed out here, and these are not minor by any means. However, once the commercial production agencies understand that the education field will return a profit to them on a continuous but very slow basis we will then find a greater availability of these materials for use in student motivation and learning. These programs can be available on closed-curcuit television in school systems and universities so that they can be put into the dorms at times when students would have the opportunity to utilize them.

Let me now mention the use of modern media in the area of teaching law. It may come as somewhat of a shock to you, as it did to me, that a majority of graduating law students have not had any reasonable exposure to the legal process as it takes place in a court of law. I would suspect that a major problem involved is one of leaving the campus to attend a court session somewhere else in the community, only to find that the trial has been postponed. How simple, then, to bring the court of law to the campus on a closed-circuit basis. The University of Michigan inaugurated such a system in 1962 and has had a most positive experience with it. In that particular instance, a camera is mounted in the courtroom in such a fashion as to be unobservable to the average visitor in that courtroom. It is controlled by students back on the campus through a remote-control instrument. There are five micro-phones placed strategically around the courtroom so that the audio portion of the experience is brought back into the law school at Ann Arbor. The judge on the bench has immediate control of those microphones in the event that there is some audio portion which he does not wish to be extended out into his courtoom or into the adjunct courtroom which has been set aside on the campus for purposes of viewing the court sessions. The bailiff has access

to both video and audio controls so that he may clear the courtroom in the event that the judge asks for it. In this instance he clears it electronically as well as physically. In no sense is this a "big brother" watching what is going on since the attorneys and the court staff involved are all fully aware of the presence of the camera.

In the area of education we have developed at Wisconsin a similar kind of technological injection into the teacher-training experience. A classroom at the University Central High School located in the heart of Madison has been equipped with two cameras mounted in opposite corners of the room. They are placed in such a way that one camera essentially scans the students while the other camera is capable of following the teacher at the front of the room. Both of these signals are brought back to the campus and fed into separate television receivers. In this way students on campus are able to watch the teacher in the teaching process and at the same time are able to watch the students involved in the learning process. Both pictures are observable side by side. The University through its Instructional Research Laboratory has added a recording capability to the facility so that a particular example of the teaching-learning experience may now be saved, or a student who is practice teaching at Central High may be recorded. The student then is able to observe himself in the teaching-learning situation later that afternoon back on campus. Here is the fantastic opportunity of standing outside of oneself and watching oneself in a dynamic, communicative situation.

Much the same kind of equipment is in operation in medical and dental colleges all over the United States. In our own school, two operating rooms are equipped with cameras mounted within the lighting aparatus. Consequently, the picture being fed from the surgical situation is that which one would see if he were located directly over the hands of the surgeon. Medical students now sit in a separate classroom and observe the surgeon from this point of view rather than in the traditional amphitheater which provided a visual presentation of the surgeon's back rather than the patient. The audio portion is provided through a throat microphone worn by the surgeon or through a microphone held by a medical professor who is present during the operation strictly for the purpose of describing and analyzing the procedure. A feedback capability is available with this latter arrangement so that students in the classroom are able to ask the medical professor a question related to the on-going experience of the operation. The impact of this approach to surgical training is patently obvious.

I will not labor the point with details of the various subject areas which have begun to make imaginative use of the new technology, but let me summarize a few before getting into the animal sciences. It is important that people in any specialized field have some notion of what other fields are doing with the new media. This information will bring forth from one's own teaching experience the ideas which media specialists need in order to make greater use of the technological tools we have been given. It has been my experience that most of the truly creative innovation patterns in this field have come directly from subject matter specialists who have gotten into the

109

use of the tools and have through an empirical process arrived at suggestions for utilization. For example, the area of nursing skills has brought about some utilization patterns which begin to deal with the individual tutorial situation. First of all, one can readily observe that the particular skills involved can be created in recorded video form and photographed or televised from an optimum angle or position. In effect, each student who utilizes such material becomes a "front row center" viewer. If the materials are available on a repetitive basis, those students who need to observe a skill procedure more than once are able to do so before attempting to master it themselves. If these materials are then automated into separate booths and carrels, we will then have created a viable instructional condition for the individual who wishes to learn something at a time convenient to him. The regulated classroom period with a professor available obviously has about it the limitation of requiring all students to learn at precisely the same hour and within the same given amount of time.

It is our intent with new media to break both of these molds since all students are not available at precisely the same time and all students need not be forced into utilizing the same amount of time in a learning situation. Some students may learn in a very short time, while others take a good deal more to learn precisely the same skill or the same concepts. In the case of nursing skills, it is possible for a student nurse to enter a multimedia booth and be given an audio-visual demonstration of the skill she is to learn within the framework of programmed instructional materials. This same process has been experimented with in the field of oriental languages. Chinese, for example, lends itself very well to the video medium since it is a pictographic language and since the audio portion has greater impact on the meaning of the character than would normally be found in the relation-ship of audio to print in our own language. Consequently, students are able to operate at their own pace and with as much repetition as they might need in learning a language which is structured visually and auditorily in a very different way from their own. Just to give some notion of the magnitude of the task: our own experimentation has brought us to the point where eight Chinese characters can be taught in approximately 30 minutes. When one can handle 600 characters he can carry on a generalized communication with most anyone in Chinese, both verbally and in print. When one has achieved control of 1500 characters, he should be able to read almost any Chinese newspaper.

Courses in the sciences have moved into the new media through use of slides, film, video, and audio in a tutorial arrangement. The very presence of new technology has brought about cooperation within the field in which faculty members of various universities have joined together to create a maximum quality product which can then be used throughout the country. This is the case in the Big Ten, where the Departments of Geology have joined together and at this moment are engaged in just such an activity. Here is a way in which we may share faculty talents without requiring a given faculty member to move to another location, thus losing his services or interrupting his research for a period of time. It is probably these latter factors which have restricted the true sharing and exchanging of faculty among groups of

universities, even those which exist in a single system. Here is one of the impacts of the new technology that will prove to be most beneficial to academic fields as well as to the students in those fields. The values of such a project are not only the intercooperation of faculty and the best possible video product available for demonstration, but also the fact that students can now begin to operate on a one-to-one basis with the demonstration lecture. Almost all of the physical sciences have had the experience of presenting a lecture-demonstration to four-to six-hundred students, followed by somewhat smaller laboratory groups and possibly even smaller discussion groups. The large group demonstration lecture can now be made available on an individual basis; or, within the large group, it can be made available in such a way that the student in the back row has essentially the same seat as the student in the front row. Large science lecture halls across the country are rapidly being equipped with the necessary video distribution equipment so that students do not watch the lecturer who is physically below and in front of them but rather pay closer attention to monitors located strategically throughout that hall. This, of course, gives the lecturer the capability of demonstrating something with a pin if necessary, and the pin can be observed by all six-hundred students.

One other application which has been developed in the teaching and communication field is that of "mirror" television. It is one which has not yet been used by people in science, but I think that it has some possibilities you should know about. It is simply a matter of recording a student in a performance situation and permitting him at some later time to observe himself as a performer. This technique has been used in speech courses, teacher training courses, ROTC, etc. In these instances the student is able to sit back and observe himself somewhat as an objective critic while his instructor is able to sit alongside of him, providing him with the criticism necessary for improvement. Those processes and skills involving equipment manipulation in the animal sciences might best be learned by having them recorded, played back, and criticized by a science professor. It certainly must be axiomatic in your field that learning would take place at a greater rate or in greater quantity if the student's ability to manipulate the tools of science were well in hand.

Animal Science. Let me now make reference to the problem of providing certain kinds of animal science courses in locations where one would normally not have enough students to justify the equipment, manpower, and facilities for such a course. In our own instance at the University of Wisconsin, we have an international reputation as an institution which deals in the area of extension education. The University of Wisconsin Center System is known throughout the country as one of the successful systems whereby teaching is brought to the student rather than the student brought to the teacher. One of the new centers located at a small community in northern Wisconsin happens to be in a predominantly agricultural area. Though the institution has a very small enrollment, there was a desire to present a course in meat and animal science. The new technology makes it possible for the Madison campus faculty to accept this responsibility and to transport the course to

111

where students are. At the moment there is a delay factor since the course
is produced on video tape, mailed to the center, and played back on a machine
there. Once our state has completed a statewide communication system, this
course will emanate directly from the Madison campus; and the students en-
rolled will then have a live interconnected contact with the campus. It
is also important, in my opinion, that those distant students identify with
their counterparts in Madison. Once the complete interconnection of audio
and video has taken place, there will be this relationship; and it is my
guess that this will enhance learning. To the best of my knowledge, research
has not yet demonstrated that one's psychological attitude and identifica-
tion with peers in a class would indeed enhance learning; but until the
technology provides us with a workable laboratory for research in this area,
we will not be able to test the matter out.

Let me add an aside, related to this specific course. In the process of
developing the meat and animal science course, I was made aware by my colleages
in that field that there is an increasing number of students in agriculture
who do not come from the farm or rural experience. A good many of these
do not have in their background the visual experience which could be relied
upon by professors in this field twenty and twenty-five years ago. Here
is an area where the remote visual situation can be brought into the class-
room, thus avoiding the cumbersome field trips to farms, food-processing
plants, and slaughter houses.

Let me now refer to zoology as it has been experimented with at the
University of Wisconsin by Professor Donald Bucklin. In my opinion this
has become an almost classic course in the new media mode. In brief,
Professor Bucklin has committed to video tape the lecture demonstrations
normally given to hundreds of students in a large lecture hall. These
are in a constant state of revision. Initially these tapes were pre-
sented to students divided into several small groups which were physically
separated so that the students could begin to identify with each other and
identify within the group. It was the intention of those in this project
that students should begin to help with the teaching process. In the last
fifty years, we of the teaching profession have almost insisted that stu-
dents stay out of the teaching function, thus relegating them totally to
the learning part of the cycle. As any educator knows, one really learns
a subject when he teaches it. Consequently, any injection of the student
into the teaching process should help not only the student who teaches but
should at the same time help the student who learns from his classmates.
Small-group situations seem to stimulate this kind of activity. Professor
Boyd of Education on our campus has suggested as a result of some of his
experimentation that the magic number for learning may be seven. It is
quite possible that we will build classrooms of the future of such a size
that they are intended to contain only seven learners at a time. When this
occurs we will then be in stage three and will begin to adapt the educational
community to the technology. It is clearly true that a building which would
house 700 students to take a course in zoology could be divided into 100
rooms for those 700 students, with the same audio-visual stimulus being fed
at the same time into all of the rooms.

By utilizing some of the properties of the television medium, Professor Bucklin was able to do some things which he could not do in the classroom. For example, he was able to provide the students a complete demonstration of a life cycle of the polliwog within a normal class period. Because of the obvious time factor involved here, one would normally have to do this over a period of many days. However, by prerecording, Bucklin was able to provide these students with this experience within the confines of a forty-five minute period. He then prepared the students by showing them precisely what they were to do on their own in the laboratory during the next two-week period. Through close-ups, they were able to watch him open the male frog and remove the necessary organs to create the materials for this experiment. They watched him inoculate the female, bring forth the eggs from her body, and then handle the fertilization process in a laboratory dish. Immediately following they watched various stages of growth of the fertilized egg until it became a moving, living being. They were in fact prepared for the experience they were about to go through in the laboratory. This can be done with many laboratory experiences. Professor Bucklin would on occasion intentionally delete a certain aspect of the experience so the discovery process of education could continue to take place. This technique was intended to arouse the student's desire to get into the laboratory situation as soon as possible and find out for himself what it was that the professor had observed or experienced. This unique teacher was also capable of transmitting his excitement for his field through the television medium to the students, so much so that, when they encountered him *vis-à-vis*, he regularly had the experience of students who simply waded into a conversation just as if they had been in the middle of one previously that day. The truth of the matter was that their earlier encounter had been by recorded video. Television is not a cold, impersonal medium; it is very clearly a warm and personal one. It has been my experience that students of all ages, kindergarten through college, can and do relate to personalities we have brought to them in close-up fashion on a television screen with some regularity.

The laboratory experience in the case of this zoology course drew its main ideas from Dr. Sam Postlethwait of Purdue. The essential factor is to provide an auto-tutorial situation for the students. In short, the student goes into the laboratory on his own, at his own time, and has his own experience for whatever length of time he needs. He relates to the media, to other students in the laboratory, and to the assistant who is there to help him. In a properly equipped laboratory booth there should be an audio tape recording of the professor explaining what the student is to do and how he is to do it. There should also be available various visual experiences in film, video, or slide form which will either introduce new concepts to the student or reinforce what he has already seen in a lecture-demonstration situation. In some cases it may be a simple matter of replicating whatever was seen previously since some students prefer to receive that experience again before attempting to try it on their own. If the material is available in the form of an eight-millimeter film cartridge, one can simply slide it into the opening in the projector, press the button, and view at will. It then becomes possible for a student in a laboratory

situation to operate in an imitative basis. If, for example, the student
has to create a probe from a glass rod which is being heated in the flame
of a Bunsen burner, he could by means of a cartridge film of that process
carry out the procedure himself while directly viewing the teacher engaged
in that activity. There are some students who learn more easily in that
fashion, and it is time that we begin to cater to those peculiar individual
differences which appear more and more in the research about the learning
activity of the human mind.

I might point out that a key factor of such a science-laboratory approach
ought to be complete flexibility of the time made available to the student.
Again we are talking about catering to the individual learning propensity.
If a student can learn what he needs in a forty-five minute experience in
that laboratory, so be it; but there are bound to be students who will need
two hours and forty-five minutes or possibly even four hours and forty-five
minutes to learn the same quantity or quality of material. We must shed
the bell-curve approach, which is the grading phenomenon that primarily
results from the rate of learning differences in students. If you give
all students the same amount of exposure to the same material, the diff-
erences in their inherent learning capabilities will show up in the form
of a bell curve, with the better students, or rather students who learn
more rapidly, on one end of the curve and the slower students on the other.
However, if one can vary the amount of exposure, we ought then to be able
to approach a situation in which most of the students learn the same quality
and quantity of most of the material.

The autotutorial approach to science learning suggests something else on a
larger scale, something I would prefer to call a "walk-in" text. It would
not surprise me that in stage three, adaptation to the technology, there
will be an increased utilization of people trained like museum curators.
Will it not be possible to create a text into which one walks and within
which one can see, listen, read, feel, and in fact wander, about a chapter?
The new media make it possible to create such a learning environment. Like
a museum display, the chapter for the week or two-week period could then be
taken down and new materials (printed, visual, and auditory) put in its
place. Through the use of new technology, students ought to be able to
take a quiz, or a sample midterm examination if you like, within that kind
of walk-in text situation. How much more efficient and valuable this would
be than the file of examinations now is existence in fraternity houses and
libraries!

Media. I admittedly have stressed the video tool as the prime technological
injection into the educational community. The reason is the very dramatic
nature of this tool and because it is probably a complete extension of the
human nervous and perceptual systems. However, let me make reference to the
electro-writer again. The electro-writer is a means by which we can transmit
script from one location to another via telephone line. This means we can
now have a writing capability added to the voice capability of a telephone.
When the electro-writer is attached to a projection instrument at the re-
ception point, it becomes in effect a blackboard. One would then be in a

position to provide not only the usual audio portion of a lecture or teaching situation but also to have access to a blackboard when dealing with students at a remote location. This has been used in our University to improve post-graduate medical instruction and teacher in-service mathematics training where the doctors and teachers are gathered off campus. It is not yet a fully operative tool, but in our headlong rush toward video we ought not overlook the real value of being able to transmit our ability to "write" on a board at distant locations. We have, as an entire generation, overlooked the simple telephone line in the process of educational technology utilization. It is only now that radio and the telephone are beginning to come into their own as tools.

Our post-graduate medical education faculty deals with doctors in clinical or hospital situations all over the state of Wisconsin via the telephone line or the subcarrier of our statewide FM network. This permits two-way audio communication. It has proved most effective in this field; and in those instances where visuals were necessary, slides were sent out ahead of time to each reception point. In a few instances, the electro-writer served to provide the visual written capability for the medical professor involved. While I am on the subject of medicine, let me use it as a means of demonstrating one of the uses of the computer in this array of technology. The computer has obvious storage and retrieval capabilities, and any data can be programmed in and brought out at will. It also, however, has the ability to correlate these data and report out whatever relationships do or do not exist among them. When one applies this to the field of medicine, for example, he can see fantastic possibilities in the area of diagnostics. In this instance, one is able to program into a computer all of the known symptoms of various pathologies. It then becomes relatively simple to feed into the computer the data which are extracted from a human being by human and instrumental observation. When these data are correlated with the stored data, the computer will give an almost immediate printout of the possible illnesses that person might have, a statement of probability, and even latest method of treatment if that kind of material has also been programmed into the equipment. Since a computer can be fed with data from any remote point to which it is linked a centralized medical computer facility can and will eventually service the entire medical community of this country. It must be assumed that at some point such a facility will service the entire medical profession of the world via a satellite. Every individual practicing doctor will be on an almost immediate consultation basis with the best known information in the field of medical science. The very expense of this kind of technology is offset by its fantastic capability for wide-spread utilization.

Library Resources. All of you, as in almost every field of education today, are aware of growing problems with our library resources. The vast amount of print has increased to a point where storage and cataloging is expanding at an increasing rate. With growing numbers of students, the interplay between student and this print resource is increasing daily. Shortages of space, trained personnel, and duplicated material are making it increasingly difficult for a student to have access to certain printed matter for any

reasonable length of time. As the demand increases, libraries tend to restrict the amount of time of one student's access. As you and I know, the students do not and will not accept this. Growing limitations in the library situation create a tendency in students to act individually and selfishly by extracting the material they want from a given journal simply through the use of a razor blade or other sharp instrument. This of course destroys the library's purpose and function.

The problem involves a complex question: how can we provide a greater number of duplicated materials, even if those copies are not to remain in existence with any permanence, plus distribute those materials to students whereever they may be, and at whatever time is convenient for them to utilize the materials? Technology which is already in existence has provided a solution. I am referring to slow-scan television. Here is the prime value of this instrument, which has no capability of producing a moving image. A printed page is translated into electronic bits of information, which are then transmitted along a reaular telephone line to a slow-scan television receiver which will reproduce that printed page on its screen. The image of the page will remain on the screen for approximately 20 minutes; and in fact, it can be "recharged" to stay a bit longer. If a permanent record is needed, a Polaroid-type process could extract the material from the screen to provide the hard copy for the student. The page could be reproduced electronically in any quantity and distributed to any location by our regular phone system. In short, five hundred students at five hundred separate locations could be reading the same page at the same time. The electronic frequencies involved in slow-scan are essentially those which are considered audio or, in a lay term, "music." The printed page then can be translated into "music," to be replayed into visual form at some later time. Music or audio frequencies can be pressed into a disc which, if in LP form, could probably provide four to five hundred pages of material on both sides of a twelve-inch recording. These recordings can be set up in a mechanical piece of equipment which all of you have observed in almost every restaurant across the land. A given recording, representing a journal, and a band on the recording, representing a single page, can be selected by means of a dial system. We can then have a student, located in a booth, dial into this machinery, have the instrument select the record he wishes, and play back the specific page he wishes--all within a ten-second period. In this manner, the student need never be in direct contact with any hard copy and thus could not damage or obliterate it. He would be able to call up the page he wanted twenty-four hours a day and seven days a week since the equipment need only be turned on and in operating order. No trained library personnel would have to be on duty. With such a system a student could dial into any library in the country by means of the telephone; and in fact, via satellites, he would be able to dial any library in the world. For your information, there are colleagues in my field who are at present working at the Library of Congress with precisely this result in mind.

The Individual Learner. Computer-assisted instruction is fairly well known to all of you since it simply means that a computer stands between the learner and the programmed materials, which are then to be reproduced by the various pieces of equipment described previously. The computer can, if programmed properly, provide examination and testing material to students, who will then type out the answers on an electric typewriter for the computer's evaluation. This leads us to what may promise to be the greatest future development of technology in the field of education. In my opinion, the first half of this century was aimed at meeting the problem of providing education for millions of students. By reasonable standards, we have achieved our goal. The last half of this century presents a new and quite different challenge. The greatest problem in American education today is how to teach students singly while meeting his individual needs and capabilities. We cannot provide the number of instructors necessary to do this on a personal tutorial basis.

Instructional technology is, in my opinion, the answer to this problem. If we take all of the media which I have discussed or mentioned and combine them into one facility under the control of a computer which has been programmed for individual tutorial purposes, this goal too can be achieved. It would work in the following fashion. Various departments with the help of learning and media specialists would develop programmed materials utilizing whatever media were appropriate for an auto-tutorial situation. These materials would then be placed into a central facility where the equipment and personnel necessary to operate it would be gathered. The bulk of the facility would simply be a series of soundproof individualized study carrels to which a student would go when assigned.

If you as teachers of animal science were to send me to this facility for tutorial work in a specific area of your field, I would be assigned to a given booth and provided with those learning materials prepared by your department. In front of me would be all of the imput and output capabilities described in this paper. There would be an electric typewriter for my printed responses; there would be a microphone for my verbal responses; and there would be an electro-writer for my script responses. For my visual reception there would be a screen, and for my audio reception a speaker. When I was ready to proceed, I would simply so indicate, and the computer would select the first question to be sent to my booth. That question might be in visual or audio form or both. If I didn't understand the question, I could ask the computer to repeat it for me, which it would do. If I wished to think about the question for a few minutes, the equipment would simply wait for my response and would not be affected one way or the other. If my response were to be made in printed form, I would then type out my answer. The system would evaluate this answer to determine if it was right or wrong. In the event it was wrong the computer might even be programmed to tell me what type of error was involved. My answer would determine the next question to be fed into the booth, all of this, of course, having been preprogrammed. If I gave the right answer to question one, I would simply get question two. If I gave the wrong answer to question one, I would then

117

get question one-A or one-B or one-C, as the case might be, depending upon what type of error was involved. If I could not get the answer at all, this would simply be indicated; and the computer would provide the answer, thus allowing me to proceed.

At the end of any given interval of time, my instructor could extract a record from this system which would tell him what kinds of errors I was no longer making, what kinds of errors I was now beginning to make, and what kind of time factor was involved in my responses. He would thus receive a good deal of information concerning how much self-tutoring I was engaged in and how well I doing. With this information at hand, a private evaluation conference between student and instructor becomes a meaningful and important educational experience. I might also point out that, if such a facility were available on a campus, it could also be available for students anywhere in the state if they had access to that facility via a statewide educational communication system. The next step, of course, would be to utilize satellites with such a facility and make it available to students anywhere in the country or even possibly anywhere in the world.

Here is, in my opinion, the exciting future of education--the individualized, self-paced tutorial instructional experience. For some this may be pie in the sky, but I would remind you that there are also those for whom pi is 3.1416.

JAMES ROBERTSON
Director, Radio-
Television-Film
University of
Wisconsin

IMPACT OF A STATE ETV SYSTEM ON ACADEMIC PLANNING

I'd like to make clear at the outset that I appear here today in my capacity as Director of Radio-Television-Film for the University of Wisconsin -- and *not* as the acting executive director of the Educational Communications division of the State of Wisconsin. As many of you may have heard by now, the state Educational Communications Board announced on Monday of this week the appointment of Lee Franks, currently the head of the Georgia ETV network, as their new man to work with all of us in planning and coordinating our event-ual state-wide ETV system. I have worked closely with Lee in the past, I know the excellent job he has done in Georgia, and I can assure you Wisconsin is very fortunate in securing him as its Director of Educational Communications.

So what follows today are the thoughts of the University of Wisconsin's educational television man -- who, like his counterparts in other institutions of higher education in our state -- looks forward to offering full cooperation in the work which is ahead of all of us.

I'd like to divide the assigned subject into three parts, if I may. Let's talk about "The Impact of a State ETV System on Academic Planning" by posing three questions:

    1.   What is meant by a "state ETV system"?

    2.   What can it offer to higher education?

    3.   What should academic planners be doing about it?

(1)

Two things should be said at the outset. The first is that despite what you may have heard or read, *no final or binding*

decisions have yet been made about the size or nature or cost
or location of such a system. Chapter 349 of the Laws of
1967 established the new Educational Communications Board to
deal with all aspects of this question and that Board is be-
ginning to do so. Under the chairmanship of State Superin-
tendent of Public Instruction Bill Kahl, the Board has now
organized itself into three committees to deal with matters
of *policy, program and utilization,* and *finance;* it has or-
dered a state-wide engineering survey; it has retained Jack
McBride from Nebraska as consultant on the administrative and
operational aspects of such a system; it is sending a team
of its members to Nebraska this week to study that state's
system, and another group of Board members will vis't the
South Carolina and Georgia systems before the month is over;
it is also studying systems in Massachusetts, Pennsylvania,
and Michigan; it has endorsed the principle of using advisory
committees of people throughout the state to participate in
planning; it is gathering information as rapidly as possible
from which to build its 1969-71 biennial budget. But quite
properly, in *my* view, this Board is unwilling at this time to
predict in advance of all these studies just what their con-
clusions will be. By early fall there will begin to be some
answers, but we cannot expect them until proper investigation
and thought has gone into answering all the questions which
you and I and many others may wish to raise.

The second thing to be said at the outset is that over the
past several years there has been a fair amount of discussion
about basic principles of a state ETV plan, and I for one
hope that the Educational Communications Board will give full
consideration to the results of these discussions. I am re-
ferring specifically to the work of the ETV Advisory Committee
established by the CCHE in 1966, which included representatives
from all levels of higher education in our state as well as
elementary and secondary education. The many months of meetings
of this committee eventually brought forth what was known as
CCHE WORKING PAPER #8, which was endorsed by the CCHE on
March 9, 1967. Actually, this working paper became the basis
for the legislation we now have on the books -- although in
the course of its progress through the Assembly and the Senate,
certain elements were dropped and others were added. My point
in bringing it to your attention now, however, is simply to
establish the fact that people from various educational in-
stitutions all over the state did come up with a cooperatively-

120

constructed set of principles. I'd like to read them, because
they begin to suggest the broad objectives which seem to
be proper for any state-wide ETV system. I quote from CCHE
#8, March 1967:

The following principles are suggested as a basis for state-
wide educational television planning.

1. The ultimate objectives of a statewide educational
television system must be to serve all segments of
education and all segments of the state's population
as their needs dictate and as those needs may change
from time to time.

2. All sectors of the state's formal educational com-
plex together with several spokesmen for our
citizenry at large should participate in the making
of policy with respect to statewide educational
television.

3. No single existing educational institution or agency,
acting on its own, can properly coordinate state-
wide educational television, since each has its
own special objectives and its own constituents to
serve.

4. Therefore, there must be established a representative
policy-making and coordinating entity as a general
guardian of the interests of the people of the
state in educational television as a public resource
of great value.

5. This new entity must be conceived and set up as an
educational service agency of the state rather than
becoming another separate and competing educational
institution itself.

6. Programming and production for a statewide educational
television system must remain the prerogative of the
educational institutions themselves. The policy-
making body should establish appropriate procedures
for coordinated planning of production, for scheduling
the use of the network facilities, and should encourage

the planning and funding of additional production
centers at various locations throughout the state.
However, actual program production for either in-
structional or general uses should be undertaken by
the state's various educational institutions and
other appropriate agencies under the guidance of
their own faculties and in cooperation with their
own communication arts specialists. Funds for the
planning, development, and production of such tele-
vision programs, including monies for faculty com-
pensation as well as the cost of construction and
operation of the physical facilities should be pro-
vided within the various institutional and agency
budgets.

In addition to these principles, and description of the duties
and responsibilities deemed appropriate for a state coordin-
ating body, the ETV Advisory Committee went on to make some
specific suggestions as to the form which an ultimate state-
wide system should take. To summarize, these suggestions
included establishment of additional transmitters so that all
parts of the state could be served by broadcast ETV, and
eventual interconnection by cable or microwave of not only
these *stations* with those now existing, but also inter-
connection of the various *campuses* of higher education in-
stitutions so that instructional materials could be exchanged
between college and university campuses without the necessity
for broadcasting them over the air. So when we talk about
a "statewide ETV system" we *may* not be talking only about
additional television transmitters and production facilities.
It is possible to consider installing circuits between cam-
puses . . . over which, for example could be fed an out-
standing lecturer who now reaches 500 or 600 students and
who then might reach 50,000 or 60,000. And this single example
is only a narrow glimpse of other possibilities.

Of course, the obstacles in the way of accomplishing this are
certainly not all electronic. . .or even financial. Even
the broadcast on ETV stations throughout the state of a
specific course by a specific professor, with all institutions
of higher education offering credit for such a course (so that
an individual living in one spot in the state might register
for the course at the institution nearest him) -- even this
presents problems. Some of us who have been trying to work

122

together have discovered that even the use on closed circuit TV at Wisconsin State University - LaCrosse of a course recorded on the Madison campus by a professor at the University of Wisconsin presents some obstacles. Though all clearances were available from the professor and from the University of Wisconsin - Madison, there still were obstacles at LaCrosse. And I suspect some of the Madison faculty might not be overjoyed at the prospect of using on the Madison campus a course recorded at LaCrosse or Stevens Point or the University of Wisconsin - Milwaukee. I need not draw the picture in any more detail. And all of these concerns are legitimate and must be faced.

(2)

So I am already into the second question raised at the opening of my remarks: *"What can a state ETV system offer to higher education?"*

I would not blame any of you if your involuntary answer to that question was: *"more problems."*

And I suspect that the prevailing feeling among administrators in higher education is that while there may be some usefulness in on-campus closed circuit televised instruction, the emerging state ETV system is not central to their basic academic objectives.

To those who hold that view, I would merely say that while they may have been right *yesterday,* and may still be right *today,* they cannot ignore *tomorrow.*

It is only fair to recognize that over the past fifteen years, the major use of television for instructional purposes has been in *elementary* schools. . .and not in *higher* education. The Michigan State University Compendium of Televised Education, Volume 14, published late in 1967, recalls that in 1952 only *two* schools were using televised education for systematic instruction. . .and only *three* schools used it in 1953, *seven* in 1954, *sixteen* in 1955, *fifty-three* in 1956, *114* by 1957. Ten years later (1967) 1,826 schools and school systems reported enrollments totalling *19,232,584.*

But frankly I was a little surprised myself at the college
and university figures. While we all remember the early
credit course adventures of Iowa State, Western Reserve, and
University of Houston, it was rather interesting to m: to
discover that in 1967, the national compendium shows a
total of 48 subject areas reported by 227 universities, 836
colleges, 42 seminaries, 49 institutes, and 46 TV stations
with institutions of higher education cooperating -- for a
total college level enrollment of 461,431. Apparently some-
thing is happening in higher education, too.

What can *televised* instruction do for the student that *tra-
ditional* instruction cannot? That's the real question, is
it not? For there is no point in simply furnishing on an
impersonal screen what would be better if delivered face
to face. At least, this is what *I* hear.

First, let me caution those who feel that a lecture on TV
is necessarily less effective than in person. Those who
have produced instructional material for TV know that what
gets by in the classroom may not get by at all on TV. One
of the most significant by-products cited by those institu-
tions and those faculty members who have been working with
TV is that television forces one to re-think his own teach-
ing, the way in which he makes his presentation, the supporting
data which may be needed to emphasize a point, the whole
approach to the particular subject matter at hand. Nearly
every faculty member who has tried TV teaching has looked
back upon the experience as one of the most *difficult* yet one
of the most *rewarding* in terms of professional discipline.

Now, then, what can televised instruction do which cannot
normally be done by traditional methods? I won't dwell on
these points, but simply cite them as the general experience
of others:

First, television is immediate and can thus present new
knowledge not yet available in other forms.

Second, through television, it is often possible to intro-
duce subject matter not otherwise offered. This may be due
to difficulties in securing adequate instruction in a given
field, where top flight teachers are scarce.

Third, TV has been used to introduce curriculum improvements quickly. Research may point to new ways of teaching a given body of material -- how long will it take to re-tread your faculty, as compared to producing a new instructional sequence on TV and making it available to your faculty to use?

Fourth: television can reach students unable to come to the campus. These are of two types. The first is the young student whose economic or family circumstances do not permit him to attend college. . . .and we all know there are many of these who are not now reached. The second is the professional already out of college and requiring additonal help in his chosen line: the doctor, nurse, lawyer, supervisory personnel in factories, social workers, and the like. Now, I am not an educator, but it would seem to me that these four things which other educators say television can do -- are probably among *your own* educational objectives for your own institution:

    ---making new knowledge available immediately;

    ---providing subject matter not otherwise offered;

    ---introducing new teaching methods quickly; and

    ---reaching additional students unable to come to the
        campus.

There is an additional reason often given for not using television as an instructional tool in higher education. Especially in the earlier years, research showed that students didn't like it. "Too impersonal," they said. In these days no college administrator wants to add to the growing impersonalization of campus teaching! But I would point out that the incoming freshman today is different from the incoming freshman of ten or fifteen years ago in at least one respect important to this discussion -- he is already accustomed to television not only as a common form of communication, but in many cases he is accustomed to television as an effective means of instruction. Remember that today over 40% of all children of school age are receiving a part of their classroom instruction by television. They already know this medium as one which, when properly utilized, can present material in

125

a highly interesting and effective manner.

So these are some notions of what televison may offer the
academic planner in higher education. At least I hope it is
clear that academic planners no longer can ignore consideration
of television as one more technological tool at their dis-
posal, should they wish to use it. One of the troubles with
using television in education, of course, is its *expense*.
And in my thinking, that's where the state ETV system comes
in. It should be obvious that for every institution of
higher education to plan and finance and construct and staff
a complete television operation of its very own, ignoring
what may be going on on other campuses and in the process
developing costly duplication of effort, is neither practical
nor *prudent* -- especially since we are all funded by the same
taxpayers. Moreover, our various campuses do not all have
identical academic resources. . .some are especially strong
in one subject area, some in another. It is increasingly
difficult to be strong in all. By working together we should
be able to develop a variety of college course materials
presented by the *very best* talents from *whatever* campus in
whatever system and then make these available everywhere in
the state. . .through the statewide ETV system of intercon-
nection. There seems little doubt but that this could raise
the quality of college level instruction -- but it also would
make possible a far more significant improvement: By using
these televised courses to reach students in large-enrollment
classes, we relieve the faculty of their *routine* teaching
chores and enable them to spend far more time with *individual*
students on individual problems. Certainly this would be a
consummation devoutly to be wished!

What I am saying about a state ETV system, then, is just this:

A system is about to be planned and built in our state. It will
be designed to serve pre-school children, elementary students,
women at home, the family, the professional.

Let's be sure that during the planning and development of such
a system, the vital needs of higher education are not neglected
because academic planners in higher education do not them-
selves know enough about how television might be used to help
solve their most pressing problems.

126

Briefly, let me touch on question three: "What should academic planners be doing about all this?" Let me suggest four guidelines.

First: *start with your own well-defined academic objectives, not with the hardware!* Far too often a salesman for an equipment company is the man responsible for getting an educational institution into TV -- and this, my friends, is the wrong way to go about it. Every institution has goals. Every institution also has roadblocks which stand in the way of achieving those goals. Maybe, in some of those cases, television can help. That's the way the thinking should start.

So, you look at the goals and you wonder how TV *might* help . . .And you wonder who to ask. And that's my next guideline.

Two: *Take advantage of experiences of others.* Remember that 227 universities and 836 colleges reported use of television in instruction in 1967. Go and visit Purdue, Michigan State, Indiana, Ohio State. Also, find out what is happening elsewhere in Wisconsin. For example, the University of Wisconsin - Green Bay is just completing a year-long study of how TV and radio and other electronic media can best be used in their new institution. Perhaps their study can be useful to you.

The *Third* guideline: *Employ Experienced Consultants whose professional objectives are the same as yours.* Don't use an equipment salesman: his objective is to sell equipment. Be careful of a faculty committee: they can be exceedingly useful but if left on their own they may not explore the question as fully as you would like. Don't even rely entirely on your own communication specialists like me! If you are considering the expenditure of perhaps $200,000 or more, it's worth 5% of that to retain an experienced professional who has helped other institutions do their planning and in the process learned a lot which he can apply to your problems. This is what the University of Wisconsin - Green Bay did.

The *fourth* guideline is this: *Plan for your own institution but coordinate your efforts with others.* Every campus, every

institution is different, and when you ask for dollars the request must be justified in terms of what benefit will come to the students *you* serve. But throughout Wisconsin and to some extent throughout the nation, higher education has common problems. And we are not talking *to each other* enough about television. Even within our own limited systems!

Two steps to improve this situation have just been taken. The Wisconsin State Universities now have set up an Educational Media Council, with President Dreyfus as chairman, to facilitate the exchange of information among the state universities. And for a similar purpose, I understand that Vice President Clodius of the University of Wisconsin will very shortly announce appointment of an all-university Instructional Media Committee with representatives from each of the campuses, the Centers, and University Extension. I hope the Vocational-Technical-Adult educators may be planning to do likewise. If we try to do our planning as competitors, working behind walls and closed doors, none of us is going to get the kind of results we desire and the people of our state will experience something far less than can be achieved if we plan together.

We are all part of higher education in Wisconsin. Each institution, each campus has something of value to furnish to all the others and to the state as a whole. If this has not been true in the past, I see it as an inevitable condition of the future. Perhaps the prospect of statewide educational television provides us with a better reason and better means than ever before to share with one another the strengths each has to offer. If we make certain that we clearly see the possibilities and if we can develop them together, then we will have enlisted the state ETV system as a proper ally of higher education -- as indeed it must be.

I am glad to associate myself and my institution with all of you in working toward this end.

ALLEN SLAGLE
Assistant Superintendent
Department of Public Instruction

DEVELOPMENTS IN TEACHER EDUCATION

Bel Kaufman, speaking as a high school English teacher, observed that five and six year old kids approach learning the alphabet with great enthusiasm. Why was it that she found that later, as high school students, so many of them hated to read? What happened to these children? Perhaps, she said, it was education.

If education is the culprit, the ready answer seems to be: Do something about teacher education. And what are we doing about teacher education?

According to Don Davies, "Teacher education is the slum of American education. It is a slum because it is characterized by neglect, poverty, isolation, alienation, exploitation, lack of status, and insecurity. Teacher education is in trouble, just as slums are in trouble, because not enough influential institutions or agencies or individuals take it seriously or care enough about it to take positive action. The scholars don't; the graduate schools don't; school systems don't; the colleges don't; the state legislatures don't; the teacher organizations don't; the Office of Education doesn't. Our society simply hasn't been willing yet to devote adequate intellectual and monetary resources to the task of develping high quality personnel for our schools."[1] Now, Davies has for several years been a national leader in teacher education (NCTEPS) and recently assumed leadership in the Education Professions Development Act, so that his comments represent not only those of a critic, but those of a responsible critic. But I intend to provide some indications that all is not so dark, at least in Wisconsin, if we continue to take advantage of some of our opportunities.

But the indictment is formidable. In his foreword to *The Preparation of Teachers*[2] Arthur Coladarci reported, "Recently, two competent investigators of the tough-minded variety searched and appraised the published literature on the evaluation of student-teacher outcomes. They were obliged to conclude that: 70 years of research on teacher effectiveness have not added much to our systematic knowledge, and it is difficult to see how another seventy can do any more, if the same procedures are followed."

Procedures are changing, perhaps not rapidly, in response to social conditions which in very recent years have been changing at an accelerating pace.

1. Quoted in the *Phi Delta Kappan*, April, 1968.

2. Sarason, Davidson and Blatt, *The Preparation of Teachers.*

These changes have relevance for teacher education in general and schools of education in particular. To name a few, we see the development of technology, the entree of private business into education, the growth of regional laboratories and research and development centers, and an increased role of the federal government in education. "Schools of education," warns Roald Campbell, "can ill afford to ignore these and other developments; neither can they afford to become uncritical devotees of any of these movements."[3]

To take one of the items mentioned, the research and development center, a rather interesting thing is being undertaken at this moment in Wisconsin which tends to refute the notion that responsible institutions are neglecting teacher education. The Research and Development Center at the University of Wisconsin has developed and extensively tested the concept of the unitized school in the public schools of Madison, Racine, and Janesville. Since this concept appears to have unusual potential for improving learning in elementary schools, the Department of Public Insturction has committed personnel to the dissemination of this innovation throughout the state. This is more than the usual publication and circulation of brochures. This means that knowledgeable Department of Public Instruction personnel will be in certain lighthouse schools at least once a week during the next year to see that the idea gets an adequate trial. Because the task is so large, and because the interest is so great, the schools of education at Wisconsin State University - Eau Claire, Wisconsin State University - Stevens Point, the University of Wisconsin - Madison, and Holy Family College are also committing personnel and providing on-campus inservice opportunities in connection with this effort. The complaint that beautiful theory never gets into practice is being challenged.

Student teaching, the pedagogic clinical experience, is widely accepted as the *sine qua non* of any teacher education program. We are seeing a gradual evolution in clinical experience from practice teaching, in which the student thinks he is assuring his success as a teacher by copying and applying the methods and techniques of his critic teacher, to internship in the true sense of an advanced student gaining supervised practical experience. One of the concommitant benefits of the unitized school is its provision of a sensible setting for this advanced student to obtain supervised practical experience. It also provides a superior model for the induction of new teachers.

We all know of excellent teachers who have never taken education courses. And we all know fine teachers who have never seen the inside of a liberal arts college. But the great majority of teachers will benefit from a well-

3. *The Newsletter.* The Department and Graduate School of Education, University of Chicago, February, 1968.

balanced program containing three ingredients: a broad liberal education, extended scholarly knowledge of the subject to be taught, and professional preparation that includes supervised practical experience.

From a statistical point of view, teacher education is the principal reason for the existence of the member institutions of the state university system and is certainly a major concern on the Madison and Milwaukee campuses of the University of Wisconsin. During 1966-67 the state universities graduated 5,444 with bachelors and masters degrees. Fifty-six percent (3,033) went to persons who completed teacher education programs.* The proportion of teachers among bachelors and masters degree recipients on the Madison campus was 9 percent; it was 15 percent on the Milwaukee campus. The total prepared by all the public institutions was 3,818. The predicted figure for 1967-68 is 4,687, an increase of 869 (23%). Incidentally, we know that some 55 percent of the teachers prepared in all Wisconsin institutions, public and private, will immediately enter teaching in Wisconsin. Another 16 percent will teach in other states, and the rest will not teach, at least immediately. This explains the teacher shortage.

Having established that teacher education is the principal business on most public university campuses, let's take a look at teacher education programs themselves. What are the marks of a good teacher education program? I will mention six, a list to which you may add your own items:

1. Congruence between academic majors and the needs of teachers at the pre-college level. Think of the inadequacy of an English major consisting exclusively of the history of English literature for meeting the needs of one who teaches English to ninth graders in the heart of Milwaukee. Just last week professors at Stevens Point sought federal funds to remedy the situation which leaves the typical history teacher without any course work background in areas outside Western Europe and the United States. Their proposal is to do this on an inservice basis. I hope this means a change in the undergraduate program to obviate this necessity.

   The standard major, in any subject, is often not the best one for a prospective high school teacher. There must be professors in the departments who are concerned about preparing elementary and high school teachers because, contrary to what the Rickovers, the Bestors, and the Mortimer Smiths would have us believe, prospective teachers do not receive the major part of their college education from professors in the education establishment. It is a rare program in which more than 18 semester hours in education is completed by secondary teachers, and this

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* Nationally, about one-third of bachelor's degree recipients have prepared to teach.

131

includes 8 semester hours for student teaching.

2. A realistic student-teaching experience. It is not provided in a laboratory school. It extends for one semester at full time. Its setting is of the intern-in-team type developed by the Wisconsin Improvement Program.

3. An all-university commitment to teacher education. This is manifest in the constitution of the teacher education committee (the body that controls the content of teacher education programs), the provision of teacher education majors that differ from the traditional (but are equally rigorous), and the existence of joint professorships between education and the academic disciplines involving persons of standing in the academic disciplines. It includes the assignment of high status personnel to the student teacher phase.

4. Formal university arrangements for keeping itself apprised of the qualitative teacher needs in public schools. There is a reciprocal responsibility on the public schools to keep the universities informed, but I suspect that a university experiences greater comfort in establishing this relationship than does the local public school. Somehow, the schools don't fully appreciate that you regard teacher education as your most important function. Further, the condition of supply is still such that a public school is chary about doing anything that might be perceived as criticism of your teacher education program.

5. It recruits only top flight prospects. It is axiomatic that the quality of the entering student does more than any other one thing to insure the production of a quality product. It is also true that if you have only the best students, poor programs and inadequate professors as well, are likely to go down under the onslaught of their keen minds. We are given a caveat, however, by Henry Hill, former George Peabody president, who pointed out that "it is much easier to succeed as a teacher, or to fail as a teacher without attracting attention, when you are dealing with select groups who are highly motivated and over whom you have the power of academic and professional life and death."

   I would urge, however, that you validate your practice of selecting top flight students by including some every year who don't quite make the grade point average cutoff. Follow them up and see if they too don't succeed as teachers.

6. Exemplary teaching. This need is illustrated by Edgar Dale's comment in his Newsletter about the girl who told him, "If I hear one more instructor talk about individual differences

without telling me what to do about them, I'll scream."[4]

A few years ago John S. Diekhoff of Western Reserve wrote as follows:

"The young teacher must decide before tomorrow's class what he thinks his students should learn from it, what assignment and what class activity will enable them to learn it. He must decide what he will do during the fifty minutes he will spend with his students and what they should do. In time he will be unable to say anything in less than fifty minutes, but when he is young fifty minutes is a long, empty time. To fill it he must plan questions for discussion, or plan a lecture, or set up a demonstration, or all three . . . . He must think his way into the experience and ignorance of his students, must make himself familiar with their vocabulary, aware of their interests and indifference, remembering that not all of them share his professional zeal for learning and that his job is to make good students of the students he has . . . . He must devise ways of appraising his students' learning and therefore the quality of his own teaching."

This is a model description of a public school teacher's task, but Diekhoff, interestingly enough, was addressing his remarks to college teachers who, hopefully, would be models for the future public school teachers sitting in their classes.

The *Atlantic* carried an article entitled "What Shall We Do With the Dullards?" which prompted an anonymous letter. It said, "There are many reasons why a boy may be considered dull. However, to pursue only one, it is evident that if a boy cannot convey to his teacher the ideas which are in his mind, the teacher will consider the boy dull. It is equally true that if the teacher cannot convey his ideas to the boy, the boy will believe the teacher to be dull. Many professors, when asked a question, will not answer the question asked, but will answer the question which they believe should have been asked. This is all very well for the bright students, but for the dull boy it is sadly disconcerting because he still does not know the answer to the question which he asked; and, being dull, he is probably reasonably indifferent to the question the professor thought he should have asked."

The teacher who relies heavily on tests and exams does not have to concern himself with the learning process. He can simply assign lessons, then later test his students to see what they have learned on their own. This may be

4. Dale, Edgar, "Why Aren't We Smarter?" *The Newsletter*, Ohio State University, Columbus, March, 1966.

5. Diekhoff, John S., "Untaught Teachers," *The Saturday Review*, October 15, 1960.

professing, but it is not teaching. And, unfortunately, many public school teachers have adopted this model for their own classroom performance. The point is that often the teacher does not teach at all; he merely holds his pupils responsible for learning. Kenneth Clark said of the inner city child that he could forgive anything in his teacher, except that he did not teach him.

In discussing exemplary teaching it might help to note what a competent teacher supervisor looks for in appraising teaching at the public school level. First, he looks for evidence that the teacher knows what he expects his pupils to learn. What is the pupil to carry away from this class that he cannot reasonably be expected to have brought in?

Second, he looks for ways in which the teacher conveys his expectation of learning. Do the pupils know why they are there? Or are they just studying poetry, or fractions, or chapter 3? Does Jane, for example, understand why she should learn that when two parallel lines are cut by a transversal the alternate interior angles are equal?

Third, is teaching strategy. What does the teacher do and have the pupils do to realize the teaching objectives? Does he use class time for things better done outside of class? Does he bring anything besides the basic text to class with him, or does his "teaching" merely consist of periodic quizzes on the content of the text? Does he teach, or just hold the pupils responsible for learning?

Fourth, is evaluation. How does the teacher ascertain what has been learned as a result of his teaching?

These are the marks of exemplary teaching. There are others, such as, giving as much attention to historiography as to 1066 and heeding the research attesting to the lecture as one of the less effective modes of teaching.

Finally, I would like to mention a few things that are coming in teacher education which I believe have implications for colleges and universities:

1. Preparation for elementary school teaching will include at least a minor in an academic subject.

2. There will be increasing congruence between college majors and the subjects to be taught in public schools.

3. Certification of secondary school teachers will be limited to fields of major preparation.

4. We will see the demise of the County College.

5. There will be increasing use of teacher aides and evaluation of their use in terms of the reasons for taking them on.

6. More college persons, especially those in departments other than education, will become familiar with public schools. We will see more joint appointments to college and public school staffs.

7. There will be a reduction in the hazing of beginning teachers. This will be in part a result of the beginner's knowledge that this condition does not have to obtain. It will also result if the unitized school concept takes hold.

8. Student teaching will be extended to a full semester along with other improvements to make it a true proving ground.

   The student teaching phase of teacher education is so crucial that the Department of Public Instruction, acting upon the recommendation of a statewide committee on student teaching and internship appointed by Angus Rothwell, is asking the state for funds during the next biennium to reimburse local school districts for the major expense incurred in providing suitable student teaching situations. The plan calls for the reduction of the regular teaching load by one-fifth for the public school teacher who supervises student teachers.

9. There will be a greater insistence on hard evidence regarding the efficacy of teacher education programs. We do not have such evidence regarding school programs or about teacher education. In teacher education this means measuring the product.

That we have an awesome task if we really succeed is shown in John Macdonald's description of what is expected of teachers. They are "to be at once intelligent and affectively warm, knowledgeable and tolerant, articulate and patient, efficient and gentle, morally committed and sympathetic, scholarly and practical, socially conscious and dedicated to personal development, fearless and responsible. They are told that they must be specialists in an academic discipline, masters of the techniques of presentation, adept class managers, artful motivators, skillful diagnosticians, ingenious remedial workers, imaginative curriculum designers, eager inquirers, efficient administrators, helpful colleagues, widely interested citizens, and loving human beings."

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135

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TRENDS IN TEACHER EDUCATION

Trends in teacher education cover the continuum from the sensational use of technology to the subtle shift of emphasis in a prospective teacher under-graduate preparatory program. Trends also may be moving into the direction of becoming tradition or "straws in the wind" leading the way or continuing the search for more effective teacher education programs. The allocation of twenty minutes permits a mention of trends in three areas: partnership in teacher education, educational technology, and internal institutional trends. Major emphasis will be placed on the partnership in teacher education.

Partnership in teacher education is a slow but dynamic and far reaching trend. This is especially true in the attempt to translate theory into practice.

The goal of the cooperative efforts of schools, colleges and related agencies is to provide a base for the overall improvement of teacher education, a "grass roots approach," the major assumption being that neither the colleges nor the schools can do an effective job alone: that, in fact, the best re-sults will come from cooperative ventures. The problems encountered by personnel from schools, colleges, state departments, professional organiza-tions and the federal government have made us aware of the need for the "arrangements" involving schools, colleges and related agencies. As a result, some institutions have established cooperative ventures, others are studying and working with school districts on possibilities and alter-natives. In any case, interest in partnership continues to grow.

An example of the partnership in teacher education is a cooperative Student Teaching Center involving four school districts and our institution.

Specific Objectives of Cooperative Centers -

1. facilitate communication between college and the schools.

2. broaden the base of shared responsibility and decision-making.

3. develop a professional team engaged in teacher preparation.

4. organize more effectively to carry out policies and procedures.

5. provide in-service education to cooperating schools and supervisory personnel.

COOPERATIVE STUDENT TEACHING CENTER

(A Field Unit for Supervision and Instruction
of Student Teachers and Interns)

Merrill

INVOLVEMENT

School District
Board of Education
Superintendent
Principal
Supv. of Instruction
Cooperating Teachers
School Staff
Student Teachers
Teacher Interns

Planning

Policies-control
Roles-Responsibilities
Procedure
Scope-In-Service-Courses
Appointments (joint)
Schedules
Evaluation-Revision
Modification
Financial Arrangements

Faculty
Administration
College of Education
    Student Teaching
    Education Department
    University Lab School
Resources of Staff
    Learning Resources
    L&S Faculty
    Fine Arts
    Applied Arts & Science

Wausau Teaching
Center

Rothschild
Schofield

Mosinee

Schools Provide

Ideas - people - materials
facilities - observation -
participation - teaching
responsibilities - school
and community activities
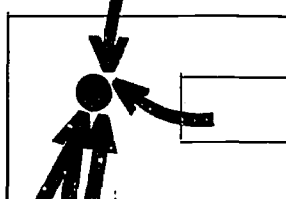
Center Provides

Classroom
Video tape facilities
Audio Visual equipment
Professional Library
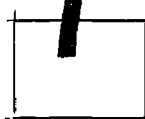
W.S.U. Provides

Student teachers and
    interns
Course work
In-Service assistance
Cooperating teacher graduate
    course
Instructional materials
Resource staff
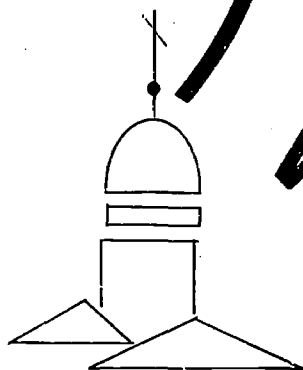
Other Resources

State Dept. of Public Instruction
Association of Student Teaching
American Association of Colleges
    for Teacher Education
North Central Association for
    Colleges and Secondary Schools

137

6. provide a framework in which experimentation and analysis of teaching may take place.

7. provide a means of interaction between college interdisciplinary personnel and school-community personnel.

There are numerous cooperative centers with varying patterns of programs and organization already developed and in operation. A few called to our attention by the American Association of Colleges for Teacher Education in their recent publication *Partnership in Teacher Education* are:

1. Harvard Student Teaching Centers.

2. University of Wisconsin-Milwaukee Student Teaching Center.

3. University of Utah, Cooperative Center for Teacher Education.

4. Cooperative Teaching Centers, Wayne State University and Detroit Public Schools--Regions #4, 5, 7, 9.

5. Southfield Student Teaching Campus, Southfield, Michigan.

6. Student Teaching Center, State University College, Buffalo, New York.

7. Inner City Education Project--Central Missouri State College and Kansas City Public Schools.

Evaluation of these programs has shown cooperative center arrangements are not without problems but definitely are worth continuing and perfecting. Evaluations show that centers provide:

1. more consistent high-quality supervision and more concern for the professional development of student teachers.

2. more in-school contact by the college staff member and the student teacher for observation, analysis and planning.

3. greater autonomy and personal respect for the student teacher by the supervisory staff.

4. a high degree of relationship of theory to practice in an appropriate "setting."

5. new ideas to the school and influenced curriculum change.

6 realistic induction of student teachers to school life.

7. training of supervisory personnel and basis for selection of supervisory personnel.

8. orientation for some college personnel to present school situations.

9. a means to discover unusual talents and leadership in the area schools.

This example is only one type of trend that is on the move today, but it does exemplify the moving out from the ivory tower to where the "action is." This same moving out or partnership in teacher education into the schools is manifest in other areas of educational concern.

1. The College of Education is adopting total schools and, in some cases, total school districts. These are direct partner-ships with communities, boards of education and professional staffs. These endeavors vary from rural or small town districts to inner city schools. In some institutions total interdisci-plinary facilities of colleges and universities are being utilized in efforts to effectively work with these projects.

2. Several research and development centers are in operation across the nation. These are federally funded projects. The University of Wisconsin has a project called MODELS (Maximum Opportunities for Development and Experimentation in Learning in the Schools). Through combined efforts of local schools, other institutions of higher learning and the State Department of Public Instruction, Project MODELS is be-ing developed to promote long-term research activities with the schools. New organizational units have been formed called Research and Instructional Units. These units involve teachers directly in the process of educational research.

3. Wisconsin Guidelines for Field Experiences in Teacher Educa-tion have been developed jointly by the Wisconsin Association of Student Teaching, the Wisconsin Commission on Teacher Education and Professional Standards, and the Wisconsin State Department of Public Instruction. The roles and responsibilities of the State Department of Public Instruction, Public School Systems and Teacher Education Institutions have been spelled out to help implement and supervise the formulated guidelines.

4. Projects with Cooperative Educational Service Agencies - Planning - Services - Curriculum.

5. Area Curriculum Study Councils - curriculum development and research.

6. In-service programs for school personnel - school board members to para-professionals.

7. Area materials and media centers - material collection and instruction.

8. University Laboratory Schools - innovative practices - resource staff.

9. Projects with urban and rural disadvantaged - Head Start, Upward Bound, etc.

10. Wisconsin Improvement Program.

11. Tutorial and Clinical Professor Programs.

12. Internships.

13. Team Supervision.

A most obvious and spectacular trend in teacher education has been in the area of educational technology--it has also had its spin-off effects on both methodology and organizational structure.

Probably one of the most dramatic and useful developments has been video tape, the video tape recordings and playback equipment. This equipment is now being used extensively in the colleges of this state for analysis of activities and the recording of micro-teaching episodes.

On the horizon for utilization in schools is the tie-in with an electronic computer for computer assisted instruction. This type of technology may break down the traditional ideas of time and place of the delivery of instruction.

Educational television networks are a reality in some areas. Currently, programs are being produced along with the aids for use with the telecasting. Wisconsin has commercial stations selling educational programs to school systems at the present time. There is hope that a statewide educational TV network will be operative soon. Television via satellite will have an important role in educational programs in the future.

Recent advances in learning theory and methods of instruction have given rise to developments and utilization of such practices in teacher education as programmed instruction, team teaching, micro teaching, simulation, interaction analysis, inquiry method, numerous attempts at individualizing instruction, and a variety of organizational plans for effective utilization of personnel.

Other developments in technology include a wide variety of materials and media of instruction, often with a resource center setting, include textbooks, workbooks, paperbacks, test films and transparencies, magnetic tapes, projection equipment, recorders, learning laboratories, television. The

ability of industry to reproduce materials and combine technical products into instructional aids is fantastic.

While we are in a period of redirection and change in teacher education, we cannot forget recent developments that have a tendency to start a trend or merely place a greater emphasis in the direction or trend in which teacher education is moving:

1. reorganization within institutions to provide somewhat greater autonomy to teacher education units.

2. recognition for greater selectivity in the admission of students into teacher education.

3. greater emphasis on "self-evaluation" by an institution.

4. extension of the period of preparation time before full certification for teaching. (Over 70 institutions now have a five-year teacher preparation program.)

5. a sound liberal education is basic in the education of a teacher.

6. a teacher should have depth in some one area of preparation as well as breadth in several fields of knowledge.

7. students should have the opportunity to begin professional education studies at variable points in a college program.

8. recommendation that students have an opportunity for full-time student teaching.

9. provision for selected liberal arts graduates to enter teacher certification programs as fifth-year programs or as Master of Arts in Teaching candidates.

10. Provision for special emphasis programs in teacher education; i.e., educationally disadvantaged, perceptually handicapped, international education.

11. development of educational and cultural exchange programs on the national and international level.

12. student participation in planning and evaluation of the total teacher education experience.

I have attempted to point out a few of the trends that are affecting teacher education today--the most obvious being within the area of educational technology, the numerous trends affecting instruction resulting from research in learning and methodology, and the development of partnership in teacher education bringing together colleges, schools and related agencies for more effective programs in teacher education.

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DEVELOPMENTS IN TEACHER EDUCATION

Teacher education is a prime example of what philosophers
have come to call an essentially contested notion--that is to
say an idea which is universally held to be important but
which cannot, strictly speaking, be defined. The term stands
for a number of different and sometimes mutually opposed tra-
ditions. And so you will commonly find people saying that
real teacher education is general education (in short, one
learns to teach by teaching) while others call for greater
concentrations of professionally oriented experiences, such
as internships, methods courses, offerings in educational
psychology, educational history and the like. There are also
numerous eclectics of interdisciplinary persuasion (Mr.
Conant for instance) who recommend combination of both of
these traditions. These are all unmistakable signs that
teacher education is a subject of a contest; it is not a
subject with well defined boundaries.

Furthermore, everyone (who has an opinion) has strong feelings
on the subject if only because each one of us has been sub-
jected to formal teaching of one sort or another at some
time or place in the past. Reconstructions of these past
experiences (memories if you like) are notoriously unreliable
indexes of reality. This unique set of circumstances leads
to what I will call the danger of inflated ideals. Not only
do individuals feel strongly about teacher education, but
they tend when discussing it to conceive of it in a way that
is humanly ridiculous--to set their ideal teacher education
programs up on a pedestal on which only angels may stand. The
obvious danger of these inflated ideals is that the theoretical
discussion of master plans for change (most without historical
reference and on an ad hoc basis) often becomes a substitute
for the hard work of preparing teachers.

Moreover, we teacher educators are the prisoners of the whims
and fancies of the moment. Not so long ago, spurred on by
the achievements of the Russians, the nation began a crash

program to educate the gifted. The classic studies of Terman were resurrected and once again the ancient battle between nature and nurture was decided in favor of nature (i. e. ability grouping). Life adjustment became a derogatory term and was banished. Now under the gun of Black power, we are reacting as usual to the new order of the day, education for the disadvantaged (i. e. heterogeneous grouping). I do not know how old you are, but I am old enough to have completed the cycle at least twice. Opportunists in teacher education (and there are many) are quick to respond to external pressures be it mental retardation enthusiasts, Admiral Rickover, or Black militants. Very quickly, almost supinely, the validating of the new focus (whatever it may be) is taken up by the Office of Education and the various professional associations, particularily the American Association of Colleges for Teacher Education. We are exhorted to get on the bandwagon or else the grants will go elsewhere, even to the industrial complex, if necessary. It is small wonder that the Office of Education (by requesting proposals with clear value orientations) un- covers a legion of supplicants. In fact, some institutions are so anxious to please that they seek to find out what the government really wants before submitting their proposals. It is no secret that the intervention of federal bureaucracy into teacher education has ominous overtones if one has an affinity for diversity in achieving goals. I have. Fortunately, the great educational institutions like Wisconsin, Harvard, and Stanford, are forces to be reckoned with--quality universities still command respect, and, in addition, have countervailing measures available to them. The skirmishes have begun; the battle is yet to be decided.

So much for general background; now let us undertake a closer examination of the status quo in teacher education. It is no surprise that many voices in the land condemn what we are now doing. To paraphrase the current "in vogue" critics (men such as Paul Goodman, Edgar Friedenberg, and John Holt) the best projection we can make is that nothing will change in teacher education. This doesn't mean that change is im- possible. It just means that educators are impossible.

These men have an overall theme which is simplistic. Let us examine its main points:

1. Present classrooms simulate the larger society quite
    well--they are parts of it.

2. This larger society is basically that of the occu-
    pational syndrome in this country: competition,
    social stratification, stagnation on purposes,
    maintenance of industrial and educational procedures
    as ends in themselves and the like.

3. This is an anti-educative classroom society. Both
    for educational reasons and for the salvation of
    society, we must learn how to have classes heterogeneous
    rather than homogeneous, cooperative rather than
    competitive, purposes emergent rather than dictated
    by the teacher, procedures arrived at by the class
    rather than given and imitated.

With notable exceptions, their description is a fair one.
The significant weakness in generalized critiques of pro-
fessions (certainly lawyers, doctors, morticians and others
are also equally vulnerable) is that description is sub-
stituted for analysis. *Up the Down Staircase* by Bel Kaufmann
is an example of this genre at its best and at its worst.

Instead of trying to present a highly personal view of the
art and science of teaching, I am going to proceed in a way
that philosophers often find attractive (the paradigm case)
by taking what seems to me a clear and simple example of
successful teaching, thereby hoping to generalize from it.
Let us suppose that we wanted to teach someone how to use a
new experimental rifle. In the first place I postulate that
the learner, the imaginary soldier, is originally ignorant--
he does not know how to operate the rifle. If he knows how
already, I cannot teach him a skill he already possesses.
If I tried, he would yawn, give me a derisive smile, turn his
back on me, or do something equally unsuccessful from my point
of view. Secondly, I postulate that the teacher (myself in
this instance) knows how to manipulate the rifle. If I didn't
have this knowledge, it would be absolutely ridiculous on my
part to try and teach somebody how to operate the rifle.
The third factor that I wish to postualte is the desire to
learn. The first two conditions might well be fulfilled and

144

yet the man who doesn't know might be sublimely uninterested
in being shown how. The desire to learn is not, as some
theorists have said, tied to practical concerns, although
the soldier about to transfer to Viet Nam may be highly mo-
tivated to learn such a skill. Now from these previous
concerns I postulate that nobody has really learned how to
shoot the rifle until he has had a chance to handle it and
to do it. And so I postulate a certain amount of activity
and I postulate also that the teacher has played some role.
If the man plays with it and discovers how to use it himself,
we do not have a case of teaching. We have a case of learning
of a different character and so we have to suppose the effective
role of the teacher.

Of all the essential factors in teaching, the one that I would
stress the most is the fourth, the activity of the learner.
It seems to me extremely important that the student knows
what he has learned by testing it on the rifle itself. Most
importantly, the teacher knows there is no possibility of a
substitution of a verbal skill for operational competence.

What does our paradigm case tell us about the today's typical
teacher education program? More than enough to give us pause,
I wager. Probably most of our teacher candidates are not
totally ignorant of the craft; undoubtedly they have attempted
to pass their ideas on to others. They have been exposed to
a wide range of teacher models (their own instructors) and
replication of these observed behaviors is likely to be
attempted. In short, most prospective teachers enter programs
with well conceived notions of what teaching is all about.
Frequently, these ideas are highly traditional and unusually
resistant to change.

Unless one is willing to buy a particular type of teaching as
the one and only way (for example, micro teaching), it is
highly unlikely that any one teacher has the talent to suggest
all the possible methodological approaches available. In
sum, I am saying that there is no such thing as an authority
on teaching. I think there is very good reason for this. The
difficulty about teaching teachers in the complex situation
is that the end itself is mysterious; in a very important sense,
even the best teacher doesn't know what he is doing. If he
knew what he was doing, the difficulties would be technical

difficulties, that is, to say, difficulties of achieving the
end in question. You might say that from my standpoint the
teacher is an inprovisor, an opportunist, an experimenter. This
may sound paradoxical, but I think the paradox is unavoidable,
that in a very important sense the teacher doesn't know what
he wants to teach and finds out only in the process of teaching.
It has been said by somebody, I don't know who, that life
is like learning to play the fiddle in public while giving a
recital on it. This might be said for teaching, too.

Are most of our prospective teacher candidates highly motivated?
The answer is no. This often denied fact stems from the over-
whelming evidence that teaching is the route (along with
nursing) for status mobility. Our teachers come from lower
occupational levels; they learn the behaviors of teachers
(i. e. to imitate the teacher role) but they do not learn to
think like teachers--that is, they hold on to their own cul-
ture instead of developing the culture that would be congruent
with the idealized role. Thus social mobility is not assimil-
ation into a higher class, it is upgrading of occupation plus
degrading of the one-time profession. Since the culture of
the trainees has no congruence with professional committments,
self improvement, and the like--all the kinds of appeal on
which advanced training is supposedly based don't work.

Most teacher candidates praise their practical exercises
(internships, practice teaching) as the most valuable of their
pre-service curriculum. The prime danger at this crucial
stage is the stamping in of questionable behaviors, solidifying
perhaps for a lifetime an approach which is stultifying in
its effects on students who ultimately fall under the care
of the teacher. All too often these practical opportunities
do not liberate but merely standardize.

You have been patient with me as I have developed my frame
of reference. Now I propose to discuss future developments
in teacher education as I see them.[1]

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1   I am indebted to Professor Edward A. Krug and Deans Dan
     W. Andersen and Josiah S. Dilley of the School of Education
     at the University of Wisconsin, Madison, for some of these
     ideas.

1. I think that enlightened teacher education will
    increasingly provide for the recognition, even the
    cherishing, of diversity and differences. Regardless
    of what form team teaching may take in the future,
    it has brought us to recognize more clearly diver-
    sity in teaching functions. The next step may well
    be the same for teaching styles. This would mean
    the individualization not only of methods and con-
    tent for prospective teachers, but to some extent
    individualization of aims with respect to teacher
    behaviors. Ultimately this might mean in the schools
    fitting of teaching styles to learn styles in the
    groupings of students with teachers.

2. Individualization is the key term bandied about in
    today's literature. How does this concept fit
    into the rapidly developing predominance of the
    education-industry complex as the vehicle for research,
    innovation, and implementation of educational pro-
    grams at all levels? Traditionally, research, in-
    novation, and implementation in education have been
    the exclusive province of Schools of Education, par-
    ticularly within the big graduate institutions. But
    Education is now a growth industry, and IBM and its
    competitors, sense a financial bonanza in the offing.
    Clearly, many of these giant empires would be glad
    to contract to operate school systems. (You may
    remember that they didn't do too well with the Job
    Corps). You may be interested to know that we have
    chosen to work with one of these enterprises, RCA
    to be exact, to see where we can complement each
    other. RCA has the equipment; hopefully, we have
    the software. At any rate, computers and other
    technological advances do offer some valuable help
    to individualizing instruction. As our complicated
    and expensive technology improves its hardware, we
    intend to embrace what we consider to be good; we
    will reject the bad. To put one's head in the sand
    when facing such a formidable challenge would be
    the height of absurdity.

3. As I have intimated indirectly, the art of teaching
    is a complex affair requiring constant retooling

throughout a career. We have been immensely derelict
in the area of in-service training. To quote Don
Davies, Associate Commissioner of Education, the
United States Office of Education:

> In-service teacher training is the slum of
> American education--disadvantaged, poverty-
> stricken, neglected, psychologically isolated,
> riddled with exploitation, broken promises,
> and conflict.

The point to be made here is that pre-service in-
service must be considered as continuous. The
necessary relationships must be developed between
Schools of Education, public school systems, and
State Departments of Education to provide the req-
uisite program for such a development.

4. Value conflict in American society are likely to be
    fought out in the educational arena. How are we to
    keep our sense of fair play and our consideration
    of the rights of others from setting up the conditions
    which result in destroying our colleges and perhaps
    our society in general? There will be advocates of
    even greater uniformity than we have at present,
    and there will be advocates of greater diversity
    than most of us perhaps think could be tolerated.
    The far left, or the anarchist approach, is poten-
    tially a greater threat to freedom of speech and other
    liberal values than the far right ever way. It is
    practically impossible for an educational institution
    to protect itself against a determined minority
    who wishes to precipitate conflict at any cost. If
    you call in the police to quell a disturbance, you
    are accused of being repressive. If you tolerate
    as much dissent as is reasonable, you are accused of
    being soft. Naturally, I am an advocate of maximum
    freedom without anarchy. This desirable end result
    may become more elusive in the future. The question
    of values is definitely an area in which teacher
    education needs to plot a strategy in which the
    teacher learns respect for himself and for other

teachers without abdicating responsibility.

One practical instructional application might be to require beginning teachers to spend some time working in the community in which they are teaching. I just do not see how a person who visited a walk-up flat in an inner core of a large city could possibly stand up in the front of his class and continue to do the same old terrible things to it. This vulnerability (facing reality) is a force which I predict may lead to significant program improvement.

>   5.   With regard to psychological and social foundations
>   in programs of teacher education, I expect to see
>   not less attention given to these studies, but the
>   loosening of patterns of requirements within them.
>   The issue here, I think, is also one of aim. From
>   one point of view, the desirable aim is provision
>   of common substance or content, this to "guarantee"
>   for example, that every prospective teacher will
>   understand a body of material on education. The
>   inventory of such desirable common items of content
>   soon grows to unmanageable dimensions. From another
>   point of view, the aim might be to build so far as
>   possible on the present individual interests of
>   prospective teachers so as to develop further and
>   widening interests in the various fields of the
>   foundations.

What might well happen, or what we might want to bring about, is a greater range of diversitifed offerings in the foundations, wich packages of four, six, or eight weeks, as well as the present pattern of sixteen weeks. There might be short courses in the writings and thoughts of such people as Jefferson and Horace Mann. Another course might be devoted to a single work such as Rousseau's *Emile*. More in the present scene, courses could be devoted specifically to the problems of education in the inner core, or in rural communities, schools in relation to middle-class values (or those of other classes), education as national policy with a study of the legislation of the past decade, schools in particular nations or cultures other than our own. Within the domain of a broadly-administered pattern, students could elect varying combinations of such courses in line with their present interests. Although the

aim in such courses would be the capturing and expansion of interests, the courses should have tangible content, for interests depend on and grow out of content. The difference is that content would not be the aim.

For instance, at Madison we are cooperating with the School of Pharmacy in developing a short unit on drugs possibly to be added to our health course. We intend to provide our graduates with a penetrating and sound review of the effects of drugs on the human condition.

6. Present frameworks on which we hang credits and requirements are certain to be drastically overhauled. Currently there is no reason why students should not take advantage, where appropriate, of certification by examination. However, I think that a better innovation would be the institution of performance tests for full certification. Why not certify a recent graduate for a preliminary period of five years and then permanently license the individual after a written content examination and a performance appraisal? Such an appraisal could take into account evaluations of the degree of teaching success in the provisional years.

7. Now this brings me to what I am going to make the last point, namely, the imperative importance of the teacher continuing to learn. As I suggested before, one thing he has to learn is how to teach. I take this as axiomatic. The teacher is going to be learning, learning his profession, and will continue to do so as long as he lives.

There is a beautiful remark attributed to Goya, the painter. Just before he died, he said, "I am still learning to paint." One can believe it if one has looked at his paintings. Now the same is true or ought to be true of the teacher. The moment that the teacher stops, the moment that he has it all worked out and is just doing what he did last year, he is dead as a teacher.

150

If one reads a good history of the modern phase of American
teacher education--i.e., Lawrence Cremin's *The Transformation
of the School* -- you are struck immediately by the parallel
of the demise of life adjustment education and the seeming
present withdrawal from basic education. We are back to
individual needs, and subject matter specialization will soon
be under attack. And so we continue battered by social,
economic, and political events over which we have little
control. In these times teacher educators must be men of
courage and fortitude. No one would deny that it is an
exciting time to be engaged in this essential work.

ROBERT M. BOCK
Dean of Graduate School
University of Wisconsin

GROWTH AND EVOLUTION OF GRADUATE PROGRAMS

When Mr. White invited me to join you in this workshop on academic mat-
ters to be faced in the future of graduate education programs of our
State, he noted that the title of this workshop was sufficiently broad
that I could talk about anything I pleased. However, the questions
raised in his accompanying letter and in Document Coordinating Council
for Higher Education No. 12 of March 1968 are such direct inquiries
about certain aspects of development and maintenance of quality in grad-
uate programs to meet the needs of the State that I feel I could be
most helpful to the group here today if I avoid trying to be a prophet
or philosopher in graduate education. I will review the mechanisms
and procedures that we have found useful in maintaining high quality
in graduate programs, bringing improvements in quality where needed,
and permitting evolution of graduate education so that it fills the
changing needs of our society.

The Need For New Programs

You are all aware of the excellent enrollment projections that have been
prepared for the Council. I will remind you that the Universities of
Wisconsin have a 1967-68 graduate enrollment of 13,000 if all post-
bachelors programs are included and the projection is that this figure
will double by 1977-78. From my observations of graduate growth in the
past few years, I feel that 85 to 90% of our 1977-78 graduate students
will be enrolled in degree programs which exist today on our Madison or
Milwaukee campuses. The 10 to 15% who will be in programs yet to be de-
signated are a major concern to the Administration but it is obvious
that we must devote even more emphasis to maintaining the quality of
areas in which the great majority of our students will be trained in
the coming decade. This rough estimate of the distribution in new and
continuing programs reveals that the Madison campus major emphasis will
probably be towards maintenance of quality within existing departments
but this is not the problem of central interest to the group assembled
here today. Because of the different nature of graduate institutions
elsewhere in the State, I will devote more attention to the procedures
by which we allow for the development of new programs on the Madison
campus. I believe you will see that the mechanism of growth of new
programs on the Madison campus is also very different and distinct from
the problem faced by schools wishing to present graduate education in a
field for the first time.

Flexibility Within Existing Programs

The University of Wisconsin has recognized that there is a need for change and continuing evolution within its undergraduate and graduate programs. In order to make this possible, several mechanisms have been established. The most common mechanism permits the graduate student to tailor his Ph.D. education to a new need or a new combination of specialties which has not previously been recognized. This mechanism is the "distributed minor" degree program in support of a major within a classical department. This simple technique of collecting a series of courses, seminars and developing contacts with knowledgeable advisors enables graduate students to develop secondary strengths in their programs and prepares them for a field or activity not available within the traditional major-minor degree program. When this distributed minor option is used wisely and when the enthusiastic advice and co-operation of the minor professors can be obtained, a student is most fortunate and finds himself with a powerful tool for flexible adaptation of a program to his needs. This extension beyond the traditional major-minor program suffices for the vast majority of all our students in assembling training opportunities in a combination of graduate skills and research capabilities to fill their needs.

The major universities recognize that graduate education is a national resource and share their strengths with sister institutions. The 320 Ph.D. programs of the CIC (Big Ten plus Chicago) are available for supplementing our graduate majors.

Experimental Degree Programs

In the past decade a small but steadily increasing number of graduate students find that they wish to conduct actual research within a discipline or combination of disciplines that is distinct from any offered on this campus and, yet they feel this combination can be devised by the strengths provided at the University. This interest and demand (generated at least as often by the students as by the faculty) led us long ago to develop the "committee degree" program for experimental construction of a research degree that crosses two or more disciplines and offers unique research possibilities which no traditional major-minor program can supply. This mechanism has given rise to many, if not most, of all the new programs that eventually are formally developed and presented as named-graduate degree programs on this campus.

The committee appointed for the experimental special Ph.D. program is nominated by the major professor of the student and is carefully scrutinized by the Graduate School. I frequently seek advice from the Graduate School Administrative Committee or experts in fields related to the proposed program. It is expected that these experimental committee degree programs will correspond to honors programs in under-

graduate education in that the level of attainment, quality of course work required and challenge to the student must exceed and not erode the traditional programs.

If these experimental degree programs have sensed a growing need as demonstrated by increasing numbers of applicants for special programs that are closely related, then a new common degree curriculum is indicated. The Graduate School then requests that a definitive program be developed by a degree supervising committee and that this program be reviewed by a sub-committee of the Graduate School Administrative Committee. Before this new program can be named and presented to the Graduate Faculty for their approval, the Administrative Committee will often have worked for one to two years with the faculty committee which is developing the program. In some cases the faculty committee is a sub-committee of a department. Specialization within a department may have evolved to a stage where division of that department becomes necessary. In other cases, the faculty committee may represent four, five, or even a dozen faculty members who have been brought together by common interests of a new evolving discipline. Molecular Biology, Biophysics, Bioengineering, Environmental Sciences, and Oceanography are among the examples where specialists from diverse disciplines have been brought together by a strong common interest in developing a new graduate degree program. Following review and approval or disapproval by the Graduate School Administrative Committee, the request for a new program is presented to the Graduate Faculty and if appropriate, is passed forward for presentation to the Regents and Coordinating Council.

Quality of New Programs

During the development of any new program, there are extensive checks on quality and need at the level of existing departments, deans of the respective colleges, and the divisional committees. If a departmental faculty does not see the need for a new program, then they are reluctant to release the time of their faculty members for the development of the appropriate course work, degree directing committees and development of experimental programs which must precede the actual naming of a new program. The Dean of the College is also sensitive to needs in the various fields, to redundancy or repetition within the departments and colleges, and to the quality of the faculty members who are attempting to develop the new program. The Divisional Committees play a most essential role in checking the quality of growth of graduate programs. They pass on all new course curricula which are presented, and also, on all promotions of faculty to tenure within the divisional disciplines.

The Graduate Biological Division has established minimum standards for all biology degree programs and works to maintain a basic core of training common to all of graduate biology. This policy is strictly enforced and has a major influence on program quality.

154

We do not hesitate to call on outside authorities for review of new programs. The Council of Graduate Schools has a service to aid us when sufficient talent is not available within our own departments. On occasions we restrict the freedom of new programs by maintaining responsibility for standards within an old existing department. When the program has proven itself over the years, full autonomy is granted.

Costs of Graduate Program Development

The actual costs to the State of Wisconsin of development of graduate programs vary widely depending upon the quality of the institution, the existence of federal support for the particular area under development, and the quality of staff who can be attracted to the institution. For example, if a new program is formed by bringing together a small number of well-recognized established research investigators, they can develop the federal grants which will pay at least 50% of the building costs for housing their new programs, and further, can attract young faculty members who will be eligible for career development awards or who will be funded on program development grants. In the most favorable instances of very strong groups who bring established reputations to the new program, the program is almost a profit-making venture for the University. However, even in these cases, very significant outlays of cash must be found within the University for matching the costs of construction of the new buildings, matching the cost of acquisition of research apparatus and establishing such costs as office furniture, secretarial help, building maintenance and telephone costs which are in general not eligible for support on federal program grants.

In other programs which are equally important to a major University in our State, there may be total lack of federal categories for support. In these cases, the entire burden for development must be borne by the State and University. In such cases, the rate of development must be carefully controlled so that it does not over-commit the resources of a University. Very often one finds that the pressing needs for development of a program occur several years before federal support is available for this topic. In such cases the difficult decision of deferring or developing a program at a slower rate must be faced. The current financial crisis facing the federal government makes planning for new program development the most difficult it has been since 1943.

Whereas, occasionally in the past, we have obtained buildings on a non-matching basis, full equipment costs for establishment of research laboratories, and career development awards or program development grants, so that little cost was borne for a tremendous return in graduate opportunities, this does not appear to be a likely situation for the coming few years. In fact, there appear to be few, if any, federally supplemented construction opportunities in the next two years. Because of these difficulties, the University is deferring a number of programs which in the previous environment would have been developing at a rapid rate.

Improvement of Existing Programs

I have not given attention in this discussion to our problems in revitalizing existing programs and upgrading their quality if they slip behind. This is indeed a major problem. Among the signals of quality that we recognize are the success of departments in obtaining research and training grants and general support when competing with their peers before national agencies. We watch student demand because students are very sensitive to their wishes and needs and recognize quickly if a department is not a prestigious place for them to become trained. The departmental publication record and the results of surveys such as the recent "Assessment of Quality in Graduate Education" are also indicators which warn us when positive programs should be instituted to challenge a department to improve itself. The department may bring in outside consultants to analyze the problems. We may deemphasize an area by refusing permission to replace retired or lost faculty positions. While we have some mechanisms for renewing and reeducating our faculty, this is one of the most serious limitations that faces us today. We badly need funds which will permit competitive application by our faculty for retraining opportunity or the opportunity to learn new techniques in education and research. Our faculty could be given such opportunity at a cost far less than a conventional sabbatical program if the support was selectively awarded. The return to the University would be enormous. Our need for this opportunity has increased as the pace of change of educational methods and progress in research has increased.

There is widespread cooperation among graduate schools on a national and even international basis for the development of high quality graduate programs. The University of Wisconsin in Madison has formal cooperative programs with at least seven different universities for improvement or establishment of programs. In addition, many faculty members and administrators serve on review committees for the National Science Foundation, National Institutes of Health or Office of Education, review proposals and visit campuses which are applying for program development grants. My colleagues and I receive many requests each year to serve as advisors to a program (usually in the area of our own specialty) in order to help other universities establish a graduate research or education program of high quality.

Review, planning, and program development is a serious, time-consuming task, which I estimate occupies at least one thousand man days each year for the Graduate Deans, our Administrative Committee, our Research Committee, and the numerous ad-hoc committees on the campus. This time is almost insignificant compared to the time and effort that must be spent screening and searching for qualified faculty. Even our strongest departments find that the department chairman and his staffing committee must devote major portions of their time to vigorous search for quality replacements for the faculty that are either retiring, shifting their fields of emphasis, or being lured away by other outstanding Universities.

This task of recruiting high-quality faculty and making the judgment of their promise is more challenging than anything which faces the administrators at the Graduate School or College Dean level. Selection and judgment can only be made by persons knowledgeable within the field and thus, the establishment of a critical nucleus of competence is essential before a department can flourish. In this regard, the Madison campus is indeed fortunate that most of its growth and change comes from within existing graduate units. It has had the opportunity to grow slowly over many decades with no urgent explosive expansion in any one field.

Typically, establishment of a new curriculum is done by those groups who naturally have found mutual interest and need to establish this curriculum. Often, we will have to add one or two staff members to round out the new program but almost never would we engage in an effort to establish a totally new program which had not previously existed on our campus. In this regard we are indeed fortunate and do not face the serious problems that our newer campuses must overcome when they seek the critical nucleus of competent faculty.

Among the general rules or practices which have influenced quality of our programs have been policies to prevent inbreeding or excessive bootstrap operations. It is in general not a good policy to hire your own graduates for staffing of your departments. The two principle arguments against this are the dominance of the former graduate student by his professor so that he more slowly attains true independence and the lack of innovation and new ideas to stimulate the thinking of the department in general. Certainly exceptions are warranted when an outstanding graduate student can be retained by the staff, but these should truly be exceptions. When inbreeding becomes the rule the departments almost always lose in national prominence and quality. A second control which is of paramount importance is that the staff cannot be permitted to "upgrade" itself by granting degrees to its own faculty. We feel that *the rule that no member of the faculty can be a candidate for a graduate degree within the same institution is of paramount importance*. Regardless of the good intentions of a University or a department, it simply cannot execute the severe critical judgment needed to refuse the granting of a Ph.D. degree to one of its own faculty members if this route is allowed to remain open. An additional danger which departments face if they grow very rapidly is that a few decades later they will all grow old together. This simultaneous aging of the bulk of faculty of one department is a serious problem and often results in destruction of the high quality of a department.

Summary

To summarize a typical growth pattern of a high quality Ph.D. program, I will describe the stages of growth for some of our best new programs. In order to make my example applicable to the State Universities and the new UW campuses, I will discuss programs growing out of a good undergrad-

157

uate department rather than our typical case of rearrangement of existing graduate programs.

The potential must be identified. If a department teaches junior and senior level courses at a high level, has extensive experience in senior research thesis supervision, and has three or more research oriented faculty members, potential for developing a graduate program exists.

The faculty should then be given opportunity to prepare themselves for directing research oriented graduate work. Research leave in a strong academic research environment, or study on an NIH or NSF special post-doctoral fellowship should be strongly encouraged. This will require adding new faculty to release the faculty time needed for retraining. The library, computer and laboratory facilities should be augmented enough to receive a small graduate research program.

Collaboration with strong related graduate research departments on and off the campus should be started. The program should be defined and developed with high quality as a goal. When the program is authorized, not over one new candidate per faculty member should enter the program each year. A sudden start with three or four candidates under one staff member will not permit development of a quality program. Expansion of the program should be slow in the first five years. Watch the Graduate Record Exam scores and the placement success of the first few crops of students. What is the quality of applicants? Are they coming from good schools? Avoid taking your own graduates. Continued stay at the same institution serves neither the student nor the institution.

Establish Master's programs with as great selectivity and care as you do for Ph.D. programs. The Master's degree is important in Engineering, Education, Business and fine arts but has lost its usefulness in physical and biological sciences. Not only has the M.S. in these sciences ceased to be useful as a terminal degree, but it has become a handicap to its holder if he wishes to continue to the Ph.D.

When a department has learned to handle graduate programs at the level described above, it will have competence for planning the next major improvement in its own scope and quality. By now it should be competitive on the national scale for part of its research support. Its next expansion could involve federal support, addition of two to four strongly research-oriented young staff or one senior leader to help plan the next phase. This second phase may require another five years for completion. Ten years should not be considered excessive for growth from a strong undergraduate department to this second plateau of a 5 to 8 man graduate faculty with 10 to 30 graduate students in various stages of progress towards the Masters or Ph.D. degree. All of the safeguards of quality I have mentioned early can play important roles at critical times during this period. If each plays its role well, the quality of the program will be assured.

KENNETH E. LINDNER
Academic Affairs Specialist
Wisconsin State Universities

THE FUTURE OF GRADUATE EDUCATION

The Wisconsin State University System

The Wisconsin State University system has undergone profound evolutionary changes since the establishment of the first normal school at Platteville in 1866. These changes have included an increase in the number of institutions to nine; a change in function from normal schools, to teachers colleges, to state colleges offering liberal arts degrees, to state universities with graduate programs in education.

These changes have resulted in a strong university system with the sixth largest enrollment in the country. While this history is well known to most of you and can be read in the catalogues of the nine universities, it is very interesting to examine the way that these changes have occurred. The growth has not been "like Topsy", but has been an orderly establishment of strong bases, followed by upward projections from these strong foundations. Let us examine these growth trends more closely because they may give us a basis for projecting growth in our graduate program.

In the mid-twenties, after strong two-and-three-year teacher training programs had been operating for considerable time, four year teacher training programs were established. The institutions were then charged with the responsibility of awarding degrees in teacher education programs. The charge to offer degrees to secondary teachers in various subject matter areas resulted in a gradual strengthening of the several academic departments. As these departments added new well-qualified staff members they became capable of doing more than the demands of the existing teacher education and pre-professional programs placed on them. In response to these departmental strengths, liberal arts programs were established in the early fifties. The increase of students concomitant with this broadening of programs allowed for considerable expansion in departmental staffs, further strengthening them and giving them an opportunity to acquire faculty members with a wide range of specialties. As a result of this additional foundation-building in the departments, the liberal arts offerings quickly matured. The high-quality staff which had been added in the various departments could now act as the broad keystone for extremely high quality teacher education, pre-professional, and liberal arts programs. A natural result of the strong foundation which now had developed was a graduate program which welded together the historic strength of the teacher education programs and the vitality of the departments developed through the new liberal arts program. A master's program designed for elementary and secondary teachers was developed cooperatively with the University of Wisconsin. At its December,

1962 meeting the Wisconsin Coordinating Council for Higher Education transferred the complete responsibility for this degree program to the Board of Regents of State Universities.

The graduate programs developed included programs in elementary education, history-social science, language-literature-speech, and mathematics-science. Prior to this transfer of responsibility of the graduate programs the WSU-Council of Graduate Deans had worked diligently to develop a format for these MST programs. This format included the requirement that the MST candidate must complete 12 to 18 hours of graduate work in his area of academic specialization. This requirement was an additional challenge for the already strong and healthy academic departments to develop further, to increase their offerings, and to develop viable research capabilities in which these graduate students could participate.

The upgrading of elementary and secondary teachers has had a significant impact on education in Wisconsin. To give some idea of the numbers involved, in 1966-67 some 480 teachers completed their master's degrees in the WSU system. Placing such large numbers of highly qualified teachers in the elementary and secondary classrooms over a period of years undoubtedly produced a higher level of educational opportunity for the boys and girls of Wisconsin.

It would perhaps be wise to indicate at this point that this paper is not intended to be a history of graduate education in the WSU system. If it were, I would have to trace in detail the graduate programs that developed at several institutions prior to the UW-WSU cooperative programs which started in 1960. For example, Stout began graduate work in 1935, Superior in 1950 and LaCrosse in 1956. But my intent is not to trace the history but rather to show that at every stage of evolution, for each new development, the educational needs of the State of Wisconsin were carefully considered. Similarly the demands of students for the new programs were carefully evaluated, as were the abilities of the institutions to offer programs of the highest quality. I submit to you today that as a result of the careful, perhaps even conservative, approach to developing graduate programs, the programs now operating in the WSU system are of the highest quality, programs of which we may be justifiably proud. This is not to say that we can rest on our laurels. Healthy programs need constant updating to remain viable. Our MST program must undergo critical examination in the near future to determine if it is responsive to the needs of today's students. It would seem that the present liberal studies requirement might now be called to serious question. The Council of Graduate Deans has indicated a willingness to examine the MST program in order to maintain a program consistent with our objectives.

We are now at another crossroad in our evolution. The WSU system has been charged by the State Legislature with the responsibility of developing

master's degree programs in academic and professional areas in addition to those now offered in education and to develop the specialist or professional degrees in education.

In accord with our tradition of careful development to ensure quality programs, the Council of Graduate Deans, the Council of Presidents and the Board office staff have spent some six months in cooperatively developing a set of guidelines which will ensure orderly growth of the new M.A./M.S. programs. In many areas where the universities have had experience in the MST programs and presently have a core of more than 18 hours of graduate courses it may seem relatively simple to move into a M.A. or M.S. program. In other areas it will not seem to be so simple. We would view, however, the initial thrust at each university as involving only those areas where they have developed particularly strong MST programs. Strong commitments must be made by the university to develop library holdings, to acquire necessary equipment, and to expand the graduate staff in the disciplines where the initial thrust into M.A. or M.S. programs is to be made. If indeed a university decides to enter into a M.A. or M.S. program in a given discipline, the extent of thrust that must be made would seem to place a natural limit on the number of such thrusts that can be made at any one institution with the available resources. Considering the extent of the commitment necessary to establish high quality programs, undue duplication of programs among the nine universities would be undesirable. This does not mean that we expect only one M.A. program in English or only one M.S. program in Biology in the system. There may be areas such as these where several of the universities have exceptionally strong departments and where student demand will be judged to be sufficient to support several programs. In those academic areas where such a duplication may tend to occur, the universities will be encouraged to develop a specific emphasis for their program to make it essentially unique. For example, in biology one school may want to build their program around botany while another school may develop zoology as its emphasis in the Biology M.S. program. As each program develops a unique thrust as a reflection of specific staff interests at a given university, the WSU system will be offering a wide range of high quality M.A. and M.S. programs to the people of the state, but not always in their own back yard.

To say that the universities are merely "ready" to field these new M.A./M.S. programs is an understatement. They are ready, willing, able, and anxiously waiting for an opportunity to submit their programs for processing by the Board of Regents and the CCHE. The present time schedule indicates that Board of Regents and CCHE action will occur in time for submission of approved programs to the North Central Association before the latter's January 1, 1969 deadline. This implies that the WSU system will be able to implement these new programs beginning in September, 1969.

Under the legislative charge to furnish additional graduate opportuni-
ties, we also envision development of such programs as the Master of
Business Administration, Master of Music, Master of Social Work, Master
of Fine Arts degrees and similar programs in other specialized areas.
Development of such programs will be encouraged at those universities
where such programs are clearly a natural extension of one of the pri-
mary missions and where exceptionally strong departments have already
been developed in the discipline.

Now turning to the final charge of Bill 157-S, which indicates that
specialist or professional degrees in education should also be devel-
oped. The Education Specialist degree is now being offered by WSU-
Superior and may develop at several of the other campuses as well.
There seems little doubt that such a degree is a logical one in some
specialized areas of education such as educational administration and
counseling and guidance. It would seem desirable that we should also
be moving into a professional doctorate (not the research oriented
Ph.D. degree) in some areas where we have considerable expertise. Stout
has offered an M.S. degree in Vocational Education since 1935. WSU-La
Crosse has specialized in Physical Education since 1913 and has offered
an M.S. in Physical Education since 1956. It would seem logical that
these institutions and others with such an outstanding tradition of
excellence, with large and highly qualified staffs in their specialized
fields, should, without hesitation, without timidity, start defining
any further elements necessary for the development of doctoral programs
and should indeed begin the planning of such programs.

I do not intend to suggest that the two fields mentioned are the only
ones where we are ready or nearly ready to mount professional doctoral
programs. Those chosen as examples are, along with elementary education,
perhaps the most obvious. Such areas as Business Education, Agriculture
Education, Audio-Visual Education, and several others may be fields
where doctoral planning should also be taking place.

There has been much discussion over the past few years about the appro-
priateness of the Ph.D. degree to teaching in a small college, or for
that matter to teaching many of the undergraduate courses in the larger
universities. The argument often advanced is that the Ph.D., primarily
a research degree, is really preparing students for research positions
in industry or in a large university, where the teaching function may
be secondary to the research function. The teaching function that does
exist in a large university may well be limited to a narrow area of
specialization. Perhaps we need to separate to a degree at least, the
teaching function from the research function. Perhaps we need another
degree, a different degree that would place the research function sec-
ondary to the teaching function. In other words we may need to design
a program to specifically prepare people to teach in the undergraduate
college. I am not suggesting a degree without considerable research

experience. I would agree with Bernard Berelson when he stated "...
research training at a doctoral level is an important preparation for
every faculty member, even if - perhaps especially if - it is the last
research he ever does. At least he will learn, in writing a disserta-
tion, how hard it is to come by sound knowledge."[1] If it may be that
the research-trained Ph.D. may never do research after he starts teach-
ing, it seems extremely possible, and indeed quite logical, that a de-
gree might be structured with less emphasis on research and more empha-
sis on additional course work in his field. If such a degree is a
needed reform to improve college teaching, then the experience the WSU
system has gained with its MST program suggests that the system is
uniquely qualified to develop such a degree program. An interesting
discussion of the need for such a degree program is contained in the
May, 1968 issue of *The Journal of Higher Education* in an article by
V. R. Cardozier, "The Doctor of Arts Degree" (pp. 261-270). Perhaps
a more fitting title might be D.A.T. (Doctor of Arts in Teaching) rather
than D.A. It would seem that the topic of preparing college teachers is
one to which the WSU system should address itself.

No discussion of the future of graduate education in the WSU system
would be complete without giving consideration to Ph.D. programs. As I
have indicated in this paper, we have traditionally moved into programs
when sufficient expertise has been developed to be able to offer a high
quality program. I do not believe we are ready to offer the Ph.D. at
this time. It does seem obvious, however, that as our various depart-
ments move into M.A. and M.S. programs, facilities, equipment, library,
and staffs will be provided to the point where the Ph.D. will be the
next logical step. I envision the development within the WSU system of
at least two major universities where the bulk of these research-oriented
degrees would be offered. The development of such major universities
would not usurp the specialties which now exist or are presently being
developed at the other WSU institutions. The main thrust of Ph.D. pro-
grams in the Arts and Sciences would, however, be developed at these
two major graduate centers.

The growth that will occur in graduate education in the WSU system will
not be painless or without sacrifice. It will involve many painful de-
cisions by the Board of Regents, the Board office staff and, hopefully,
a major share of them by the administration at each of the universities.

One of the critical tasks for us in the near future is the updating and
refinement of the 1966 mission statements. The universities will be
asked to give serious consideration to this revision of the mission doc-
ument. Each university will be asked to devote considerable of its ad-
ministrative talent to the development of a document which reflects
realistic aspirations and goals of the institution. The Board office

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[1] Berelson, "Graduate Education in the Arts and Sciences," in *Challenge
and Change in American Education*, ed. Seymour E. Harris, Kenneth M. Deitch,
and Alan Levensohn (Berkeley, 1965), p.297.

staff will attempt to assist the universities in the development of such mission statements by suggesting a format for the document and by coordination of efforts of the universities. It will be the responsibility of the Board office staff to review the plans of each university and to suggest revisions where it sees conflicts in missions developing among the universities in the system. It will also be a primary responsibility of the staff to interpret these approved plans to the Board of Regents and to the CCHE, thus assisting the universities in getting the plans to the implementation stage.

It will be extremely important for the universities to accept their responsibilities in the review of academic programs at the local level. Each university must examine each new program to ensure that resources are not diluted by expending funds to establish programs which are non-essential in the light of the mission of the university. Likewise, programs which are essentially competitive to established missions of other universities in the system should not be pursued. If unnecessary duplication in academic programs is not recognized at the local level, the Board office staff must necessarily assume the responsibility for making this interpretation when the programs are presented to the Education Committee. The universities must be ready to commit their resources to the development of peaks of excellence which will serve to help the institution reach the academic goals established for it. The universities must also be ready to recognize and to define those areas which will not be developed but will grow simply as service departments.

Consideration should be given to the development of teaching innovations which will allow for reduced teaching loads for graduate faculty involved in research. Research programs should not develop as a separate major thrust. There should be no attempt to emulate the kind of research program at the University of Wisconsin-Madison. The research program in the WSU system should develop as an adjunct to the graduate academic program, an adjunct which makes its contribution to an outstanding teaching learning situation. This research program should also be directed in such a way as to involve the student and to serve as his introduction to research, a means to excite him as a scholar. It must serve then as a viable teaching tool.

Once the universities have defined their research programs, the task of the Board office staff will be to interpret the research needs to the Board of Regents and to help develop programs to encourage such research interests. Strong M.A./M.S. programs demand viable research programs. One such program under consideration is to make funds available to give faculty members with a high level of research interest a full time summer appointment to develop their research. Such a program could have considerable effect on developing graduate programs.

Another critical need which must be satisfied if new graduate programs are to flourish is the need for graduate assistantships and fellowships.

If we are to attract outstanding students to these programs we must have financial support available for them. It will be the task of the Board office staff to develop such programs and present them to the Board of Regents in such a way as to assure the availability of funds for graduate students.

The Board office staff views itself as a partner of the universities, a partner charged with assisting in the development of directions for growth. Once these growth directions are established it will be the further task of the Board office staff to interpret program proposals to the Board of Regents and the CCHE so that implementation of these graduate programs may occur and the defined missions of the universities may be accomplished.

When one views the high level of student interest in graduate education which has developed, the outstanding academic faculties which have been assembled, and the strong administrative commitment evidenced at the nine institutions, it is a simple matter to predict the successful development of a wide range of top notch graduate programs in the WSU system in the coming years.

FACILITIES WORKSHOPS

THE USE OF INVENTORY AND UTILIZATION DATA
AT THE UNIVERSITY LEVEL

The discussions considered four questions posed by participants of the discussion group.

Discussion
Question   1. **How can space inventory and utilization data be
                  utilized on the local campus?**

                  The participants agreed that the principal uses of
                  the inventory and utilization data are (a) room
                  scheduling, (b) allocation of space to departments
                  and divisions of the University and, (c) planning
                  future space needs.

                  It was agreed that the space studies were designed
                  so that the information would be of most value at
                  the local level.

Discussion
Question   2. **How can the space inventory and space utilization
                  studies be improved?**

                  There was a consensus on the following suggestions:

              a. Space studies should be designed which use the
                  same terminology and format on all campuses of
                  the state and, if possible, on all campuses of
                  the nation. Common terminology of format would:

                  (1) eliminate unnecessary duplication of studies
                       for local, state and national use.

                  (2) improve communication between the local
                       campuses, the state's higher education
                       systems, the Coordinating Council
                       Higher Education and the various other
                       governmental agencies.

                  (3) improve communication, understanding and
                       acceptance of space policy on the local
                       campuses.

              b. That the space studies should be expanded to
                  include outdoor spaces such as recreation and
                  parking areas.

c. That all uses of the facilities including short
    courses and temporary use should be prorated and
    included in the utilization data.

d. That an obsolescence factor should be included
    in the space inventory.

Discussion
Question   3. Should students be included in local space utilization
                   and planning committees?

                   There was general agreement that:

                   a. Students can contribute valuable information in
                       the planning and utilization of university spaces.

                   b. Students, faculty and administrators should be
                       involved in campus planning and space allocation
                       decisions.

                   c. That students can make the best contributions to
                       space planning and utilization decisions concern-
                       ing housing, recreation, food service, student
                       service, instruction and parking areas.

                   d. That students may be included in the permanent
                       space utilization and planning committees or they
                       may be selected on an ad hoc basis for their
                       special knowledge of specific areas.

Discussion
Question   4. How can better understanding of the space inventory
                   and utilization studies be achieved?

                   The discussion group suggested that better communication
                   concerning space planning and utilization should be
                   sought between students, faculties, local university
                   administrators, Regents, CCHE personnel, concerned state
                   agencies, the Legislature and the Citizens of the state.

                   In order to achieve better communication about higher
                   education space problems and policies the following
                   suggestions were made:

                   a. The terminology and format of data should be
                       standardized.

                   b. That all information about space data and studies
                       should be open, understandable and honest.

                   c. That concise summaries of the studies should be
                       widely circulated to all interested constituencies.

168

JAMES JUNG
Director of Facilities
Higher Educational Aids
Board

THE HIGHER EDUCATION FACILITIES ACT OF 1963 - P.L. 88-204

The program implies that this discussion will be limited to the Higher
Education Facilities Act of 1963 with particular emphasis on Title I.
This implication is not entirely correct. The Higher Education Facilities
Act, besides being an enormously significant program in itself, has had
a catalytic effect on other programs, activities and communications,
all of which can be properly discussed within the framework of the Higher
Education Facilities Act of 1963. These include the Wisconsin Higher
Educational Aids Board, which owes its very existence to HEFA, the
Comprehensive Facilities Planning Program, an extension of HEFA and the
Title VI-A, equipment grant program patterned after Title I of HEFA.
One other reason for broadening this discussion is purely a pragmatic
one. I fear that spending two hours on the Title I program would be
deathly dull. After what I hope seems like a brief discussion on my
part of these programs, the remaining time can be spent in general dis-
cussion and comment.

In the interest of organization, I want very much to discuss the Board.
Given the recent activities of Congress and the Bureau of the Budget,
one wonders, however, if discussion should not be directed towards the
Title I program while there is still a Title I program to discuss. While
this fear is not entirely unwarranted, I think that I will opt for good
organization. Should some nameless bureaucrat in the Bureau of the Budget
scuttle the Title I program entirely in the next few minutes we can view
this discussion as an exercise in history.

The Higher Educational Aids Board was born the State Commission for
Academic Facilities in June of 1964 in direct response to the federal
enactment in the previous December of the Higher Education Facilities Act
of 1963. Even though the Board has been operating for four years, there
seems to be an amazing number of people involved in higher education in
Wisconsin who know little about the Board or who think that it is an
operating arm of the Coordinating Council for Higher Education. This lack
of knowledge about the Board has created at best some communications problems
and at worst an agency ego problem.

The Board, or the then State Commission, was and is an independent agency
representative of both public and private higher education, composed of
fifteen members all appointed by the Governor. Five members are nominated
by the Coordinating Council for Higher Education to represent public higher
education, five are nominated by the Wisconsin Association of Independent
Colleges and Universities to represent private higher education and five

citizen members are directly appointed. Initially, the Agency was responsible for only the Title I program. Now, four years later, the Board administers a variety of institutional grant programs and most of the state's student financial aid programs. In addition, the Board has a statutory mandate to recommend improvements in Wisconsin's student financial aid structure and is a partner in statewide planning by virtue of the federal Comprehensive Facilities Planning Program.

The Higher Education Facilities Act of 1963 provides comprehensive federal financial support through an integrated combination of loans and grants for facilities construction and makes all accredited institutions of higher education in the nation eligible for this support, regardless of proprietorship. Title I is a grant program for primarily undergraduate facilities to be administered at the state level. Title II, administered at the federal level, is a grant program to establish and expand graduate centers of excellence and Title III makes available low interest loan funds to support construction eligible under both Titles I and II. President Johnson, when signing into law the Higher Education Facilities Act, noted that it was ". . . the most significant education bill passed by Congress in the history of the Republic." Since its inception four years ago, the national impact of this program in terms of dollars has been significant. Equally significant has been the fiscal impact of the program in Wisconsin. While dollars are important, they are only a means. Of much greater importance is the effect of this program in closing the "quantity gap"--the primary mission of the facilities program. Based on gross and sometimes disputable information and an unqualified planning standard of 150 square feet per full-time equivalent student, the Office of Education projected that the national facilities "quantity gap" would be virtually closed by 1973. However, the cuts in the program for fiscal year 1968 and 1969 continues the "quantity gap" beyond 1973. About this question of "quantity gap," the Office of Education drew three conclusions in their *Revised Interim Assessment of Academic Facilities* which are as follows:

1. The "quantity gap" in academic facilities grew larger in the early years of the Higher Education Facilities Act because the act came along three years later than needed to prepare for the enrollment bulge.

2. If the Higher Education Facilities Act is continued at the projected levels beginning in fiscal year 1970, but without restoration of the fiscal year 1968 and 1969 reductions, the "quantity gap" will be gradually reduced below its current level, although the gap remaining in 1973 would be larger than is considered desirable, and

3. If the reduced levels are sustained beyond 1969, the "quantity gap" will again begin to grow substantially.

Besides the "quantity gap," there is the "quality gap" both in terms of the academic activities housed in facilities and the structural integrity of facilities. Unfortunately, there is even less reliable information available nationally about this evaluation parameter coupled with what seems to be almost total disinterest on the part of Congress in anything having to do with the quality of American life. At least as far as the lack of information and data about the "quality gap," the Comprehensive Facilities Planning Program should be in the process of fulfilling this need. In addition, the Office of Education has pending in Congress a $400,000 appropriation to undertake a total evaluation of the Higher Education Facilities Act which will include substantial discussion of the "quality gap." Even with all the qualification and questionable information, I think it safe to conclude that the Higher Education Facilities Act has had an enormous direct impact on the American higher education establishment. (Appendix I)

As was mentioned earlier, the Higher Education Facilities Act is an integrated grant and loan program. Because the Title I, Undergraduate Grant Program, is administered jointly at the state level, the integrated nature of the entire act is sometimes lost.

Title I, Construction Grants for Undergraduate Facilities

The Title I program is a state and federal partnership in the full sense of the term and it is this concept which makes the program unique. Federal objectives are satisfied in terms of state determined needs and goals. The partnership agreement is the State Plan and is the most essential element of the program. However, prior to discussing the Wisconsin Title I State Plan, some preliminary comments about how the program is organized and who does what and when may be helpful.

The primary purpose of the Title I program is to provide additional space to accommodate expanding enrollments at both public and private institutions. Thus, the program is quantitative. Because of constitutional problems in many states, including Wisconsin, the legal relationship of the grant award is exclusively between the federal government and the institution. The role of the states is primarily in the pre-approval period of the grant award. Appendix II indicates the relationship of the institution to the state and the federal governments.

There are two types of grants for undergraduate facilities which are treated separately under the program. Public two-year institutions which in Wisconsin include University of Wisconsin Centers, State University Branch Campuses and eligible vocational-technical schools constitute one group of institutions eligible under Section 103 of Title I. The second group includes four-year public and private institutions falling under Section 104 of Title I.

In administering the program, the state has two primary responsibilities. The first is to develop objective criteria by which all grant applications are evaluated and placed in priority order and the second is to determine the extent of federal participation in each project. These priority criteria and federal share provisions in combination reflect state policy objectives and are the most important parts of the State Plan.

Most sections of Title I State Plan are prescribed by federal regulations to insure consistency of administration among the states and the integrity of the broad objectives of the Act. In Section 7, Priorities, and Section 8, Federal Shares, the two most important sections, maximum flexibility is left to the states. Federal ground rules established by regulation for priority and federal share provisions and the weighting of these in the Wisconsin State Plan are as indicated in Appendix III.

Because priority factors and federal share provisions can be developed which reflect most any objective, the Board from the very beginning of the program followed the procedure of first deciding what policy objectives were to be implemented followed by the development of particular State Plan provisions.

Until this year, the Board took the position that because all two-year institutions eligible to participate in the program were public, there were no significant policy issues to be dealt with. Therefore, as seen in Appendix III, only the required federal provisions were established in the 103 sections of the State Plan. This position was consistently reinforced by the funding history. With one exception, all applications from two-year institutions received grants.

With the arbitrary Office of Education cut in fiscal year 1968 grant funds, several two-year projects were adversely affected. As a result, new information came to the attention of the Board as well as a great deal of heat. The result of this situation was that the Board adopted the policy basis for substantial changes to the sections of the State Plan affecting two-year institutions. These include:

1. Establishment of a federal share maximum

2. Initiation of a flat grant concept

3. Development of a need for funds factor

Specific State Plan amendments will now be devised which will take effect at the next Section 103 Closing Date.

There are two Title I policy objectives that have been established by the Board applicable to four-year public and private institutions. These are that Title I funds should be allocated primarily on the basis of the

relative need for additional facilities as demonstrated by the applicant's utilization and enrollment and secondarily on the institution's need for funds to construct additional facilities. These program objectives were then translated into the specific State Plan provisions listed in Appendix III.

Each year the Board reviews the Title I State Plan, evaluating it in terms of changes at the federal level, state level and the information obtained from the previous year's closing dates. Efforts are made to involve all elements of higher education in the review process in the interest of keeping the Title I program as current and relevant as possible.

Already discussed has been the direct fiscal impact of the Title I program. There has been, in addition, an indirect effect of the Title I program which has been at least as important as the direct fiscal impact. The program has served as a catalytic agent in changing the relationships of public and private higher education in Wisconsin. Historically, the communication between public and private higher education has been distant if not hostile. Private institutions have developed as exclusive independent entities in Wisconsin with little concern for statewide objectives. The historical attitude of public higher education in Wisconsin not only accepted this disengagement on the part of private higher education but in fact fostered it. With the advent of HEFA, both public and private higher education had to work in consort in implementing the program. In the four years that the program has been operating, a marked change has taken place on the part of both public and private institutions. There is a growing recognition that each must work with the other within a framework of statewide need if higher education in Wisconsin is to continue its progress in meeting the educational needs of the citizens of the state and the times in which they live.

The foregoing has been a brief overview of the Title I program in the context of the other Titles of the Higher Education Act of 1963. Much detail has been left out but is available on request or on a need to know basis. I might add that some of this detail is so boring that at times I wish that I did not have the need to know it.

The Future of the Higher Education Facilities Act of 1963

Despite debilitating cuts in the program, it does appear that the Higher Education Facilities Act of 1963 is a program with a future. What this future will be, however, is difficult to foresee but some elements do seem evident. First, the ideas and attitudes about federal aid to higher education established by this Act are here to stay. For example, no longer does the church-state issue seem relevant, nor does the old public-private controversy. I would anticipate and hope that the state-federal partnership which has evolved out of the Title I program will be expanded and broadened. Each year state commissions are gaining more experience and developing

173

increasing levels of competence. The use of this concept might well serve as a vehicle in the administration of non-categorical institutional aid programs now being discussed in the circles of higher education and at least the outer halls of Congress. Perhaps with the reduced support level for fiscal years 1968 and 1969 of the Higher Education Facilities Act of 1963, now is the time to attempt comprehensive amendment of the Act implementing four years of experience which would make the future of the program even brighter. As everyone connected with the program, I have some ideas for change which I would like to share.

The most important set of amendments in my view is to expand the Higher Education Facilities Act into a general federal program of assistance for facilities construction which is both quantitative and qualitative through consolidation of other facilities programs and basic changes in the existing Higher Education Facilities Act of 1963 legislation. Currently there are a variety of federal facilities programs that are in the most restrictive sense, categorical. The very existence of this wide variety of categorical programs imposes artificial constraints on both the facilities planning process and the later use of the facilities requiring institutions to "cut-up" a single building into arbitrary and unjustifiable prorations. By consolidating the variety of existing facilities programs, not only would effective facilities planning be enhanced but much costly paperwork would be eliminated.

Elimination of Title II of the Higher Education Facilities Act of 1963, Grants for Graduate Facilities, as a separate program seems desirable for many of the same reasons that makes consolidation of other programs a welcome innovation. At most institutions, it is enormously difficult to separate graduate facilities from undergraduate facilities. Thus arbitrary prorations again result and paperwork increases. The purpose of the Title II program is to expand graduate centers of excellence. It seems to me that this objective can more appropriately be met through an expanded federal fellowship program than through a separate facilities program.

A third type of general assistance program which I would advocate would be a broadening of the kinds of facilities eligible in order to more accurately reflect the total activities of our institutions and the diversity among them. This recommendation would include the capability for several institutions to generate a single application for a structure to be used jointly. Two qualifications to the kind of general facilities assistance program I am discussing should probably be mentioned. The ineligibility of support for space used for religious worship and sectarian instruction should be maintained and health facilities, with the exception of nursing programs in two-year institutions, should probably also remain separate because of their unique, complex and separately identifiable nature.

Parenthetically, perhaps the strongest opposition to a general facilities assistance program administered through the states would come from the nation's most prestigious and powerful institutions who feel that they have

a special relationship or pipeline to some of the existing categorical aid programs. I would hope that the force of agreement and appeal to the general benefits that would be accrued from such a program would minimize the provincial and self-interest concerns of our national centers of higher educational excellence.

The last point about the future of HEFA that I would like to make concerns Title III of the Higher Education Facilities Act of 1963. This loan program has been looked on as a savior to many institutions. However, now nationally there appears to be the situation where many institutions are so far in "hock" because of Title III loans that their financial capacity to effectively utilize increased grant funds has been considerably diminished. Some thought out to be given therefore to a program which would allow institutions to obtain facilities grants to retire capital construction debt. As I commented earlier, the future of the Higher Education Facilities Act of 1963 is difficult to foresee but I think we can agree that there is a great potential for a bright one.

The Comprehensive Facilities Planning Program

Before breaking for discussion, I would like to include some brief observations about the federal Comprehensive Facilities Planning Program and the Higher Education General Information Survey otherwise known as HEGIS, as it relates to facilities. The stated purpose of the Comprehensive Facilities Planning Program is to stimulate, nationally, the wise use of limited funds for facilities construction. A second purpose, equally important as the first, is to generate sound hard national facilities data on which Congress can make informed and rational decisions.

Under this program, the Board receives about $100,000 each year to support facilities planning activities in Wisconsin. To assist the Board in determining the use of these funds, an Advisory Council representative of all elements concerned with higher education in Wisconsin with broad authority was established by the Board. We are in the second year of the program and there are indications that it may be the last for the usual reason - Viet Nam. Therefore, I would like to make some general remarks that are more evaluative than descriptive about this program. Appendix IV indicates specific projects which have been conducted in Wisconsin both last year and this year.

It would not be an exaggeration to say that states can do about anything they want to with these planning funds all the way from effective planning efforts to studies of air conditioning at institutions which do not really know how much space they have or pretty reports with lots of aerial photographs but with little content. Assuming that this second year of the program is the last one, I think, nationally, the return on this program falls below expectations but the experience obtained can be of inestimable value in a future program.

Compared with output from other states, Wisconsin is one of the better ones in attempting to maintain the integrity of the program. Even though the projects shown in Appendix IV are sound and need to be done, I think that we, too, have fallen short in terms of our own expectations. In my reflections about this program, I wonder if the output we have and will have would not have been generated without these funds and within essentially the same time frames. As you can see from the chart, these planning funds were allocated primarily on the basis of agency needs and only secondarily on the basis of project priorities. By doing this, I think Wisconsin missed an opportunity to accelerate facilities planning. Should the Comprehensive Facilities Planning Program survive or if it is revived at some point in the future, I would hope that greater efforts could be made on the part of the entire educational community in Wisconsin to learn from the present experience in order that these critically needed planning dollars can be imaginatively used.

Title VI-A, The Higher Education Act of 1965

On November 8, 1965, the Higher Education Act of 1965 was enacted bringing a broad range of federal support to higher education institutions, college and university students and teachers. Leading educators and higher educational associations and agencies had urged on the Congress a program of massive support in several particularly neglected areas which ranged from institutional support for continuing education to direct financial aid assistance for economically disadvantaged students. Title VI of the Act was directed to the virtual crisis that was developing on the nation's campuses because of the lack of instructional equipment and materials available to faculty and students. While advancements in educational techniques had brought new discoveries in the use of media as adapted to the learning process, more funds than ever were required to keep up with technological advancements in the sciences. Burgeoning college enrollments and higher costs frequently meant that more students had less equipment. While the decade of the 1960's had brought higher costs and more students, it also brought an increased emphasis in the public mind of the importance of education and the need for improving the quality of teaching. It was difficult to reconcile this value with long lines of students waiting in line to use microscopes. This was wasting time and frustrating teachers and students. Although Title I of the Higher Education Facilities Act provided funds for built-in and movable equipment for projects constructed under that program of federal assistance, the great majority of academic facilities had been built prior to the availability of this support with the result that many of our colleges had buildings which had never been adequately equipped in the first place. Title I could provide for the buildings of the future but the need for remedying the years of previous neglect was even more urgent.

Title VI sought to fill the equipment gap by making available two categories of grants for the acquisition of equipment and materials to be used in undergraduate instruction. Like Title I, the Title VI program is oriented to the needs of undergraduates and is available to all accredited

institutions of higher education regardless of proprietorship. The administration of the program is handled at the state level by those agencies responsible for Title I. The Title VI program reaffirmed the concept of the state-federal partnership that was established with the Higher Education Facilities Act.

Since fiscal year 1966, the first year of its operation, Title VI has had a significant impact nationally. Category I of Title VI provides for support to several undergraduate disciplines: the sciences, humanities, social sciences, arts, etc., as well as interdisciplinary fields. Category II provides for equipment materials for closed circuit instructional television. Although most of the funds allocated to Wisconsin in Title VI have been used to supplement basic needs, there have been several innovative and very imaginative projects especially in the category dealing with closed circuit television. It is my feeling that one of the beneficial effects of the program has been the stimulus that it provides for inter-institutional use. We can see this already in computers and library resources.

The Title VI program is also another good test of the state-federal partnership concept, since it applies to institutions in a very different way than Title I. It entails more administrative difficulties as a result of the widespread participation, often by several departments and offices at a single institution. Some of these difficulties are now being revealed by our problem of grant losses. If these concerns can be met, a further boost would be provided for future programs of non-categorical support which I alluded to earlier.

The administrative structure of the Title VI program is very similar to that of Title I. Title VI also places primary responsibility on the state for developing objective priority criteria and federal share provisions which meet statewide policy objectives while remaining compatible with the legislative intent of the Act.

The Title VI policy objectives established by the Board are that aid should be applied on the basis of institutional need without regard to educational philosophy or governance, and without favoring particular types of equipment or subject areas. In other words, the selection of equipment and the distribution of funds to its departments should be done by the institution. The method of determination of need in Title VI consists of a mix of several factors, including expenditures per study of credit hour and space per credit hour. The funding pattern in Title VI has reflected Board objectives. Priority lists have not seemed to favor particularly any one system over another, nor any particular type of project over another.

I think that the Title VI program has now largely fulfilled the basic quantitative equipment needs which were so critical at the outset of the program and is now ready for a change in emphasis. State commissions have encouraged the Office of Education in Washington to consider modifying the approach of the program and it appears that this will be done. Now what is needed is a program tailored to promote quality by the selection

177

of projects on the basis of educational merit and soundness of planning.

Unlike the Title I allotments, we are expecting to have the same level of funding for fiscal 1969 that we have had in the past, at least at this point in time. Appendix V shows the funding history and priority and federal share provisions of the Title VI program.

APPENDIX I

FUNDING HISTORY
HIGHER EDUCATION FACILITIES ACT OF 1963

I. TITLE I - Grants for Construction of Undergraduate Academic Facilities

Fiscal Year	Legislative Authorization	Federal Appropriation
1965	$ 230,000,000	$ 230,000,000
1966	460,000,000	458,000,000
1967	475,000,000	453,000,000
1968	728,000,000	267,000,000
	$1,893,000,000	$1,408,000,000

II. Title II - Grants for Construction of Graduate Academic Facilities

Fiscal Year	Legislative Authorization	Federal Appropriation
1965	$ 60,000,000	$ 60,000,000
1966	120,000,000	60,000,000
1967	60,000,000	60,000,000
1968	120,000,000	33,000,000
	$ 360,000,000	$ 213,000,000

III. Title III - Loans for Construction of Academic Facilities

Fiscal Year	Legislative Authorization	Federal Appropriation
1965	$ 169,250,000	$ 169,250,000
1966	120,000,000	110,000,000
1967	200,000,000	200,000,000
1968	400,000,000	150,000,000
	$ 889,250,000	$ 629,250,000

DISTRIBUTION OF TITLE I AND TITLE II GRANTS
BY SYSTEM COMPARED TO ENROLLMENTS

	Grant Funds	Per Cent of Total
University of Wisconsin	$ 11,168,651	28.4
Wisconsin State Universities	17,908,274	45.5
Vocational Technical System	1,336,184	3.4
Public	(30,413,109)	(77.3)
Private Universities	2,229,458	5.7
Private Colleges	6,696,566	17.0
	(8,926,024)	(22.7)
	$ 39,339,133	100.0%

	1967 Total Enrollment	Per Cent of Total
University of Wisconsin	54,997	36.9
Wisconsin State Universities	50,996	34.2
Vocational Technical System	9,026	6.1
Other Public	1,257	.8
Public	(116,276)	(78.0)
Private Universities	12,616	8.5
Private Colleges	18,107	12.1
Other Private	2,089	1.4
Private	(32,812)	(22.0)
	149,088	100.0%

APPENDIX I (Cont'd.)

WISCONSIN ALLOTMENTS

TITLE I-HIGHER EDUCATION FACILITIES ACT

	Section 103 Allotment	Section 104 Allotment	Total Wisconsin Allotment
I. Fiscal Year 1965			
Original Allotment	$1,369,176	$4,148,904	$5,518,080
Reallotment from other states	-	-	-
Reallotment from Wisconsin	-	-	-
Total	1,369,176	4,148,904	5,518,080
II. Fiscal Year 1966			
Original Allotment	2,551,588	8,315,982	10,867,570
Reallotment from other states	3,936	14,833	18,769
Reallotment from Wisconsin	-	(51,980)	(51,980)
Total	2,555,524	8,330,815	10,886,339
III. Fiscal Year 1967			
Original Allotment	2,519,948	8,281,590	10,801,538
Reallotment from other states	90,529	108,673	199,202
Reallotment from Wisconsin	(35,808)	(62,338)	(98,146)
Total	2,610,477	8,390,263	11,000,740
IV. Fiscal Year 1968			
Original Allotment	1,633,948	4,778,123	6,412,071
V. Grand Total	$8,169,125	$25,648,105	$33,817,230

APPENDIX I (Cont'd.)

WISCONSIN TITLE I GRANTS
HIGHER EDUCATION FACILITIES ACT OF 1963
SECTION 103 - TWO YEAR INSTITUTIONS OF HIGHER EDUCATION

Institution	Project	Dev. Cost	Project Cost	Fed. Share	Grant Amount
I. Fiscal Year 1965					
1. Milwaukee Technical College	Science Center	$ 1,347,922	$ 1,347,922	$ 539,169	$ 539,169
2. UW - Waukesha Center	Campus Complex	1,865,954*	1,526,693*	610,677*	610,677
3. UW - Rock Center	Campus Complex	1,604,561*	1,307,973*	523,189*	219,33?
		$ 4,818,437	$ 4,182,588	$ 1,673,035	$ 1,369,17?
II. Fiscal Year 1966					
1. UW - Waukesha Center(Supp.)	Campus Complex	$ 2,522,837	$ 2,059,622	$ 823,848	213,171
2. Madison Area Tech. College	Addition	531,376	501,298	200,519	200,519
3. UW - Waukesha Center	Gymnasium	375,404	369,522	147,809	147,80?
4. UW - Marathon Center	Campus Complex	2,686,525	2,355,545	942,218	939,19?
5. UW - Rock Center (Supp.)	Campus Complex	1,919,281	1,55?,536	624,214	404,88?
6. UW - Marinette Center	Campus Complex	674,076	574,945	229,978	229,978
7. WSU - Richland Campus	Campus Complex	2,296,152*	2,251,831*	900,732*	416,030
		$11,005,651	$ 9,673,299	$ 3,869,318	$ 2,551,5??
III. Fiscal Year 1967					
1. Madison Area Tech. College	Academic Bldg.	$ 1,123,549	$ 1,123,549	$ 449,420	449,42?
2. WSU - Barron Campus	Campus Complex	2,812,716	2,763,755	1,105,502	1,105,50?
3. WSU - Richland Campus(Supp.)	Campus Complex	2,794,193	2,723,835	1,089,534	669,56?
4. UW - Washington Center	Campus Complex	1,723,285	1,575,639	630,255	295,45?
		$ 8,453,743	$ 8,186,778	$ 3,274,711	$ 2,519,?-?
IV. Fiscal Year 1968					
1. Madison Area Tech.College(Supp.)	Academic Bldg.	$ 1,491,240	$ 1,491,240	$ 596,496	147,07?
2. WSU - Fond du Lac Campus	Campus Complex	5,156,849	4,651,415	1,860,556	1,485,8??
		$ 6,648,089	$ 6,142,655	2,457,0??	$ 1,633,???
TOTAL		$23,035,704	$21,975,274	$ 8,790,108	$ 8,074,66?

182

APPENDIX I (Cont'd.)

WISCONSIN TITLE I GRANTS
HIGHER EDUCATION FACILITIES ACT OF 1963
SECTION 104 - FOUR YEAR INSTITUTIONS OF HIGHER EDUCATION

Institution	Project	Dev. Cost	Project Cost	Fed. Share	Grant Amount
III. Fiscal Year 1967					
1. WSU - Oshkosh	Fine Arts Building	$ 7,403,830	$ 7,164,681	$ 2,388,227	$ 1,000,000
2. WSU - Eau Claire	Fine Arts Building	4,861,510	4,574,710	1,524,903	1,000,000
3. UW - Milwaukee	Science Building	8,970,960	74,365	119,145	1,000,000
4. Marquette Univ. (Supp.)	Science Building Remod.	762,781	761,781	249,160	48,500
5. Stout State University	Library Building	1,221,200	1,175,900	391,966	391,500
6. WSU - Superior	Library Building	1,925,550	1,925,550	641,850	621,450
7. WSU - Stevens Point	Fine Arts Building	3,500,442	3,400,356	1,133,452	1,000,000
8. Northland College	Library-Swimming Pool	912,000	911,025	303,675	303,675
9. Viterbo College	Fine Arts Building	4,736,248	4,626,118	1,542,035	1,000,000
10. Ripon College	Phy. Ed. Building	2,229,879	2,199,379	733,126	733,126
11. Carthage College (Supp.)	Library Building	135,333	135,333	45,111	9,502
12. WSU - Platteville	Library Building	2,723,750	2,603,350	867,783	867,783
13. Ripon College	Classroom Building	795,900	787,900	262,633	262,633
14. UW - Madison	Zoology Building	2,293,310	2,293,310	764,436	43,25?
		$43,369,391	$32,914,758	$10,967,505	$ 8,281,5??
IV. Fiscal Year 1968					
1. WSU - Oshkosh	Phy. Ed. Building	$ 4,083,000	$ 3,504,461	$ 1,168,154	$ 1,168,154
2. Milw. School Engineering	Multipurpose Complex	2,950,010	2,865,240	955,080	955,080
3. WSU - Eau Claire	Science Building	2,701,000	2,636,000	878,666	878,666
4. WSU - Whitewater	Library Building	2,033,000	1,910,550	636,850	636,85?
5. WSU - Whitewater	Educ.-Psych. Building	2,078,200	1,942,509	647,503	647,51?
6. Lakeland College (Supp.)	Science Building	917,914	917,914	301,054	15,6??
7. Marquette University	Library	3,729,665	3,619,665	1,206,555	475,???
		$18,492,7??	$17,396,339	$ 5,793,862	$ 4,775,???
TOTAL		$114,136,785	$28,789,701	$29,984,535	$25,521,5??
SEC. 103 & SEC.104 GRAND TOTAL		$138,172,439	$110,675,975	$38,774,643	$33,599,3?

*Amount not included in total since it
is part of a later supplemental project

APPENDIX I (Cont'd.)

WISCONSIN TITLE I GRANTS
HIGHER EDUCATION FACILITIES ACT OF 1963
SECTION 104 - TWO YEAR INSTITUTIONS OF HIGHER EDUCATION

Institution	Project	Dev. Cost	Project Cost	Fed. Share	Grant Amount
I. Fiscal Year 1965					
1. Marquette University	Chemistry Building	$3,241,775	$2,112,233	$ 704,077	$ 704,077
2. UW - Madison	Language Building	5,500,000	3,850,000	1,283,333	1,014,821
3. WSU.- River Falls	Agri.-Science Building	2,389,975	2,389,975	796,658	796,658
4. Mount Senario College	Campus Complex	1,152,393	593,834	197,944	197,944
5. WSU - Platteville	Eng.-Science Building	2,695,000	2,695,000	898,300	898,300
6. UW - Milwaukee	Library Building	3,857,563	1,427,298	475,766	475,766
7. St. Norbert College	Science Building	2,796,458*	2,796,458*	932,153*	61,332
		$21,633,164	$14,584,798	$5,288,231	$4,148,90?
II. Fiscal Year 1966					
1. Marquette University	Language Building	$ 1,742,077	$ 1,685,977	$ 561,992	$ 561,992
2. Marquette University	Legal Center	800,817	712,234	237,428	237,42?
3. Marian College	Campus Complex	2,590,459	1,569,282	523,094	523,094
4. St.Norbert College (Supp.)	Science Building	2,796,458	2,796,458*	932,153	870,815
5. Lakeland College	Science Building	873,000*	857,955*	285,985*	285,985
6. Northland College	Science Building	686,420	681,920	227,307	226,9?4
7. Carthage College	Library Building	106,569*	106,569*	35,523*	35,52?
8. Milton College	Library Building	457,977	452,469	150,823	150,143
9. Beloit College	Science Building	3,793,385	2,829,612	943,204	900,0??
10. WSU - Stevens Point	Resources Center	3,369,404	3,240,884	1,080,295	1,0?0,0??
11. WSU - La Crosse	Library Building	2,728,593	2,646,593	882,198	882,3??
12. WSU - River Falls	Library Addition	1,928,718	1,871,598	623,866	623,8??
13. Stout State University	Ind. Tech. Building	4,436,657	4,285,697	1,428,566	1,000,0??
14. Marquette University	Science Building Remodeling	747,481*	747,481*	249,160*	200,5??
15. WSU - Platteville	Ind. Ed. Building	3,958,030	3,828,490	1,276,163	817,24?
		$35,164,949	$28,313,269	$9,437,757	$8,315,95?

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184

APPENDIX I (Cont'd.)

DISTRIBUTION OF TITLE I GRANT FUNDS BY SYSTEM
COMPARED TO ENROLLMENTS BY SYSTEM

Section 103-Two-Year Public Institutions

	Title I Grant Funds	% of Total Funds	1967 Total Enrollment	% of Enrollment
University of Wisconsin Centers	$3,060,504	37.9	6,578	37.9
Wisconsin State U. Branch Campuses	3,677,972	45.5	478	2.8
Vocational, Technical System	1,336,184	16.6	9,026	52.1
Other	-	-	1,257	7.2
TOTAL	$8,074,660	100.0	17,339	100.0

Section 104-Four Year Institutions & Two Year Private Schools

	Title I Grant Funds	% of Total Funds	1967 Enrollment	% of Enrollment
University of Wisconsin	$2,533,842	9.9	48,419	36.8
Wisconsin State Universities	14,230,302	55.8	50,518	38.3
Total Public	(16,764,144)	(65.7)	(98,937)	(75.1)
Private Universities	2,229,458	8.7	12,616	9.6
Private Colleges[1]	6,530,997	25.6	18,107	13.7
Other Private	-	-	2,089	1.6
Total Private	(8,760,455)	(34.3)	(32,812)	(24.9)
TOTAL	$25,524,599	100.0	131,749	100.0

1. Includes Private liberal Arts Colleges and private technical and professional.

APPENDIX I (Cont'd.)

Distribution of Title I Grant Funds
According to Type of Facilities

Type of Facilities	Title I Grant Funds	Number of Projects	Percent of Grant Funds
Sciences	$ 7,469,476	15	22.2
Library	7,430,356	14	22.1
Campus Complex	7,311,705	13	21.8
Fine Arts	4,000,000	4	11.9
Physical Education	2,049,089	3	6.1
Languages	1,576,813	2	4.7
General Academic	1,059,648	4	3.2
Other[1]	2,702,172	4	8.0
	$33,599,259	59	100.0

1 Includes Legal Center, Industrial Technology, Industrial Education, and Education Psychology buildings

APPENDIX I (Cont'd.)

DISTRIBUTION OF GRANTS
TITLE II – HIGHER EDUCATION FACILITIES ACT OF 1963

	Educational System	Title II Grant Funds	% of Total Funds
1965	University of Wisconsin	$1,032,176 $1,032,176	100.0 100.0 %
1966	University of Wisconsin Private Colleges	$1,174,934 165,569 $1,340,503	88.0 12.0 100.0 %
1967	University of Wisconsin	$1,058,768 $1,058,768	100.0 100.0 %
1968	University of Wisconsin	$2,308,427 $2,308,427	100.0 100.0 %
	TOTAL	$5,739,874	100.0%
	TOTAL TO UW SYSTEM	$5,574,305	97.0%

187

APPENDIX II

TITLE 1 HIGHER EDUCATION FACILITIES ACT

APPLICATION PROCESSING DIAGRAM

188
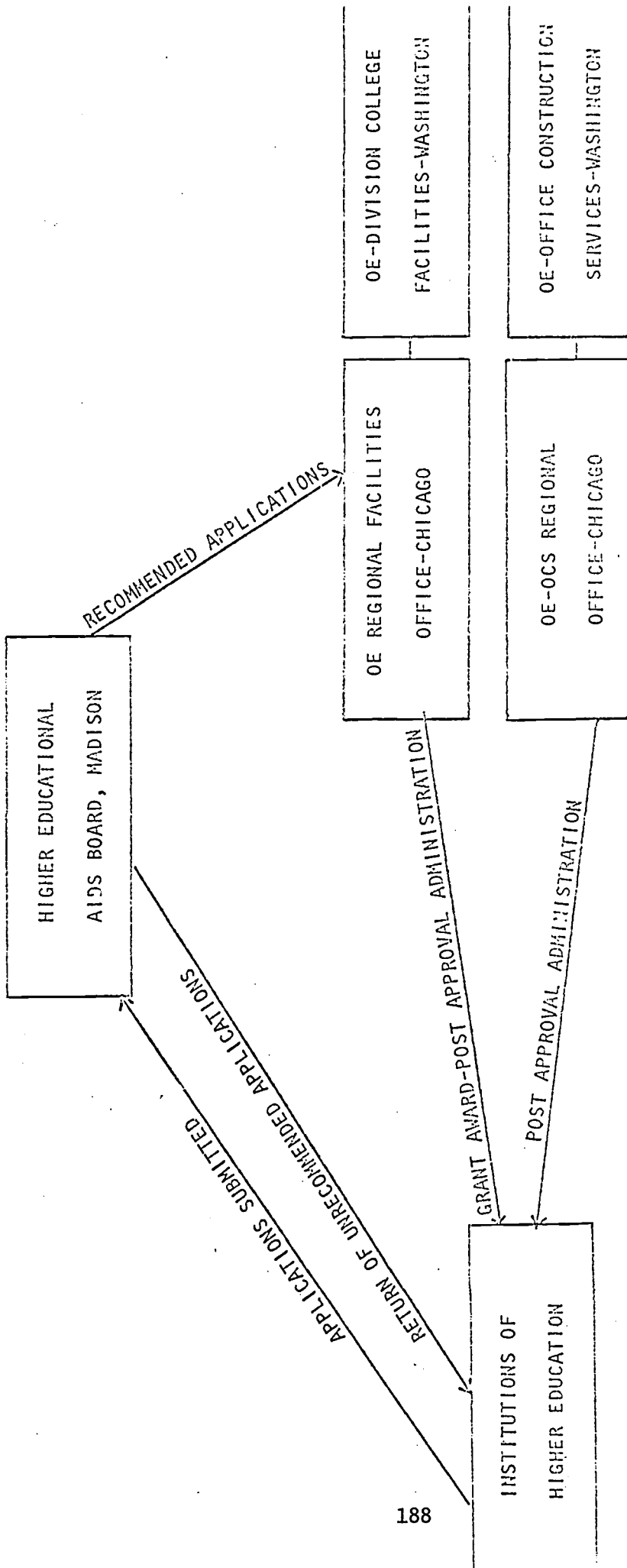
APPENDIX III

TITLE I PRIORITY FACTORS AND FEDERAL SHARE PROVISIONS

. Priority Factors for Existing Institutions

	Fed. Require.	State Plan Sec. 103	State Plan Sec. 104
1. Advantage to greater numerical and/or percentage increase in enrollment over 4 yr. period.	20%	30% (15% numerical) (15% percentage)	20% (10% numerical) (10% percentage)
2. Advantage to greater numerical and/or percentage increase in instructional & library area provided by project.	10%	15% (7.5% numerical) (7.5% percentage)	15% (7.5% numerical) (7.5% percentage)
3. Advantage to institutions most effectively utilizing existing facilities	10%	55% (10% average student use classroom) (10% average student use laboratories) (10% average room use classroom) (10% average room use laboratories) (15% C/E ratio)	50% (10% average student use classroom) (10% average student use laboratories) (10% average room use classroom) (10% average room use laboratories) (10% C/E ratio)
4. Advantage to institutions paying higher percentage of instructional costs from student resources.	--	--	15%
TOTAL	40%	100%	100%

. Priority Factors for New Institutions

	Fed. Require.	State Plan Sec. 103	State Plan Sec. 104
1. Advantage to greater numerical increase in enrollment over 4 year period.	30%	50%	50%
2. Advantage to greater numerical increase provided by project to existing instructional and library area at institution.	10%	50%	50%
TOTAL	40%	100%	100%

I. Federal Share Provisions for Existing and New Institutions

	Federal Require.	State Plan Provisions
1. Section 103	Maximum of 40% of eligible development cost	Maximum of 40% of eligible development cost
2. Section 104	Maximum of 33 1/3% of eligible development cost.	Maximum of 33 1/3% of eligible development cost or $1.5 million whichever is the lesser

189

APPENDIX IV

COMPREHENSIVE FACILITIES PLANNING PROGRAM

I. Comprehensive Planning Program - Fiscal Year 1967 $96,650

    A. Coordinating Council for Higher Education $60,000

        1. Comprehensive physical facilities survey of existing space
            in vocational-technical schools $20,000

        2. Improvement of space guidelines for projecting future
            space needs in public higher education $40,000

           a. Preferences of high school graduates according to type
               of post secondary education
           b. Retention, withdrawal and transfer patterns among students
           c. Development of space guidelines for graduate and research
               programs

    B. Wisconsin Association of Independent Colleges and Universities
       Establishment of a centralized space program and office for private
       higher education $31,000

        1. Development of a plan for securing common space data for
            private educational institutions
        2. Preparation of a physical facilities survey which can be
            conducted by W.A.I.C.U.

    C. Higher Educational Aids Board - Development of a research proposal
       for the construction of a computerized space requirements model $ 5,650

II. Comprehensive Planning Program - Fiscal Year 1968 $95,275

    A. Coordinating Council for Higher Education $59,500

        1. Student Preference Study
        2. Enrollment projections of the eighteen area vocational
            technical districts
        3. Projected space requirements for extension and public service
            activities in public higher education
        4. Development of criteria for integrating the biennial building
            program for public higher education
        5. Development of a ten year capital building program for public
            higher education

    B. Wisconsin Association of Independent Colleges and Universities -
       implementation of a computerized physical facilities inventory
       for private higher education $30,500

    C. Higher Educational Aids Board - Continued study on the feasibility
       of developing a computerized space requirements research model $ 5,275

TITLE VI PRIORITY AND FEDERAL SHARE PROVISIONS

I. Priority Factors for Category I

	Federal Require.	State Plan Provisions
1. Advantage to institution with lower three year average of instructional expenditures per credit hour	25%	40%
2. Advantage to project with lower percentage of equipment and materials to be used in new facilities	15%	20%
3. Advantage to institution with lower ratio between area of instructional space and student clock hours of enrollment	10%	20%
4. Advantage to institution paying greater percentage of instructional costs from student resources	-	20%
	50%	100%

II. Priority Factors for Category II

	Federal Require.	State Plan Provision
1. Advantage to institution with lower three year average of instructional expenditures per credit hour	25%	40%
2. Advantage to institution with greater number of CCTV courses to be added to curriculum in two year period	15%	20%
3. Advantage to institution with greater enrollment increase planned for CCTV courses in two year period	10%	20%
4. Advantage to institution paying greater percentage of instructional costs from student resources	-	20%
	50%	100%

III. Federal Shares Provisions for Category I & Category II

	Federal Requirement	State Plan Provision
1. Category I	Maximum of 50% of project cost	Maximum of 33 1/3% of project cost or $75,000 whichever is lesser
2. Category II	Maximum of 50% of project cost	Maximum of 33 1/3% of project cost or $15,000 whichever is lesser

APPENDIX V (Cont'd.)
TITLE VI CATEGORY 1
HIGHER EDUCATION ACT OF 1965
LABORATORY AND OTHER SPECIAL EQUIPMENT AND MATERIALS

1966 - Institution	Project Dev. Cost	Grant Awarded
WSU - Eau Claire	$ 153,250	$ 51,083
WSU - River Falls	70,218	23,406
WSU - Oshkosh	43,992	14,664
WSU - La Crosse	31,899	10,633
WSU - Stevens Point	18,521	6,173
Marquette University	26,073	8,691
WSU - Whitewater	47,676	15,892
UW - Milwaukee	20,207	6,736
WSU - Platteville	139,014	46,338
WSU - Superior	62,415	20,805
Stout State University	163,085	54,362
Dominican College	9,503	3,167
UW - Madison	49,773	16,591
Alverno College	28,232	9,411
Ripon College	104,761	30,952
	$ 968,619	$318,904

1967 - Institution	Project Dev. Cost	Grant Awarded
Marquette University	$ 34,170	$ 11,390
Marian College	3,068	1,023
WSU-Oshkosh	221,573	73,857
Lakeland College	2,880	960
WSU - Eau Claire	57,633	19,211
WSU - Stevens Point	25,000	8,333
WSU - Whitewater	48,589	16,196
Mount Mary College	5,884	1,961
WSU - Superior	25,420	8,473
WSU - Platteville	111,191	37,063
Edgewood College	5,733	1,911
Stout State University	224,936	74,978
Ripon College	84,494	28,164
Viterbo College	18,991	6,330
UW-Milwaukee	71,137	20,729
	$ 940,699	$310,579

1968 - Institution	Project Dev. Cost	Grant Awarded
Marquette University	$ 42,441	$ 14,147
WSU - Oshkosh	76,966	25,655
St. Norbert College	31,335	10,445
Alverno College	31,972	10,657
WSU - Eau Claire	102,315	34,105
WSU - Whitewater	17,039	5,680
WSU - La Crosse	22,597	7,532
WSU - Platteville	223,003	74,334
WSU - Stevens Point	10,386	3,462
WSU - River Falls	67,809	22,603
Stout State University	213,556	71,185
UW - Sheboygan Center	14,580	4,860
Dominican College	9,189	3,063
UW - Milwaukee	81,174	27,062
	$ 944,362	$314,790

TOTAL	$2,853,680	$944,273

Final grant awards for 1968 have not been completed, so estimated figures have been used.

APPENDIX V (Cont'd.)

TITLE VI CATEGORY II
HIGHER EDUCATION ACT OF 1965
CLOSED CIRCUIT TELEVISION

Fiscal Year	Institution	Project Development Cost	Grant Awarded
1966	WSU - La Crosse	$ 87,222	$15,000
1966	WSU - Superior	9,705	3,235
1966	WSU - Platteville	7,343	2,447
1966	WSU - Eau Claire	39,942	13,314
1966	UW - Madison	4,314	1,438
		$148,526	$35,434
1967	Stout State Univ.	$ 45,484	$15,000
1967	WSU - Oshkosh	5?,318	15,000
1967	WSU - Superior	22,635	5,836
		$121,437	$35,836
1968	WSU - Superior	$ 39,415	$13,138
1968	Marquette University	35,790	11,930
1968	WSU - La Crosse	19,522	6,508
1968	Alverno College	8,953	2,984
1968	Lakeland College	9,850	1,763
		$113,530	$36,322
	TOTAL	$383,493	$107,592

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PROPOSED 1969-71 BIENNIAL BUILDING PROGRAM FORMAT

The biennial building program format is used by each of the institutions
in the University of Wisconsin and Wisconsin State University systems to
summarize information which justifies requests for new facilities. This
summarization, along with supporting back-up materials, will be transmitted
to the various agencies responsible for compiling, evaluating and approving
the building priority list for the 1969-71 biennium (e.g., campus and central
administrations, boards of regents, the Coordinating Council for Higher
Education, the Building Commission, etc.). A sample of a proposed 1969-71
building program format developed jointly by the CCHE, the University of
Wisconsin and the Wisconsin State Universities appears in Chart One. Like
previous formats of this nature it contains the following information for
each campus: the present and projected student enrollments by level, an
amounts of space by "category" (i.e., classroom and service, instructional
laboratory and service, etc.) for line items relating to space occupied,
available, required and recommended. The categorical breakdown of space
occupied in the current biennium is obtained from the institution's physical
facilities inventory. This information must be modified by subtracting areas
which are leased or rented in order to arrive at space available by category
as of the fall of 1967. Adding space which is approved or under construction
as a result of previous biennial building requests, and subtracting areas
in buildings which are temporary or to be razed results in figures reflecting
the space which would be available to the institution in the forthcoming
biennium if no additional facilities were approved. The space required for
each category is arrived at either by application of CCHE approved space
guidelines or, where these do not exist, on the basis of experience and
academic planning. By subtracting the space required from the space available,
a deficit or surplus reflecting space need can be computed for each space
category. This information is used in establishing building requests for
the 1969-71 biennium which will best meet the space needs of the institution.
However, it should be understood that buildings should not be planned to
exactly cancel out the generated deficits and surpluses, but rather, such
planning must take into account the academic goals and policies of the par-
ticular institution.

At present CCHE approved space guidelines exist for only five of the eleven
categories appearing on the building program format. These guidelines for
classroom and service; instructional laboratory and service; office, conference
and service; library; and physical education are shown in Chart Two. It
should be noted that these guidelines require the following types of data
projections for the fall of 1972: student class hours; student lab hours;
research, library and total faculty and staff populations; undergraduate,
graduate and total enrollments; and number of library volumes. Even some of

these guidelines were approved for only the 1969-71 biennium while none were approved for the other six categories of space. This was the result of both the implementation of a new space calssification system and the realization that a more sophisticated approach is needed in arriving at institutional space requirements. For example, the student class hour approach adopted for projecting classroom and service space requirements. Further information pertaining to the approved guidelines can be found in the following CCHE Working Papers: #11 of 1968, #79 of 1967, #17 of 1966, #34 of 1966, and #53 of 1966.

The implementation of a new space classification was necessary in order for the institutions to comply with both federal and CCHE requests for space data. This system is comprised of two kinds of classifications, one based upon function and the other on type of room. Chart Three shows a listing of these two classifications.

It should be understood that there are over 80 specific classifications used for identifying room type. This system is currently used by the two university systems, the public vocational-technical institutions, and will soon be incorporated in a facilities inventory of the private institutions of higher education in the state. If further information concerning this space classification system is desired, it is recommended that reference be made to the "Higher Education Facilities Classification and Inventory Procedures Manual," Superintendent of Documents Catalog No. FS 5.251: 51016, which is available from the U.S. Government Printing Office for $1.50. The University of Wisconsin system also employes a room sub-type classification which identifies some 200 additional types of space. This creates the potential for a more detailed analysis of an institution's current space situation, which should prove useful in institutional planning and in further space guideline development.

This new system of space classification has resulted in changes from the space categories which appeared on building program formats in previous biennia. Even though it would have been desirable to establish these new categories on the basis of either function or room type, it was necessary to incorporate a mixture of the two because of guidelines which were approved prior to the implementation of the new classification system--in particular library and physical education. For comparison purposes the space categories appearing on both the 1967-69 and 1969-71 building program formats are shown in Chart Four. It is hoped that the following explanation will help to clarify the relationships between the old and new categories. *Classroom* space is now shown under classroom and service. *Instructional laboratory* space is included in that shown for insturctional laboratory and service. *Office* makes up a portion of the area indicated for office, conference and service. The *library* category remains unchanged, and all space which is functionally classified as library appears under this heading. *Other instructional* space is split, since it was comprised of various types of instructional service areas, and now portions appear under classroom and service; instructional laboratory and service; office, conference and service; other study

and service; and other special-use facilities and service. The *research* category remains unchanged, and all space functionally classified as research appears under this heading. The category of *physical education* also remains unchanged and includes all athletic facilities space used for instruction. *Extension and public service* was primarily a functional category, and its space is now included under the new categories of office, conference and service; other study and service; other special-use facilities and service; general-use facilities and service; and supporting facilities and service. *Physical plant* was also a functionally oriented category, and this space is now found primarily under office, conference and service; and supporting facilities and service. *Other non-instructional* space is similarly split between office, service and conference; and supporting facilities and service. *Auditorium* space now appears under general use facilities. *Auxiliary enterprise* was also a functional category, as its space appears under the new category headings of office, conference and service; intercollegiate athletics and service; and general-use facilities and service. Thus, it can be seen that space for the categories relating to classroom and instructional laboratory will increase due to the addition of service areas. Space for the office, conference and service category will show a more marked increase because not only is service space included, but also all office-type space which was previously buried under other headings.

Now that the new space classification system and the conversion from previous space categories is more fully understood, it is possible to define the space categories appearing on the 1969-71 building program format. These definitions are shown below, and are intended to impart a general idea of the kinds of space appearing under each heading.

Classroom and Service--instructional space used for class meetings such as lectures, recitations or seminars, and space which directly supports such facilities (e.g., preparation rooms, coat rooms, projection booths, etc.).

Instructional Laboratory and Service--space equipped for specialized instruction in a specific area (e.g., chemistry experiments, painting, music practice, etc.), and space which directly supports such facilities (e.g., preparation rooms, balance rooms, darkrooms, etc.).

Research--all space used for research purposes; including laboratories, research office, conference rooms, cold rooms, and greenhouses.

Office, Conference and Service--rooms used by faculty, staff or students working at a desk; space which directly supports an office (e.g., file rooms, duplicating rooms, waiting rooms, office supply storage areas, etc.); conference rooms used by groups for non-class meetings; and space which directly supports a conference room (e.g., kitchenettes, chair storage, projection booths, coat rooms, etc.)--unless such areas are functionally classified as research or library.

Library - Areas used for the orderly collection, storage and retrieval of knowledge (e.g., study rooms, carrels, stacks, library processing areas and library offices), which are under the supervision of the library operation and available for use by more than one department.

Other Study and Service - reading rooms, study rooms, and supporting spaces typically scattered across the campus, which are not under the control of a librarian.

196

Physical Education and Service--athletic facilities (e.g., gyms, pools, towel rooms, etc.) used for instructional, intramural and recreational activities.

Intercollegiate Athletics and Service--athletic facilities used for inter-collegiate sports; including spectator seating area.

Other Special Use Facilities and Service--areas related to instruction, but somewhat specialized in nature. This includes space devoted to armory activities (e.g., indoor drill areas, rifle ranges, uniform distribution and storage areas, etc.); audio-visual, radio and TV facilities used in the pro-duction and distribution of instructional media; non-medical clinic facilities usually associated with such educational areas as speech and hearing, remedial reading and remedial writing; demonstration facilities such as home management houses and pre-school nurseries; and field service facilities (e.g., barns, sheds, animal shelters, etc.) related to farm operations.

General Use Facilities and Service--space which is usually considered to be revenue producing in nature. This category includes auditoriums and theaters; exhibition and display areas; dining and food preparation areas other than those used for residence halls; student health facilities; lounges; merchandising areas such as newsstands or vending machine rooms; and recre-ational areas typically found in student unions (e.g., bowling alleys, ping pong rooms, ballrooms, chessrooms, etc.).

Supporting Facilities and Service--areas which in general provide services on a campus-wide basis. The following types of space are included under this heading: data processing-computer facilities; painting, electrical, carpenter shops and similar physical plant maintenance facilities; central printing and duplicating shops; central stores; "warehouse" storage; vehicle storage; central laundry; and central food stores.

As previously indicated the information necessary for the completion of this worksheet includes not only a knowledge of the institution's current and approved space situation, but also projections of enrollments and faculty and staff populations, based upon both expected enrollments and operating budget. In addition the academic program must be taken into account. Thus, all four of the areas of concern at this conference--academic planning, institutional studies, finance and facilities--will be involved in producing information necessary for the completion of the 1969-71 building program format. However, greater effort is required if this information is to be properly integrated. In future biennia the presently elusive academic program of the institution should form the umbrella under which all the planning and projecting tasks necessary for the determination of space needs and recommended buildings is carried out. Operating budget expectations should be more fully considered in faculty and staff population projections, as well as in the projection of other information such as the number of library volumes. And, of course much work remains to be done in the development and refinement of space guidelines. Thus, although the 1969-71 building program format represents a step forward, it is only a transitional step toward a format which truly reflects and easily communicates each institution's particular space needs.

CHART ONE

PROPOSED 1969-71 BIENNIAL BUILDING PROGRAM FORMAT

Enrollments: 1967   1972

Undergraduate
Graduate
Total

	Class-room & Serv	Instr Lab & Serv	Re-search	Office Conf & Serv	Libry	Other Study &Serv	Phy Ed & Serv	Inter-col Athl& Serv	Other Spec Use & Serv	General Use Fac & Serv	Support Fac & Serv	Total Assign Space
Space Occupied Fall 1967												
Space Leased or Rented												
Space Authorized or Under Construction 1965-67												
Space Authorized or Under Construction 1967-69												
Space Released (Razed or Temp.)												
Space Available Fall 1970												
Space Required Fall 1972												
Deficit or Surplus												
Recommendations 1969-71												

198

CHART TWO

1969-71 APPROVED SPACE GUIDELINES

Classroom and Service:

$$\frac{16.5 \text{ NASF/Student Stat.}}{.67 \text{ Stat. Util. x 30 RM. PDS./WK./RM.}} = 0.821 \text{ NASF/Student Class Hour}$$

Instructional Laboratory and Service:

$$\frac{71.5 \text{ NASF/Student Stat.}}{.80 \text{ Stat. Util. x 24 RM. PDS./WK./RM.}} = 3.724 \text{ NASF/Student Lab Hour}$$

Office, Conference and Service:

135 NASF/FTE Faculty and Staff-Exclusive of Library and Research Faculty and Staff

Library:

Stack Space: 0.1 NASF/Volume

Reading Rooms: 25.0 NASF x .20/ Undergraduate Student

Carrel Space: 45.0 NASF x .25/ Graduate Student

Office & Serv: 135.0 NASF / FTE Library Staff

Physical Education:

47,500 NASF with Enrollments up to 5,000.

9.0 NASF/Student with Enrollments of 5,000 to 10,000.

8.5 NASF/Student with Enrollments of 10,000 to 20,000.

8.0 NASF/Student with Enrollments of 20,000 and over.

CHART THREE

SPACE CLASSIFICATION SYSTEM

Function Classification	Generalized Type of Room Classification
Instruction	Classroom Facilities
Research	Laboratory Facilities
Public Service	Office Facilities
Library	Study Facilities
General Administration And Institutional Services	Special-Use Facilities
Auxiliary Services	General-Use Facilities
Non-Institutional Agencies	Supporting Facilities
Unassigned Area	Medical Care Faciiities
Non-Assignable Area	Residential Facilities
	Unassigned Area
	Non-Assignable Area

CHART FOUR

SPACE CATEGORIES
1967-69 AND 1969-71 BIENNIAL BUILDING PROGRAM FORMATS

1967-69	1969-71
Classroom	Classroom and Service
Instr. Laboratory	Instructional Laboratory and Service
Office	Research
Library	Office, Conference and Service
Other Instructional	
Research	Library
Physical Education	Other Study and Service
Extension & Pub. Serv.	Physical Education and Service
Physical Plant	Intercol. Athletics and Service
Other Non-Instructional	Other Special-Use Facilities and Service
Auditorium	
Auxiliary Enterprise	General-Use Facilities and Service
	Supporting Facilities and Service

ROBIN O. RILEY
Chief, Coordination Section
Bureau of Engineering

PROPOSED FACILITY QUALITY STUDY FORMAT

Obsolescence Formula Study Factors - Description

Technical and Operational

1. Physical Characteristics. It is intended that items listed under this category be subjected to a technical evaluation under which the condition and adequacy of the building and building systems may be subsequently measured as a yardstick of the buildings' present and future use as an academic facility. In general, this represents a critical appraisal of space, light, heat and energy as represented by the following detailed considerations:

   A. Structural Condition. Identification of any deterioration in structural systems since the building was constructed; in particular the cumulative effects of climate, soil compaction, building loading, fatigue, displacement and component failure of beams, columns, girders, joists, footings, walls, floors and such other elements as may be integral to concrete, steel, wood or masonry structural systems.

   B. Exterior Condition. Evaluation of building facing materials, walls, windows, doors, insulation, calking, flashing, roofing, painting, dampproofing and weatherproofing.

   C. Interior Condition. Surface materials (partitions, ceilings, walls, floors) finishes, building components (doors, windows), acoustical qualities, natural light, effects of previous remodeling or modifications; condition of fixed equipment such as millwork, shelving, and storage cabinets.

   D. Building Efficiency. A measure of actual building efficiency arrived at by comparing gross area, assignable area and assignable/gross ratio with the norm for building type.

   E. Adaptability to Expansion. Interior planning and space distribution, horizontal and vertical access, exits, building configuration and other architectural considerations. Flexibility of heating, ventilating, cooling and plumbing installations, transformers, switchgear and secondary electrical distribution systems.

F. **Mechanical Building Systems.** Adequacy, suitability and efficiency of heating, ventilating and air conditioning installation. Condition of plumbing including fixtures, waste lines, traps, vents and related piping. Capacity and efficiency of vertical transportation.

G. **Electrical Building Systems.** Lighting, light levels, fixtures, switching and convenience outlets, power supply (qualitative and quantitative) building (secondary) electrical distribution, transformer, switchgear, building service and emergency power supply.

H. **Special Systems.** Public and private telephones, intercom, radio and TV (campus closed circuit), computer circuiting, clock and program, fire alarm, security and signal systems.

I. **Utility Services.** Adequacy and efficiency (quantitative and qualitative) of supporting utility systems in the handling of existing building loads. Capacity in relation to current use of all utilities supplied from a central system or waste distribution to bulk disposal facilities including water supply, sanitary and storm sewers, heating or chilling mains, gas, air and the supply of electrical energy.

2. **Building Services.** A prorata evaluation of labor and materials expended in routine maintenance of a facility.

A. **Construction Materials.** Floors, ceilings, exterior, and interior walls, roofing, sheet metal and special finishes.

B. **Mechanical Systems.** Heating, ventilating, air conditioning and elevators.

C. **Electrical Systems.** Fixtures, wiring, controls, and communications gear.

3. **Codes and Safety.** A general appraisal of the building plan and individual building features contributing to or detracting from the *safety* and *protection* of the occupants and general public. Identifiable deviations from the State Building Code to be reported for immediate corrective action by the user agency: stairs, access and egress; fire prevention and smoke detection; protection of hazardous laboratory materials, industrial gases and volatile liquids.

4. Building Location. A statement of the compatibility of building location as measured against the following criteria:

   A. Relationship to Existing Campus Development. Architectural considerations of siting, massing and design as related to topographical features, function, pedestrian and vehicular traffic patterns and proximity to functionally related structures and major utility distribution points.

   B. Relationship to Campus Master Plan and Community. As above, but including physical relationships to community for community participation oriented facilities; access and parking.

   C. Historical Significance. Institutional tradition, historic community identity or both.

5. Land Use. The evaluation of a structure in terms of *optimum use of the land in context with*:

   A. Existing Use. Population, building valuation, building density on site, space disposition (hi rise, walk up), water tables, subsoil, conditions, topographical limitations.

   B. Future Use. Projection of items under A (above) against campus master plan.

Obsolescence Formula Study Factors -
Point System, Technical and Operational

		Maximum Points	Points Assigned	
			Ordinary	Extra*
1.	**Physical Characteristics**	52		
	A. Structural Condition		4	
	B. Exterior Condition		4	
	C. Interior Condition		4	
	D. Building Efficiency		6	
	E. Adaptability to Expansion		6	
	F. Mechanical Building Systems		10	
	G. Electrical Building Systems		10	
	H. Special Systems		4	
	I. Utility Services		4	
2.	**Building Services**	7		
	A. Construction Materials		3	
	B. Mechanical Systems		2	
	C. Electrical Systems		2	
3.	**Codes and Safety**	10	10	
4.	**Building Location**	15		
	A. Relationship to Existing Campus Development		6	
	B. Relationship to Campus Master Plan and Community		6	
	C. Historical Significance		3	
5.	**Land Use**	16		
	A. Existing Use		8	
	B. Future Use		8	
			100	

*Extraordinary points are intended for the identification of physical or operational limitations of such gravity as to have a disproportionate effect on present and future space use of the facility. It is further intended that they be considered and applied only in the context of an emergency measure necessary to project an accurate assessment of space depreciation.

Points may be assessed at a rate not to exceed 10 per category (5 categories) and may be cumulative biennially.

Obsolescence Formula Study
Hartford School - Point System, Technical and Operational

		Maximum Points	Assigned Points Ordinary	Extra
1.	**Physical Characteristics**			
	A. Structural Condition	4	3	
	B. Exterior Condition	4	3	
	C. Interior Condition	4	2	
	D. Building Efficiency	6	5	
	E. Adaptability to Expansion	6	0	5
	F. Mechanical Building Systems	10	5	
	G. Electrical Building Systems	10	7	
	H. Special Systems	4	3	
	I. Utility Services	4	3	
2.	**Building Services**			
	A. Construction Materials	3	1	
	B. Mechanical Systems	2	1	
	C. Electrical Systems	2	1	
3.	**Codes and Safety**	10	8	
4.	**Building Location**			
	A. Relationship to Existing Campus Development	6	3	
	B. Relationship to Campus Master Plan and Community	6	0	5
	C. Historical Significance	3	0	
5.	**Land Use**			
	A. Existing Use	8	4	
	B. Future Use	8	0	5
		100	49	15
			15	
	Total Assigned Points		34	

Obsolescence Formula Study Factors - Description

Academic

It is intended that the criteria as listed in this category be subjected to an academic evaluation encompassing educational adequacy, efficiency and use of space, building (fixed) equipment, environment, climate, support services, utility availability and distribution; such evaluation to be based on current academic use and conducted on a room-by-room basis.

1. Space Requirements

   A. Area Provided for Each Unit of Use
   B. Area Provided for Ancillary Equipment
   C. Surge Capacity
   D. Area Restrictions and Limitations
   E. Storage

2. Space Efficiency

   A. Control Requirements
   B. Exit and Entrance Conditions
   C. Traffic Patterns in Room
   D. Effect of Adjacent Occupancies
   E. Security
   F. Academic Load

3. Flexibility of Space

   A. Adaptability to Temporary Change
   B. Adaptability to Permanent Change
   C. Modernization Capability
   D. Improvement of Quality Levels
   E. Multiple Use

4. Location

   A. External Traffic Disturbance
   B. Internal Traffic Patterns
   C. Relation to User
   D. Relation to Staff
   E. Relation to Other Units
   F. Required Interaction
   G. Public Usage

5. Environment

    A. Special (Heat, Cold, Humidity, Static Free, Sterile)
    B. Light
    C. Heat
    D. Ventilation
    E. Air Conditioning
    F. Acoustics
    G. Aesthetics
    H. Psychological Factors

6. Fixed and Movable Equipment and Accessories

    A. Adequacy
    B. Suitability
    C. Location
    D. Condition

7. Support Services

    A. Electrical Energy
    B. Communications
    C. Water, Air, Gas and Vacuum Supplies
    D. Solid, Liquid and Gaseous Waste Disposal

Obsolescence Forumla Study Factors –
Academic Evaluation Point System Value Range Table

A general statement compiled by the user agency, establishing the parameter of factors affecting space utilization.

	Points		
	Minimum	Maximum	
Space Requirements	5	40	Point range derived
Space Efficiency	5	20	from stated factors
Flexibility of Space	5	30	is intended to be
Location	5	15	illustrative and not
Environment	5	20	limiting.
Fixed and Movable Equipment	5	20	
Support Services	5	30	

Assignment of Points from Established Value Range Table and Room Evaluation

A statement of values derived from the value range table and applied to the specifics of a given area and academic function (classrooms, labs, offices).

	Weighted Points	Assigned Points
Space Requirements	25	
Space Efficiency	10	
Flexibility of Space	15	
Location	15	
Environment	15	
Fixed and Movable Equipment	5	
Support Services	15	
Maximum Permissible	100	

Coefficient of Utilization (c)

The total of the assigned points (by definition less than 100) represents an academic coefficient of utilization for individual areas.

Area Utilization

C X Room Area = Utilization Factor (u) in sq. ft.

Building Utilization

Obtained by totalling utilization factors of academic and support areas for the facility.

Academic Efficiency

$$\frac{\text{Building Utilization (sq. ft.)}}{\text{Assignable Academic Space (sq. ft.)}} = \% \text{ Efficiency Ratio.}$$

Obsolescence Formula Study Factors –
Academic Evaluation Point System – Building "X"

Factors	Point Range Min.	Max.	Staff Offices WP	AP	Grad Offices WP	AP	Storage WP	AP	Seminar WP	AP	Lab (L) WP	AP	Lab (R) WP	AP
1	5	40	25	25	30	10	35	10	30	20	15	10	35	30
2	5	20	15	12	10	5	20	15	15	15	15	5	5	5
3	5	30	10	5	20	10	10	5	10	5	5	5	5	5
4	5	15	15	15	10	5	10	5	10	5	5	0	10	10
5	5	20	10	5	10	5	5	0	20	15	20	10	10	5
6	5	20	15	5	10	4	15	15	10	5	20	5	5	5
7	5	30	10	0	10	0	5	5	5	5	20	10	30	25
Total W.P.	100		100		100		100		100		100		100	
Coeff. (c) of Utilization				75		45		55		70		45		85

Assignable Square Footage

Laboratories (R)	1836
Laboratories (L)	1404
Storage	537
Staff Offices	660
Grad Offices	930
Seminar	228
	5595

Gross Square Footage

9020

Area Utilization (U) Sq. Ft.

|			
Laboratories (R)	1836 x 85	....	1560
Laboratories (L)	1404 x 45	....	632
Storage	537 x 55	....	295
Staff Offices	660 x 75	....	495
Grad Offices	930 x 45	....	418
Seminar	228 x 70	....	160

Building Utilization   3560 Sq. Ft.

Academic Efficiency

$$\frac{\text{Building Utilization}}{\text{Assignable Academic Space}} = \frac{3650}{5595} = 65.2\%$$

Obsolescence Formula Study - Point System Time Relationship
Rate of Obsolescence - Projection in Graphic Form

FACILITY (NEW) 1968
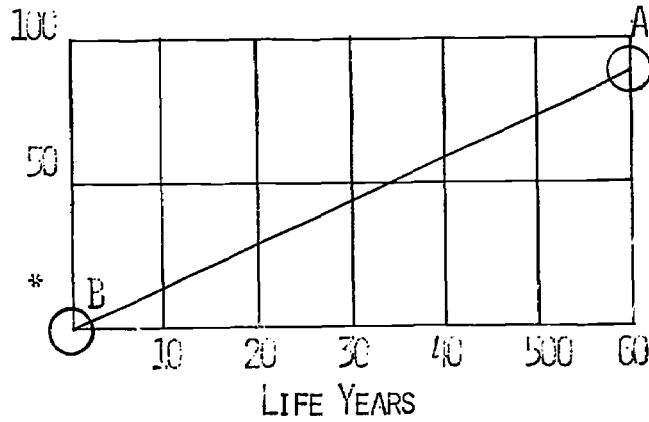
- Rate of obsolescence a
  measure of slope of the
  line.
- A and B both established
  as a result of an initial
  (design) evaluation.
- Predicted (design) life
  60 years.

FACILITY 1968 + 12
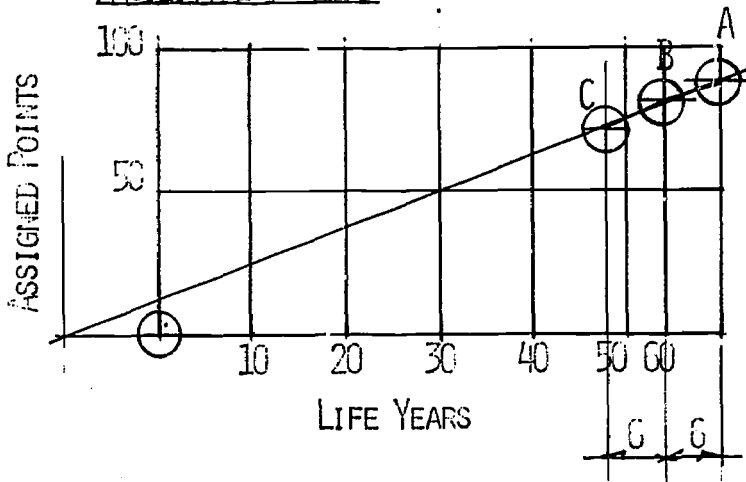
- Elapsed time of 12 years
  representing completion
  of second 6 year inspection.
- A, B and C established as
  a result of independent
  evaluation.
- Predicted life 70 years.

FACILITY 1968 + 24
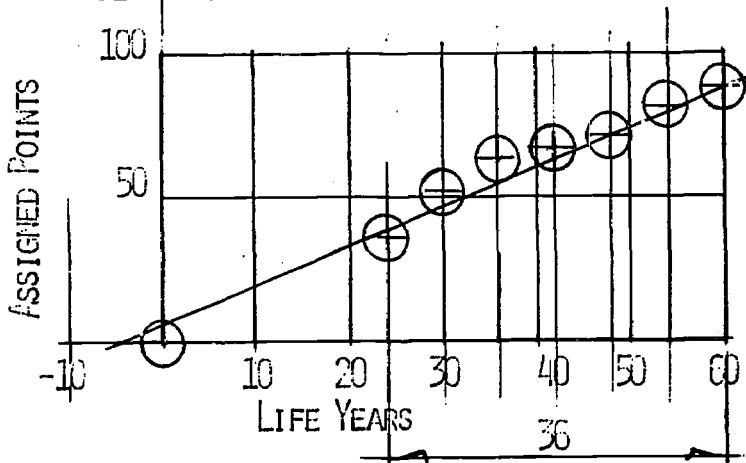
- Cumulative data acquired
  from four consecutive
  6 year inspections.
- Predicted life 65 years
  with anticipated accuracy
  of one biennium.

*Graph "0" Minimum acceptable point count under which building can properly
function for a given mission.

211

Obsolescence Formula Study - Point System - Time Relationship
Downer Evaluation - Like Function and Construction

	1965 Recommendations	Built	Total Life Expectancy (Years)
McLaren Hall	3	1903	65
Engelmann Hall	25	1926	64
Sabin Hall	25+	1927	63
Kimberly Hall	5	1908	60
Albert Hall	5	1907	63
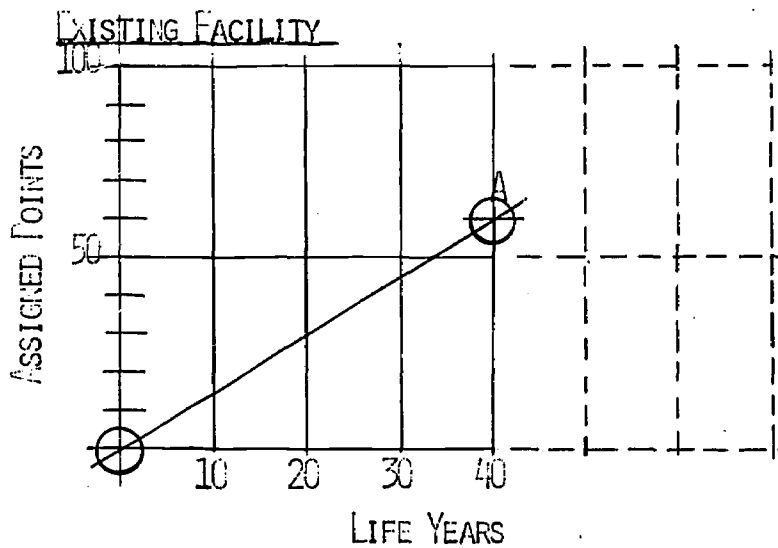
First Method

Predicted slope, current valuation "A" and building life of 40 years based on initial inspection.

(Similar to Downer study.)
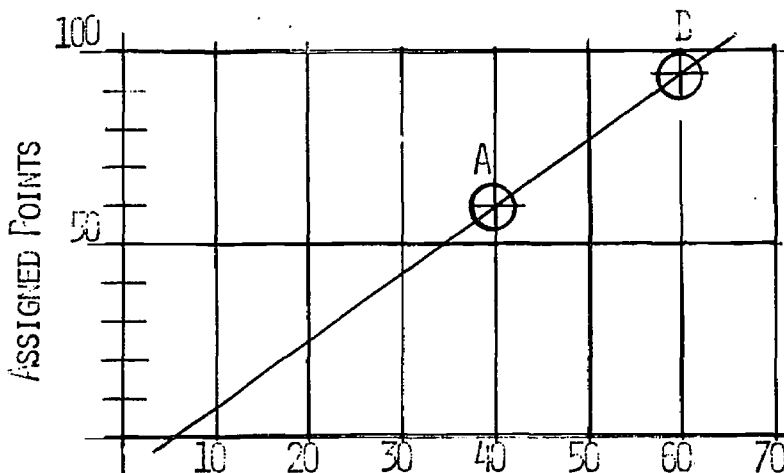
Second Method

Predicted slope based on two initial evaluations.
A. Current "A"
B. Retroactive based on new structure "B"

Obsolescence Formula Study
Point System - Time Relationship

Classroom Building

Life Years
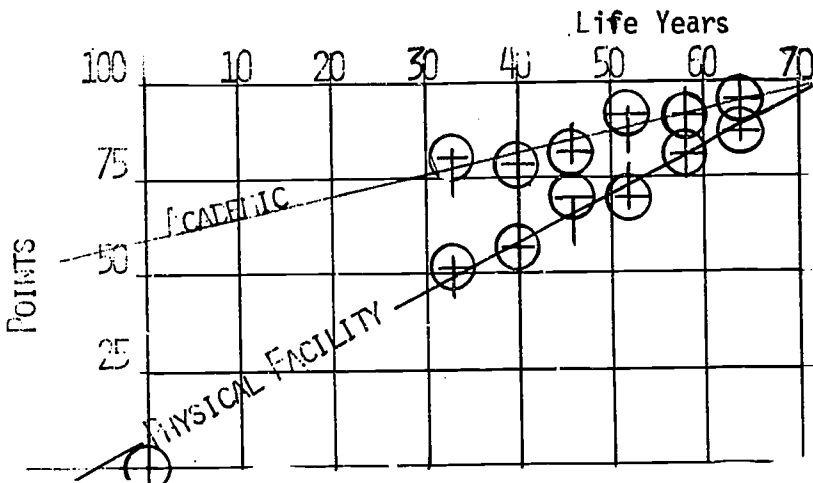
Built 1930
Estimated Life:
1. Academic
   Indefinite
2. Physical Facility
   A. Initial
      Estimate
      70 years
   B. Actual
      Projection
      78 years

Building space depreciation based on
physical deterioration occurring over
78 year span

Limiting Factor - Physical Facilities

LIBRARY

Life Years
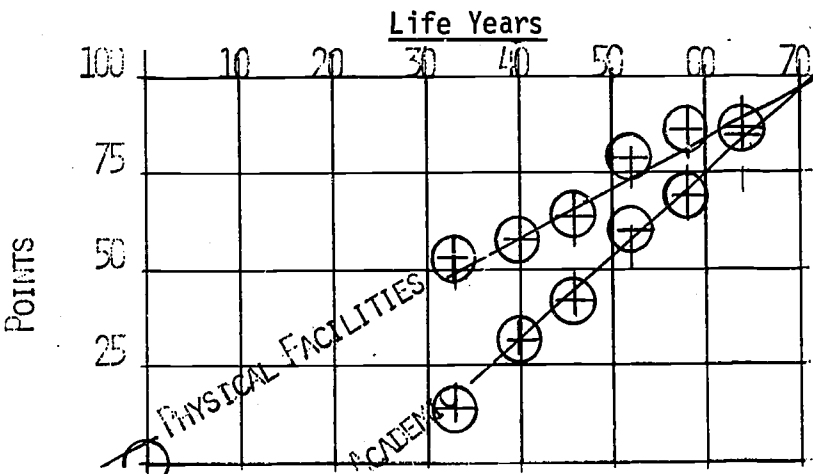
Building space obsolescence based on academic
usefulness which depreciates fully in 45 years.

Projected physical life 75 years: assignable
square footage available for re-evaluation in
terms of new academic function.

Limiting Factor - Academic Mission

213

Obsolescence Formula Study
Point System - Time Relationship

Library

Cumulative
effect of
application of
extra points
to physical
facility
graph.

Typical Graph

Life Years
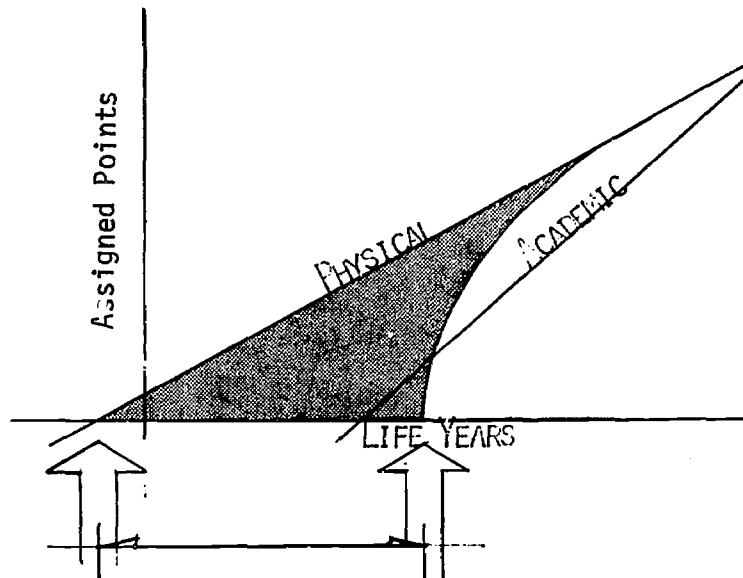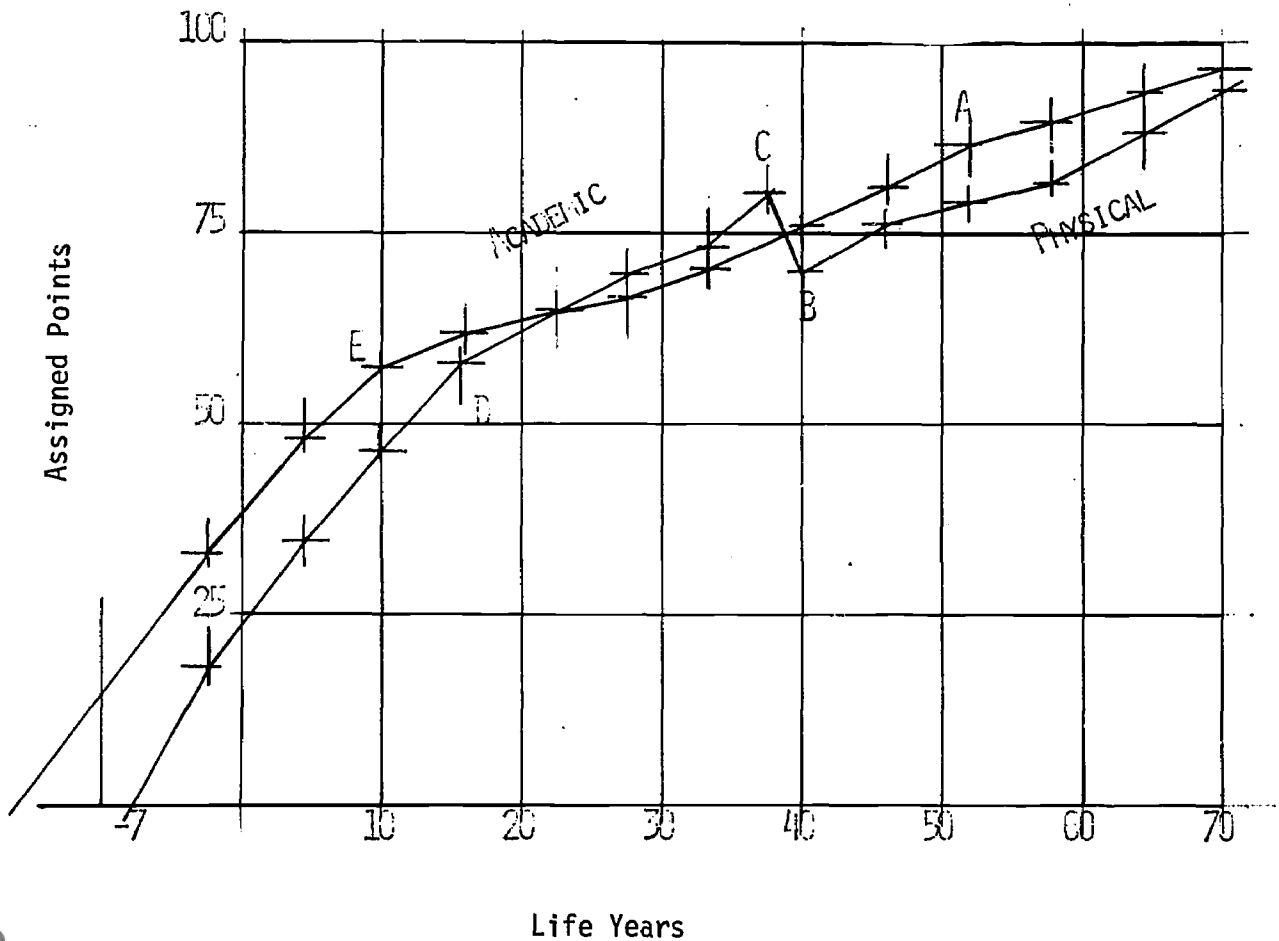
	McLaren Hall
Built	1903
Additions or Modifications	None
Space	19,456 sq. ft. including basement 10,080 sq. ft. assignable

GENERAL: This building was the third dormitory to be built
on the Downer Campus and was occupied by 60 students
in September 1903.

Assignable space is entirely occupied by dormitory
rooms and support facilities such as an administrative
office, lounges, basement recreation area and laundry.
There is no food service capability.

REPORTS:

Date	Physical & Operational	Academic
1909		
1915		
1921		
1927		
1933		
1939		
1945		
1951		
1957		
1963		

PAUL J. ANSFIELD
Coordinator, Physical Facilities
Wisconsin State Universities

A "WHAT IF" APPROACH TO ACADEMIC FACILITIES UTILIZATION

The first step in effective academic facility planning is knowing with
some precision, what is the existing inventory of facilities and, in
particular, just how those facilities are being utilized. If these data
are valid, the basis for decision making is established. Planning and
construction, or reconstruction, of required facilities may commence
and progress.

Those who are aware of the current methods and procedures for achieving
required academic facilities in the State of Wisconsin agree that the
inventory of physical facilities for higher education in this state is
one of the finest. There is also agreement that this inventory may be
refined further and its validity advanced. Our consensus is that Wis-
consin's academic facility inventory has developed enough precision so
that we have an excellent start for sound facilities planning. I am not
sure we can simply say the same for our techniques of evaluating the
utilization of our inventoried academic facilities.

What is problematical is not the methodology of gathering utilization data
or even the measures of facility use, such as weekly-student-contact-hours
or room-periods. What is questionable appears to be the adequacy of existing
utilization criteria. How are the criteria to be refined; what should be
their numerical values, how are utilization criteria researched, developed
and evaluated? Even now, if we accept the suitability of the current utili-
zation criteria for facilities planning use, we would like to determine better
procedures for making sure they are met. Pointedly, we ask what is the best
procedure to insure adequate facilities utilization in all of our institutions
of higher education. These kinds of questions should be asked and they are
answerable.

I would like to speak about one approach we, in the State Universities, must
look to in our effort to provide the answers. The approach itself is not
so new, but what is new is the way we choose to develop it as a workable
procedure for enhancing facilities utilization. The approach we are develop-
ing, in fact, asks another question, a "what if" question such as this:
what will the student station use be *if* a criterion is imposed of 70%
station occupancy for classrooms used for 30 class hours of a 44-class-hour
week. To answer this type of "what if" question regarding facilities utili-
zation, we will employ simulation methodology and computer technology to
maneuver detailed inventory data such as room type and number of available
student stations, the university timetable of classes, the faculty with
regard to their teaching load and unique course assignments, the students'
selection from among the offered courses, and the students' preferential

faculty choices. By means of the computer, all of these factors can be manipulated rapidly and with ease; various constraints can be imposed and a variety of heuristic alternative sets of room assignments for achieving optimal utilization of existing facilities can be forecast. Ideally, the one best alternative, or answer, may be chosen and implemented.

By now, the experienced facilities specialists among you will have concluded that the "what if" approach I speak of is really nothing more than first aid for the old lame duck of automated class scheduling and sectioning of students that almost expired five years ago. Well, yes and no! First, computerized class scheduling is not a lame duck but has suffered in the past, I feel, from an initial lack of sophisticated computing hardware and software, from inappropriate application of the first automated scheduling procedures, and from general inability to meet the needs of college and university administrations. Second, I am convinced that the way to discover the best utilization pattern for any complex of academic facilities is to simulate a variety of possible class schedules and then decisively implement the one schedule that best approximates the existing standard for utilization and that best supports the institution's academic program.

You must appreciate that I am thinking of automated class scheduling not just as a means of expeditiously doing by machine what the scheduling officer of a university traditionally and laboriously does by hand each semester or quarter. The primary objective of the usual scheduling system is to generate a time schedule of classes to be offered by assigning rooms, faculty and students to classes in such a way that the number of conflicts in student programs are at a minimum. This traditional approach to scheduling takes student requests for courses as a starting point and by use of a methodology, as elusive as the Unicorn, constructs a schedule to cover the greatest amount of requests. Forty-five to sixty percent conflicts are not uncommon in class schedules produced in this traditional way. This type of manual process, even if converted identically step-by-step to computer processing for added speed, is tedious, costly, and still time-consuming to the point of becoming ineffective. Most often, the mechanism of assignment employed was so inflexible that so-called time tested class schedules persisted term after term without being really evaluated for the best use of existing facilities.

There is little imagination and creativity in such a class-scheduling process, whether it is done manually or converted with identity to computer operation. Optimal utilization of facilities is not of primary concern and certainly far from being achieved with the traditional methodology. Automated class scheduling should not be considered mechanization or computerization of the traditionally rigid and manual procedure. Automated class scheduling should be looked to as a flexible planning technique which can fit together a complex network of time, physical resources, people and their preferences in order to maximize the use of existing academic facilities and to plan the physical requirements of future academic facilities.

Abundant experience with the traditional class-scheduling methodology has resulted in identifying factors that must be included in the development of newer and more practically applicable scheduling by simulation paradigms or "what if" techniques. For example, while there may be a mathematically optimal solution for the assignment of a fixed number of people to available space, it is not clear that an optimum solution is really required by most universities. In most universities, the administration does not manipulate the faculty at will; it is very difficult to tell a full professor, with twenty-five years seniority and who is heavily involved in research, when and where he will teach. Because many of the faculty have fixed commitments, it is important that instructional assignments remain flexible. Certain facilities *are* for special purposes and *are* practical for use only in a very narrow range of course offerings. Academic departments prefer to do most of their teaching near to their offices. Many classes require unique instructional aids which are difficult to move and set up in different locations in the short space of time between classes. All these factors and conditions must be taken into account in any scheduling system if it is to function in a manner acceptable to the faculty as well as the students.

The automated class-scheduling procedure that we in the State University feel is desirable takes into account the kinds of problem factors just described, in addition to standardized utilization criteria. It enables the university administration to ask and answer the kind of "what if" questions that will optimize facilities utilization. The addition of utilization criteria as important factors in scheduling and the availability of quantity high-speed random access storage in the third generation computers, makes it entirely feasible to develop a computer oriented class-scheduling program useful as a simulator of alternative schedules biased for the best utilization of academic facilities.

The scheduling procedure as we conceive it, then, is a computer program designed to make systematic changes among scheduling parameters as instructed by the university administration and report the results in terms of class schedules and measures of facilities utilization. These changes could include alterations of the timetable for classes, the attachment of differing priorities to faculty and student preferences, information about optimal section size and class balancing factors, and the introduction of the components of standard utilization criteria. Many other systematic changes are also possible.

The scheduling program we have in mind allows for the introduction of successive and incremental changes in any one of, or a combination of, scheduling parameters while keeping still others constant. Or, by way of example, the program could be instructed to hold constant all data except that for room type and the number of available student stations. The same computer scheduling program can be instructed further to successively increase the number and type of rooms and generate output which would display the minimum number and type of rooms required to implement a given academic program. Moreover, by studying the output produced after

each successive and incremental change, the administrators of academic affairs would be able to learn what the contribution of additional space above the required minimum would make to desired and planned improvements in the curriculum.

Note also, that the administrator of academic affairs or the scheduling officer, does not have to examine every successive schedule produced by incremental change in the type of parameters we have just described. We could instruct the program to produce only those alternative schedules which would bracket the current utilization components which contribute to the latest utilization standards for station use. See Table 1.

Table 1

Actual Utilization Criteria

Utilization Components

Room Type	Class-Hrs./Wk.	Proportion of Total Stations Occupied	Station Use
Classrooms	30	.67	20.1*
Laboratories	24	.80	19.2*

Here are displayed current utilization criteria. The computer program will produce a specific class schedule, which will meet the standards for optimizing room use in terms of these standard utilization components. See Table 2.

Table 2
Simulated Utilization Criteria

Room Type	Utilization Criteria		Station Use
	Class-Hrs./Wk.	Proportion of Total Stations Occupied	
SET Class Rooms	34	.59	20.1*
1 Laboratories	22	.87	19.2*
SET Class Rooms	29	.69	20.1*
2 Laboratories	21	.90	19.2*
SET Class Rooms	38	.53	20.1*
3 Laboratories	30	.64	19.2*

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*The utilization standard is expressed as CLASS-HRS./WK. of station use

For each of the three utilization criteria sets displayed, a different class schedule would be produced for the unique interaction of the utilization components in each of the three alternatives in figure 2. Yet, all three alternatives result in the same station use. This type of computer program or simulation technique becomes not only a procedure for the continuing process of scheduling classes each term but, even more, becomes a sophisticated methodology for researching, developing and evaluating existing and proposed utilization criteria.

A well defined class-scheduling simulator, of the type I have previously described, is feasible and can be implemented. The advantages are clear; they include generation of minimum conflict class schedules each term; significant savings of schedule planning time by students, faculty and administrators; provision of accurate figures on facilities utilization; provision of a modern facilities planning aid; and achievement of the capability for matching capital building expenditures with academic needs.

Finally, computer simulation is often the only feasible way to analyse and evaluate a system. Certain very complex systems, such as utilization of academic facilities in higher education, seem to defy analysis by simpler techniques. It would appear that learning to skillfully ask a variety of "what if" questions of a class-scheduling simulator is the best approach for studying and developing optimal utilization of our academic facilities.

FINANCE WORKSHOPS

PROGRAM BUDGETING AT THE INSTITUTIONAL LEVEL: USE OF BUDGET AS A MANAGEMENT TOOL

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OVERVIEW OF THE BUDGETARY PROCESS IN PUBLIC HIGHER EDUCATION:
THE ROLE OF THE CCHE

My purpose today is to examine the role of the Coordinating Council
for Higher Education in the budgetary process; specifically, I wish to
discuss:

- Various perceptions of the Council's role, and some of its
  key policy objectives

- Guidelines used in the actual performance of its role

- Progress to date in laying the groundwork for the 1969-71
  biennial budget

Overall Role of the CCHE

The CCHE's statutory mandate in the finance area can be summarized in
a few words--namely, to "review the separate budget requests" of the
public higher educational systems and to "recommend a single, consolidated
biennial budget request" to the Governor and legislature. In addition,
the CCHE is vested with "final authority" in determining the consolidated
budget request and has "full responsibility" for its presentation.

The crucial issue, of course, is not simply what the laws say about the
responsibilities of the Council, but how *in fact* it discharges these
responsibilities. In other words, despite the rather sweeping statutory
authority delegated to the CCHE, its actual role in the governmental
system is open to various interpretations. How one perceives that role
depends at least partially on where he is located in the structure of
state government, i.e., the Governor's office may have one view, the
Joint Finance Committee another, and the central administration of one
of the university systems, still another.

To be recognized, first of all, is that the coordinating process--as
Lyman Glenny points out--is "a political one involving powerful social
agencies such as colleges and universities with their historic . . .
independence and autonomy on the one side" and the elected decision-
makers on the other--the governor and legislature. Situated between
these two political forces, the coordinating agency must attempt to
define its role. Should it identify with the higher educational systems,
or with the elected officials and related state agencies, or with both?

In my opinion, there are three or four possible conceptions of the Council's role:

1. a spokesman or advocate for the interests of higher educational institutions.

2. a mediator or connecting (communications) link not only among the systems under its jurisdiction but between the systems on the one hand and the executive and legislature on the other. In effect, one might regard the CCHE as a mechanism for regulating interaction among the various participants--for "interpreting the interests, needs, and goals of one side to the other."[1]

   In this connection the Council might also be considered a *buffer* between the general public and the higher educational systems; it can help to insulate institutions from certain types of external pressures, such as direct attempts to interfere with academic freedom or other strictly internal operations.

3. a planning and policy-making arm of the state designed to assist the elected officials in arriving at sound educational policy decisions.

Obviously these conceptions are not mutually exclusive or inherently incompatible. All are legitimate roles for the CCHE. Whether one receives greater emphasis at a particular point in time hinges largely on the issue or policy area involved.

However, I would attach greatest importance to the planning and policy-making function of the Council given its basic objectives; briefly these are:

. To serve the diverse higher educational needs of Wisconsin youths and adults. A key goal here is to insure that every resident high school graduate with the necessary ability and motivation is able to pursue that form of post-secondary education best suited to his needs.

. To produce well-qualified personnel--at the professional, semi-professional, and vocational levels--in response to manpower demands.

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[1]See: James Gilbert Paltridge, *Conflict and Coordination in Higher Education* (Berkeley: University of California, 1968), p. 45.

. To foster excellence and diversity in statewide higher education.

In short, a central goal of the CCHE is to achieve optimum use of total higher educational resources--both human and financial.

Clearly such objectives presuppose comprehensive long-range planning, i.e , projection of needs on a statewide inter-system basis; assessment of alternative methods of accomplishing goals; and establishment of program priorities.

Now let us turn specifically to the CCHE's budgetary functions.

Role of CCHE in Budgetary Process

What is the role of the Council in the budgetary process? Is it a "gatekeeper" of public higher educational budgeting? Is its function that of placing a brake on institutional demands--of bringing system requests into line with projected resources?

To me this implies too negative a role for the Council and its staff; rather, I look upon the budget primarily as a vehicle for translating educational program and policy goals into fiscal requirements on both a short-term and long-range basis.

In my area of responsibility an overriding aim is to insure an equitable and efficient allocation of state resources that is consistent with the objectives of the CCHE and the approved academic missions of the different systems and campuses. In other words, fiscal planning must be meshed with academic and facilities planning; all three areas are very much interrelated.

Specific Facets of the CCHE Staff's Budgetary Role--

What are the specific aspects of the CCHE staff's "role performance"?

1. *Scrutiny of policy areas related to finance.* A major obligation of the staff is to conduct comprehensive studies in selected policy areas. (Our concern is with the broader and larger issues facing higher education; the detailed, line-item, "nitty-gritty" analyses can be left to the Department of Administration!) Examples include: the financing of public two-year higher educational institutions; support formulas for extension and public service programs; faculty needs; etc.

2. *Examination of comparative support factors in higher education.* A second function of the staff is to compare Wisconsin's support trends in higher education with those of other states, e.g., ability to pay, per capita expenditures for higher education.

225

3. *Development of procedures and techniques—in cooperation with the systems and Department of Administration—for the preparation and review of budget requests.* Paltridge, in his study of the CCHE, highlights the importance of this aspect of the Council's role as a way of gaining the confidence of the systems, the state agencies, and the governor and legislature (see page 86). Involved here, among other things, is the development of appropriate *formats* for the reporting and analysis of information.

4. *Determination of the fiscal implications of new program requests.* As the University of Wisconsin and State Universities expand their graduate offerings, it is essential that the CCHE staff probe the short-term and long-range fiscal implications of graduate program requests.

5. *Stimulating efficiency and economy.* The CCHE provisional long-range plan calls for "a major effort to stimulate . . . efficiency and economy" within this framework: program quality, maximum service to the student and the state, and maximum return on the tax dollar.

6. *Vigorous leadership in presenting the budget to the elected decision-makers.* Once educational needs, programs, and levels of support have been decided upon, the Council and its staff should exert vigorous leadership in presenting the biennial request to the governor, the legislature, and the general public. Certainly in this sense the CCHE is an advocate for higher education.

Summary—

The CCHE's role differs from that of the individual systems, i.e., the Council focuses on *total statewide* higher educational needs; its role also differs from that of the Department of Administration and the Governor, i.e., whereas the CCHE evaluates requests and assigns priorities within higher education *alone*, the chief executive must balance higher educational needs against competing agency demands in such areas as welfare, health, conservation, and highways.

Constraints under which the CCHE Staff Operates—

Under what constraints does the CCHE staff function? These can be enumerated briefly:

. Burden of calculation. In the words of one authority: "Budgeting is complex largely because of the complexity of modern life."

. Limited time and information.

. Outlook and predilections of CCHE members. They are only
human like the rest of us!

. "Professional ethics" and a sense of self-restraint on the
part of the staff. We respect institutional initiative,
discretion, and autonomy. As Bill White pointed out, we want
the systems and campuses to do their own planning.

. Political environment.

Role of CCHE Budget Liaison and Advisory Committee--

Let me now say a few words about the CCHE's approach in laying the
groundwork for the next biennial budget, 1969-71. Last December the
staff formed a Budget Liaison and Advisory Committee composed of Messrs.
Lorenz, Winter, Budnar, Hiestand, and myself, with Gary Goetz also
participating. It was the feeling of the staff that such a committee
could be an important vehicle for: exchanging ideas and information,
examining educational needs and policy issues, reviewing and where
necessary modifying budgetary procedures and techniques, and allocating
workload responsibilities on the basis of special areas of competence
or expertise.

I'll outline the committee's progress very briefly since this will be
explored in depth tomorrow:

. Agreement on a timetable for the preparation, submission,
and review of budget requests. Such a schedule affords an
opportunity for thorough policy analysis by the CCHE Finance
Committee prior to action on specific budgetary requests.

. Revision of the budget format.

. Examination of quality standards in higher education--both
input and output measures.

. Preliminary discussion of faculty needs in the UW and WSU
systems, including salaries, fringe benefits, and recruitment
and retention patterns.

Concluding Remarks

I hope I have conveyed the idea that the aim of the CCHE staff in the
finance area is not to "slash budgets" but to foster orderly, "rational"
growth.

It is particularly important, I believe, that CCHE members view their
role as one of determining higher educational needs and policies, rather
than one of cutting budgets to justify their existence as a Council.[2]
The problem in the budgetary process is that a "stable pattern of mutual
expectations" can develop among the various participants. At the federal
level Aaron Wildavsky has shown that the agency is expected to play the
"advocate" role; the Bureau of the Budget, the role of "Presidential
servant with a cutting bias"; the House Appropriations Committee,
"guardian of the Treasury"; and the Senate Appropriations Committee,
"responsible appeals court."[3]

Obviously such a system is difficult to alter. Thus it would be
unfortunate indeed if the CCHE acquired the label of "budget cutter"
over and above that of "needs definer."

It seems to me that much depends upon building the necessary rapport
and confidence between the systems and the Council--a rapport and
confidence that develops from:

. open lines of communication--a free flow of information and
  sufficient justification of budgetary requests.

. related to this, an explicit statement of policy assumptions
  and goals and a spelling out of alternatives where possible.

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[2]This is not to say, of course, that the CCHE should simply accept all
budget requests from the systems!

[3]See: *The Politics of the Budgetary Process* (Boston: Little, Brown and
Co., 1964), pp. 160-61.

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OVERVIEW OF THE BUDGETARY PROCESS IN PUBLIC HIGHER EDUCATION:
THE ROLE OF THE DEPARTMENT OF ADMINISTRATION/GOVERNOR

The Governor and the Bureau of Budget and Management are frequently
thought to play similar roles in the budget decision-making process.
One of the major emphases of this presentation will be to identify the
similarities and differences in the two roles, and to delineate the
particular support mission which the Bureau of Budget and Management
plays. Secondly, this presentation will attempt to identify the
difficulties inherent in budget decision-making.

By statute, the Department of Administration must create a budget
document which contains a large number of accounts and financial summaries.
The statutes also prescribe certain dates by which certain steps of the
budgetary process must be completed: November 20 of each even-numbered
year, the Department must submit the resume of budget requests;
February 1 in each regular legislative session, the Governor must deliver
his budget message; on or about February 15 of each odd-numbered year,
the Governor must deliver his executive budget to the members of the
legislature.

Although most of the statutes delineate gubernatorial-department
relationships, the Department of Administration is also directed to
provide informational services to the Joint Finance Committee regarding
"the financial operations of the state and its several departments."

The role of the Bureau of Budget and Management in the budget decision-
making process includes:

1. *Technical aspects*--Education analysts are responsible
   for verifying the dollar accuracy of forwarded budgets.

2. *Knowledge and informational aspects*--Education analysts
   are responsible for absorbing, digesting and understanding
   education agency requests. This covers both program and
   financial content.

3. *Formulation of policy and program alternatives*--Educational
   analysts are responsible for drafting and refining alternatives
   to the directions set forth by the educational agencies, as
   they are endorsed or modified by the CCHE.

Some Bureau guidelines for posing alternatives are:

1. *Educational ends*--Analysts review educational programs and policies--existing or new--to determine their impact on statewide needs, e.g., trained manpower. Education may be viewed as a means and not an end.

2. *Overlooked or understated needs*--Analysts may identify educational needs for the state which have been overlooked or understated by educational agencies.

3. *Efficiency and effectiveness of operations*--Analysts review programs to identify costs and may suggest alternative ways of doing things.

Difficulties inherent in the process include:

1. *Time and deadlines*--Analysts must perform all analytical and alternative formulation functions in approximately four months.

2. *Knowledge and data stocks*--As elsewhere, knowledge and data stocks may be slim in relation to the magnitude of decisions to be made.

3. *Professional ethics and the "displeasure problem"*-- Educational analysts wish to avoid mistakes and feel some reluctance to tread in the educational world. "Poor" budget decisions and recommendations may come back to haunt analysts at a later date.

The roles of the Governor in the budget decision-making process are:

1. *To sort out claims and assign priorities*--The Governor is responsible for meeting all the state's needs and raising revenue to meet these needs. The priority he assigns to educational budget claims is judged in terms of other needs. He is an ultimate decision-maker.

2. *To redress imbalances or emphasize specific areas*--The Governor may wish to divert more resources to certain areas than others because he feels the state has lagged or he believes it is to the state's future benefit to start new programs.

3. *To act as appeals listener*--The Governor may hear education budget claims that have been overlooked, underestimated or de-emphasized by educational agencies and the Department of Administration. The Department of Administration is not the only access route to the Governor.

The similarities and differences in the decision-making role of the
Governor and Department of Administration are as follows:

1. *Similarities*

    a. The outlook is comprehensive in that both parties
       look beyond education and make assessments of total
       state needs.

    b. Considerations other than education may form the basis
       of alternative recommendations and decisions.

2. *Differences*

    a. The Department of Administration formulates alternatives
       but does not make policy decisions. The Governor, the
       systems, and the CCHE do make policy decisions.

    b. The Governor must ultimately balance priorities and
       adjudicate between competing budget claims; the
       Department of Administration identifies the competing
       claims, pinpoints policy implications and tries to
       demonstrate total program impact.

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Legislative Fiscal Bureau

OVERVIEW OF THE BUDGETARY PROCESS IN PUBLIC HIGHER EDUCATION:
ROLE OF THE LEGISLATIVE FISCAL BUREAU

The Legislative Fiscal Bureau is an outgrowth of the Ford Foundation grant to the State of Wisconsin in 1961 for the purpose of strengthening the public service of Wisconsin state government. Funds for the project were provided from a $240,000 grant from the Ford Foundation, released over a six-year period, and from a matching state appropriation.

It was recognized by members of the legislature that "In order to fulfill its historic duty, the legislature must have adequate staff and services so that it can readily obtain pertinent information vital to making policy decisions. The legislative branch should be at least as well equipped as the executive branch to obtain accurate information about departmental operations and budget requests . . ."

It was the intent of the legislature, and so stated in the law establishing the legislative improvement program (section 13.49 of the Statutes) that high priority be given to fiscal review and budget analysis. From the outset, the legislature assigned to the Legislative Fiscal Bureau (formerly called the Legislative Budget Staff) the responsibility for examination of department appropriation requests and the effectiveness of the programs financed through those appropriations.

Consistent with the legislative desire to increase staff services so that the Joint Committee on Finance and other legislative committees may be furnished with information which will assist members in making an independent decision on any fiscal matter brought before committees, the 1967 Legislature appropriated funds to continue the fiscal review function entirely at state expense. Subsequently, functions of the Legislative Fiscal Bureau were expanded and the staff was increased to its present level of 8 professional positions and 2 supporting positions. The functions assigned to the staff include:

1. Analysis of agency operating budget requests.
2. Answering of individual legislative fiscal information requests.
3. Evaluation of legislative proposals for fiscal effect.
4. Preparation of in-depth studies of selected program areas.
5. Continuing review of agency budgets and programs.
6. Analysis of agency capital budget requests.
7. Revenue estimating.

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FINANCING TWO-YEAR INSTITUTIONS OF PUBLIC HIGHER EDUCATION IN WISCONSIN

The CCHE staff is studying the financing of University centers, branch campuses of the State Universities, and associate degree technical education. The analyses will focus upon the cost to the student, the costs to localities which have such institutions, and the costs to the state.

Staff interest in this subject was prompted by what appear to be significant inconsistencies in financial support levels and aid formulas among the various kinds of public two-year higher educational institutions in Wisconsin. While the study is not yet complete, and this presentation will of necessity be an interim report outlining possible fiscal alternatives, the probable dimensions of the complete study appear to be:

1. The financial support for instruction and other operating expenses, as well as the capital outlay for facilities and equipment.

2. The cost to society of freshman-sophomore public education, specifically: (a) student expenses such as tuition and fees, cost of living, etc.; (b) local contributions (for buildings, grounds, and continuing maintenance), the ability of communities to support such institutions, and the variation in local financial ability; (c) state support of two-year collegiate and technical education, including comparisons with the costs of lower division education on four-year campuses; and (d) federal aid availability for physical facilities and other expenditures.

3. The two-year programs of Illinois, Iowa, Michigan, Minnesota, and other states.

4. Various financial alternatives, and their effects upon the taxpayers of Wisconsin; for example, continuation of the present system, incremental modifications of the existing system, a different basis of state funding such as equalized aids, complete state financial support, and other financial alternatives.

Wisconsin is somewhat unique in that it has three separate higher educational systems operating 32 two-year institutions of public post-high school education in the state (as of fall, 1968). Although these are not junior colleges, which are becoming so prevalent in other states, they are two-year post-high school community-based educational institutions:

1. The 13 University of Wisconsin Centers offer a two-year collegiate transfer curriculum. The cost of buildings and grounds, continuing maintenance of the facilities (utilities, repairs, and improvements), and one-half of the cost of custodial service are borne by the community or county. The staffing and operation is by and from the University Center System; control is by the University of Wisconsin administration. The operating cost in terms of faculty, supplies and materials, etc., are from the University budget. On July 1 of this year, UW-Green Bay will assume responsibility for the operation of the Green Bay, Fox Valley, Manitowoc and Marinette Centers in northeastern Wisconsin, and UW-Parkside will operate the Kenosha and Racine Centers in the southeastern part of the state.

2. The State Universities operate three branch campuses which are similar to a University of Wisconsin Center in financial support, staffing, and curriculum, except that control is delegated to one of the State Universities in the region of the branch campus.

3. The Board of Vocational, Technical and Adult Education has jurisdiction over 14 technical institutes, which offer an extensive program of post-high school technical education of two years duration leading to a Board-approved associate degree; in addition, there are two technical colleges which are similar to the institutes except that they also offer two years of collegiate transfer education and are accredited by the North Central Association of Colleges and Secondary Schools.

This study will omit consideration of County Teachers Colleges which provide two years of training in elementary education. Beginning in 1967-68, state aids have been withdrawn from County Teacher Colleges with fewer than 50 students at the start of the previous academic year, and all state aids will, presumably, be terminated at the conclusion of 1970-71. Beginning in 1972, a minimum of a baccalaureate degree will be required for all public school teachers in Wisconsin, and it is assumed that County Teacher College operations in Wisconsin will be discontinued--as has been the case in all other states.

Since 1958, the Coordinating Council for Higher Education has adhered to these tenets of educational opportunity, diversity and quality:

> The general welfare of the state will be best served by making it possible for any deserving and qualified youth to continue his education to the level of his ability and ambition. Since the major cost of education to the student occurs when the training must be secured away from his home, the welfare of the student and the state will be best promoted by providing post-high school opportunities as widely over the state as is consistent with sound educational and financial consideration.[1]

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[1] CCHE #105 (1966), p. 1.

These principles were adopted by the 1963 session of the Legislature which gave statutory authorization for the establishment of branch campuses and extension centers. Since then, the need for dispersed two-year collegiate opportunities has been substantially realized by the establishment of additional freshman-sophomore branch campuses and centers throughout the state. As the presently authorized campuses provide wide geographic accessibility of state-supported educational opportunities, a moratorium has, therefore, been placed on the approval of any new centers or branch campuses, except for those already in the planning stage--such as for Taylor County. It is anticipated that further implementation of the outreach plan will be concerned with the development of area vocational-technical districts throughout the state.

The common and significant mission of the two-year institution (whether collegiate or technical) is to provide high quality freshman-sophomore and associate degree programs to primarily commuting students. These institutions with their smaller enrollments are student-oriented with greater stress upon classroom instruction, close student-faculty contact, and comprehensive counseling services. While the two-year institutions are partially funded through local resources and should be responsive to community needs in adult education and public service, their primary focus must be upon a quality freshman-sophomore curriculum prerequisite to a broad range of occupational aspirations. The guiding principles for the establishment and operation of two-year institutions of public post-high school education are:

1. Appropriate educational opportunities must be available to all who seek them and can profit by them.

2. Individuals differ widely in the range of their abilities, interests, and ambitions. To provide the same educational experience for all does not thereby provide an "equal opportunity." Both the variations among individuals and the needs of society require widely diversified kinds of education.

3. Within the context of providing for a wide range of individual and social needs, the demands of excellence must be recognized. Excellence should be judged not by comparison with prestigious institutions, but by the quality of education related to the purposes it is designed to serve.[2]

Among the apparent anomalies in the financial support of two-year institutions are the following:

1. Collegiate transfer education at the centers and branches is supported by a tuition charge of $119 per semester (which is the same as for the State Universities, where it approximates 20% of operating costs), whereas vocational-technical education

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[2]A. J. Brumbaugh, *The Two-Year College in Virginia*, Staff Report #4, Virginia Higher Education Study Commission (Richmond, 1965), pp. 22-23.

in full-time statewide programs is free to residents of the
district or locality operating the institution.

2. The state pays the full cost of collegiate transfer instruc-
    tional salaries at the centers, branches, and technical
    colleges, but only 80% of technical instructional salaries.

3. VTAE districts must reimburse the Madison and Milwaukee
    Technical Colleges for their students who are enrolled in
    collegiate transfer programs. This appears to be a contra-
    vention of legislative intent as expressed in Chapter 292,
    Laws of 1965, which states that "Except in cities having a
    population of 150,000 or more, no liberal arts collegiate
    transfer program shall be offered . . . where there is an
    existing institution of higher learning." The rationale
    for the specific limitation on VTA collegiate programs was
    that they were necessary for a distinctive metropolitan
    student clientele. It does not seem equitable for the tax-
    payers of Wausau, for example, to reimburse the Madison or
    Milwaukee Technical Colleges, when they are also supporting
    the Marathon County Center.

4. The cost of instructional equipment is borne by the state or
    federal government for the centers and branches, but for tech-
    nical institutes is funded either by the locality or by
    federal aid allocated by the State Board.

As this review illustrates, the main differentiation of financial support
is between transfer education at the centers and branches, and terminal
education at the technical institutions. The locality's funding of both
centers and branches includes: furnishing suitable physical facilities,
and providing for the maintenance of the facilities (including utilities,
repairs and improvements to the buildings and the surrounding premises)
and for one-half of the cost of custodial service. One difference between
the centers and branches is that for the former, the custodial workers are
local employees, and for the latter they are state employees. The state
support of technical institutions is limited to aids for instructional
salaries, contact hours, and administrative-supervisory-coordination
salaries--all other funding is by local financing or through federal aids
allocated by the State Board. The technical institutions are now in the
process of shifting their funding source from a municipal to an area dis-
trict basis.

The tuition charge for full-time resident students at both the centers and
branch campuses is $119 per semester; for nonresidents the student contri-
bution is $327 per semester. This is the same tuition as for the State
Universities, except that a compulsory incidental fee (averaging $87) is
not charged. For comparative purposes, the tuition at the Madison and
Milwaukee campuses of the University of Wisconsin is $150 for residents and
$550 for nonresidents per semester, plus a compulsory incidental fee of $49.

The technical institutions charge a varying tuition amount for nonresident students which is based upon actual instructional costs funded from local taxes (i.e., less state and federal aids). For example, the tuition charged by the Madison Area Technical College. District #4, is:

1. Full-Time Vocational and Technical:

    a. District residents . . . . None
    b. Wisconsin residents who are not residents of the district . . . . $12.83 per semester credit*
    c. All Wisconsin residents over 21 . . . . $12.83 per semester credit*

2. Full-Time Collegiate Transfer:
    a. District residents . . . . $ 3.22 per semester credit
    b. Wisconsin residents over 21 who are not district residents . . . . $12.83 per semester credit*
    c. Nonresidents of Wisconsin . . . . $16.10 per semester credit**

3. Other Courses: nonresident tuition for all other courses and programs . . . . $ .59 per instructional hour

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*Up to a maximum of $153.99 per semester.

**Up to a maximum of $193.20 per semester.

Thus, there is a significant difference in the tuition practices between the collegiate and the technical two-year institutions:

1. For a full-time collegiate transfer curriculum (assuming a standard course load of 15 credits per semester) at the centers and branches the cost per credit is $7.93 for residents and $21.80 for nonresidents; at the technical institutions the semester's tuition for 15 credits would amount to only $48.30 for district residents (compared to $119 at the centers and branches), and either $153.99 for Wisconsin residents over 21 who do not reside in the district or $193.20 for nonresidents of Wisconsin (compared to a nonresident tuition of $327 per semester at the collegiate institutions). A collegiate transfer curriculum is significantly less expensive for resident students at the technical institutions than at the centers or branch campuses.

237

2. There is no tuition for local residents pursuing a full-time vocational-technical curriculum.

3. The nonresident tuition for both transfer and technical courses is less expensive than is the nonresident tuition at the centers and branch campuses.

The 1966-67 lower division (freshman-sophomore) cost per student for instruction, student services, and libraries--excluding first year branch campus start-up costs--are shown below:

University Centers	$1,031
State Universities	$ 735
UW-Madison	$ 628
UW-Milwaukee	$ 583

Although the per student cost at the centers and branch campuses is significantly higher than for four-year institutions, it is assumed that substantial savings in room and board are possible for the student who attends a two-year institution located near his home. With the wide geographic distribution of two- and four-year collegiate institutions throughout the state, it is probable that the University centers and the branch campuses of the State Universities will remain nonresidency two-year institutions serving primarily commuting students.

Since the local contribution for the operating expenses of two-year institutions is supported by property tax levies, the costs to localities will be analyzed on the basis of the following assumptions:

1. The property tax will continue to be the main vehicle for the generation of local revenues;

2. Utilization of the full valuation for each locality will equalize differential assessment rates among localities;

3. A relatively constant number of property taxpayers can be assumed to exist per unit of population;[3]

4. Full value per capita is a meaningful index of the relative ability to pay of various localities;

5. The population and full valuation of each locality supporting a collegiate two-year institution should be calculated on the same proportion as that locality shares in the support of such institution (e.g., the local funding of the Kenosha Center is 50% from the city and 50% from the county, and one-half of the population and full valuation of each were summed to arrive at the appropriate figures from which to compute the local per capita full valuation supporting that center);

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[3]Courtland Washburn, *et al.*, *Financing California's Public Junior Colleges*, California CCHE Report #1029 (Sacramento, 1967), p. 46.

238

6. Since the entire state is in the process of establishing area Vocational, Technical and Adult Education districts, the local funding of technical education should be considered on a district rather than a municipal basis;

7. Populations and full valuations of area districts on a county line basis will approximate the populations and full valuations of districts computed by a combination of county lines and school district boundaries (i.e., all district calculations followed county lines, except that Lincoln County was apportioned 50% to District #15 and 50% to District #16);

8. Area districts will be committed to the tax levies prescribed by Chapter 47, Laws of 1967 (i.e., 2 mills on the full value of taxable property of the districts for making capital improvements, acquiring equipment, and operating and maintaining the schools of the district).

The 1966-67 local contribution for the operating expenses of the 11 existing centers (which includes one-half of the janitorial costs, plus all heat, light, water, gas, and facility repairs) ranged from a low of $18,000 for the Marinette Center to a high of $65,000 for the Green Bay Center. The distribution, in order of ascending local support for the University Center system in 1966-67, is shown in the following table:

| Locality | 1966-67 | | |
	Contribution	Enrollment	Cost Per Student
Marinette County	$ 17,780	314	$ 57
Marshfield-Wood Co.	22,040	342	64
Manitowoc County	26,880	340	79
Marathon County	30,130	591	51
Sheboygan County	31,080	447	70
*Rock County	33,840	229	148 (start-up)
rox Valley	45,070	647	70
City of Racine	45,950	779	59
Kenosha (City and County)	48,250	724	67
*Waukesha County	52,800	401	132 (start-up)
Brown County	65,030	997	65
TOTAL	$418,860	5,911	
Average	$ 38,080	537	$ 71

*First year of operation.

When the actual local support for 1967-68 is known, and the county contributions for the branch campuses are included, the local support for the operating costs of two-year collegiate institutions will probably exceed $500,000 annually.

As the previous table illustrates, the local cost per student for center operating expenses in 1966-67 varied from a high of $148 for the start-up cost of the Rock County Center to a low of $51 for Marathon County, with the center system 1966-67 average local contribution, per student, for current operations being $71.

The relative ability of localities to support centers and branch campuses (based on 1966 per capita full valuation), varied from $8,560 for Waukesha County to $3,181 for West Bend-Washington County, with the statewide average at $6,382. The distribution of 1966 per capita full valuation of localities supporting two-year collegiate institutions, in order of increasing ability to pay, is shown below:

West Bend-Washington Co.	$3,181
Taylor Co. (proposed branch)	$3,608
Richland County	$4,123
Barron County	$4,801
Baraboo-Sauk County	$5,223
Marinette County	$5,663
Marathon County	$5,831
City of Racine	$5,935
Marshfield-Wood County	$6,104
Fond du Lac County	$6,164
Manitowoc County	$6,377
STATE AVERAGE	$6,382
Sheboygan County	$6,585
Brown County	$6,770
Rock County	$6,873
Kenosha (City and County	$6,960
Fox Valley (Outagamie and Winnebago Co.)	$7,391
Waukesha County	$8,560

The average per capita full valuation of the localities contributing to the support of the University centers is $6,570 which is significantly higher than the average per capita full valuation of $5,512 for the three counties supporting the State University branch campuses (if Taylor County is included in the calculations, the average per capita full valuation for localities supporting branches drops to $5,278).

The local schools of vocational, technical and adult education, which
operate under the general supervision of the State Board, were entirely
municipal institutions until July 1, 1967, and were funded as shown below
for the 1965-67 biennium:

VTAE Revenue Sources	% 1965-66	% 1966-67
Local Tax Levy	50.9	44.8
Federal Aid	16.4	20.0
State Aid	14.5	16.9
Tuition and Fees	9.1	9.8
Other Receipts	9.1	8.5
	100.0	100.0

The technical colleges and institutes are the leading institutions in
Wisconsin's vocational-technical system, and have generally been funded at
a higher level of local support than the above table, which is for the
entire system, indicates. The VTAE disbursements for 1965-67 also on a
system-wide basis, show the following breakdown of expenditures:

VTAE Expenditures	% 1965-66	% 1966-67
Salaries	59.8	55.4
Supplies and Operating Expenses	17.5	18.6
Building Maintenance	5.9	4.5
New Construction	10.1	14.2
Equipment	6.7	7.3
	100.0	100.0

With both the revenues and disbursement percentages for 1965-67, it is not
possible to differentiate the receipts and expenditures for operating ex-
penses and capital outlay. The local tax levy includes bonding for physical
facilities for some schools, and not for others; while the federal aid in-
cludes funds for categorical programs as well as for facilities.

Chapter 47, Laws of 1967, provides that: "Annually . . . [each] district
board may levy a tax, not exceeding 2 mills on the full value of the tax-
able property of the district, for the purpose of making capital improve-
ments, acquiring equipment and operating and maintaining the schools of
the district. . . ." In addition, each VTA district may borrow and issue
bonds up to 2% of the value of its taxable property as equalized for state
purposes for the purchase of sites and the construction and equipment of
schools.

The maximum operating revenues and the limit of outstanding indebtedness for each district based on 1966 full valuations, are shown below:

District	Amount Realized from 2-Mill Levy (000 Omitted)	2% of Full Valuation Debt Limit (000 Omitted)
1	$ 1,574	$ 15,741
2	$ 1,640	$ 16,403
3	$ 1,146	$ 11,461
4	$ 5,060	$ 50,602
5	$ 1,904	$ 19,038
6	$ 2,400	$ 24,000
7	$ 1,973	$ 19,726
8	$ 2,709	$ 27,093
9	$ 13,501	$135,012
10	$ 2,642	$ 26,422
11	$ 2,772	$ 27,719
12	$ 3,776	$ 37,762
13	$ 2,847	$ 28,466
14	$ 1,634	$ 16,340
15	$ 1,829	$ 18,290
16	$ 843	$ 8,429
17	$ 1,236	$ 12,355
18	$ 918	$ 9,181

Ten VTAE districts (numbers 1, 2, 3, 5, 7, 14, 15, 16, 17 and 18) will generate under $2 million from a 2-mill tax levy for operating revenues, and have a debt limit of under $20 million. Five districts (numbers 6, 8, 10, 11 and 13) would realize between $2 and $3 million from a 2-mill levy. District #12 would generate between $3 and $4 million, and District #4 would realize slightly over $5 million in operating revenues. The Milwaukee district (#9) would realize approximately $13,500,000 from a 2-mill levy, and have a debt limit of $135,000,000. [all figures from 1966 data.]

When the ability of each district to support vocational-technical education is measured on the basis of per capita full valuation (1966 data), the following distribution, in order of ascending ability to pay, from a low of $4,902 for the Superior district to a high of $8,560 for Waukesha, is obtained:

VTAE District	1966 Per Capita Full Value	Location
17	$4,092	Superior
2	$4,482	La Crosse
1	$4,673	Eau Claire
3	$4,930	S.W. Wisconsin area
15	$5,041	Wausau
18	$5,347	St. Croix area
14	$5,708	Wisconsin Rapids
13	$6,270	Green Bay
	$6,382	STATEWIDE AVERAGE
9	$6,516	Milwaukee
10	$6,613	Fond du Lac
5	$6,811	Beloit area
11	$6,916	Manitowoc/Sheboygan
7	$6,956	Racine
12	$7,063	Appleton/Oshkosh
4	$7,311	Madison
6	$7,844	Kenosha
16	$8,402	Rhinelander area
8	$8,560	Waukesha

The construction and equipage of vocational-technical institutions is financed by local bond issues and through federal funds. The existing state aids for vocational-technical programs provide for:

1. 80% of instructional salaries incurred in statewide, full-time technical programs designated and approved by the State Board;

2. 100% of instructional salaries incurred in statewide, full-time collegiate transfer programs designated and approved by the State Board;

3. 80% of administrative, supervisory and coord .ion salaries as approved by the State Board in vocational programs not qualifying for aid under 1. above, but not to exceed 35% of instructional salaries, whichever is less, and not to exceed $8,500 for each school;

4. 15 cents per student period for courses which have a vocational objective and which are approved by the State Board.

The present formula encourages the wide development of state and regionally-oriented technical curricula, and the aid program is relatively easy to administer at the State Board level. However, the formula is not related to a locality's effort and/or ability to support vocational-technical education, i.e., the district is not required to meet a minimum standard of financial support, nor is its financial ability taken into account in the allocation of aids. State aids cover approximately 55-60% of the total instructional cost of full-time technical programs, whereas the 15-cent formula provides only approximately 10% of the instructional cost of vocationally-oriented programs. This discrepancy in state support may result in a disproportionate emphasis on the development of two-year associate degree programs. Aids based upon the instructional salaries of technical and transfer programs may produce a dysfunctional effect upon the collective bargaining process between district boards and their teachers who could argue that local ability to pay is only slightly related to teacher salaries because the district funds only 20% of instructional salaries of technical teachers while the state pays the total instructional salaries for collegiate transfer programs. In addition, for the case of those areas already organized as districts there is some difficulty in the determination of what constitutes a "school" for purposes of the $8,500 state aid for administrative, supervisory and coordination salaries; this is a relic from municipal VTA schools, and is not a formula applicable to a statewide system of area VTA districts. There appears to be little justification for the differential treatment and aids for vocational, technical and transfer courses. Lastly, the present aid formulas do not provide data for management and planning efforts; the accumulation of student period and instructional salary information is not particularly germane to planning-programming-budgeting at either the district or State Board level.

The capital outlay required of the localities supporting centers and branch campuses includes the cost of buildings, land, and the necessary improvements. The annual cost of these capital expenditures for the 1966-67 operation of 11 centers ranged from a low of $24,030 for Marathon County to a high of $103,740 for Waukesha County. The following table in order of ascending annual local support displays the original cost of buildings and land improvements, as well as the annualized capital cost (which was computed on the basis of a 35-year depreciation with 2% interest on the cost of buildings and 4% interest on the cost of land improvements).

		Land and	1966-67		
			Annual	Enroll-	Cost per
Locality	Buildings	Improvements	Cost	ment	Student
Marinette Co.	$ 463,210	$ 38,280	$ 24,030	314	$ 77
Marathon Co.	595,870	18,000	29,660	591	50
Marshfield-Wood	637,880	78,070	34,100	342	91
Sheboygan Co.	865,590	102,130	46,130	447	103
*Rock County	840,290**	173,400	47,760	229	209(start-up)
Fox Valley	903,500	105,500	48,100	647	74
Manitowoc Co.	825,260	205,240	48,200	370	130
Brown County	1,332,230	65,100	67,310	997	68
Kenosha	1,716,290	175,350	90,380	724	125
City of Racine	1,730,110	439,750	101,620	779	130
*Waukesha Co.	1,882,580**	307,450	103,740	401	259(start-up)
TOTAL	$11,792,810	$1,708,270	$641,030	5,911	
Average	$ 1,071,070	$ 155,300	$ 58,280	537	$108

*First year of operation.

**Adjusted cost after deducting federal grant under Title I Act.

When the county contributions for the branch campuses are included, the local cost of the capital outlay for two-year collegiate institutions will probably exceed $750,000 annually.

As the previous table indicates, the total cost of buildings, land, and improvements for these 11 centers was $13,501,080. The local cost per student for these centers varied from a high of $259 for Waukesha County start-up costs to a low of $50 for Marathon County, with the average local contribution per student in 1966-67 for capital expenses being $108.

The state funds the equipment cost for the centers and branch campuses, except that portion funded by the federal government. The equipage costs of the center system ranges from a low of $150,000 for the Marinette County Center to a high of $356,000 for the Waukesha County Center:

| University Center | Equipment Costs | | |
	Federal	State	Total
Baraboo-Sauk Co.		$ 300,000	$ 300,000
Fox Valley		295,000	295,000
Brown County		189,000	189,000
Kenosha		320,280	320,280
Manitowoc Co.		210,000	210,000
Marathon Co.	$ 87,880	232,120	320,000
Marinette Co.		150,000	150,000
Marshfield-Wood Co.		178,000	178,000
City of Racine		235,000	235,000
Rock County	86,990	163,010	250,000
Sheboygan Co.		190,000	190,000
Waukesha Co.	109,790	246,210	356,000
West Bend-Washington Co.	86,410	183,590	270,000
TOTAL	$371,070	$2,892,210	$3,263,280
Average	$ 92,790	$ 221,470	$ 251,020

The state cost of equipping the two-year collegiate institutions, probably exceeds $3,500,000 when the costs of the branch campuses are included.

Fiscal alternatives to the present financing of two-year institutions of public higher education in Wisconsin include the following approaches:

1. The state could equalize the tuition charges for two-year collegiate and technical education, for both resident and nonresident students.

2. The state could assume the one-half of custodial costs presently borne by the localities supporting centers and branches.

3. The state could fund the operating costs of utilities and continuing maintenance now financed by the localities supporting two-year collegiate institutions.

4. The state could sequentially, on the basis of per capita ability to pay, relieve the localities supporting centers and branches of their total share of operating expenses.

5. The legislation pertaining to tuition reimbursements among districts could be amended so that it would not apply to liberal arts collegiate transfer programs.

246

6. The state aid formula for vocational, technical and adult
   education could be amended. Any change from the present
   method of state support should probably become effective
   prior to the July 1, 1970 date established for the state-
   wide system of area VTA education districts. Alternative
   state-financed vocational-technical aid formulas include
   the following:

   A. Guaranteed present state aid. Section 41.24(4),
      Wisconsin Statutes (1965), provides that "If the
      appropriation available for state aids in any one
      year. . . is insufficient to pay the full amount as
      provided. . . the payments shall be prorated among
      the various districts entitled thereto." Thus,
      since state aids are paid on the basis of instruc-
      tion for the previous fiscal year, the state, in
      effect, aids vocational-technical education at a
      reduced amount for instruction which has already
      been accomplished. State aids for 1966-67 operation
      were paid on the following basis: 70% of instruc-
      tional salaries for technical programs, 90% of
      instructional salaries for transfer programs, 13
      cents per student period for vocational courses, and
      $7,600 for administrative, supervisory and coordina-
      tion salaries. It would have required an appropria-
      tion of $7,000,000 to pay the full amount of state
      aids for 1966-67, which would have been approximately
      $1,000,000 over the $6,016,000 actually appropriated.
      Other approaches to state aid for VTAE include:

   B. Flat grant per full-time equivalent student.

   C. Matching local funds with state funds on a uniform basis.

   D. Equalized matching of district and state funds.

   E. Basic and equalized aids.

   F. Equalized matching incentive added to basic aids.

   G. Incentive grant matching local taxes above a certain
      level in the same ratio of state to local funds as
      provided in the basic aids.

7. The state could fund the annual cost of debt service for those
   localities which constructed facilities for centers and branches.

247

8. The state could, sequentially on the basis of per capita ability to pay, purchase (at original cost less depreciation) the facilities from the localities supporting two-year collegiate institutions.

9. The state could relieve VTAE districts of local equipment costs.

10. The state could assume the financing--except for federal aid--of two-year public higher education, relieving all localities of their support for centers, branches, and vocational-technical education.

11. Two-year public post-high school education could be made available without charge by the state to all individuals who seek and can profit from such experience.

TWO-YEAR INSTITUTIONS OF PUBLIC HIGHER EDUCATION IN WISCONSIN

◨ Planned Technical Institution

▲ University of Wisconsin Centers

● Wisconsin State University
Branch Campuses

◉ Proposed Branch Campus

■ Technical Institutions

▬ VTAE Districts
(following county lines)
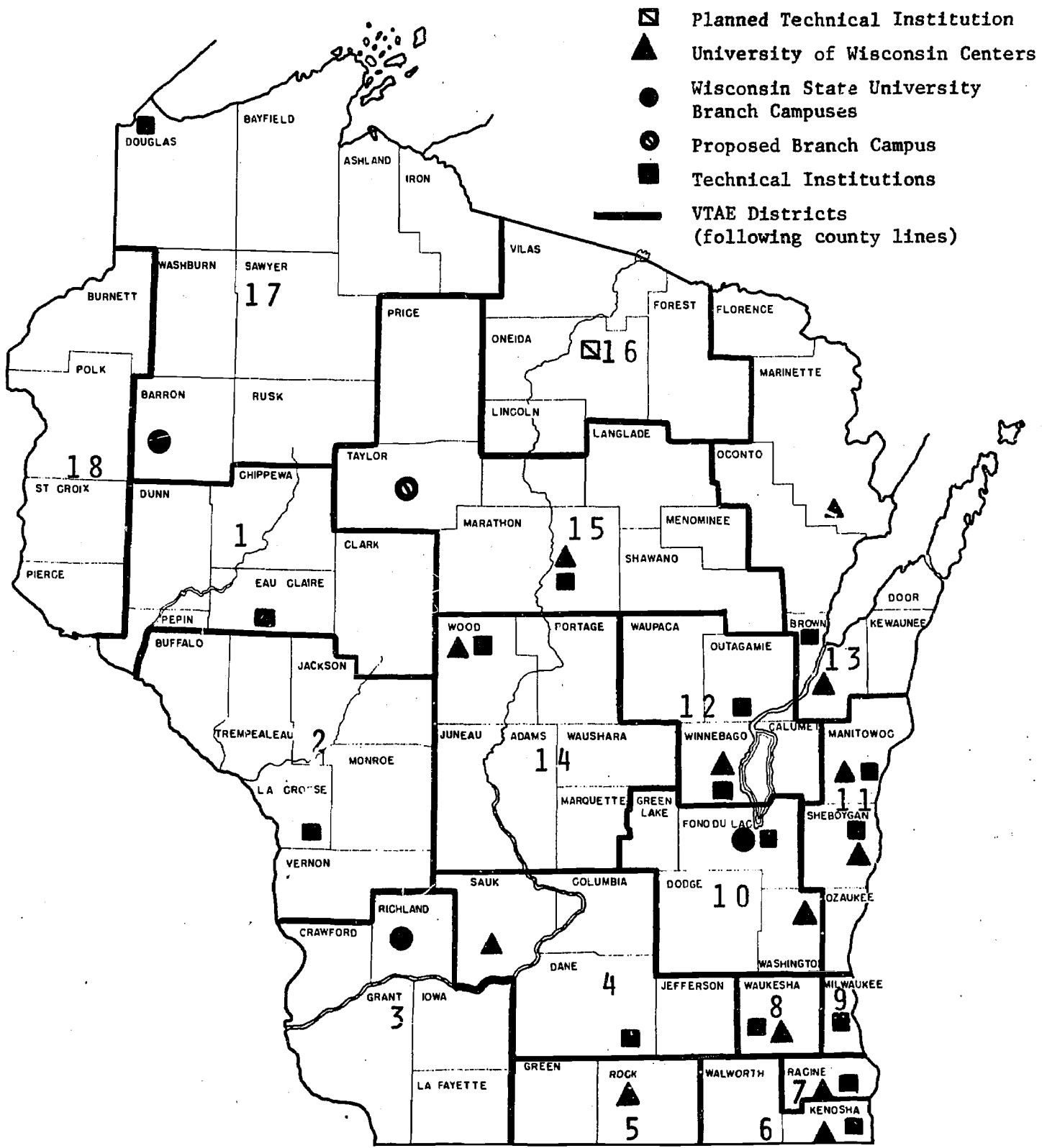
Appendix B

1966 POPULATION AND FULL VALUATIONS FOR LOCALITIES

FUNDING U.W. CENTERS AND W.S.U. BRANCH CAMPUSES

	POPULATION	FULL VALUE (OOO OMITTED)	FULL VALUE PER CAPITA	ABILITY TO PAY RANK
BARRON COUNTY	34,270	$ 164,522	$4,800.75	14
BROWN COUNTY	125,080	846,845	6,770.42	5
FOND DU LAC COUNTY	75,090	462,866	6,164.15	8
50% Outagamie Co.	50,895	364,439		
50% Winnebago Co.	53,965	410,561		
FOX VALLEY	104,860	775,000	7,390.73	2
50% City	38,730	253,291		
50% County	50,310	366,435		
KENOSHA	89,040	619,726	6,960.09	3
MANITOWOC COUNTY	75,470	481,268	6,376.94	7
MARATHON COUNTY	88,870	518,185	5,830.82	11
MARINETTE COUNTY	34,660	196,267	5,662.64	12
RACINE, CITY OF	95,400	566,154	5,934.53	10
RICHLAND COUNTY	17,680	72,892	4,122.85	15
ROCK COUNTY	113,910	782,892	6,872.90	4
50% City	4,030	18,644		
50% County	18,580	99,449		
BARABOO-SAUK CO.	22,610	118,093	5,223.04	13
SHEBOYGAN COUNTY	86,480	569,470	6,584.99	6
TAYLOR COUNTY	17,840	64,374	3,608.41	16
40% City	5,400	42,595		
60% County	27,670	217,236		
WEST BEND-WASHINGTON	81,670	259,831	3,184.44	17
WAUKESHA COUNTY	158,250	1,354,643	8,560.15	1
50% City	8,000	41,929		
50% County	29,550	187,272		
MARSHFIELD-WOOD CO.	37,550	229,201	6,103.89	9

1966 POPULATION AND FULL VALUATION FOR VTAE DISTRICTS (Following County Lines)

AREA VTA DISTRICTS	POPULATION	FULL VALUE (000 OMITTED)	FULL VALUE PER CAPITA	ABILITY TO PAY RANK	AMOUNT REALIZED FROM 2-MILL LEVY	2% OF FULL VALUATION DEBT LIMIT (000 OMITTED)
1	168,410	$ 787,051	$4,673.42	16	$ 1,574,100	$ 15,741
2	183,000	820,159	4,481.74	17	1,640,300	16,403
3	116,230	573,056	4,930.36	15	1,146,100	11,461
4	346,060	2,530,105	7,311.17	4	5,060,200	50,602
5	139,760	951,875	6,810.78	8	1,903,800	19,038
6	152,980	1,200,011	7,844.23	3	2,400,000	24,000
7	141,780	986,283	6,956.43	6	1,972,600	19,726
8	158,250	1,354,643	8,560.14	1	2,709,300	27,093
9	1,036,050	6,750,594	6,515.70	10	13,501,200	135,012
10	199,790	1,321,200	6,612.94	9	2,642,200	26,422
11	200,390	1,385,940	6,916.21	7	2,771,900	27,719
12	267,330	1,888,091	7,062.77	5	3,776,200	37,762
13	227,020	1,423,317	6,269.56	11	2,846,600	28,466
14	143,140	817,022	5,707.85	12	1,634,000	16,340
15	186,780	941,493	5,040.65	14	1,829,000	18,290
16	50,160	421,440	8,401.91	2	842,900	8,429
17	150,960	617,754	4,092.14	18	1,235,500	12,355
18	85,850	459,066	5,347.30	13	918,100	9,181
TOTAL ALL DISTRICTS	3,953,030	$25,227,105				
STATEWIDE AVERAGE			$6,381.71			

2.51

1966 PER CAPITA FULL VALUATION FOR LOCALITIES FUNDING

TWO-YEAR PUBLIC INSTITUTIONS OF HIGHER EDUCATION IN WISCONSIN

PER CAPITA ABILITY TO PAY RANK	COLLEGIATE		VTA DISTRICTS		
(1)	Waukesha Co.	$8,560	EIGHT	$8,560	Waukesha
(2)	Fox Valley	7,391	SIXTEEN	8,402	Rhinelander
(3)	Kenosha	6,960	SIX	7,844	Kenosha
(4)	Rock County	6,873	FOUR	7,311	Madison
(5)	Brown Co.	6,779	TWELVE	7,063	Appleton/Oshkosh
(6)	Sheboygan Co.	6,585	SEVEN	6,956	Racine
	STATE AVERAGE	6,382			
(7)	Manitowoc Co.	6,377	ELEVEN	6,916	Manitowoc/Sheboygan
(8)	Fond du Lac Co.	6,164	FIVE	6,811	Janesville/Beloit
(9)	Marshfield-Wood Co.	6,104	TEN	6,613	Fond du Lac
(10)	Racine, City of	5,935	NINE	6,516	Milwaukee
			STATE AVERAGE	6,382	
(11)	Marathon Co.	5,831	THIRTEEN	6,270	Green Bay
(12)	Marinette Co.	5,663	FOURTEEN	5,708	Wisconsin Rapids
(13)	Baraboo-Sauk Co.	5,223	EIGHTEEN	5,347	River Falls
(14)	Barron Co.	4,801	FIFTEEN	5,041	Wausau
(15)	Richland Co.	4,123	THREE	4,930	Richland Center
(16)	Taylor Co.	3,608	ONE	4,673	Eau Claire
(17)	West Bend-Wash. Co.	3,181	TWO	4,482	LaCrosse
(18)			SEVENTEEN	4,092	Superior

GALE L. KELLY
Associate Director, Finance
Coordinating Council for Higher
Education

PROGRAM BUDGETING AT THE STATEWIDE LEVEL:
GENERAL CRITIQUE OF PPBS AND CASE STUDY
OF CCHE BUDGET LIAISON AND ADVISORY COMMITTEE

My aim this morning is to approach program budgeting from the standpoint
of the devil's advocate. Specifically, I wish to offer a general critique
of PPBS and then direct your attention to some of the problems encountered
by the CCHE Budget Liaison and Advisory Committee.

Overall Evaluation of Program Budgeting or PPBS

General Criticisms--

Among the major criticisms leveled at PPBS are the following:

1. Since PPB draws its core concepts from economics and systems
    analysis, it fails to give sufficient consideration to the
    political and social environment within which budgetary
    decisions are made. It fails to take into account *political*
    costs and benefits and *political* rationality--such factors
    as political feasibility, recruitment of support, and
    reconciliation of competing interests.

    As William Gorham, Assistant Secretary for Program Coordina-
    tion in HEW, states: 'Anyone in government knows that
    most decisions on spending emerge from a political process
    and are most heavily influenced by value judgments and the
    pressures brought to bear by a wide range of interested
    parties."[1]

2. PPB demands an approach to budgeting that may be unrealistic
    given the finite nature of man; in effect, it thrusts a
    heavy burden of calculation on the budgetary decision-
    maker.

    Traditionally, budgeting has:

    defined its mission in terms of identifying the
    existing base and proposed departures from it--"This
    is where we are; where do we go from here?" PPB

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[1]"Notes of a Practitioner," *The Public Interest*, Summer 1967, p. 4.

defines its mission in terms of budgetary objectives
and purposes--"Where do we want to go? What do we
do to get there?" The environment of choice under
traditional circumstances is *incremental* . . .[2]

But under PPB the approach is goal-oriented, "futuristic"
(multi-year frame), and comprehensive. The implicit assumption
is that each participant "will behave as a sort of Budgetary
Man, a counterpart of the classical Economic Man . . ."
Budgetary Man is to be "guided by an unwavering commitment
to the rule of efficiency; in every instance he chooses that
alternative that optimizes the allocation of public resources."[3]

In short, PPB ignores or minimizes:

. Limits of human rationality. How comprehensive can we be in
our thinking? To what extent can we formulate key policy
objectives in advance?[4] Barriers to rational choice include:
ignorance, bias, lack of information or faulty information,
and unanticipated consequences.

. "Sunk costs"--continuing costs and commitments that limit
our flexibility or range of alternatives. At the federal
level, the sunk costs of interest on the national debt,
veterans benefits, defense expenditures, and social welfare
programs, etc. can so shape the decision-making situation
that not too much latitude is left, especially for a new
Administration determined to cut expenditures.

Specific Difficulties--

Specific difficulties in implementing PPB can be cited:

1. PPB places a great deal of emphasis on quantification of
outputs; yet key variables may not be quantifiable, particularly
in higher education.

2. PPB may founder because of technical and conceptual problems:

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[2] Allen Schick, "The Road to PPB: The Stages of Budget Reform," *Public
Administration Review*, December 1966, p. 257.

[3] *Ibid.*

[4] Among the difficulties involved are: a lack of agreement on objectives;
conflict among even shared objectives; lack of precision in the statement
of objectives--they may be so vague as to be meaningless; and obstacles
inherent in projecting future needs.

a. Absence of data or data gaps. For instance, follow-up information on college graduates may be especially difficult or expensive to gather.

b. Problems in defining and measuring benefits. To quote Gorham again:

It is far from obvious how the benefits of most health, education, and welfare programs should be defined. For example, Title I of the Elementary and Secondary Education Act provides special funds to local school districts for the education of deprived children. What is it that we want to measure? Should we test the children to see whether their reading comprehension, or their arithmetic achievement, has improved faster than would have been expected? . . . Or shall we wait . . . and see how much they earn as adults, and whether, in fact, the cycle of poverty has been broken?[5]

Even if we can conceptualize and measure the benefits of particular programs, these benefits may not be commensurate or equal to one another. Or if they are equal, different clientele groups may be the recipients. Thus, should "equal benefits to different individuals in the population be weighted equally? Is it equally important to raise the educational attainment of a suburban child and a slum child?"[6]

Now that I have outlined certain criticisms of the PPB approach, I wish to relate these to the work of the CCHE Budget Liaison and Advisory Committee (the establishment of which was discussed yesterday). Such a "case study" may be illuminating.

Case Study of CCHE Budget Liaison and Advisory Committee

Since the beginning of the year the advisory committee has wrestled with this central question: To what extent can program budgeting or PPBS be implemented in public higher education? Specifically:

. To what extent can quality standards and goals be developed by system and/or institution?

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[5] Gorham, *op. cit.*, p. 5.

[6] *Ibid.*

255

. What type of program budget structure should be adopted? The
answer, of course, depends partially on how one views the
budget--as a planning vehicle, a management tool, or a control
instrument. Is it possible to serve all *three* purposes through
one format?

From the standpoint of PPB, what structure can best reflect
operations and outputs at the system and institutional levels?

Budget Format--

According to the literature, the chief feature of the program budget is
its output orientation; "that is, it allows the activities of several
agencies or departments to be assembled in terms of specific output
packages--i.e., program and sub-probrams . . . Wherever possible,
programs and sub-programs should be clearly delineated . . . [and]
should have minimum overlapping with other programs . . ."[7]

After much discussion it was the consensus of the budget advisory committee
members that a more meaningful program-subprogram structure could be
developed for the University of Wisconsin and State Universities based on
these criteria: (1) a program format readily understandable to the Regents,
the CCHE, and the elected decision-makers; (2) a format that accurately
reflects system and institutional operations; and (3) a structure that
directs attention to significant educational policy issues, rather than
insignificant detail, and that permits a greater degree of comparability
between the budgets of the two systems, while recognizing the uniqueness
of each.

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[7]Werner J. Hirsch, "Toward Federal Program Budgeting," *Public Administration
Review,* December 1966, pp. 260-61.

Below is a comparison of the existing (1967-69) budget format with the
revised format recommended by the advisory group for 1969-71:

Present Program Structure, 1967-69		Recommended Program[8] Structure, 1969-71
UNIVERSITY OF WISCONSIN	*STATE UNIVERSITIES*	*UNIVERSITY OF WISCONSIN AND STATE UNIVERSITIES*
I. Education, General and Related Services	I. Instruction	Program: Education to Advance Individuals and Discover New Knowledge
II. Auxiliary Enter- prises	II. Faculty Research Projects	*Subprograms:*
III. Medical Education and Treatment	III. Student Assistance	A. Campus Instruction for Individual Advancement
	IV. Physical Plant	B. Educational Support Services
	V. Auxiliary Programs	C. Research to Discover New Knowledge
		D. Extended Training and Public Service for Wisconsin
		E. University Hospital Services (UW only)
		F. Personal Assistance to Students
		G. Campus Living and Student Development
		H. Physical Plant Main- tenance and Operation
		I. University and State University Administra- tion and Services

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[8]The above format may undergo some revision in terms of the number of
subprograms, but the same "building blocks" will be retained in any case.

Quality Standards: Input and Output Measures--

A fundamental question in higher educational administration is: "What is 'quality' in education and how is it achieved?"[9]

The CCHE provisional long-range plan calls for the establishment of quality goals or standards *"wherever possible,"* to assure an equitable allocation of state resources "consistent with program mission," i.e., "comparability of support where appropriate, and adequate differentials of support where necessary." Pursuant to this recommendation, the budget advisory committee zeroed in on the following questions: Is it possible to attain quality standards that can be expressed in budgetary or numerical terms? Can we measure the *quality* of educational programs and functions--instruction, research, extended training, etc.--according to certain *quantitative* guidelines or formulas?

Possible *input* measures considered by the committee are shown below:

1. Quality of instruction: indices?

    a. Scope and diversity of curricular offerings
    b. Faculty mix by rank; proportion of tenured faculty
    c. Educational attainments of faculty (proportion holding doctorates)
    d. Level of faculty compensation (salaries, fringe benefits)
    e. Faculty research accomplishments
    f. Faculty-student ratios
    g. Average instructional loads (credit or contact hours per FTE faculty member)

2. Quality of research: indices?

    a. Level of funding for research; funding sources
    b. Number and significance of faculty publications (according to one study, there is a close association between "departmental strength and quantity of publication performance")
    c. "Payoffs" from organized research efforts--economic, social, cultural, etc.
    d. Amount and adequacy of research facilities and equipment

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[9] See: James L. Miller, Jr., *State Budgeting for Higher Education: The Use of Formulas and Cost Analysis* (Ann Arbor: Institute of Public Administration, the University of Michigan, 1964), pp. 171-72.

3. Educational support services

   a. Library resources:
- Number of volumes, separate titles, periodicals, etc. Query: How meaningful are certain national standards or traditional yardsticks, e.g., number of volumes per student?
- Quality of service, e.g., hours open for student use
- Circulation rate

   b. Computers: appropriate indices?

   c. Other supporting services: appropriate measures?

Following this initial exploration, the committee concluded that within the context of financial planning, "meaningful" quality standards are goals or criteria that:

1. can be readily translated into budgetary requirements

2. "fit" the mission and "unique" characteristics of the institution or system under consideration.[10]

Obviously, the development of such standards is a formidable assignment. Among the problems recognized by the committee are:

- a lack of data in various areas--particularly with respect to comparable institutions in other states.

- interpretation of available data. Even with substantial information at hand, one must ask: What does it *mean* from a quality standpoint? Will such data enable us to formulate quantitative guidelines that reflect quality goals at the institutional and/or systems levels?

On the *output* side, the question becomes: can we assess the effectiveness of higher education, or its impact on the individual, by focusing on the graduates produced? What measures do we use?

As Seymour Harris indicates, "the measurement of a college product is . . . extremely difficult; it can only be done in terms of what the college is trying to do." Some possible indices discussed by Harris and others include:

- Scores on Graduate Record Examinations. "These examinations can be used to find out what is in the student's head, although they do not reveal who put it there."

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[10]It seems clear that at this point in higher education there are no "absolute," all-encompassing input standards applicable to budgetary planning.

. Number of Wilson or Rhodes scholarships won by undergraduates.

. Earnings of a college's graduates. Here several caveats are in
  order: first, such economic measures as earning power "allow
  neither for differences in ability of the raw material entering
  the colleges nor for the varying degrees of what the business
  world calls 'connections'"; and second, they "neglect the greater
  values of a college education, which are only in part reflected
  in income," e.g., analytical abilities, intellectual curiosity,
  "seasoned judgment" in the treatment of issues.[11]

. Job placement records and graduate school entries.

It would appear that the staff of the California Coordinating Council for
Higher Education is correct in underscoring "the impossibility at present
of measuring higher education outputs in any meaningful fashion." While
the number of degrees awarded can be computed, changes in the students'
characteristics produced by the educational environment "are not readily
measurable." Also, there tends to be a "multi-year lag between the discovery
of knowledge and its economic and commercial exploitation which precludes
the measurement of economic payoff of different research findings." Nor
can many of the noneconomic benefits to society of research findings be
quantified.[12]

Moreover, an output orientation can lead to an excessive emphasis on
fulfilling manpower demands--to the point where colleges and universities
are regarded as nothing more than "what H. L. Mencken called 'rolling
mills' of learning for the mass production of specialists to attend to
the needs of a technological society." (See *The Nation,* Vol. 206,
June 3, 1968, p. 714.)

Concluding Remarks

As I stated in the beginning, my intention was to play the devil's
advocate. I certainly don't want to convey the impression that I reject
program budgeting; obviously I wouldn't be in my present position if I
weren't committed to the further development of budgetary concepts and
techniques, such as PPBS.

Perhaps, however, PPBS should be supplemented by what one author refers
to as "policy analysis." Policy analysis would combine "present methods

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[11] *Higher Education: Resources and Finance* (McGraw-Hill, 1962), pp. 106-108.

[12] *Instructional Practices and Related Faculty Staffing in California Public
Higher Education* (October 1967), p. 2.

of systems analysis with qualitative methods and a full awareness of the special characteristics of political phenomena." Specifically, "much attention would be paid to the political aspects of public decision-making and public policy-making"; a "broad conception of decision-making and policy-making would be involved . . . [since] many types of critical decisions cannot be usefully approached from an economic resource allocation framework"; and "there would be extensive reliance on . . . qualitative models and qualitative methods . . . "[13]

[13]Yehezkel Dror, "Policy Analysis: A New Professional Role in Government Service," *Public Administration Review*, September 1967, pp. 197-203.

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PROGRAM BUDGETING AT THE STATEWIDE LEVEL

A budget document can be viewed as three documents in one: (1) a planning design, since it reveals policies and programs which will be executed in the near future; (2) a management tool, since it reveals how organizations and parts of organizations are to perform work, and (3) a control device, since it seeks and gains resources which are allocated to organizations to perform work.

In 1965, Wisconsin converted to a complete program budget format which greatly improved the worth of the budget as a decision-making tool.

Description of Wisconsin state budget--1961 through 1968

1. Prior to 1965, the budget was primarily an accounting document.

2. Beginning with 1965, with the introduction of program budgeting, the budget book: emphasized output rather than input; made the budget more intelligible; focused on entire program effort, rather than segments; and laid the basis for the development of performance indicators.

Further development of program budgeting techniques: introduction of planning-programming-budgeting systems

There is an urgent need to develop performance indicators in education to tell us how extensively, how effectively and how efficiently a program is being carried out.

1. Description of PPB system:

   a. PPB is goal-oriented since it questions why programs are being carried out.

   b. PPB is future-oriented since it predicts future resource needs.

   c. PPB is comprehensive since it examines all costs.

   d. PPB is systematic since it presents alternative action courses.

2. Advantages of a PPB system:

    a. Improves perspective of government operations

    b. Emphasizes identification and evaluation of program
        options

    c. Gives more careful consideration to individual program
        proposals

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PROGRAM BUDGETING AT THE STATEWIDE LEVEL

Line-Item Budget versus Program Budget

The basic distinction is an input versus an output orientation. The line-item budget used prior to 1965 discussed proposed expenditures in terms of the inputs into a program. Thus the budget "lined-out" proposed expenditures in terms of positions and salaries, materials and supplies, contractual expenses such as computer time, and capital expenses such as desks, chairs and beds. When Wisconsin converted to a program budget system in 1965, the underlying concept was that there would be a shift in orientation from the items to be "bought" to the goals, objectives, and accomplishments to be attained as a result of a given expenditure level.

Previous speakers have outlined functions of the budget document, including the functions of planning, managing and control. These functions of planning, management and control are similar to the PPB in a planning-programming-budgeting system upon which Wisconsin has recently embarked. Each of these budget account functions carries with it certain implications in terms of the type of budget used.

1. Planning--As a planning tool, the budget document should provide a degree of flexibility. In terms of a program budget, this means the goals or objectives, once agreed upon, are relatively fixed but ways in which funds may be expended are made more flexible than under the line-item document.

2. Managing (programming)--The concept of the budget document as a management tool implies that it has a realistic relationship to the actual operation and administration of the institution (program) for the budget period. Actual execution of the budget ought to follow closely upon the budget document proposals that were approved. For a line-item budget, this would mean expending funds only for approved expenditure items. Under a program budget, total expenditures would still be controlled, but types of expenditures might vary from the plan so long as approved goals and objectives were still pursued and attained.

3. Control (budgeting)--The budget document must adequately state the resources requested to operate the institution or

program. Under a line-item budget the control is "by lines" on the basis of funds budgeted for various items of expenditures. The control aspect of a program budget comes in relating performance and accomplishments to stated objectives. This means that for this type of control to be possible, a program budget must include performance projection (estimated standards of performance) against which actual performance can be compared.

In contrasting the line-item and program budgets, the most important shortcoming of the line-item budget is its focus on alternative items of expenditures rather than alternative goals and objectives. The program budget was conceptualized as an answer to these shortcomings. Control was not to be given up but rather was to be at a different level--that of program accomplishments. However, the program budget to date in Wisconsin has shown its greatest weakness to be specifically in the area of control. The experience to date has not indicated that this type of control is impossible but rather that the budget documents have failed to provide specific, clearly defined performance standards against which the decision-makers can evaluate actual performance and judge the effectiveness of the resources invested.

The Budget Document as a Tool for Legislative Control

The line-item and program budgets, as generally conceived, represent the two extremes in terms of legislative control via the appropriations process. With a line-item budget document and appropriations act, considerable legislative control is exerted in terms of detailed expenditure transactions. The tendency when the concern is on expenditure inputs, is to slight the outputs or "where we are going." It assumes that meaningful performance standards are available and usable in budget documentation and execution, and that only a minimum of control over the details of expenditure is necessary, i.e., to insure that expenditures are in accord with the total authorized appropriation level. The 1967-69 Wisconsin budget can be viewed as a compromise--a hybrid between the ultimate line-item budget and the ultimate program budget. In the actual budget bill, specific appropriations are generally on a program basis. The classical "line" appropriations for personal service materials and expenses and capital outlay which appeared in the 1963-65 appropriations act do not appear in the 1967-69 appropriations act. In lieu of specific control by legislative enactment, the Department of Administration is assigned the responsibility for general oversight of budget execution via the allotment process. The Department's Bureau of Budget and Management allocates funds quarterly to agencies on the basis of the three traditional expenditure lines. Shifts between support lines require approval of the Bureau and must be reported to the Board on Government Operations.

Issues in Program Budgeting in Wisconsin from the Legislative Side

Development of Performance Standards--

If the expenditure flexibility concept of program budgeting is to be
implemented further so that line-item type allocation control can be
totally replaced by performance evaluation, adequate and meaningful
performance standards will have to be developed. Heavy reliance will be
placed upon program administrators with the development of performance
standards.

Program Definitions--

If performance evaluation is to become an adequate substitute for
detailed expenditure control, programs must be adequately defined.

The Legislative Role in the Execution of the Budget--

Among the various opinions on the issue, the following represent two
divergent viewpoints:

1. The fundamental role of the legislature is to establish
   the biennial budget. After the budget has been established,
   the separation of powers doctrine--basic to our system of
   government--places the responsibility for administering
   the budget in the executive branch of government. The
   legislature must rely upon the post-auditor's report to
   raise questions or challenges to specific actions of the
   administrators executing the budget. This viewpoint
   assumes that "violations" of legislative intent or "failures"
   to perform up to specified standards would be taken into
   account in the next legislative session.

2. The legislature in approving a budget bill is actually
   adopting a plan of action justified by specific program
   goals and a detailed estimate of required resources.
   Legislative involvement is required whenever the executive
   agencies propose to depart from the program or resource
   plan approved in the budget justification.

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PROGRAM BUDGETING AT THE SYSTEMS LEVEL

We have been looking at the budgetary process from the view-
point of the various levels of compilation and review. I
have been asked to discuss program budgeting at the systems
level. This would appear to be about the midpoint between
the initiation of the budget at the department starting with
a zero base and the final approval by the legislature.

What Is A Program Budget?

In the first place, it is a *planning document*. As I see it,
this is the *new* aspect that PPBS has brought to the budgeting
procedure. It requires the budget makers to give serious
consideration to the future planning of their operations.
It requires the defining and documentation of the objectives
to be strived for. It covers a period of at least five years,
and possibly as long as ten years. The long-range plan
becomes the first "P" of PPBS. The second "P" - *Program*
budget - covers a shorter period; in Wisconsin, this becomes
an articulation of the plan for the coming *biennium*. In
this phase, the plan is converted to dollars and cents, the
objectives are short-run, and probably a percentage accom-
plishment is all that is hoped for. The third letter - "B" -
is the *annual budget*. This, too, becomes a document that fits
into the long-range plan and the two-year program. The last
letter - "S" - refers to establishment of PPBS in *a systematic
way* so that more and more budgetary decisions are made after
a thorough analysis, to insure that they fit into the formal-
ized plan for achieving the approved objectives.

In the second place, a program budget is a *control document*.
The objectives, and the program to achieve these objectives,
have been approved at the various administrative levels.
Even though most accounting responsibility follows an admin-
istrative structure which is inconsistent with the broad
program definitions, it is a simple accounting task to make

certain that expenditures are made in accordance with the budget.

In the third place, it is a *political document*. Unfortunately, we have no guarantees at this time that the program budget does a better job than the line item budget in providing the necessary information leading to a clearer understanding by the legislature of the needs of higher education. However, one of the main reasons for adopting PPBS is to assist "non-budgeteers" in obtaining a better understanding of the objectives of the operating units and the costs of achieving these objectives. McGeorge Bundy recently stated: "Educators may know in their bones that the needs of our colleges are more urgent than ever; they may even know from their balance sheets that the deficits predicted so long are now becoming a brutal reality; they may be able to demonstrate-- case by case--that this contract or that loan or the other gift is more needed than ever. In this or that contest with regents or with governments--with trustees or with professors-- educators may be able to argue persuasively their desperate need and consequent claim to indulgence. But as a whole, and to the country as a whole, *they have not made their case.*" Perhaps program budgeting will help present our case.

In the fourth place, a program budget is an *economic document*. It stresses the input and output requirements, and of necessity these are related to the current economic situation. The estimated expenditures of institutions of higher education for the fiscal year 1967-68 will be $14,700,000,000, and the projected estimate for 1975-76 is almost $23 billion. These expenditures will certainly have a substantial economic impact on this country. The enrollment projections go from 6.5 million in the fall of 1967 to about 9.4 million in the fall of 1976. In order to educate this many students beyond the high school level, there must be a proportionate input of dollars.

In the last place, it is an *accounting document*. All of us are familiar with the accounting aspects of any budget, and the PPBS budget is not greatly different in an accounting sense from any other type budget. The mechanism for controls and expenditure distribution is easily established:

Planning   Economic
Control   Accounting.
Political

What Is The Reason For Budgeting?

The various administrative levels have different reasons for
budgeting. I will restrict my comments to how I view the
reasons for budgeting at the institutional level. Like most
governmental units, the university is an entity with almost
all of its *programs underfinanced*. You are familiar with
the situation in which it becomes apparent that a program
should be started or improved. It may be a modest improve-
ment, such as adding a new course, or it may mean starting a
new campus. In either case, chances are that the funds made
available to do the job were inadequate. However, it has a
high priority in the judgment of management, and the work is
undertaken. Henceforth, there will be difficulty in getting
the funding up to a reasonably adequate level--chances are
there will be "bootlegging" from some ongoing operation. As
far as I am concerned, the entire budgeting process must be-
gin with the assumption *that most projects are underfinanced*.
So how do I look at PPBS? *It is a vehicle to maximize the
returns*. It is a means by which our own unit can get more of
the badly needed funds than any other method known. The
comment might be made that PPBS will create more efficiency--
perhaps so, but when there is a universal shortage of funds,
you are already required to operate as efficiently as possible
regardless of the type of budget.

A budget that is properly conceived, prepared, and executed
will maximize rational decision-making. One of the aspects,
and I think the most important, is to maximize the returns;
another aspect is to facilitate expenditure control. From
the institutional viewpoint, I view the former as much more
important. The various operating units of the university have
presented their best estimates of what they need to attain
their objectives in an efficient manner. We know they are
underfinanced, and therefore it behooves us to do the best
possible job in maximizing the returns. Expenditure control
is of secondary importance and becomes relevant only to the
extent that it makes possible the most intelligent allocation
of the limited resources available.

Central Administration vs. Individual Units

The organization chart of the University of Wisconsin indicates
a central administration with six operating units--the Madison
Campus, University of Wisconsin-Milwaukee, University Extension,
the Center System, University of Wisconsin-Green Bay, and
University of Wisconsin-Parkside. The approach to budgeting
will vary by degree, depending upon your vantage point at
the moment. .

Let's look at enrollment. One of the primary objectives of
the University is to provide the opportunity for the young
people of the state to receive a university education. This
current year there were over 55,000 students in the system,
with 33,000 on the Madison Campus. How does the university
look at the enrollment projection in the budget planning phase
of PPBS? What are the alternatives? There has been a lot of
talk about the rapid growth and the bigness of the Madison
Campus, and that its optimum size is 40,000 students. The
new campuses at Green Bay and Parkside are trying to establish
themselves, and naturally one of the prerequisites of a
university is a sufficient enrollment base. The decision has
been made to attempt to attract students to the new campuses.
This will slow down the growth at Madison and UWM and encourage
a consistent, reasonable growth. In planning the budget, the
various alternatives to achieve this end are considered. It
is the responsibility of central administration to attain a
balanced growth that will maximize the return on the invest-
ment of the state taxpayer.

There are costs that follow the enrollment: staff, supplies,
capital, and facilities. In order to cover these costs, we
use a cost-by-level methodology to compute the amount of the
cost for each additional student. This is consistent with
the new program budgeting concept. It recognizes that students
by level and discipline, and in our case by campus, are the
basic elements of higher education. This can be true even
though the administrative structure still follows the division-
department framework and does not materially assist in the
definition of a major program or sub-program.

Once costs-by level have been determined, a tool is available
to assist in the program budgeting. It becomes relatively
simple to project the costs of additional freshmen at Madison,
UWM, or at the Centers; or the costs of graduate students at
each campus. It may not be possible to do a great deal about
controlling these enrollments and still stay within the long-
range, accepted principle of having educational opportunities
available for all Wisconsin residents. However, even though
it may not be possible to follow alternative programs which
would eliminate costs by restricting enrollment, we at least
will know the extent of the costs.

Society is expecting a great deal from universities today,
and universities are responding by trying to do all things
possible within their capabilities. Along these lines, Mr.
James A. Perkins in *The University in Transition* has said:

> "There was a young lady from Kent
> Who said she knew what it meant
> When men took her to dine,.
> Gave her cocktails and wine,
> She knew what it meant--but she went."

The university of Wisconsin has gone, and it will continue to
go, even though it knows what it means, and it is our hope
that through PPBS we will also know what the various alternatives
will cost in dollars and cents. It is our plan at this time
to indicate in our 1969-71 budget requests the costs of in-
structing students in campus instruction, providing degree
credit work off-campus, providing special programs to encourage
the disadvantaged, developing new campuses, etc. The costs
of the new programs will be compared with the costs of the
ongoing programs, the alternatives will be analyzed, and re-
quests and recommendations will be made accordingly.

Central administration will be analyzing the requests as they
come from the various chancellors. The university does not
accept the responsibility for balancing the state budget.
However, it does present reasonable request within the overall
economic status of the state. This will require making re-
ductions in the requests as submitted to central administration.
Here PPBS will assist in the analysis. All approved programs
will be costed, and the various review and approving bodies will

be asked to approve these requests. It will be possible to analyze these requests and make decisions with full knowledge of the price tags on the various alternatives.

One of the difficulties in developing and implementing PPBS in an educational institution is the definition of the major program areas. In relating the university to the state as a whole, it is our opinion that the university functions within one broad program. This seems reasonable when you consider that the Department of Defense is structured into only ten major programs. The determination of sub-programs has no historical basis, since most administrative and accounting frameworks have been different from the broad program areas of instruction, research, and public service. The college, school, department organization with controls by line item is not particularly relevant to the administration of a program budget. We are supporting at this time the development of a sub-program for educational support services. With the importance of the use of computers in education today, and also the use of other support services, central administration is of the opinion that information in this area should be segregated and developed in such a manner that it facilitates an analysis of the various alternatives. Should requests be granted for funding additional professional staff, or should the same funds be used to provide support services? Should available funds be used for libraries or computers or teaching assistants? We are still searching for the methodology that will provide the necessary background information for analyzing these alternatives. There are a lot of unanswered questions concerning the programs, sub-programs and activity levels in PPBS. We should look forward to experimentation in the next few budget sessions to develop a viable structure of programs, sub-programs, etc.

To summarize:

PPBS is not a panacea to all financial problems;

PPBS requires planning--This is a distinct advantage of PPBS over previous budget methodology; We look upon PPBS as a means of maximizing returns; and further work is required to develop the optimum program structure, and all concerned parties should continue to work towards this solution.

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PROGRAM BUDGETING AT THE INSTITUTIONAL LEVEL:
USE OF BUDGET AS A MANAGEMENT TOOL

I have been asked to express my points of view concerning "Program Budgeting
at the Institutional Level: Use of Budget as a Management Tool."

My appearance on the program of this conference may imply that Wisconsin State
University-Eau Claire has fully accepted the concept of program budgeting and
is using this system as the management tool on campus. I assure you that this
is not the case. We too are in the very initial stages of developing such a
system. Nor am I an expert on the subject of program budgeting. I have,
however, had some exposure to the concept of program budgeting and a limited
amount of experience in its use on a university campus and would like to share
with you some thoughts on the subject.

Just what is this thing called program budgeting? Why has program budgeting
been adopted by our state government and why should it be adopted at the
institution level? These are questions that we must all consider and consider
seriously if we are to fulfill our roles as responsible members of the manage-
ment team of our various institutions. If program budgeting can be used
effectively as a management tool, we must understand it and commit ourselves
and our institutions to its implementation.

Let's look at the first question - What is this thing called program budgeting?
Program budgeting has been described as a planning, programming, and budgeting
system which is a mechanism for systematically presenting relevant infor-
mation and alternatives to decision-makers. It is not a substitute for
judgment, but a tool with which the decision-maker can focus and sharpen his
grasp of alternatives.

None of the components of program budgeting are new in themselves. No one
would question, for example, that long-range planning is essential for the
sound management of an institutio and that higher education management has
been involved in such activities. However, to raise the question of whether
such planning goes on in an optimal way is not unduly cynical. Too often
planning is construed as an extremely long-range and somehwat abstract con-
ceptualization of the basic thrust of the university and involves only in-
exact gross planning. Frank B. Dilley in his article entitled "Program
Budgeting in the University Setting" that was published by the American
Council on Education said: "There is too much that is dreamlike about many
if not most long-range plans. Just as in dreams there are some points of
contact with reality but much fantasy, so with plans. A few concrete pro-
jections are made, but the rest is vague and unspecific. Almost nowhere can
one find a plan which translates dreams into planned reality, in which ob-
jectives for every unit are made concrete and the means to their achievement
plotted out year by year in the future."

What's new about program budgeting is the integration of planning, programming, and budgeting into a system which progresses from evaluation of long-range needs and setting of objectives to development of shorter range plans and translating these plans into specific budget programs and resources necessary to accomplish the stated objectives. Program budgeting stated simply then is a management-by-objectives system.

To illustrate some of the benefits of the management-by-objectives principle, I would like to relate a story that was told at the recent annual meeting of the Central Association of College and University Business Officers in Dayton, Ohio. It seems that three men of the religious cloak, a Methodist minister, a Catholic priest, and a Jewish rabbi were discussing their methods of allocating resources. Their budget contained two major programs of concern-- 1) the administrative program including, of course, their salary and 2) God's work. The Methodist minister described his system first. He said, "My system is very simple and fair. I wait until the congregation leaves the church then, I take a piece of chalk and draw a circle on the floor. I then place all the collections in one plate and throw the money into the air-- what lands in the circle goes to God's work and the rest I keep." The Catholic priest said, "My system is very similar. I wait until everyone has left the church, then I take a piece of chalk and draw a line on the floor. I then throw the collections in the air and what lands on the line goes to God's work and the rest I keep."

The rabbi said, "My system works very well too. I wait until everyone has left the synagogue then, I collect all the money into one plate-- throw it into the air and what God wants he can grab."

Obviously the rabbi has defined objectively what he wanted out of his program or system and left nothing to chance. We too have the obligation to take every step necessary to assure that we develop programs and systems that accomplish our objectives.

Program budgeting has some distinct advantages over the conventional method of budgeting. It also has some problems and I believe Donovan Riley from LaCrosse is going to highlight these in his presentation. Many of the advantages that I will refer to are paraphrased statements or quotes of Dilley from the article mentioned earlier.

1. Ease in locating actual program costs, costs which are hard to obtain from ordinary fiscal budgets because the information about individual programs is scattered throughout the typical budget and many program costs are not even computed.

2. Formulation of objectives in precise terms.

3. Emphasis on what we are trying to accomplish with our available resources.

Other points to be noted are as follows:

1. When information is collected by programs, the decision-maker has the information which enables him to distribute resources selectively rather than merely incrementally.

2. Chief among the advantages of program budgeting is the opportunity for every area of the university to examine and review the plans of other areas, thus facilitating greater cooperation and the reduction of future overlapping.

3. One difficult problem encountered by institutions is that of keeping means properly subordinated to ends. Existing means come to be regarded by those who participate in them as ends in themselves; thus programs within a university often expect not only that they will be permanent but also that they will be allowed to expand at the same rate as every other program. In addition, service activities sometimes tend to wag the dog. Development programs, for example, become the source of educational policies through specific fund-raising efforts which lead to the creation of new programs. Sometimes this leads to good results, but sometimes it leads to expensive programs which in the short run seem desirable because of the funds they bring in, but which in the long run are a drain on total financial resources.

In closing I would like to quote the opening statement from the American Council on Education's publication *Planning for Effective Resource Allocation in Universities* by Harry Williams.

"It is the essence of decision making, therefore, to choose among alternative ends and to ration scarce means to their accomplishment. At this level of description, no significant distinction exists between profit and nonprofit organizations, or between private and public organizations. All require the ordering of goals, the analysis of their relative contributions to the great aims of the total undertaking, the development of plans, the measurement of alternative resource inputs and their relation to progress toward objectives, rational choice of feasible ends, allocation of means, monitoring of progress and appraisal of results. The budget process is the activity through which this work is done. The budget is the instrument through which the process is made operational."

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PROGRAM BUDGETING AT THE INSTITUTIONAL LEVEL
USE OF BUDGET AS A MANAGEMENT TOOL
(IDENTIFICATION OF PROBLEMS AND DRAWBACKS)

The Problem of Goals and Objectives for Higher Education: Whose Goals?

1. The list of those groups seeking to set goals for institutions of higher education grows with each passing year. Among the current contenders--in addition to institutional administrators, students, faculty and boards of regents and trustees--are business and industry, state and federal government, accrediting agencies, coordinating councils, and budget analysts.

2. Amid this array of goal setters (often with conflicting goals and objectives) there is cause for concern as to how a goal-oriented budget-planning system can be an effective management tool at the institutional level. Perhaps the university is too diverse to have a "mission" or "goal" capable of precise definition in budgetary terms.

The Problem of "a program structure for what level":

1. Program outlines and structures are set by agencies and review groups other than institutions. Programs should be meaningful to all centers of decision-making authority, starting with the institutional administrator, and continuing to the agency head, coordinating body, central budget office, the chief executive and the Legislature.

2. It is suggested that at present a "program is not a program" at all these levels. One imprecise measure of this lack of success is the reception program budgeting has received at various levels of the education "industry."

3. There is the problem of the relationship between program structure and organization structure: Universities at the working level are departmentally organized. This organization persists in the face of evidence that interdisciplinary approaches to teaching and learning are necessary. "If budgeting is to serve in its traditional role as a 'tool of management,' administrative responsibility must be assigned for particular activities in an organizational context. Anything that is called a program must have a program manager responsible to utilize resources to best achieve outputs." At the

institutional level universities are not traditionally organized for program budgeting.

Coupled with faculty-student desire and need to participate in goal setting, organizational problems are one of the biggest obstacles to effective use of PPB as an institutional management tool.

The Problem of What is Educational Output and What are Its Units of Measurement:

1. Auxiliary services, maintenance, and food service are measurable; they have easily agreed upon and measured unit outputs.

2. "Educational output" is some kind of attainment--acquiring a technical skill, an appreciation of literature or art, a sensitivity to human needs and relationships. Best current output measures--test scores, drop-out rates and continuing education--do not appear as frequently as they should as measures. This is true at the institutional level and elsewhere.

The Problem of Lack of Trained Staff:

To cite an illustration: the New York City Public School System wanted to install PPB as a management tool. "The initial thought of the President of the Board of Education and the Superintendent of Schools was to hire an individual experienced with PPBS, at a large salary if necessary, and let the individual install a PPBS system in the NYC Public School System. As it turned out, there were no individuals who were experienced in PPBS and weak minded enough to take on that type of impossible job."

Anyone who has tried to recruit and hire PPB-oriented and experienced staff knows this problem.

Miscellaneous Problems:

1. Hooking the computer to PPB.

   a. "The advent of the computer has often encouraged the trivialization of scholarship and the belief that things that count are those that can be counted."

   b. Very often the computer and electronics data processing systems yield information more useful at the central level than at the institutional level.

277

2. Central agency reluctance to implement program budgeting for the benefit of institutions.

    a. PPB should lead to decentralization within an organization for both budget preparation and execution. There should be freedom to move funds within the program to accomplish goals.

    b. Retention of line item control within programs continues in many instances. Authority at the institutional level to transfer funds remains restricted.

3. Multiplicity of programs.

    a. If "programs" are increased in number, and even the most liberal transfers are allowed with programs, a point can be reached where the effect at the institutional level is more restrictive than line item budgeting.

    b. Such a trend if carried to an extreme will make fiscal and managerial liars out of the best managers.

    c. Visibility of programs may pose problems. Examples abound of programs once considered exotic and esoteric which have since turned out to be vital to the needs of the nation and world. What risks would a well managed institution that presents a sophisticated display of *all* its programs run?

Conclusion: The position can be taken, even if just for purposes of argument, that PPB serves other decision-making levels better than it serves an institutional manager.

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PROGRAM BUDGETING AT THE INSTITUTIONAL LEVEL:
USE OF THE BUDGET AS A MANAGEMENT TOOL

Relevance and Usefulness Demonstrated by Use

It would seem that the best test of program budgeting is whether or not it is being used at the "gut level" of education, i.e., at the institution where the instructional program is being carried on.

A review of the University of Wisconsin-Milwaukee budget will disclose that while it preserves the traditional framework of a campus - division - department - activity - classification, etc., certain program budget units do exist. They take varying forms; some are called schools, like the Graduate School; some are called centers, like the Center for Great Lakes Studies, or the Center for Economic Education; some are institutes, like the Institute for Human Relations; some are difficult to categorize and have varying identifying labels, such as the Surface Studies Laboratory.

These and the many others at UWM share certain features:

(1) They cut across the traditional school and college lines and draw upon personnel and programs from various schools and colleges. For example:

Graduate School - provides support for programs and individual faculty members in all units of UWM.

Center for Great Lakes Studies - personnel from Zoology, Economics, Geology, and various other UWM departments.

Center for Economic Education - College of Letters and Science-Economics, and School of Education.

Institute of Human Relations - Faculty members from a number of schools and colleges within UWM as well as University Extension.

Surface Studies Laboratory - Faculty members from the College of Letters and Science, primarily departments of Chemistry and Physics, and the College of Applied Science and Engineering.

(2) They are directed at defined individual program objectives; and tailored to aid in carrying them out. For example:

Graduate School - graduate education.

Center for Great Lakes Studies - study of all facets of
the lakes, including such diverse items as shorelines
wave action, economic values of the Lakes, plant and
animal life of the Lakes.

Center for Economic Education - advancement of the study
of economics, and economic education in the schools.

Institute of Human Relations - research and action programs
aimed primarily at the disadvantaged.

Surface Studies Laboratory - study of the aspects of any
and all surfaces.

Ways in Which the Program Budget is Effective as a Management Tool

(1) Presenting and securing approval of, and funding for, new programs.

A program budget allows you to show the problem being attacked,
the resources required, and the hoped-for results in one package,
without confusing the issue with various unrelated and arbitrary
accounting classifications. An example of our success in using
this mechanism is a recent $500,000 NSF grant to the Surface
Studies group, a grant which neither of the participating col-
leges could have secured individually.

(2) Identifying, highlighting, and keeping track of specified programs.

Giving official status to a function calls attention to the
existence of it, serves as a focal point for interest in the
activity, and provides a recorded history of its activities.
Otherwise, uncoordinated activity might be taking place with
the participating individuals unaware of activity by others
in the same area.

(3) Focusing responsibility and project accountability for the activity.

The University can call upon the designated participants for
review purposes and either reward for results achieved or with-
draw support if necessary.

(4) Spelling out possible alternatives.

The various means of producing an anticipated result can be
weighed, and, in some cases, benefit-cost ratios of the dif-
ferent alternatives can be compared and decisions made based
on these.

(5) <u>Preventing unnecessary allocation of resources to competing and duplicating groups (within the same school or college or in different schools and colleges) to achieve the same result.</u>

If programs are not clearly defined, duplicate effort may be going on all over campus.

(6) <u>Accumulating total costs of the program.</u>

Too often when the program is ill-defined, identification of total costs is difficult, if not impossible. If costs are recorded and accounted for by program, greater assurances exist for having total costs available.

(7) <u>Disclosing all sources of funds being used in the program.</u>

The program budget takes into account federal and gift funds, as well as state support; it recognizes the fact that most programs enjoy support from more than one source.

<u>Ways in Which Program Budgeting is Ineffective or Deficient as a Management Tool</u>

(1) Program budgeting does not usually lend itself to the traditional accounting classifications and categories, and difficulties arise in processing and accountir for expenditures within the existing University and state accounting system.

(2) Because of the cross-disciplinary nature of many of these new programs, they are not readily adaptable to the traditional modes of administration. Therefore, in many cases additional project or program coordinators and support personnel must be added to run these programs. The large number of these programs have given rise to an entirely new class of program business administrators at UWM.

(3) This form of budgeting sometimes is so program directed that it is difficult to obtain and summarize the information when a different criterion is used. For example, we have all become vitally interested in how much effort and resources the state is expending on Milwaukee's inner core. Yet because our criterion is geographical as well as cross-program, it is difficult to identify effort being expended by UWM--by the entire University system--and also by the entire state government of Wisconsin.

(4) It sometimes passes by the really relevant questions which are of a negative nature rather than positive, i.e., it won't necessarily tell you because of budget shortages how many students

you turned away from what courses, *who* they were, or what resulted from this. It's true most other systems of budgeting won't either, but if your program is to be relevant, a system must be devised which calls attention to this aspect.

(5) Most program budgets and program budget systems have not addressed themselves to mid-point evaluation or control. Under a program budget system, results are difficult to measure short of completion of a project. The individual component parts, which would otherwise serve as check points, are overlooked, under-emphasized, or played down, putting the entire focus on final result. This occasionally results in large expenditures of money, and much time lost, prior to a final unsuccessful result. A better system of "bench marks" would be a major breakthrough.

Real Value of Program Budgeting as a Management Tool

The real value of the program budget as a management tool at UWM is as one member of a team of tools we use. Program budgets when used in conjunction with other management reports,[1] give us a reasonably complete picture of our institution, and its *program position* at any one time.

The other real value of program budgets as we assess them is their focus on *total* resources and facilities needed to implement, operate, and complete a program. The follow-up through completion of a project of cost estimates keeps a number of marginal programs from being proposed. It tends to be self-selecting, in that if probable results are also documented, it allows the decisions on which programs to push forward to be made at the *lowest, appropriate* level.

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[1]These reports include:
   (1) standard division-department budget balance report
   (2) open position reports
   (3) overtime reports
   (4) employee category count reports
   (5) termination and reallocation of interim merit reports
   (6) purchasing activity reports
   (7) enrollment and registration reports
   (8) facility construction reports
   (9) remodeling reports
  (10) gift, grant, and federal contract
     (a) submission of proposal report
     (b) acceptance of proposals report
     (c) rejection of proposals report

What's Needed to Make it Even More Effective

To get maximum value out of it, recognition must be given to the fact that program budgeting, especially at the institutional level, is a means, not an end. If it is realized that it is the first step in moving down the road to more effective use of resources to meet the educational commitment, and that it is only one of many tools at the disposal of the professional administrator, then progress has been made.

Anything that helps the professional educator to decide the basic question of what knowledge and skills should be developed, and when, where, how, by whom, and for whom, cannot be ignored. Any tools that help us decide in any given year what kind of education should be offered for how many students, by how many teachers and support personnel, with what background, in what facilities, must be utilized.

<u>INTEGRATED DATA SYSTEMS -- A CONCEPTUAL APPROACH</u>
<u>INSTITUTIONAL CONCEPT</u>

<u>DATA COLLECTION, INPUT AND OUTPUT</u>

<u>MEETING SPECIAL NEEDS</u>

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INTEGRATED INFORMATION SYSTEM
OF THE UNIVERSITY OF WISCONSIN

Increasingly, demands are being made upon higher educational institutions for more detailed reporting of planning activities and descriptive institutional data. Internal questions relating to broad policy decisions are also requiring more viable data systems as an aid in the decision-making process.

The University of Wisconsin, along with most major universities, has, since the advent of the computer, generated vast quantities of data within the various operational units. Also, consistent with a somewhat universal pattern in major universities, data collected in these operational units in many respects have not been compatible among the units. Consequently, the analyses which might be possible as a result of inter-relating data from several operating units have, at times, been difficult to accomplish.

My discussion of an integrated information system will include a description of the present state of development and my concept of what might be, hence is part fact and part fanciful.

An institutional information system should be established according to long-range objectives which have been developed cooperatively by the chief executive officers. Once objectives to be served by the system have been precisely stated, a basic informational system design can be constructed. It is at this point that we are confronted with managerial philosophy and practice. Rourke and Brooks,[1] in their study of management in higher education state that, "Four areas of change stand out as being particularly significant in the emerging style of university administration. The first is the shift from secrecy to publicity in the general conduct of administration and academic affairs - a shift which has greatly altered the relationship between institutions of higher education and their environment. The second is the development, sometimes institutionalized and sometimes highly informal, of a cabinet style of government in place of the presidential system of executive leadership that has traditionally characterized university administration. The third is the introduction of new forms of decision making which, if not entirely as rational as their advocates might suggest, are nonetheless considerably less subjective than the purely intuitive styles of the

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1   Francis E. Rourke and Glenn E. Brooks, *The Managerial Revolution in Higher Education* (Baltimore: The John Hopkins Press, 1966), p. 101.

past. Fourth, and finally, the multi-campus network that has been created
in many state systems of higher education has generated both novel admin-
istrative forms and new difficulties as the world of higher education
seeks to adjust to the demands of the modern age." Each of these has rele-
vance to the development of an institutional information system at the
University of Wisconsin. Attention must also be given to the educational
implications of increased capabilities for quantification, hence stand-
ardization, especially in a complex university setting. Experts in Amer-
ican higher education contend that one of the strengths of the American
system has been its diversity, both inter and intra-institutional. We
must avoid any tendency to attempt to quantify that which is not quanti-
fiable; to formularize at the expense of institutional dynamics; to bur-
eaucratize at the expense of faculty initiative. With these cautions
clearly in mind, I will attempt to review with you some of the efforts in
institutional information systems design and development at the University
of Wisconsin.

A first phase in the design of the system is an analysis and definition
of the informational system currently in use. This we have done, in part
at least, through an inventory of data elements now available throughout
the University and through interviews with top-level administrative per-
sonnel to determine the kinds of information now utilized in the decision-
making processes and to identify inadequacies in the present system. It
is important to keep in mind that institutional research, as broadly de-
fined, includes data collection, analysis, and reporting as a major, but
by no means all-inclusive, function. Data collection too often becomes
an end in itself resulting in vast quantities of unrelated facts. Thus
the institutional research office should participate in the development
of a viable management information system from which critical analyses
can be made and implications for institutional policy be drawn. It is
imperative that the utility of the system override tendencies to become
engrossed in the technology of data collection and retrieval.

Any information system must relate directly to the functions of the Uni-
versity, that is, teaching, research, and service. Since a statistic
which merely represents a condition at a given point in time may be gen-
erally meaningless without some basis for comparison, data should be
historical in order that trends can be observed.

At the University of Wisconsin, we have attempted to define an integrated
information system as a system which brings together the data collected
in a multitude of operational subsystems in a way that will produce ac-
curate, reliable information about the University's resources, current
operations, and future planning. To borrow a definition from the N.S.F.[2]
study, we perceive that "the total information system is a linked network

2   National Science Foundation, *Systems for Measuring and Reporting the
Resources and Activities of Colleges and Universities* (N.S.F.; Washington,
1967), p. 237.

of raw facts (data), processed data (information) and collection of data, the development and flow of information, the manual and automated procedures which make the network operative, and the organization that coordinates and operates the network, all of which are designed to aid in the operation of a college or university by providing the information needed at all administrative levels for control, evaluation, and planning." We would also agree with the N.S.F. study that three principal conditions must be met:

1. The coordination of all administrative activities and the establishment of decision-making policy that takes into consideration the over-all institution without regard for the barriers of organizational segments or departments.

2. The collection of all data needed for the operation and management of the institution at the points of origin in a manner that will avoid duplication of the collection effort.

3. The recording and processing of data in a relatively fast, efficient manner, using manual or automated techniques or both.

This means that at the University of Wisconsin we believe an information system must be developed in cooperation with and full support from top-level administration. It also means that there will be a reliance upon the various operational subunits for basic data; that is, basic data will be collected in the registrar's office, controller's office, payroll office, secretary of the faculty's office and others and that compatability of data from each office will be developed and maintained.

Components of the System

The most highly developed data subsystem at most colleges and universities, and I am sure this is true at the University of Wisconsin, is the student data subsystem. These data include the number, abilities, source, entrance status, geographic distribution, sex, marital status, levels, majors, retention, continuance in graduate and professional education, employment, and so on. A complete discussion of student data will be given by Dr. Heetderks tomorrow.

The second subsystem, less highly developed than the student data subsystem, is that of personnel, both academic and classified. We have recently completed a study of the types of faculty data available at the University in an attempt to identify that which should be part of a central data bank. Obviously, there are needs for detailed faculty vitae by departments and other operational units. However, it has been agreed that much of the information needed in departmental administration was not pertinent to the function of a central administration, either campus or university wide.

The data elements identified as being part of the central data bank were social security number, name, maiden name or former name, address, sex, date of birth, marital status, country of citizenship, educational background including highest degree, institution granting degree and date awarded, rank or title, term of appointment, salary, salary distribution by assignment function, i.e. research, teaching, etc., and by fund source, breakdown of split appointments by department, division, unit, etc., and tenure status. Along with these basic data, we also have an interest in faculty time distribution. Such information is necessary in cost studies such as computation of direct instructional costs by level. Recently, we have asked each faculty member to estimate the percentage of instructional time devoted to each course taught. From this information, it is possible to compute relative cost by level ratios.

Staff data have not been defined as precisely as data on faculty members. There is a need to develop data which will provide information on the composition of the staff according to assignment, salaries, classification, and so on. Also, we need basic data on faculty and staff for purposes of reporting racial compositions of employees.

A curriculum and instruction subsystem includes data on courses offered, courses listed, course enrollments, section sizes, section types (that is lecture, recitation, laboratory), independent study, variable credit, grades, student credit hours by department, student contact hours, student credit hours and contact hours per full-time-equivalent faculty member, instructional space by category per full-time-equivalent students, dollars per student credit hour by level, etc.

Physical facilities represent another subsystem about which basic institutional data are needed. These include space available by space categories such as classroom, laboratory, office, research, residence, administrative service, with information on both the quality and usage of each. More will be said about this subsystem later.

The final subsystem which we believe is part of an overall information system is the financial subsystem. Here we must know the allotments and expenditures by various functions, by sources of income, and according to operating units. Especially important to a complex institution like the University of Wisconsin is knowledge of financial support for instruction research, and public service. The impact of sponsored research upon the university requires continual evaluation. Educational cost accounting techniques along with program budgeting are requiring that financial data be integrated with data on institutional outputs. Currently we know very little about the total financial impact of a university upon its community - the State of Wisconsin. More research and analysis is needed here.

Finally, we must know the extent of research and public services activities. These involve the graduate school and university extension. At present we have not done very much in the way of basic data for these areas. We need to do more. The HEGIS questionnaires this year include a section on extension activities which will require that we do a more careful accounting of workshops, conferences, non-credit classes and so on.

Since the theme for the workshop is an integrated information system, it seems appropriate to discuss our concept of integrating the subsystem as discussed previously. It should be kept in mind that we, along with most higher educational institutions, are at the developmental stage, and if we are to remain dynamic must remain flexible to incorporate new technology.

An integrated information system can be conceived as a central system responsible for all data elements or a composite of subsystems with sufficient inter-system compatibility to allow for interchange of data. At this point in time, we have chosen the second alternative with the Office of Institutional Studies assuming responsibility for working with the subsystems to insure compatibility.

Some of the criteria of a viable system made up of a composite of subsystems are:

1. The development of uniform coding to be used by all units;

2. The development of uniform definitions which are practical for each unit;

3. The assurance of sufficient autonomy within each unit to preserve the integrity of that unit and to allow the unit to perform its specific operational function in an efficient manner while at the same time generating the required data elements;

4. The imposition of a discipline within the unit which produces complete and accurate data.

From these data subsystems, it is the role of the institutional studies office to provide the necessary information utilized in the decision-making processes of the University. Here I am defining information as derivations arrived at through combining or in some other way inter-relating basic data elements. For example, a table which displays student-faculty ratios would be developed through the use of data elements from two of the subsystems.

In conclusion, I would like to discuss briefly a few of the more obvious outputs from an integrated information system.

All institutions are faced with periodic reviews by various accrediting
agencies. The most comprehensive reviews are the institutional accred-
iting reviews conducted by teams from the North Central Association of
Colleges and Secondary Schools. Illustrative of the comprehensive na-
ture of data required by the North Central is the basic institutional
data document. The institutional data document puts demands upon each
of the above mentioned subsystems as well as depending on data on li-
braries, research activities, and adequacy of financial support and con-
trols. Institutional self-studies emphasize evaluation, hence demon-
strate the utility of the information systems in the evaluative and
planning processes.

Another output from the information system at most colleges and univer-
sities is an institutional fact book. These take many and varied forms,
from that of essentially a registrar's report to documents providing his-
torical data on budgets, faculty loads, enrollments, majors, faculty,
curriculum, instruction in terms of section sizes, types of instruction
and so on. At the University of Wisconsin a "Fact Book on Students" con-
taining historical data on students has been up-dated and distributed
annually. The document has included enrollment data, student housing
data, sources of students, student ages, degrees, alumni, student fees
and expenses, loans, scholarships and stipends, courses, and budget
data. Currently we are planning to expand the factbook to include fac-
ulty data.

Another utility of the integrated information system is in the conducting
of space utilization studies. To illustrate let me cite the *Methodology
for Determining Future Physical Facilities Requirements for Institutions
of Higher Education* prepared under a U.S.O.E. contract by John Yurkovich
of the University of Wisconsin.

> Ideally, both student registration records and departmental
> records should be used to establish independent files which
> can be used for mutual auditing. These files should contain
> the instructional information necessary for conducting a
> utilization study as well as the additional data needed for
> the projection of enrollment by course. A file which could
> serve both of these purposes might be structured to contain
> the following items of student, course and section informa-
> tion: (a) the name, permanent student number, major, and
> classification or level of each student; (b) the department
> in which the course is offered, the unique course number,
> the duration, and the credits of each course in which the
> student is enrolled; and (c) the section number, type of
> instruction, meeting time(s) and day(s), room(s) in which
> the section meets, and instructor's name for each section
> of each course in which the student is enrolled.

One final, and most exciting utility of an information system is that of
operations analysis and simulation. Although most of us have been involved
in simulations of one form or another in a crude sense for many years, it
has been only recently with the work of such people as Judy and Levine at
the University of Toronto and Keller at California that simulations and
model building have been attempted with any degree of sophistication. A
major limitation in University simulations has been the lack of an adequate
data base. We eagerly look forward to the time that we at the University
of Wisconsin can pre-determine the total effect of selected parameter
variations at any level of the operati on.

In conclusion, let me say that I view a total information system as an aid
to the decision-making processes in the university environment and hence
a contribution to more effective and efficient planning. It is not an end
in itself, but only a means to an end and those of us in institutional re-
search must avoid at all costs a natural tendency toward egotism which
would isolate us from the business of the University.

ROY E. HEATH
Director of Research and
    Development
Wisconsin State Universities

INTEGRATED INFORMATION SYSTEM OF THE STATE UNIVERSITIES

As our State University system grows, the management at each campus and
at the Board of Regents office requires more sophisticated statistical
reports to aid in management decisions.

Recently the Wisconsin State Department of Administration adopted the
"PLANNING-PROGRAMMING-BUDGETING-SYSTEM" (P.P.B.S.) as part of their
management process. This system quantifies need, input and output in a
logical sequential manner. It is a "production line systems analysis"
program.

P.P.B.S. was popularized by ex-Secretary of Defense, Robert S. McNamara,
and he used it in Department of Defense planning. Dr. Charles Hitch of
the Rand Company is generally given credit for developing the system.
P.P.B.S. has been described as "explicit quantitative analysis, which is
designed to maximize, or at least increase, the value of objectives
achieved by an organization, minus the values of the resources it uses."
There are risks in the system if all variables cannot be estimated. (For
instance, the Department of Defense was off eight billion dollars on their
money needs in one year. But, please, Mr. McNamara did not have the full
P.P.B.S. system in at Ford when it introduced the Edsel.)

The variables in education may well exceed those of the military. As
Anthony Oettinger remarked in the May 18th *Saturday Review*, on page 77:

> "The goals for education have been stated with such monumental
> vagueness, and yet with such colossal residues of disagreement,
> as to provide no useful guidance for any systematic design."

But P.P.B.S. is here to stay -- it is a system of management by objective
-- it is not really new but a "systems" approach with new nomenclature
and possibly changed emphasis.

The Office of Education sets great store in the possibilities of systems
analysis and their base point must be the statistics they obtain from
their H.E.G.I.S. (HIGHER EDUCATION GENERAL INFORMATION SURVEY) reports.

On April 2, 1968 the Office of Education mailed each President a packet
containing the 1968-69 set of H.E.G.I.S. Reports, tabulated below:

	Survey Area	Period Covered or Reference Date	To Be Returned to the Office of Education. Not Later Than
1.	Institutional Characteristics of Colleges and Universities and Post-secondary Business, Trade, Technical, and Other Vocational Schools	Academic 1968-69	July 15, 1968
2.	Students 1/		
2.1	Degrees and Other Formal Awards Conferred Between July 1, 1967 and June 30, 1968	FY 1968	August 15, 1968
2.3	Opening Fall Enrollment: 1968	Fall 1968	October 15, 1968
2.5	Students Enrolled for Advanced Degrees: Fall 1968	Fall Term 1968	November 30, 1968
2.8	Residence and Migration of College Students	Fall 1968	November 15, 1968
3.	Employees in Institutions of Higher Education	Fall Term 1968	November 1, 1968
4.	Financial Statistics of Institutions of Higher Education	FY 1968	November 30, 1968
5.	College and University Libraries	FY 1968	October 1, 1968
6.	Projections in Higher Education	Selected FY's 1970-1981	October 1, 1968
7.	College and University Physical Facilities	September 30, 1968	November 30, 1968
8.	Selected Adult Education Programs in Institutions of Higher Education, 1967-68	FY 1968	September 1, 1968

1/ Schedules 2.2, 2.4, 2.6, and 2.7 omitted for HEGIS III.

Since the Presidents' time is so committed, we, here at the Board Office, have assumed that the Institutional Research Director will be assigned the administrative responsibility for these and other Washington and annually-reported Board Office forms. The Institutional Research Director then "becomes all things to all annual statistics."

Let us take a quick look at some of these forms. The July 15 report, "Institutional Characteristics of Colleges and Universities and Post-secondary Business, Trade, Technical, and Other Vocational Schools," poses no serious problem but should be checked by the Vice-President of Academic Affairs for accuracy before submission.

"Degrees and Other Formal Awards" requires a careful look at the coding. It would be logical to code all major and minors according to the Federal code; and as each new major comes into being, it, too, should be coded. Currently we are using a two digit code and the Federal is four digits. One answer is a conversion program so machine calculation and print out can produce the necessary data.

The "Opening Fall Enrollment" report due October 15, the "Student Enrolled for Advanced Degrees" due November 30, and the "Residence and Migration of College Students" due November 15 contain part of the data required in the Board Office Fall Enrollment Report. With proper planning now with the registrar and the data processing center, this report could be machine generated.

The report "Employees in Institutions of Higher Education," due November 1, could be machine generated by assigning code numbers to each staff member and each new staff member.

The report on Financial Statistics must come from the Vice-President of Business and Finance but can be submitted by the Director of Institutional Research.

Since the Library, the Federal Grants Office, and the Business Office all have key data, cooperation of these departments can produce a document that is accurate and will match the figures in your Title II Library proposal.

"Projections in Higher Education," due October 1, should consider fall enrollments for necessary adjustments; but basically, you should use the projections of Dr. Lins of the Coordinating Council for Higher Education. This will require his adding 1980 projections.

Physical facilities specialists will have to prepare their report in co-operation with Dr. Ansfield, but this report should be forwarded by the Director of Institutional Research.

The Office of Civil Rights demands a report on Form OS-34 showing the breakdown of Negro, American Indian, Oriental, Spanish Surnamed American and total students. This report must also show the support each category received in financial scholarships, financial assistance, and if they resided in university-owned housing. Again this should be part of the enrollment report, and the data must be collected at registration time.

I recommend an immediate review of the data needs for all H.E.G.I.S. reports and that we plan ahead for all of them.

Now let's take the P.P.B.S. program a step further. We may do a good job of establishing needs, but we must know the input costs required to reach our objectives. How much must it cost per credit hour for a quality education? Our space studies can be expanded to include more cost data. What influence will increased salaries, decreased teaching load, and new courses have on costs?

If the output is defined, then what is the quality of this output? This past year, a dropout study was completed at Stevens Point under the CORD project. We need to expand this type of study.

Statistics generated by the computer can be most helpful. May I suggest that we use as efficient a system as possible. All necessary business, student and staff data should be stored in machine readable form on card, disk, or tape. All data should be in a standard system code.

Ideally, programs should be interchangeable from campus to campus. This requires using standard languages, and I propose Fortran II and Cobol. Student, faculty, and institutional data should be coded to conform with federal (CASE - Committee on Academic Science and Engineering) and test services (ACT) coding. Programming for special areas such as personnel, library, student financial aid, etc., could be accomplished for one campus and applied for system use (in most cases). This would eliminate duplication, and even worse novemplication, of effort.

The needs of the P.P.B.S. system should have our attention so that we will structure our data bank to provide the data for management decisions in the years to come. The HEGIS Reports are a starting point for planning.

EUGENE LEHRMANN
Assistant State Director
Wisconsin Board of Vocational,
Technical and Adult Education

INTEGRATED INFORMATION OF THE
VOCATIONAL, TECHNICAL AND ADULT SCHOOLS

Wisconsin Schools of Vocational, Technical and Adult Education were estab-
lished by the Wisconsin Legislature in 1911 largely on the basis of a re-
port given to the Legislature by Dr. Charles McCarthy, who had been author-
ized in 1909 to make a study of vocational education. Dr. McCarthy's re-
port was based upon ideas gathered by himself and his co-workers from the
most successful schools in various European countries. From that earliest
beginning, which initially involved only the apprenticeship program, the
present system has grown with the present comprehensive array of services
being added through various State and Federal acts, as needs were identi-
fied through the years.

The Wisconsin Board of Vocational, Technical and Adult Education has been
given a major role in providing educational services to individuals not
seeking their baccalaureate degree or entry into the "professions." This
range of service includes both full and part-time programs for youth and
adults, from basic education to collegiate type programs for professional
support personnel in a variety of special fields. Several schools author-
ized by the Legislature also provide the general education, transfer type,
programs. All of these services combine to form a comprehensive educational
opportunity in the true spirit of universal higher education.

One of the earliest comprehensive community colleges came into being in
1933 in Milwaukee when, at the request of the University, a junior college
program was established as a maturing and gap-filling effort for the many
able students who for various reasons could not meet university entrance
requirements.

The vocational movement in Wisconsin was originally directed largely to
agriculture, home economics, and industry. Schools were established pri-
marily for the industrial phase, located in industrial centers, with agri-
culture and home economics needs met primarily in the high schools. Even-
ing and part time schools were established to extend job upgrading and
retraining services throughout the state.

With the movement of the Wisconsin economy from a rural to an industrial
emphasis and with the industrialization of the modern farm, rural-urban
differences in the need for educational opportunity have diminished. With
the mobility of the labor force and the rising minimum educational require-
ments to compete in it, the kinds of services these schools provide are

needed by all of the people. This goal, long held as a basic tenet of the people in the movement, remained unattainable as long as the responsibilities were vested in the small, city-oriented, centers which existed in most of the state prior to implementation of Chapter 292 of the Acts of 1965. This act required that the Wisconsin Board of Vocational, Technical and Adult Education and Coordinating Council for Higher Education reorganize the state into 18 districts for vocational, technical and adult education according to criteria which were established to assure adequate enrollment and financial resources for self-disciplining, comprehensive organizations. This legislation required that all portions of the state be in a vocational school district by July 1, 1970. As of July 1, 1968, 17 of the 18 districts will be organized including three-fourths of the population and two-thirds of the area of the State in area districts. The stage is now set for the Wisconsin Board of Vocational, Technical, and Adult Education to take its place as full partners with its sister agencies to bring a complete educational service to the people of this State.

We are not unmindful of the historical development of education. The service we are to provide fulfills needs as old as time and has been the target of continuous effort through the years.

The guild system of medieval times recognized the necessity for the development of specialists in accomplishing the world's work. The early technical institutes and the colonial apprenticeships were developed in response to the realization that this country could not meet its requirements for craftsmen from the European labor force. The Morrill Acts were not intended to establish graduate institutions of basic research but were established for training in "agriculture and the mechanic arts."

The life cycle of an educational institution has been clearly established. Institutions established to fulfill the needs of the common man gradually yield to the calling of the "elite." We realize that this danger exists today when we observe that the most widely recognized community college system of California count only about 10 per cent of their enrollment in full-time vocational, technical programs. This tendency is tacitly acknowledged by the Illinois Legislature which found it is necessary to include a stipulation that the vocational and technical component of the system must not fall below 15 per cent. One must understand that both of these systems, as well as most others across the land, developed from an academically-oriented junior college system.

In contrast, Wisconsin remains the only State in which the movement is generating from a sound, post high school majority, oriented system. Because of this, we believe that more resources are now in existence in this state than in any other to provide leadership in the achievement of a complete educational service.

Our changing technology demands flexibility and change in our programs, in our staffing, and in our facilities. Planning and planning information are needed to cope with the long range nature of buildings if they are to be an educational asset rather than a limitation. The young person coming to one of our centers today finds not only an invironment conducive to learning, but also an attractive physical and social setting. Several of our districts have adopted the campus concept -- view of Kenosha, Eau Claire, La Crosse.

One of the bottlenecks in the educational process and in the administration of education is the limitation which we still endure in the organization, storage, retrieval and dissemination of information. Our agency is, therefore, keenly interested in the topic and purpose ofthis conference and in the many efforts presently in progress to take advantage of modern technology in the solution of this problem.

The Wisconsin Board of Vocational, Technical and Adult Education is vitally concerned with the development of integrated data systems. Historically, we have been a group of locally-oriented, autonomous, units with minimum reporting practices to meet federal requirements for financial aids. In response to increasing educational needs, and with the increased mobility of workers, many of our programs have become state-wide or even national in their area of service. This trend has been recognized by the identification of state-oriented programs which are designated and approved by the State Board and the Coordinating Council for Higher Education. Those of concern to the Coordinating Council offer the Associate Degree, and cause our agency to be included with higher education in this state.

Our expansion has been rapid, from enrollments in 1955 of 6,063 in full-time post-high school programs and 5,221 in part-time programs to enrollments in the fall of 1967 of 13,845 in Associate Degree and full-time programs and 9,782 in part-time programs. Spring semester enrollments moved the total to approximately 25,000. Total enrollments are now approaching 200,000. Much more sophistication is needed in our informational systems to meet existing requirements. The need to know more about ourselves is a pressing challenge. Questions raised in the legislation, inquiries of taxpayer groups increasing public interest, and the increasing concern of the Coordinating Council caused us to reappraise our position in regard to information gathering and analysis.

In about 1964, our student and staff accounting was partially converted to data processing procedures. Schools already having this capability moved rapidly and were submitting their statistical and financial reports on punched cards by 1965. Centers lacking this capability submitted their reports through revised, precoded instruments to the State Board where punching and processing was accomplished. While some individual schools had been using data processing for some time, this marked the first state-wide effort to approach the information problem.

One of the enormous tasks of an educational system seeking to move beyond the level of statistics to educational function is the establishment of communication in educational terms. Our reporting practices have been geared to very broad classifications. In order to get more detailed information on a student-class basis, agreement must be reached on such things as program codes, course titles, and course numbers which identify courses of approximately equal scope, rigor, and purpose. This is an enormous task from the standpoint of the effort involved, but it is further complicated by philosophical and ethical overtones.

We are persuaded that these problems can be solved without violation of our cherished traditions. We acknowledge, however, that the movement in which we now find ourselves must be judiciously controlled from the standpoint of local and individual interests.

The Wisconsin Board is cooperating with the Department of Administration in its Planning Information Committee which is exploring procedures whereby a central indexing service can be provided to integrated state agency data banks. This, of course, involves reconciliation of existing agency codes, many of which are not compatible with the development of regulations on access, and involving certification of individuals to deal with privileged information, etc.

While the initial concern is with planning, the capability which is envisioned will most certainly involve operations as well. Interest in the information may be characterized in two ways: intelligence information which may be used to detect fraud, consistency of reporting, errors, etc.; and the statistical treatment of group information.

Data systems within education seem oriented toward budget demands. We are concerned that the education function be recognized as the central responsibility of the agency and that the budget and accounting systems are essential tools to the accomplishment of the educational objective.

Information involves three things in the view of program planning and budget systems people. These are: people, places, and things. If an integrated data system is to have relevance to education, it must concern itself, also, with concepts. A comprehensive data base should not only provide source information for administrative decisions concerning credits and debits, it should also provide the reservoir from which instructional content may be drawn. Accessed through threaded lists, which some computer people are talking about, computer assisted instruction might become practical at an early date in several of its dimensions. The task of continuous curriculum inventory becomes physically possible.

Continuous labor market analysis, in terms of occupational mix, work force shortages, and occupational information for guidance purposes, opens up a new dimension in meeting educational needs.

As is the case with other educators, we are interested in student characteristics. The local districts and schools maintain permanent records and develop student profiles. These contain privileged information of questionable justice and of questionable accuracy. The harm that comes to individuals who may have been wronged either in regard to their academic record, their personal qualifications, or their potential capability, even at their present state of accessibility, causes the professional educator to ponder whether the benefit justified the entire process.

The thought of automating access across the country during the present vulnerable state of the individual is unthinkable. Obviously, the spirit and intent of the constitution with regard to primary surveilance must be extended to matters concerning secondary surveilance, without regard to electromechanical problems or administration difficulties. Means must be provided whereby the individual may have recourse and whereby his records in all of its locations may be legally purged.

If educators involve themselves effectively in this emerging technology, great good will inevitably come to the educational process. The Wisconsin Board of Vocational, Technical and Adult Education is proceeding on this assumption and is presently developing a comprehensive data base designed to describe our populations, our activities with them, and our projected activity with respect to their needs.

Where instructional content and resource information are involved, a transitional step seems to be in order. We are now in the process of implementing a microform capability in order that our schools throughout the state may have rapid and economical access to the nation's research findings. A procedure is being established, compatible with the National Education Resource Information Center (ERIC) which will enable us to disseminate reports of all kinds that are of interest to educators. With the same system, we will establish communication with the local schools through the vehicle of microforms, further enhancing our in-state dissemination ability and providing increased services to the districts at what seem to be substantial economies to the state agency.

An ultimate system, as envisioned at this time from the standpoint of our need, involves random and remote access to an integrated data base with a video display. Translation to hard copy in such a system is through microform. We believe, therefore, that movement to a microform capability is entirely compatible with, and actually a step toward, an ultimate integrated data system.

We understand from the Department of Administration that an integrated data base, as it is presently conceived, will be accomplished through central indexing and a common thesaurus. Present thinking seems to favor agencies continuing to house their own data base but provide access to qualified persons and agencies through the common identifiers. The methods by which

uniform codes will be accomplished, or by which existing codes will be interpolated, remains to be seen. The Wisconsin Board is not waiting for these agreements to be reached, but is proceeding on the basis of educational standards which have developed nationally at this time.

Such standards include the "Dictionary of Occupational Titles" and "The Standard Terminology for Instruction," a taxonomy of curriculum concepts compiled by the U. S. Office of Education, which has already been cross-referenced to the D.O.T. through "Guidelines for Occupational Clusters."

We have an advisory committee on staff and student accounting on which both state and local personnel are represented. The task this committee has accepted is the accomplishment of an educational language which will be compatible with these documents, and with federal reporting; and which will be comprehensive to meet our educational planning needs both at district and state levels.

Our "institutional research," largely conducted within our administrative services division, endures serious limitations because of the developmental stages of these many parts of the needed system. With the accomplishment of our immediate goals in student and staff accounting codes, this difficult situation will be relieved and our information, which heretofore has been aimed at federal demands, will become functional on a much broader basis. In-state demands such as those coming from the Legislature, Governor's Office, Coordinating Council, and other agencies, have been handled on an exception basis, often involving special surveys and questionnaires. With this basic accomplishment, we will be in a position to develop the needed data base in an orderly and routine fashion.

The Wisconsin Board of Vocational, Technical and Adult Education, while it has sophisticated data processing and computer capability in various districts, does not at this time have a central installation. We are presently reviewing our position in regard to our needs at this level. Several alternatives exist:

1. The establishment of a central capability which will become a sub-system of the state-wide integrated data base.

2. Contract with one or more district systems to provide the above function.

3. Participate in a share time utility concept with the Department of Administration and/or the University.

4. Subscription to an independent or private computer utility.

At this time it is difficult to conceive of a totally effective educational service without the establishment of a central agency capability. Certain

pressures are being experienced by current deadlines placed upon information requests about which the data base might be logically initiated.

The task of instrumentation and coding is so great as to crystallize existing patterns. If this occurs before the revised codes can be adopted, great effort is lost in an obsolete system. We are thus faced with a serious developmental gap. The proper tools must be developed before the task can be accomplished.

The further problem exists that the Planning Information Systems program has not yet accomplished its standards. Accordingly, compatible and continuous development poses certain questions. The bulk of the data, however, is somewhat unique to the agency, and is largely in the instructional content area which is presently classified according to nationally accepted codes. We feel we have reasonable assurance that our work will be compatible.

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DATA COLLECTION, INPUT AND OUTPUT: STUDENT AREA

As an opening comment, it should be stressed that the data
collection role is distinctive for each institution or agency
attempting to fulfill this function. Differences in data
collection are both unmistakable and important. It is of
great importance that such differences be recognized and under-
stood.

If given the opportunity, many could describe an ideal student
data collection function. Briefly stated, one description
would involve: Students cheerfully, correctly, and completely
providing answers to all questions on demand. Further, such
data would be readily convertible to computer-retrievable
format. The conversion of all student data would be performed
sufficiently prior to the academic semester in question to
permit generation of the total number of requested reports.
The ideal includes the cheerful, correct, and complete giving
of student data collected by other individuals or units re-
siding within the same institution. The automatic data
scanner would destroy all duplicate or irrelevant data. Al-
though the ideal might be considerably elaborated, the above
will suffice.

Such an ideal student data collection function, where attempted,
is experienced in less successful terms in varying degrees by
all. The reasons for departure from the ideal are both many
and complex.

Should some hold that they are operating within the suggested
ideal, they hoodwink themselves. The reasons for being un-
able to simulate the ideal are obvious. It is also important
to recognize that great numbers of untrodden paths exist as
well as models to be developed and systems to be implemented.
These *unknowns defy* existence of the ideal data collection

function. This ideal system requires a total knowledge and effective treatment for all demands of student data.

Rather than despair, let us direct attention toward relevant component parts of data collection in general and student data collection in particular.

1. Typically, data gathering is a shared role. This seems particularly true in the student area.

2. Student data is of a repetitive or recurring nature and, therefore, there is a responsibility for up-dating findings.

3. Sizeable budgets allocated to this function are necessary to credibly attempt such data collection.

4. For most institutions, competent computer capability is essential.

5. Certainly not least, is a policy directive designating the data collection role.

6. Collection of student data demands operational definitions of what is student data.

It is realized that student data collection must be regarded as relative. Perhaps this is a polite way of saying that our quality of data is often deficient. For the most part, there are good and legitimate reasons for shortcomings. Limits regarding student data collection often are not controlled internally. There are compelling demands made of an institution's data collector from a varied number of external sources. These include: national and central depositories, regional and state planning functions, system or unit controlling oper-ations, and community needs.

Within an institution, there are many sources requesting data support. The most common are administrative. Others include students, faculty members, and faculty committees. All such requestors look upon data collectors for service and support.

Often, the various requestors generate their own specific attitudes or areas of interest. Such special attitudes include peculiar operational definitions, level of resolution, and suspense dates. Of particular interest is the grouping of data demanded by the one-time requests. It would seem a conspiracy exists for lack of commonness when one views the growing stacks of requests.

Wherein multiple *collectors* of student data exist, too often inconsistent coding is found. Thus, the lack of compatibility of data creates time-consuming bogs. For the individual units, such special attitudes are understandable, but too often are not efficiently serving the general attitude.

Collection of data is a task of never-ending responsibility. Its very nature is recurring. And yet, interruptions are commonplace. Requests do not allow for sufficient intake of data prior to desired product. The task of staying abreast of current data takes on life or death proportions -- much less regard for earlier data insufficiently compiled.

The matter of priorities among variables within student data is real. The collector has varying concerns for such characteristics as student major, student draft status, student age, student graduation high school rank, etc. Certainly all are not of similar importance. When one is faced with as many as 100 characteristics, the task of placing priorities on the most critical is difficult.

Indeed, the question of what is a student has not been resolved. Does one commence collection of data on likely prospective students? Should one continue student data collection subsequent to graduation? To what extent are possible prospective student pools worthy of data collection?

Typically, the effort needed for student data collection, as is true with investigations in general, is underestimated. This lack of awareness is felt by both the collector and those who budget his function. Budgetary "hamstrings" can be of serious proportions.

Lastly, I'm sure the loudest cry of all student data collectors is need for ample advance warning to permit appropriate prior planning and preparation.

There do seem available steps that can be directed toward remedy in areas of data collection. They are:

1. There is a need for professional honesty, not only in our dealings with others, but especially with ourselves! Problem methodology must be thoughtfully aimed at meaningful, appropriate solutions.

2. In the interests of economy, efforts must be directed toward data already being collected within the institution's system. Generally, the cost is substantially less for converting data as opposed to collecting data.

3. There is need for a systematic approach to our role as data collectors. The systems approach begins with a statement of role objectives and goals in operational terms. Such statements must be clear and concise. Such an operation would have obvious impact on identification of critical student variables.

4. There is need to inform and recommend rather than await the call to serve. Recommendation not only appears an essential part of good reporting, but can be useful to educational administrators in advancing further requests to intelligently and purposefully meet their challenges.

5. Perhaps the most commonly overlooked is the great need for internal research and development. What is meant here greatly transcends evaluation. Time, energies, and resources must be directed toward avenues of greater efficiency and meaningfulness. Typically, this planning and development is directed toward newer systems -- hopefully to serve the entire institution.

At this point, I would like to call upon examples and experiences more directly related to UWM.

I.   Those who labor in the area of Institutional Research
quickly realize the importance of professional integrity. As
an included aspect, I would like to stress internal honesty.
A recent study conducted within my office, I believe serves
well as an example.

Rather early one morning a zealot from the other side of cam-
pus came running over to our place and announced that calamity
was about to strike. Upon elaboration, it was discovered he
felt that the Military Selective Service Act of 1967 would
have sizeable impact not only on the UWM graduate enrollment
but in particular the UWM undergraduate enrollment. In
support of his fear, he brought to my attention the fact that
student deferments would be granted those who successfully
complete one quarter of their degree requirements during one
academic year. At first blush, I felt he had grossly over-
projected the negative impact and told him so. Together we
looked at some of the student reports to get a feel for such
a possible impact. The student reports were inadequate to
answer the question.

After he left, the thought kept lingering. It was true that
for the fall of 1967, the average undergraduate day semester
credit load was about 12. For five previous semesters the
figures for the same question were all above 13. Nevertheless,
12 credits seemed dangerously distant from the needed 15
credits. Was it true that sizeable numbers of male under-
graduates at UWM would be forced to quit higher education in
order to serve in the armed forces? I was not sure. I did
feel an investigation was appropriate to the issue.

A specialist in our office soon began breaking down the fall
and spring semesters' enrollments for 1967-1968. After
deleting for sex, age, credit loads, graduate status, foreign
students, prior military service, and current R.O.T.C. agree-
ments, a pool of roughly 2,300 males was discovered.

About a week later I suddenly asked myself: What is the current
and past history regarding military draft calls? The state
office provided figures for both the State of Wisconsin and
Milwaukee County. By 'guesstimating' next year's draft calls,
and comparing same with available UWM undergrads, the under-
graduate pool greatly exceeded those needed for the draft. I

307

wondered, as I'm sure you are doing now, why I didn't ask
the latter question first. Internal honesty demands that we
thoroughly examine study design prior to involvement.

II. Whenever possible, investigations should draw upon al-
ready existing data. I believe it is a safe assumption that
great amounts of untapped findings are within our reach.
Further, I feel that innovative manipulation of pre-existing
data can often yield creditable subjective results.

Personal experience with three such examples were: UWM
Education Graduate Selectors, prospective UWM undergraduate
predictors, and the federally-requested Composition Report.

In each case, our office was required to massage already exis-
ting data only. In the later case limited outside support
was solicited.

III. All of us have had some introduction to programmed in-
struction. The primary root to successful programmed in-
struction lies in a systematic approach to the curriculum in
question. Course objectives and goals must be carefully spelled
out, etc. I believe the same is applicable to student data
collection, input and output.

An example of this can be demonstrated by our attempt to
develop a computerized enrollment estimation model.

IV. There is an unwritten responsibility of the collectors
of data to both *inform* and *recommend*. I feel those who ac-
quire or have regard for sizeable data pools tend to minimize
the significance of such knowledge. It is not easy to con-
vey these expressions. Perhaps partial solution is achieved
through the development of institutional fact books.

V. A meaningful research and development effort is essential
to a healthy institutional research office. At UWM, we did
allocate limited time, personnel, and budget to this function.
The fruit was a feasibility probe into a *'University In-
formation System'*. We are looking forward to an actual
demonstration of *U.I.S.* in the near future.

Data collectors in particular should investigate equipment,
appropriate to their use, which regards data conversion.
Examples are: keyboard to tape or keyboard to direct data.

It is my hope that next fall we will greatly expand our
research development efforts. Initial results are most
promising.

JOHN W. RIDGE
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DATA COLLECTION, INPUT AND OUTPUT: FACULTY AREA

My participation in this conference is a real pleasure. The pleasure
derives not from the fact that I bring the happy knowledge of procedures
to solve our problems of data collection, input and output in the area of
faculty personnel data. It derives, rather, from the fact that I now
possess a forum from which I intend to promote several recommendations.
These recommendations I would have promoted regardless of the topic assigned
to me. Those of you who have talked with me about higher education in
Wisconsin know that the conversations turn, with a high degree of inevita-
bility, to the need for a total systems approach to data handling. The
concept of a systems approach is, of course, very much in vogue. The con-
cept comes under several names; a management information system is a polite
one, but whatever the name, the implication of accepting a systems approach
is simple: each institution of higher education and each of the governing
boards in Wisconsin must analyze its procedures for processing information
and act upon the results of the analysis to make the processes more
efficient.

I will not dwell on the motivation for such an analysis and change; you are
all caught up in the swift flow of events which provide the motivation:
burgeoning enrollments, budgeting pressures (June 10th deadlines) widening
university responsibilities, new and extended demands for data and new data
processing equipment. (See Appendix I)

I will define my concept of a management information system and discuss its
relevance to Wisconsin higher education. Second, I will explain how a
management information system was designed for use at Eau Claire in the area
of faculty data, hoping that that will justify my presence here at the con-
ference. Third, I will do a little politicking by presenting some recom-
mendations for procedures in designing and implementing a total system in
Wisconsin.

Shall we begin with the first point - a definition of a Management Informa-
tion System.

A Management Information System Defined

This discussion must begin with a definition of my concept of a management
information system, not so much because I judge you to be swimming in a pool
of ignorance about the subject, but rather because I would like to ask you
to suspend, at least temporarily, your personal concept of a system at the
points where it conflicts with mine. This is done only to improve our

communication; what I say is based on my definitions, not yours. I want you to use my definitions while you try to understand my comments. Remember, too, that I have the motive of trying to bring about a change, a change that you at this conference must initiate and promulgate. Also, a definition must be given so that the systems concept can be carefully distinguished from present practice in order that the direction and specifics of change can be established.

We will build the definition of a system by talking about subsystems. A subsystem will be defined in terms of its five basic elements.
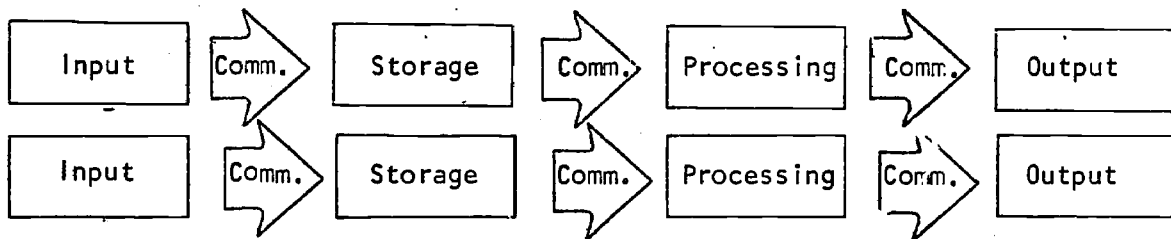
The Data Subsystem: The nature of a system dictates the broadest possible view of an entire situation. Unless parts small enough for easy comprehension can be isolated, we are at a loss to continue our discussion. Therefore, as a basic part, a subsystem consisting of five easily seen activities will be used. These five activities are data acquisition or input, data storage, data processing, reporting or data output and communication of data among the previous four activities.
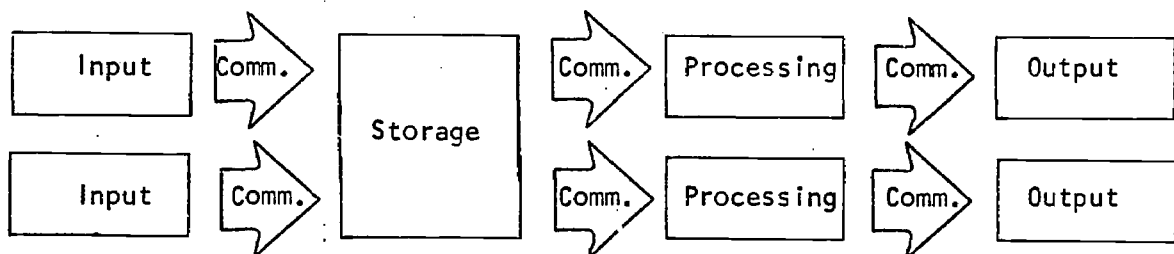

The use of this subsystem as a basis for the design of a data system structures the effort in two ways: first, for each element the questions Who?, What?, Why?, When?, and How? must be answered; second, and more importantly, using a subsystem as a basis forces attention upon the *logical structure* of the data flow rather than upon the use to which the data will be put. In other words, traditionally, the person in need of data made his own arrangements for its acquisition doing it only with his immediate needs in mind. Source documents were kept only under the threat of having to justify a decision. This simple sounding distinction between a "system" and "use" approach might well be the foundation for our impending "Managerial Revolution." More will be said of this point later. Let us now proceed to build a definition of a system using a subsystem as a building block.

The Data System: The dozens, or hundreds, or, unfortunately, thousands of subsystems which could exist within an organization, when considered together, form the organization's data system. Any two subsystems are related in one of at least three ways:
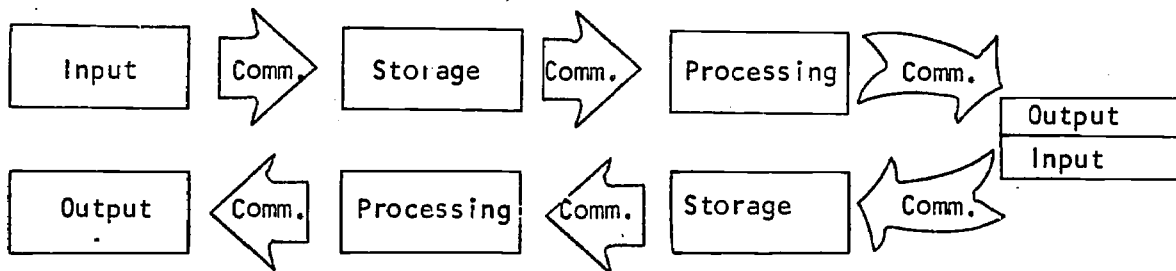
They can parallel each other, having no elements in common:

| Input | Comm. | Storage | Comm. | Processing | Comm. | Output |

| Input | Comm. | Storage | Comm. | Processing | Comm. | Output |

They can intersect at one or more common elements:

| Input | Comm. | | Comm. | Processing | Comm. | Output |

Storage

| Input | Comm. | | Comm. | Processing | Comm. | Output |

They can form a chain:

| Input | Comm. | Storage | Comm. | Processing | Comm. |

| Output |
| Input |

| Output | Comm. | Processing | Comm. | Storage | Comm. |

A data system is a net (tangle or mess) of subsystems united by parallelism, intersection or chaining.

A systems approach to data handling involves the simultaneous development of the many subsystems into a total system. The extent of the system is limited only by the conceptual limitations of the planners and the horizons of the implementers. Now, how was a systems approach used at Eau Claire?

The Proposed Faculty Personnel Data System at WSU-Eau Claire

Our efforts to revise our faculty personnel data handling procedures at Eau Claire as an example of a systems approach is done with tongue in cheek. The fact is that the system is not yet implemented. I will try to counter your "Don't talk to me until it works" reaction by pointing out that even at my most pessimistic moments I have no doubts about its potential viability. After all, the old procedures now being used work, and the new are primarily a refinement and extension of the old. My pessimism relates only to the

timetable of implementation. I'll spare you the boredom of listening to a string of rationalizations about our slowness in getting the system operating. I'll approach the problem from the positive direction by incorporating certain remedies in my list of recommendations which appear later.

If the data procedures now used do indeed work, why change? First, success is measured against objectives. Even if present procedures meet established objectives no such claim of success can be made for new objectives. Each of us opens his mail frequently to objectives in the form of data requests from within and without the university. In complexity, in range of concern and in numbers these requests are growing. Some of our board offices and USOE offices even have the audacity to compare, or rather too often, contrast, our replies with frequent sad results. Meeting the old objectives is becoming harder, too. The old (and still current) objectives of personnel data relate primarily to contacts with individual faculty members concerning hiring, tenure, salary, professional accomplishments and advancement, and teaching improvements. Much appropriate information could be, and was, stored in one, or two, or maybe three minds and not necessarily on paper. A discussion of information retrieval systems didn't have too much relevance. Pure hard numbers have changed all that. This last year it became impossible for our president to visually recognize every member of our faculty.

The motivation for a faculty personnel system at Eau Claire arose from two compelling sources:

First, new information about our faculty was being demanded on a recurring, quick access, basis thus changing, in essence, our objectives for an information system,

Second, the fragmentation of responsibility as the organization grew both in our administrative offices and within our university system demanded more clearly established communication channels to better meet our traditional objectives.

These motivations relate not only to personnel data, of course. They are equally supportive of a total system and a statewide system.

I must now get back to justifying my existence here at CCHE's Higher Education Conference. With the title of my presentation being "Data Collection, Input and Output: Faculty Area," I must assume that the intent was for me to discuss the technical details of our faculty personnel data system. Details are of two kinds, though. One kind, the conceptual guidelines, I'll do my best to describe. The other, the details of coding, routing, storing, processing, and defining, in other words the real guts of the system, I must merely allude to, not because they are unimportant or uninteresting but because a productive discussion really needs hours of time for a small number of people who can remain friends after yelling insults at each other. Included in this report are copies of two of our temporary input forms, a flow chart of the system and one temporary output form. I would enjoy talking with you individually about the forms later.

Before listing some of the conceptual guidelines we used in developing a
personnel data system I will try to explain the reasons for the Office of
Institutional Research to be involved at all. Traditionally, if that word
can be used in reference to institutional research which has a very short
history, the modus operandi of an office of institutional research was to
find, or be assigned, an area of university operations about which it was
deemed important that somebody know more. Institutional research people
would delve into that area, gather data, analyze it and report on it. The
cycle would then begin again in another area. I don't care to deprecate
this approach. It is essential. It is legitimate. It is also expensive
and, many times, inappropriate. It is inappropriate whenever the project
is related to the processing of basic operational data. In our particular
case, a project was undertaken to determine the number of doctorates in each
department. This was a "simple" task which consumed an inordinate amount of
time and talent, a task which kept giving different answers each time we
recalculated.

Because our universities do not have good data systems ready for this
traditional concept of institutional research to build upon, it is more and
more becoming apparent that the first order of business is the building of
such a system. At Eau Claire, the area of personnel data was chosen for
the first plunge for simple reasons: 1) the immediate interests of the
Office of Institutional Research happened to lie in that area, 2) the amount
of data involved was limited enough to make the project feasible, i.e., an
entire faculty record with processing programs can be stored on a single
disk pack, and 3) the number of offices involved in personnel data was far
smaller than the other logical area of student data.

From the initial efforts at designing a system, a number of guidelines
emerged. Let's consider a list of some of the conceptual guidelines which
we used in the development of the personnel system. None of these concepts
is restricted to a personnel system; they are equally applicable to fiscal,
facilities and student areas. Moreover, this list is not a complete check
list of important ideas to keep in mind while developing a system. Such
lists are not hard to find; we have one in the proposal for our personnel
system of about twenty-two items. The following list contains six concepts
which I feel are basic ideas which must be considered. The fault they have
is that they are relatively abstract. A concrete interpretation must be
made before you begin work.

Concept One: The data system must be reduced to a flow chart of manageable
proportions. A flow chart must specify the relationships among the five
elements of a system: data input, storage, processing, reporting and com-
muncation. Were this chart to be redone, one major change would be made:
less attention would be paid to the offices in which a function occurred and
more attention paid to the logical structure of the functions. I submit
that the logical structure is not unique to WSU-Eau Claire. The assignment
of responsibility for these functions may be unique. Our concern here at
Pigeon Lake must be for those concepts which are of mutual applicability.

Concept Two: The whole system is dependent on the quality of the input data. Conversely, a systems approach can pay dividends by resulting in better input data.

    a. Initially acquired data must be basic data. Basic data are those data which are as fine, small, uncompounded, and fundamental as will ever be needed. For example, birthdates, not ages will be gathered to obviate the perpetual need for updating data. For example, the total number of years experience is probably not basic data; the number of years experience in college teaching, research and administration, and military employment are more likely basic data. A careful judgment must be made for each item to be acquired.

    b. Data should be acquired only once unless redundancy is desirable to provide internal checks. The implications of this idea are twofold: multiple users of the same data should obtain the data from the same file rather than each going to the source; updating of stored data must be accomplished by correcting or adding to the stored data rather than by replacing the data with data obtained by an entirely new request from the source.

    c. The quantity of input data must be a balance between the need for comprehensive information and the undesirability of being burdensome.

Concept Three: The storage of data is the element of a data subsystem presently undergoing the greatest change. The availability of electronic storage files makes the concept of a central file a realistic possibility. Traditionally, the location of stored data has been dictated by the necessity of keeping the data near the user. The result has been duplicated records and difficulty in compiling reports which needed correlated data from two or more divergent files. A systems approach demands:

    a. The creation of central files utilizing to the greatest possible extent electronic devices so that retrieval is quick and easy and periodic reports can be automated. Each user office can then have paper copies (listings) of current data appropriate for that office. Information not stored electronically should be of primary concern and should be in a central file associated with that office.

    b. All auxiliary files should be copies of selected data maintained in a central file and updated by replacement information from the central file. No updating should originate at the auxiliary files.

Concept Four: The processing of data must become as automated and regular-
ized as possible. Responsibility for processing should be clearly defined
and accomplished according to a prearranged schedule rather than to meet
emergency needs according to the degree of panic existing. Processing must
become (and can when data are electronically stored) far more sophisticated.
The advanced developments in operations research then can become applicable.

Concept Five: Traditionally, data are reported to fill a specific demand.
A decision must be made: a questionnaire arrives or the board office wants
to know how many square feet of men's rooms are dedicated to custodial supply
storage. Information recall, of course, must be improved to ease the response
to peculiar requests. Our primary need, however, is to create current, de-
tailed, pertinent reports of operational data on a periodic basis. The
majority of individual needs must be foreseen and appropriate reports gener-
ated to answer simultaneously most of the demands. For example, an extensive
faculty profile report generated once a year would answer quickly and ac-
curately almost all demands made throughout the year.

Concept Six: The success of a systems approach is dependent upon the involve-
ment of all the users in its design and implementation; appropriate admini-
stration must be involved every step of the way. Their involvement is
dependent upon their knowledge of exactly what they are to do and on the
extent to which they perceive that they have something to gain. I have very
few suggestions to make which will aid in promoting this desired perception.
The problem is that the older, established offices do not see the need for
a change because they have their many procedures operating which are well
established and reasonably adequate for their individual short-ranged pro-
jects. A systems approach frequently appears to offer little to their
offices except more work. The overall institutional needs and the needs of
the newer offices receive the lion's share of benefit. How can all offices
be motivated?

In the discussion to follow this presentation we might discuss the extent
to which these concepts have been met in our efforts at Eau Claire.

Recommendations for a Total System

The experience we have had in developing a personnel data system has been
invaluable. I believe that I am being realistic when I say that by the end
of the summer Eau Claire will have a viable, sophisticated system in opera-
tion. Not only will we have the ability to accomplish existing tasks, but
some new application will be instituted and a great untapped capacity for
sophisticated analysis will exist. One great frustration will remain: A
personnel system is, in reality, only a small part of a total system. It
will not be integrated with a fiscal data system, a student data system or
a physical facilities data system within our own institution. It will not
be well integrated with a Wisconsin State University personnel system to say
nothing of a statewide system. Data processing and reporting which relies
on data from the personnel system and other areas will be difficult. There

still will be frantic phone calls from a Board of Regent's staff secretary to our librarian to determine the percentage of our Economics faculty that hold a doctorate. The data we send to Madison will be listed by our computer, transcribed by hand, sent by pony express, key punched, stored, fed into a computer, and lost.

The challenge is clear.

We all must be system conscious. Each administrative office of the CCHE, of each board office, of each of the member institutions must exist within a single total data system.

Don't destroy me as being an instrument of the Devil! I am perfectly aware of the multitude of antagonism between our institutions. I am aware of the competition among our system. I am aware of our different programs, methods and goals. These differences are healthy and desirable. They must be preserved. The fact remains that our data must be comparable to be meaningful and to measure the valid differences.

The demand for comparable data is so great, in fact, that almost overwhelming pressures are or soon will be applied to each of us to motivate conformity. Now is the time for us to make a strong and clear distinction between the desirable conformity of questions and the undesirable conformity of answers, between the desirable conformity of format, coding and timing and the undesirable conformity of operations.

Undesirable conformity can best be resisted by instituting the type of conformity which aids us all while preserving our decision-making autonomy. Imposed conformity can be limited by creating a cooperative structure to institute desirable conformity.

I submit that a statewide data system which specifies input data items; storage responsibilities, formats and locations; processing responsibilities; reporting formats and; communication channels will adequately satisfy the pressure for conformity without endangering autonomy. I submit that a statewide system can most effectively be instituted through a cooperative or "democratic" structure.

Recommendation One: The present administrative structure of our institutions and board offices is based on the concept of functional areas. The design of data communication formats and channels is accomplished primarily by mutual arrangement of the two immediately involved offices; the sender and the receiver. General supervision of these formats and channels lies in the administrative hierarchy. Within this structure then is little chance for the design and implementation of an efficient data system, an operation which is primarily a technical problem for a technician. *A structure must be created for the express purpose of designing and implementing a total data system.*

317

Recommendation Two: The responsibility for coordinating the designing of a data system must lie above each office to be involved in the operation of the system but at the same time this responsibility must be vested in a technically oriented office. The emerging role of institutional research is clearly consistent with the role of system planning. This is not to say that study oriented institutional research should be neglected. This is not to say that a study oriented institutional researcher is capable of or interested in systems work. What it does mean is that *each board must make specific position and salary allocations to each board office and to each institution so that an office of institutional research can be created or an existing office augmented with personnel to provide the coordination and expertise to establish data systems.*

Recommendation Three: *Within each board office and each institution, technical procedures committees should be established under the general chairmanship of the appropriate office of institutional research personnel.* The membership of each committee should be the major users of the data under consideration.

Recommendation Four: *The chairman of each local committee should form three systemwide technical procedures committees and together form a statewide technical procedures committee.* These committees should designate subcommittees to accomplish the basic system designing. The subcommittees should be augmented by appropriate experts in the individual data areas under consideration.

Recommendation Five: *Each technical procedure committee should design the relevant data systems, guide their implementation, and facilitate their operation and improvement.* Implementation of the proposed systems shall occur after approval through regular administrative channels. No other system should be allowed.

Recommendation Six: *Each committee member will act as sole liaison person in the transmittal of periodic data among the institutions and boards.* The prerogatives of the liaison person should extend only to correct channelling of data and data requests and to maintaining data consistency and corrections.

I would like to conclude by making a sales pitch for the adoption of these recommendations. But I am not a salesman. I'm sold on the concepts that I have talked about. I know that their implementation will take the efforts of dozens of educators and administrators. I need salesmen. If you concur in my concepts and recommendations I need you to sell them, to sell them to your own institution, to our respective governing boards and to the CCHE.

What can you do?

1. You can talk with Wisconsin State University Association for Institutional Research members to learn of the proposed systems conference to be held this fall in Madison. It will be co-sponsored by the American College Testing Service and will be

designed as a workshop for administrators. Each
administrator will be aided in answering the question,
What is my role in a system's approach? Learn of the
conference and make sure the appropriate people from
your campus or board office attend.

2. You can "talk systems" with your colleagues. Learn from
   them and encourage their support for a statewide approach.

3. You can present and explain the recommendations to your
   president, to board members and to CCHE members. Express
   your support of them.

I think now that I have done what I said I would do. I have defined my
concept of a management information system. I introduced Eau Claire's
personnel system. And I politicked a bit. May I now have your reactions?

APPENDIX I

Motivation for the Proposal

Several conditions, some of which have been growing in importance through
the years and others of which are being generated presently, are amalgamat-
ing to form a situation requiring immediate and urgent action, namely:

1. The growing size of the universities has resulted in a tremendous
   volume of recordkeeping and information processing.

2. Increasing public scrutiny of university operations demands *more
   ready access* to current data. A growing volume of information
   must be provided by the individual university and by the central
   board office to the Wisconsin legislature and its operating depart-
   ments, to various state and local public agencies, to agencies
   involved in fringe benefit programs and to hundreds, if not
   thousands, of professional and commercial organizations.

3. Demands are being made for more *complex and sophisticated data.*
   Increased institution size dictates greater use of meaningful
   indices rather than raw data for administrative decision-making.
   Electronic data processing demands clearer and sharper defini-
   tions. Newly created offices of institutional research depend
   on operations data and cannot legitimately exist without that
   data being extensive and valid.

4. *Duplication* of effort is common. The Board of Regents' staff
   members are designing forms and reports which contain the same
   data and will be used for essentially the same purposes as forms
   and reports being developed by several of the universities
   (e.g., preparation of position control list). Procedures
   related to information processing which are, or could be,
   identical in two or more of the universities is being evolved
   separately and inconsistently. Even within institutions the
   lack of a thorough systems approach results in one office
   duplicating the work of another office.

5. *Standards of records retention* are either absent or ill-defined.

6. Coordination of information processing between the board office
   and the individual universities is urgently needed. Information
   generated in the course of the operations of one party must be
   available to the other automatically as a spin-off of the
   operation and not only as a separate operation.

7. The proposed *interinstitutional network of electronic data
   processing* equipment with its unsurpassed potential for ef-
   ficient processing and communicating data appears to be a

real and imminent possibility. A general data system must be designed to be operational immediately and yet be capable of making the best possible use of such a network.

8. No office presently exists which is representative of all interests involved in a total information system from a technical standpoint.

O. I. R. 3-26-68

WISCONSIN STATE UNIVERSITY-EAU CLAIRE

PERSONNEL DATA

1. Social Security Number: -	(1-2) __01__ (3-11) _____

2. Name:

‾‾‾‾‾‾‾‾‾‾‾‾‾ , ‾‾‾‾‾‾‾‾‾‾‾‾ , ‾‾‾‾‾‾‾‾‾‾‾‾ ‾‾‾‾‾‾‾‾‾‾‾‾
Last (12-31)   First (32-46)   Middle (47-61)   Maiden (62-80)

3. Address: ‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾ Number and Street (12-32)	(1-2) __02__ (3-11) __SS #__

‾‾‾‾‾‾‾‾‾‾‾‾‾ , ‾‾‾‾‾‾‾‾‾‾ , ‾‾‾‾‾‾‾‾‾‾
City (35-50)   (51-52)   Zip (53-57)

4. Phone: -	(58-64) _____

5. Citizenship: ☐ 1. U.S.A. by Birth ☐ 2. U.S.A. by Naturalization
                ☐ 3. Not a U.S.A. Citizen   (65) _____

6. Race:* ☐ 1. Negro ☐ 2. White ☐ 3. Oriental ☐ 4. American Indian   *
           ☐ 5. Spanish American ☐ 6. Other (specify) _____   (66) _____

7. Sex: ☐ 1. Male   ☐ 2. Female   (67) _____

8. Marital Status: ☐ 1. Married ☐ 2. Single ☐ 3. Divorced ☐ 4. Widowed   (68) _____

9. Name of Spouse: ‾‾‾‾‾‾‾‾‾‾‾ , ‾‾‾‾‾‾‾‾‾‾ , ‾‾‾‾‾‾‾‾‾‾ First (12-26) Middle (27-41) Maiden (42-61)	(1-2) __03__ (3-11) __SS #__
10. Date Married: Month _____ Day _____ Year _____	(62-67) _____
11. Spouse's Birthdate: Month _____ Day _____ Year _____	(68-73) _____

12. Children:

Name	Birthdate				Sex (Check one)		
	Month	Day	Year	1.Male	2.Female		(1-2) __04__
1. _____							(3-11) __SS #__ __ __ (12-18)__ __ __ __
2. _____							(19-25)__ __ __ __
3. _____							(26-32)__ __ __ __
4. _____							(33-39)__ __ __ __
5. _____							(40-46)__ __ __ __
6. _____							(47-53)__ __ __ __
7. _____							(54-60)__ __ __ __
8. _____							(61-67)__ __ __ __
9. _____							(68-74)__ __ __ __

List others on back of sheet.

Additional Males _____(75-76); Females _____(77-78)

13. Your Birthdate: Month _____ Day _____ Year _____ (12-13) (14-15) (16-17)	(1-2) __05__ (3-11) __SS #__

14. Your Birthplace: ‾‾‾‾‾‾‾‾‾‾‾‾ ‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾   City (18-37)   State (2 letter postal code) (38-39)

* This data is to be provided only after employment, to be used for Civil Rights Act Compliance Reports.

15. Previous Employment:

Employer (List most recent first)	Nature of Your Position	Date Began Mo.	Yr.	Date Ended Mo.	Yr.	Teach.	Admin.	Res.	Higher Education	Secondary Educ.	Elementary Educ.	Other Professions	Non-Professional	Military
1.														
2.														
3.														
4.														
5.														
6.														
7.														
8.														
9.														
10.														
11.														
12.														
					Totals									

(Header note: "Was this a position in:")

Do not use this space.
  (1-2) 05(cont')
Higher Ed. Teaching _____(40-42)_____; Higher Educ. Admin. _____(43-45)_____; Research _____(46-48)_____; Elementary Educ. _____(49-51)_____;

Secondary Educ. _____(52-54)_____; Other Professional _____(55-57)_____; Military _____(58-60)_____; Assigned Ed. Ccde (61)_____

(62-63) see below

16. Education: A. Degrees earned or being earned:

Your last entry below should relate to any on-going degree program. Omit expected date of degree. How many semester credits have you earned toward this next degree? _____ (62-63)

	(1-2)	(12-26) Institution	(27-28) State	(29-32) Date First Attended Mo. Yr.	(33-39) Degree Earned or Being Earned(Initials)	(40-43) Date of Degree Mo. Yr.	(44-53) Area of Specialization or Major
1st Degree	06						
2nd Degree	07						
3rd Degree	08						
4th Degree	09						

B. Other Institutions Attended:

(1-2) 09
(3-11) SS #

Institution		State or Country	
1.	(12-26)		(27-28)
2.	(29-43)		(44-45)
3.	(46-60)		(61-63)
4.	(63-77)		(78-79)
5.			
6.			
7.			

(80) _____

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Full Text Provided by ERIC

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WISCONSIN STATE UNIVERSITY-EAU CLAIRE
FACULTY PERSONNEL DATA - POSITION INFORMATION
FOR NEW OR REHIRED FACULTY

Name: _____   Social Security: (1-2) __50__
     Last   First   Middle   (3-11) _____

2. Rank: 1. Prof.☐;   2. Assoc.☐;   3. Ass't.☐;   4. Inst.☐;   5. Fac. Ass't.☐;   7. No rank ☐   (12)· _____

3. Tenure: Enter number of years of previous experience elsewhere which are being credited toward
             tenure in tenths (months): - - - - - - - - - - - - - - - - - (13-15) _____._____

             Tenure is granted. 1.__ - - - - - - - - - - - - - - - - (16) _____

4. Date of Employment:
             Enter date at which employment at WSU-EC is effective: Mo._____   Day_____   Yr._____
                                                     (17-18)   (19-20)   (21-22)

5. Experience at WSU-EC:
             Enter number of academic years (in tenths) of experience at WSU-EC as of this employment
             date: (23-25) _____._____

             Enter number of summers of experience at WSU-EC as of this employment date:
             _____ x .2= _____.
             (Each summer is considered to be 2 months of experience which is 2/10 of an   (26-28) _____._____
             academic year.)

6. Identification Numbers:
             Registrars Faculty Number   - - - - - - - - - - - - - - -   (29-32) _____
             University Faculty Number   - - - - - - - - - - - - - - -   (33-36) _____
             Board of Regent's Payroll Number - - - - - - - - - - - - - - -   (37-42) _____

7. App't. Type and Salary:
             Check contract period.   Enter Amount of Salary Apportioned to Each Term:
             Use only one line.   (44-48,49-50)   (51-55,56-57)   (58-62,63-64)

	Total Salary	Fall Semester	Spr. Semester	Sum. Session
☐ 1. Academic year	•	50% of Total •	50% of Total •	╳
☐ 2. 12-Month year	•	38.46% of Total •	38.46% of Total •	23.08% of Total •
☐ 3. Summer Session	•	╳	╳	100% of Total •
☐ 4. Single Semester	•	Enter 100% in Correct Semester •	•	╳
☐ 5. Other	•	•	•	•

       If "other" what is the number of weeks contracted for? _____   (65-66) _____
       Number of Payments?   Fall _____   Spring _____   SS _____
                           (67)   (68)   (69)

8. Position(s)
     Description: This description applies to: 1. Fall ☐;   2. Spr. ☐;   3. Summer ☐   (1) _____

         Use one column for each budget position assignment for this person: (2) _____
                                                          (3-11) _____

	A	B	C	D	E
Type of Assignment for Each Position*					
% of Full Time in Each Position					
Dept. or Title					
Dept. Code					
Acc't. Code					
WSU-EC Position #					
Board of Reg. Position #					

      (12) _____
      (13-15,16) _____
      (17-34) _____
      (35-36) _____
      (37-39,40-43) _____
      (44-47) _____
      (48-53) _____

* 1. Instruction   2. Administration   3. Research   4. Curriculum and Materials Development
   5. Teacher Improvement   6. Leave of Absence

ERIC

ROBERT G. MILLARD
Assistant Director, Special Studies
Coordinating Council for Higher
Education

DATA COLLECTION, INPUT AND OUTPUT: BUDGET AREA

The federal government's planning-programming-budgeting system ("PPBS"),
the state's integrated planning-budgeting system, and program budgeting
are all similar attempts at modernization of the budgetary process; so
that both the executive and legislative branches of government may
contribute more effectively to the public interest through improved
program planning and execution. This contemporary concern with budgeting
has emphasized both rational policy-making, and more effective management
techniques. In many respects, the budgetary process is the primary
instrument for defining state purposes and achieving public objectives.

The budgets of business and industry differ from those of governments
in certain significant respects. The forces of the marketplace provide
the means for measuring the effectiveness of corporate enterprise.
Policies and methods may be tested against such yardsticks as profit
and loss, and the return on dollars invested. Governmental objectives,
on the other hand, are harder to define because of their service nature
and characteristic qualitative complexities. The reason that it is so
difficult to determine the effectiveness of public programs is that,
in most cases, they are so often in areas for which suitable quantitative
and financial indices are either not available or not yet acceptable.

The process by which the budget is built up, reviewed, authorized, and
implemented should be more rational--this is the major thrust of the
movement toward and acceptance of program budgeting. When fully
operational, such a system will permit identification of goals, choice
among them, alternative means of attainment, projection of long-range
costs, and measurement of program performance. In higher education,
for example, state goals must be reviewed and reassessed, system objec-
tives must be defined and balanced, and campus priorities must be
established. Programs designed to achieve objectives must be practicable
as well as consistent. The mission of each system, institution, and
college must be differentiated and clarified. Most operational plans
are developed at the department level within the systems, programs are
reviewed, revised and consolidated at the college, campus and systems
levels, and are then coordinated by the CCHE. After Department of
Administration and gubernatorial review and adjustments, the executive
budget is presented to the legislature.

In addition to highlighting program issues which must be resolved, the
budgetary process must accommodate the continuous problems of resource

allocation among competing programs and it must provide more precise analytical techniques to assist decision-makers. For program budgeting to be a more usable management and planning vehicle the components of the budgetary process should permit the formulation of system objectives consistent with state goals, the translation of objectives into specific program proposals, the authorization of workable programs, the implementation of approved programs, and the measurement of program performance against the established objectives. Decisions as to where and how much to spend for higher education will be made regardless of whether or not specific goals and reasonable objectives have been set. If acceptable and well thought-out goals and objectives have not been established, political and fiscal decisions will probably be made on a less rational and more costly basis.

Between broad state goals and the formulation of specific system objectives, there is need for greater inter-agency coordination and cooperative effort. The CCHE Budget Liaison and Advisory Committee has been developing a revised program structure for the 1969-71 biennial budgets of the collegiate systems. The rationale for this effort--which has extended over a period of several months--is to provide a more meaningful grouping of related activities, which will facilitate improved fiscal planning and management by the University and State University systems, the Coordinating Council for Higher Education, and the elected decision-makers. The challenge has been to more accurately reflect the operations and outputs at the system and institutional levels. Although the resultant format will be modified as the necessary budgetary documents and substantiating data are developed, the single program of "Education to Advance Individuals and Discover New Knowledge" has been recommended. This program is composed of the following major "building blocks" which attempt to translate the University and State University objectives into budgetary units:

University of Wisconsin	State Universities
PROGRAM: EDUCATION TO ADVANCE INDIVIDUALS AND DISCOVER NEW KNOWLEDGE	(SAME AS U.W.)
A. Campus Instruction for Individual Advancement	A. (Same as U.W.)
1. Individual Advancement in Arts and Sciences	1. "
2. Career Preparation at Professional Schools	2. "
B. Educational Support Services	B. (Same as U.W.)
1. Library Resources	1. "
2. Instructional Computing	2. "
3. Research Computing	3. "
4. Other Supporting Services	4. "

University of Wisconsin	State Universities
C. Research to Discover New Knowledge	C. (Same as U.W.)

D. Extended Training and Public Service for Wisconsin
  1. Extended Training
  2. Public Service
	D. (Same as U.W.)
	  1. "
	  2. "

E. University Hospital Services	E. (Not Applicable)

F. Personal Assistance to Students
  1. Student Financial Aids
  2. Student Affairs and Counseling
  3. Student Health Services
	F. (Same as U.W.)
	  1. "
	  2. "
	  3. "

G. Campus Living and Student Development
  1. Student Housing
  2. Student Unions and Activities
  3. Intercollegiate Athletics
	G. (Same as U.W.)
	  1. "
	  2. "
	  3. "
	  4. Textbook Rental

H. Physical Plant Maintenance and Operation	H. (Same as U.W.)

I. University Administration and Services
 	
  1. Central Administration and Services
  2. Campus Administration and Services
	I. State University Administration and Services
	
	  1. (Same as U.W.)
	
	  2. "

This revised program format is but one attempt to define major educational objectives; but, the responsibility for each sub-unit--be it at the campus, college, or departmental level--to review its own priorities is also obviously necessary. The key test of such reappraisals is the willingness of responsible individuals to identify and eliminate outmoded or less essential activities so they may be replaced by needed new programs or expansions. Assuming such a detailed review of existing and planned activities, the on-going elements of program budgeting are specifying program output, identifying alternative means, comparing costs of alternatives, measuring the effectiveness of achievements, comparing costs with results, and revising plans and programs.

The major steps required to transform program budgeting theory and concepts into an operational reality are development of the program

format, establishment of criteria for performance evaluation, and the insertion of a concerted planning effort into the budgetary decision-making process. Working program structures have been established, and the integrated planning-budgeting reports required by the Department of Administration are initiating a comprehensive planning effort in all systems of higher education. The development of performance criteria and quality standards is now the greatest obstacle to full implementation of program budgeting. Meaningful indices must be quantifiable measures; and yet provide an equitable basis for comparable support where appropriate, and adequate differentials when required. We have neither the means for comparing the costs of a specific educational activity with the results likely to be obtained from it; nor can we measure the extent to which funds allocated to a specific educational objective by various activities actually accomplish that objective (i.e., different methods of accomplishment cannot now be compared).

The long-range implications of Wisconsin's integrated planning-budgeting system will result in a reformulation of the roles of the participants in the budgetary process. Responsibility for establishing program objectives and relating them to concrete plans and fiscal requirements will fall on the institutional and system representatives; proper planning-programming-budgeting at these levels will strengthen their decision-making autonomy, not weaken it. The Coordinating Council for Higher Education will become the chief spokesman for the "needs of higher education in Wisconsin." That is, the CCHE will become the primary mechanism for the mutual dialogue between public systems of higher education and their supportive environment, as represented by the state legislators and the executive branch of government. The Department of Administration will provide gubernatorial perspective for the needs of the entire state; this perspective relates to purpose, what, how and where it should be done, and how well it is being done. The legislature and its staff will primarily decide the major issues of public policy, reconciling and compromising divergent interests and claimants so that the public interest is best served; such actions will probably include increased decision-making of fiscal policy on broad overall terms and greater emphasis on functions performed, and purposes served.

All participants in the budgetary process--from those who establish educational goals to those who authorize and fund new program proposals and new emphases in ongoing activities--require extensive and consistent information on which to base their decisions, including that on outmoded and inefficient operations. However, reliable bases for measuring performance and assessing quality must be developed. Once these are provided, the program managers and political decision-makers can assess the achievement of objectives in relation to funds expended. Such an evaluation of budgetary performance should include evaluating program achievement, determining the adequacy of programs and objectives, examining the quality of program management, analyzing the attainment of objectives, and making revisions in financial plans where necessary. This evaluation of performance,while the final phase in budgetary theory, is, in a real sense, also the first phase in the development of new budgetary plans.

328

Wisconsin's conversion to an integrated planning-budgeting system will provide a more satisfactory basis for rational policy-making, and a means for the improved management of all state operations, including higher education. Such a system directs attention to long-range planning, gives increased emphasis to basic purposes as well as alternative means to attain such ends, focuses on functions performed and purposes served, defines organizational missions in specific terms so that accomplishments may be measured, improves operational effectiveness, and--lastly but most importantly--allocates scarce financial resources among competing interests in a more rational manner.

In program budgeting, then, the whole range of budget activity--from setting goals through program execution and performance appraisal--constitutes a continuing and unified effort.

R. E. SPECHT
Assistant to Vice
President, Business
Affairs

DATA COLLECTION, INPUT AND OUTPUT: FACILITY AREA

Learning takes place in the mind of the student. This learn-
ing occurs in the classroom and outside the classroom. The
student may be in a large group, in a small group or in
solitude. Learning takes place both on the campus and off
the campus. It can occur in the laboratory, in the library,
in the lounge, in the recreation area, in an advisor's
office, in the student's residence; or as the student simply
walks from one class to another, as he roams through the
halls of the university buildings, and as he strolls the
paths between the buildings. Learning takes place in the
mind of the student as he sits in the bright sunlight leaning
against a tree, reading or meditating; or where several
students sit talking together on a bench, a log or a low
wall.

Our job as planners is to prepare the immediate physical
environment in the best way possible so that the best learn-
ing can take place wherever the student may be. Classrooms
must be made conducive to learning, facilities in the res-
idence halls must be planned to complement the class room,
and the outdoor physical environment should complement in-
door facilities.

The facility planners role in the development of the University
can be divided into two major categories:

    1. Total master planning,

    2. Individual building planning.

Master Planning

In developing a Master Plan, the first essential is the estab-
lishment of a sound basic educational philosophy. The

establishment of this philosophy is the responsibility of others in the Wisconsin higher education system, but the planner should be involved at the several levels. This basic philosophy should determine most of the subsequent planning decisions.

The next major step in Master Planning concerns the first of several data collecting activities. This is enrollment analysis. A detailed analysis should be made of past, present and future enrollments. This should include the breakdown of student enrollment by classes, as special students of graduate students, of drop outs, of transfer or retention patterns, of single and married student ratios, of the ratio of men to women, etc. The broad patterns of space require- ments as set up in a Master Plan should be determined by the educational philosophy and enrollment analysis.

Data collecting aids in the development of the Master Plan and in the establishment of planning policy relative to an institution. Two very obvious areas include the changing patterns in housing. This involves assignment of space de- voted to single student housing as well as married student housing. Another example where data collection is of great significance is in the problem of parking facilities. The better the records on all types of vehicles involved, the better the opportunity for making wise decisions relative to space allocation or decisions of policy.

A final note relative to Master Planning. Do include the use of the out-of-doors as a laboratory for instructional purposes as well as for recreational activities. Needs for forestry plots, agricultural fields, and arboretums should be taken into consideration.

Facility Planning

Long range plans must be tied to short range programs. The second role of the Campus Planner is as translator of the educational program of the institution into physical facilities requirements. We fulfill this role by taking inventory of present facilities; analyzing utilization; and projecting facility needs for "efficient use of faculty and facilities

to effectively meet the institutional goals in order to
teach a specific number of students."

All of us represented here operate under the Wisconsin Co-
ordinating Council for Higher Education, and you have pro-
bably already found the CCHE report of the *Schwehrs* entitled
"Procedures of Physical Facility and Utilization Studies"
(November, 1967).

What data is collected for the physical facilities inventory?
The following are direct quotes from the Schwehrs report:

"A Physical Facilities Inventory is a room by room tabulation
of all usable and nonusable space in a given building showing
its capacity, room type, department assignment, and function."

"Existing inventory data should be updated each fall to
incorporate shifts in room assignments and constructional
changes such as the remodeling of existing areas, or new space
made available by new buildings."

"Once the assignable quare feet of floor space available for
classrooms, laboratories, etc., for each building at a given
university has been established, it is necessary to know
how these facilities are presently being utilized in order
to predict the required needs for future enrollments. These
needs are presently based on the contact hours which each
student spends in a particular type room in a particular
department."

The Coordinating Council for Higher Education set up standards
for classroom and laboratory utilization which, if attained,
would indicate a need for further facilities in a specific
area, ... The present standards are:

	Prds. per wk.	% Stu. Sta. Occ.
Classrooms	30	67
Laboratories	24	80

"Utilization figures should be merely a guide to be used by
the various personnel on Campus to indicate the adequate use
of present facilities. With the implementation of irregular
scheduling and individualized study stations, assignable

square feet per department, assignable square feet per student enrolled, and assignable square feet per contact hour appear to be a more accurate means of measuring building needs for future predicted enrollments."

The desired output as a result of the inventory is:

1. a room by room numerical listing by building for each University.

2. a summary of space allocation by *general type* (facility plus service).

3. a summary of space allocation by *specific room type*, or a

4. summary of assignable space allocated by function, subject field, department and room type.

The desired output as a result of the utilization study is:

1. a grid for each room showing use (class) by periods and contact hours.

2. a summary by each room type pe: building, and finally

3. a University summary.

The greatest imagineering must take place after the data inputs and outputs have been completed. The very nature of the University, as a whole, or in its parts is such that a mere computerized answer will not necessarily be the correct one. Dialogue, written communication, and discussion are necessary between and among members of departments, colleges, administrators, regents, CCHE, legislators and the people of Wisconsin. Decisions relative to utilization of space may have wide ramifications and they should be understood at all levels. The planner must take the initiative for some of this communication.

"Request new facilities only when the quantity or quality of the existing space will not adequately support the existing or future enrollments and educational goals of the institution."

At this point in time we are engaged in planning for the many, but let us remember that the important item is that learning takes place in the mind of the student and so let us make every effort to hold out for the individual.

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Director of Institutional
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Wisconsin

INTEGRATED INFORMATION SYSTEM

AND ITS RELATIONSHIP TO QUESTIONNAIRES

The attendance at this workshop session is a good indication
of the interest in and enthusiasm for exchanging thoughts on
problems related to questionnaires. Questionnaires have been
with us for a long time. They seem to be the favored form of
inquiry today, replacing the letter and the personal inter-
view as means for getting information from individuals and
organizations. The change is unfortunate, in some ways. The
amount of specific information that can reasonably be re-
quested by letter is much more limited than that requested
by means of questionnaires. If the request in the letter is
for more general information, the respondent can choose to
provide data which is readily available, using his own de-
finitions and qualifications. The personal interview, too,
has advantages. The visitor in your office can participate
in a dialogue. You can ask him questions which can clarify
his request in your mind and his, not only in terms of de-
finitions and classifications of data, but also in terms of
the purpose of his inquiry. He can ask you questions about
the information you provide, clarifying unique aspects of your
institution and making the data more meaningful. The inter-
view certainly has disadvantages, however. The worst of these
can be attested to by those who have difficulty ending con-
versations; they can be very time consuming.

But the questionnaire, it seems, is here to stay. Moreover,
its use is increasing. Charlene Gleazer has made yearly counts
of the questionnaires listed in her monthly publication for
the American Council on Education. In 1959, there were 310;
in 1961, 419; in 1966, 468; and in 1967, 432. Her counts
do not include requests from profit-making organizations.
There are indications, too, that questionnaires are increasing
in size and complexity as well as number.

It is obvious that the impact of questionnaires on the in-
stitutions must be great. No one individual can possibly be
aware of the extent of that impact on a large, complex in-
stitution because questionnaires are directed to many offices
within such an institution. I have been in offices of the
University of Wisconsin for the past six years which have had
the responsibility for a lion's share of questionnaires; first
with the Registrar's office of the Madison campus, then with
the office of Institutional Studies in Central Administration,
and now with the Center System's office of Institutional Studies.
The reflections given today are derived from spending a major
portion of my time working with questionnaires, but it is
certain that the questionnaires I have seen represent only
a small portion of those received throughout the University.

The title chosen for this workshop was "HEGIS and Other
Questionnaires." There are two reasons for my now choosing
not to direct my remarks specifically at the *Higher Education
General Information Survey*. First, the Office of Education
has not been very cooperative. I wrote to Theodore Drews,
Chief of the Higher Education Study Branch, on March 7, re-
questing 24 packets of HEGIS questionnaires for this work-
shop, explaining its purpose. I got an answer by telephone
a week later, assuring me I would receive the packets about
April 15. After six weeks of waiting and two reassuring calls
to U.S.O.E., I still haven't received anything. The second,
and I hope, better reason for not discussing HEGIS speci-
fically is that, while it is the most complex of the requests
that can be given one label, more useful implications for
institutional data systems can be found by examining the im-
pact of multiple requests for the same or similar data.

As it is usually done, handling questionnaires can be very
costly to the institution. The typical complex questionnaire
is shunted on a course through the institution equalled only
by that of a new freshman during registration. The question-
naire is usually directed to the president. This is not
surprising; the senders of questionnaires often know less
about where to find data in our institutions than we do.
Mailing requests to the president is convenient to the sen-
der and avoids their having to keep records on who responded
to the form last year. From the president's office, the
questionnaire goes across the desks of a variety of officers,

336

each of whom answers a few questions, directs the question-
naire with a note to the next officer, and gives it not
another thought. The only guaranteed part of the procedure
is that the last officer to receive the questionnaire is the
one who mails it in. What cost has this procedure been to
the institution? Each of the officers has had to look at all
the questions on the form, answer those for which he has the
data, decide who might have other data, write a memo to that
person, and send the form on its way. In the process, per-
haps no one has decided on questions which should be matters
of policy, whether some questions should not be answered,
or whether the institution supports the purposes of the
agency sending the questionnaire. Each of the officers has
spent too much of his time on questions for which someone else
in the institution probably has better answers. The result,
moreover, does not justify the cost. The completed form, as
a representation of the institution to an outside agency, is
a dismal failure. Completed in a dozen different hands, some
unreadable to any but the author, it looks like what it is:
the product of a disorganized committee. If, as has been said,
the camel is a horse assembled by a committee, that committee
has done a better job than the one which usually completes
questionnaires.

Most of the negative impact of questionnaires on the institu-
tion is not the result of deficiencies in our methods of
handling them, however. It is rather the result of poor
construction of the questionnaires. Some of the question-
naires we receive are accompanied by letters of transmittal
which do little to inform us of the purposes of inquiry
and the uses to which the data will be put. The institu-
tional officer hardly feels comfortable providing, for exam-
ple, the number of full-time faculty (otherwise undefined)
and the number of full-time students (also undefined), if
he suspects the data may be used in publishing a highly
questionable student-faculty ratio for the institution. Un-
less we know through experience that the agency requesting
information is knowledgeable and responsible, we can only
guess how data will be interpreted and used.

Most of the questionnaires we receive have defined the data
requested either poorly or not at all. A few agencies insist

337

upon asking for spring term enrollment, even though fall term
data is becoming almost universal as a measure of institu-
tional size. At least one agency, a publisher of a college
guide for use of high school students, requests the number
of full-time undergraduates, then proceeds every year to
publish the figure as "x undergraduates" in the body of the
college guide. On the inside front cover of the publication
is the explanation that the enrollment figure given for each
institution is the number of *full-time* undergraduates, but how
many people can we expect to read that statement?

Perhaps the most exasperating aspect of responding to question-
naires is that caused by the proliferation of information-
seeking agencies. Again and again the institution is asked
to provide the legal name of the institution, the name and
title of the chief administrative officer, the founding date,
and the date of establishment, the date classes were first
held, the total fall enrollment, the majors offered, the
amount of tuition, fees, and board and room charges, the ad-
mission requirements, the number of degrees granted, the
accreditation, the number of fraternities and sororities,
the control (public, private, church-related) and the
sex of the student body. I know of no rumors that the
University of Wisconsin is changing into a private college
for men within the near future. Perhaps some systematizing
of requests could help the situation. If the agencies re-
questing information were to follow the example of the HEGIS
"Institutional Characteristics" questionnaire, by sending a
pre-completed form to the institution for correction, it
would save us much time and effort.

Not all questionnaires have a negative impact on the in-
stitution. A well-constructed questionnaire can help the
institution improve its data system. Such a questionnaire
has as its prime qualification a laudable purpose; the in-
formation it requests helps to clarify some aspects of the
local, state or national picture of higher education, and
will be published in usable form, soon enough to be useful
for more than historical purposes. The well-constructed
questionnaire has clear, unambiguous, reasonable definitions,
devised by persons well-acquainted with the complexity and
diversity of higher education. But nothing in this description

of the well-constructed questionnaire precludes the possibility
that such a questionnaire may ask for data the institution
does not have readily available in the form requested. When
that is the case, the institution should ask itself whether
or not it *should* have the information available, if for no
other reason than to know itself better. The institution
which waits to collect information until an urgent need de-
mands it is going to get "quick and dirty" statistics.
Questionnaires of all varieties can help the institution de-
cide what kind of information it should collect.

The pressures that responding to questionnaires puts on in-
stitutions can have beneficial effects in coordinating data
retrieval in general. In the University's Central Adminis-
tration and more recently in the Center System, the response
to many questionnaires has been localized in the Office of
Institutional Studies. How has this localization changed the
process from that described earlier? In the first place,
while the questionnaire is still usually directed to the
president's office, it no longer is shunted from office to
office, with each administrative officer answering a few
questions in turn. If one administrative officer can answer
the whole questionnaire the president may send it directly
to him. If not, the form may be sent to Institutional Stud-
ies. In that office, the questions are looked over in de-
tail, and it is noted where data to answer specific items is
available. Often much of the data are available in the In-
stitutional Studies Office. Data which are not available there
is obtained from other offices: sometimes by sending out
copies of portions of the questionnaire, with specific items
marked, sometimes by means of a brief phone call. The key
part of the procedure is that the whole original questionnaire
is not sent out to run a circuit; all of the offices contri-
buting data are contacted within a short period of time, and
need be concerned only with specific items. If data require
some time to compile, there is little delay in getting the
job started. Since each officer does not need to look over
the entire questionnaire, select items to answer, and then
write a memo to the next officer, the process requires fewer
man-hours. There is another bonus, too. The original question-
naire is kept in the Institutional Studies Office. When all
the data have been gathered, a neat, legible, typewritten

339

response is prepared and mailed to the source.

To be sure, the changeover in procedures has not been easy. Questionnaires in the Center System have often been directed to the dean of each campus, and he decided whether or not to respond, independently of all the other campuses. Some rather peculiar entries in national publications have resulted. A few years ago, the only Center System campus represented in one edition of the *College Blue Book* was the campus at Sheboygan. (The problem, by the way, is not unique to the Centers. I have noted in recent years publications in which only four or five of the Wisconsin State Universities are represented.)

The way we dealt with the problem of coordination was to have each dean send us all the questionnaires he receives. We respond by sending to all the deans a form memorandum which describes the questionnaire by title, appearance, and source, and tells how the questionaire will be handled. Most of the questionnaires can be answered by our office with data available there. Others may be referred to the Business Office, the Secretary of the Faculty, or another administrative officer located in Madison. In any case, the memorandum tells the dean whether or not he need be involved further. The system seems to be working rather well; during the past six months we have received an average of three or four questionnaires per week, which have been answered with a minimum of effort on the part of the deans.

I think we can look forward to more improvement in the efficiency of the system in the future. The pressure of questionnaires will make it necessary to have available in institutional studies offices, more and more current data now presently kept in other offices only. From an all-University standpoint, localization of questionnaire response in institutional studies offices has additional advantages. HEGIS and some other questionnaires are sent only to the University Central Administration. These can be distributed to the units of the University quickly and easily if there are uniform methods for doing so, which institutional studies offices provide.

In summary, if questionnaires have contributed to the future of an integrated data system for the University, by problems they have raised that must be overcome, they have at least one positive aspect.

340

WORKSHOP SUMMARIES

CLAUSTON L. JENKINS, JR.
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ACADEMIC PLANNING WORKSHOP SUMMARY

When this conference began, Mr. Rothwell noted that Wisconsin has good
potential for coordination because good cooperation already exists among
our institutions of higher education. The workshops in academic planning
have developed good evidence of the areas where extensive cooperation al-
ready is a fact, and we should, thus, applaud the efforts that are currently
being made to maximize Wisconsin's educational resources through cooperative
efforts. Academic planning workshops also served to uncover the areas of
greatest potential for increased benefits through coordinated planning.
Finally, it would be foolish to suggest that there are no problems in the
way of coordinated academic planning. The papers and discussions in the
workshops pointed out some of these problem areas. Although the problems
were not fully solved these past two days, the identification of areas of
conflict should hopefully lead to solutions when we all return to our desks.
Whatever the problems, I feel that the most significant aspects of the
academic planning workshops were the evidence of what is already being
done and the identification of what potentially can be achieved through
cooperation.

One of the best examples to use when discussing coordination is extension.
Besides the other academic revolutions that are currently going on in
America there is also a revolution in extension--a revolution that seeks
to make the university relevant to the total society by involving it in
that society. This revolution is being brought about by many outside
social and political pressures, but it is essential for the university to
be involved in planning necessary for the expansion.

Coordination is essential because extension work involves all three systems
of higher education, and the workshop on extension outlined several areas
where cooperative efforts can help. Most obvious is the need for a state-
wide system of extension coordination. Some believe that a single state
organization operated by one system would be best, while others prefer
regional organizations. Statewide planning for extension growth should
also consider the efforts of private institutions in Wisconsin. All in-
volved agree that joint appointments can be used effectively. Agreement
was also general that support formulas for extension work need revision if
extension is going to provide the service needed by Wisconsin. Finally,
discussion in the workshop revealed that in many cases duplication of
efforts is not harmful when we consider the magnitude of the problem that
this duplication attacks.

Another source of untapped potential for academic planners is the media--
ETV, computers, films, and other electronic devices. The major obstacles
to progress in this area are men, not machines. If we can overcome the
resistance to new approaches, the media offer ways to improve higher educa-
tion's ability to meet the primary goal--teaching. The process of develop-
ing programs for ETV, for instance, generally leads to a reexamination of
teaching methods that makes the professor aware of better approaches to
his students' needs. Rather than impersonality, the media offer immediacy
in the learning experience. Another important potential offered by new
media is that the physical boundaries of the classroom, library, or campus
no longer restrict the learning process. Most important of all, use of
these technological developments will allow teachers to use the tutorial
method to deal with the individual; and all involved in higher education
agree that such an approach is the true aim of the profession and the at-
mosphere in which true learning flourishes.

The problems involved should not be overlooked by academic planners. We
should always be careful to let our educational goals determine what machines
we have and not to let the equipment we have determine the goals we set. All
involved in higher education must realize the necessity for statewide plan-
ning and coordination. The recently formed Educational Communications Board
is a good model. Although the ECB is presently still studying the issues,
policy decisions will be forthcoming, and they will set the pattern for the
entire state. The expense involved in the use of the media means that no
one can afford to plan in a vacuum. Another problem involving the media
concerns the faculty. Often professors are reluctant to try new approaches,
especially when the approach may be radically different. It is also diffi-
cult to convince local campus administrators or department chairmen of the
need for large amounts of time to prepare suitable programs. Faculty mem-
bers as a body tend to be skeptical of the value of work in the media when
promotion time arrives. Finally, all academic planners should be aware of
the dangers of perpetuating errors by means of the media. This problem is
significant because a faulty method or approach is magnified through media.

Since public institutions of higher education produce two-thirds of the
teachers in the state, changes in teacher education are important for aca-
demic planners. Four systems are involved in this process; for besides the
University of Wisconsin, the State Universities, the Vocational, Technical
and Adult Schools, a significant role is played by the Department of Public
Instruction. Because it is sensitive to pressure, teacher education seems
to have a cyclical nature; and no one has yet come up with a suitable defi-
nition. The participants in the workshop generally agreed teacher education
in Wisconsin is not in as bad a condition as some national critics claim.
Change in teacher education is likely to be subtle at times, thus it will
not grab headlines. What should be noted is that the cornerstone of change
is partnership. Teacher education departments need better communication
with other departments inside the university and with agencies outside the
campus. Joint appointments offer another likely means of partnership. Use
of research and development centers to translate theory into practice must

also involve more than a single department or agency if the translation is to be successful. Four probable future developments in Wisconsin indicate something of the kinds of changes that will be coming in teacher education. First, elementary teachers will soon be required to have a minor in a subject area. Second, for other teachers a major in the subject area looms as a requirement. Third, increased use of teacher aids will mean more freedom for the classroom teacher. Finally, practice teaching will be revised and extended to one semester so that the experience will be more valuable.

One workshop dealt with the most pressing issue for academic planners-- graduate program development. It is clear that *quality* must be the keystone to growth in this area. Quality programs must be developed carefully and only when they can be fully supported. Growth of graduate work will require hard decisions about priorities and support at the institutional level, for all 13 institutions cannot all offer comprehensive master's and doctoral work. Graduate programs should be founded on institutional strength, peaks of excellence, and should be related to the mission of the institution and system.

The University of Wisconsin, Madison, foresees maintenance of quality as its most pressing problem related to graduate programs. Generally, Madison believes that its program offerings will be relatively stable. On the other hand, the Wisconsin State Universities consider that their key problem will be developing quality at the same time that they are developing new programs. The State Universities foresee expansion at the master's level, the professional doctorate degree, and perhaps the initiation of an intermediate degree aimed at the junior college or undergraduate teacher. In the plans of the WSU system there is a clear distinction between their research aims and those of the UW-MSN, and the State Universities have affirmed that one of their primary missions is the preparation of teachers.

To conclude this summary, we should consider five planning suggestions on which the workshop participants agree.

1. We agree that academic planning should be given more support at the institutional level.

2. We agree that the graduate missions for the University of Wisconsin, Madison, and the Wisconsin State Universities are distinct and different.

3. We agree that control of program choice in the statewide ETV system should reside at the local level.

4. We agree that extension should receive a higher priority in both the allocation of resources and in the acquirement of personnel.

5. We agree that teacher education departments should break the traditional bounaaries that have separated them from effective communication with potential partners for change and growth.

These suggestions may be ambitious, but they are founded on experiences relevant to the state's needs and resources. When we put them into practice, we will have moved in the direction which Bill White outlined for us earlier--a revolution in which the academic planners take the lead in defining the goals and missions for higher education in Wisconsin.

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FACILITIES WORKSHOP SUMMARY

The objective of space managers and space planners is to serve the goals of higher education--not to direct them. In so doing, their data and their deliberations must be directed toward making recommendations which will facilitate the achievement of a school's academic mission. They must continuously draw on information which relevant academic and administrative personnel possess, if such an objective is to be achieved.

It is the role of space management to perfect utilization studies of instructional space so that they prove to be an accurate reflection of present space usage. Beyond this, new ways should be explored to apply utilization surveys to such areas as recreation and parking. The use of student representation in the facilities planning process should be considered in order to: 1) provide an accurate source of information to student groups and 2) to provide a pool of fresh and relevant ideas to planning committees.

All agencies involved in the planning and construction of future buildings must explore ways to shorten the time element between the approval of such buildings and the date of eventual occupancy. If such a goal can be accomplished, it will serve to control costs and free additional space that much earlier.

Can modern computer techniques be used to more effectively schedule instructional space? It is hoped that a variety of schedule possibilities can be prepared which will incorporate more variables than have been possible through manual scheduling. For example, it would be desirable to incorporate such factors as student and faculty preferences on time and distance between faculty office and class or lab into proposed schedules. The scheduler can then alter his assumptions in a variety of "what if" schedule changes and weigh the result against a predetermined utilization target.

In t area of federal funding of facilities it was concluded that the states should develop a strong body of valid information, through research and cooperation between agencies. It is believed that this will prove to be of inestimable value to federal officials and will serve to insure the autonomy of local institutions. Similarly, if the same approach is taken in the preparation of well-researched space guidelines at the campus level, it will help demonstrate the distinctive needs of individual units within a larger system.

A proposed formula for evaluating the obsolescence of a facility was presented by the Bureau of Engineering. It is a system by which appropriate representatives of the Bureau and the unit involved can determine the

degree to which a physical facility has depreciated both in terms of its physical characteristics and the manner in which it is being academically used. It is an approach which will enable planners to compare the feasibility and cost of remodeling a facility at some point in its useful life, with the cost and possible benefits of permitting the facility to totally depreciate and be replaced by a new facility.

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FINANCE WORKSHOP SUMMARY

On June 4 we examined the budgetary process in public higher education; specifically, we attempted to define the role of the CCHE, the Department of Administration, and the Legislative Fiscal Bureau (see pages 223-232).

On June 5 we focused on two major areas of concern: the financing of public two-year higher educational institutions, and program budgeting at the statewide, system, and campus levels. It appeared to be the consensus of the finance group that the funding pattern for the University Centers, the State University Branch Campuses, and the vocational-technical institutes should be reviewed with respect to: (1) costs to the student, the locality, and the state, and (2) possible inconsistencies in aid formulas and support levels.

In addition, the finance group endorsed the further development of program budgeting or PPBS:

1. Essentially, program budgeting is an effective vehicle for planning, management, and control. It aids educational and governmental decision-makers in:

    . determining policy objectives

    . clarifying and analyzing alternative methods of accomplishing objectives

    . establishing program priorities

2. At the university central administration level program budgeting is a way of "maximizing returns" on allocated resources, and at the individual campus level, it is an important device for sound internal fiscal management-- it focuses responsibility, discloses all sources of funds being used in a program, etc.

The finance group took note of some of the major criticisms leveled at program budgeting, and some of the problems involved in implementing PPB in higher education:

    .. PPB rests upon an economic model that fails to give sufficient consideration to political variables--to the social and political environment within which budgetary decisions are made. In addition, PPB thrusts heavy burdens of calculation on the budgeteer.

2. PPB is strongly attached to quantification of outputs; yet,
    .ay higher educational outputs may not be readily measurable.

3. The "array of goal setters" in higher education can create
    problems in establishing clear-cut program objectives: *whose*
    goals are we talking about? Agreement on objectives may be
    difficult to reach.

4. Under a program budget structure, meaningful programs, sub-
    programs, and activities must be defined. This is no easy
    task.

Summary

It was the general feeling of the finance group that:

. Program budgeting is neither a panacea nor a substitute for human
   judgment; rather, it is a valuable tool to be used in the decision-
   making process.

. Efforts should be directed toward improving the program budget
   structure, isolating and measuring educational outputs, and
   establishing adequate performance indicators. At the same time
   the limits of quantification should be borne in mind.

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INSTITUTIONAL STUDIES WORKSHOP SUMMARY

The workshop on Institutional Studies for the most part was made up of information sessions - designed primarily to promulgate understanding among the systems of higher education in Wisconsin. To my knowledge, this was the first time that persons involved or interested in institutional research, in general, and specifically in data systems have conferred in this type of forum.

The makeup of the workshop group was diverse, being comprised of persons engaged at the several institutions and higher education governing boards in institutional research, computer center operations, planning and development, physical facilities utilization, and public information. In my judgment, the information and understanding sought was achieved. The interest was intense; the discussion was lively.

The workshop opened with a three-part review of the institutional concept of data systems of the University of Wisconsin, of the State Universities and of the Vocational, Technical and Adult Education system. Each set forth elements of their respective data systems and related some of the problems which they are encountering. Although each system has unique problems, typical of all seemed to be the lack of compatability of data elements among collecting and using agencies. This problem exists no matter how long a formal institutional studies program has been in effect.

It was agreed by the participants that institutional information systems must be developed and improved, and that this must be done consonant with the mission and objectives of the institution as developed and stated by decision makers. The complexity of decisions to be made and the complexity of the decision-making process demands this, as does the program budgeting system presently being implemented in the state.

Following the discussion of the institutional data concept, specific areas of data collection, input, and output were reviewed. Student, faculty, budget, and facilities data were discussed, as were the wide range of questionnaires coming to campuses and administrative offices and the need to develop a standard procedure for handling them.

In summary of the workshop sessions, it is the consensus of the participants in the Institutional Studies Workshop that:

1. There is a need to improve higher education data definitions,

as well as data acquisition and reporting methods in the state; and

2. There be established on a cooperative basis an association of persons involved in institutional studies through which problems common to the membership can be discussed and solutions sought.

It was further agreed that a steering committee be constituted of representatives from each of the three systems of higher education and the Wisconsin Coordinating Council for Higher Education. The association for institutional research of the State University System agreed to sponsor the initial meeting of the group.

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Page