University education for the practicing or aspiring professional-practitioner should be considered the beginning or extension of lifelong learning, a continuing educational requirement. University Extension programming at the University of Wisconsin covers a wide range of professional, farming, and other areas. Efforts are underway to redesign curricula on a more relevant basis than that of the logic of the structure of knowledge, the typical organizing structure. Curricula at the Minnesota Metropolitan State College and at the Kellogg Agricultural Extension Center of University College, Dublin, are competency-based. Students qualify for a degree by demonstrating their competence in five areas. (KM)
CONTINUING EDUCATION FOR THE PROFESSIONAL

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In these comments I wish to direct attention to those persons with a minimum of a baccalaureate degree (or equivalent) who must utilize what they know and the skills they possess in dealing with problems that exist in the "real world" (problems and needs of people and the institutions of society). Generally they pursue careers in which jobs are not specifically defined—that is, their responsibilities are not defined in terms of "do this, this and that" in "this and that" specific ways. It's this category of people I'm referring to as professionals—call them practitioners if you prefer.

Compared to the professional-practitioner, the academician is one who prepares and pursues scholarly work in a disciplined field of study and who professes on and about that subject. His job is to concern himself with what is known and what is knowable and to attempt to transmit this to others. Many of us are concerned with what is known.

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and what is knowable in a relatively narrow segment of the reality
of the universe. We look at problems in relation to our particular
disciplined way of conceiving of some segment of reality—of some
abstraction from reality.

The professional-practitioner is faced with dealing with problems
that are reality—not some abstraction from it. Most of the problems
he faces are not adequately dealt with by one particular discipline
or area of knowledge. I make this distinction to suggest that what may
be an acceptable education for an academician may not serve the
professional-practitioner equally well.

A comment on what I mean by continuing education: I'm referring
to life-long learning—the need for intentionally pursuing increasing
understandings and skills—not what may simply accrue to a person from
experience without some premeditated, designed intent to learn. The
need for life-long learning is based on the assumption that it is
impossible to learn all that is or will be required in a given period
of time. Unfortunately (I fear) we allow our graduates to leave our
protective care and nurture thinking they know all they will ever need
to know.
So, we must develop the attitude and the facilities (programs) to learn our way through life—whatever our situation may be. In this particular situation I'm talking about learning our way through a professional career (a career as a practitioner).

To illustrate the potential educational problem of the practitioner:

It has been estimated that the half-life of what an engineer knows is 5 years—meaning that half of what a graduating engineer knows on the data of his graduating will be obsolete in five years. I believe it would be more accurate to refer to the engineer's technology having a 5-year half-life.

The medical profession in the U.S. is concerned about the continuing education of physicians. Estimates have been made that perhaps as many as 80% of our practicing physicians know all they will know about medicine the day they graduate—except for what they may learn from the drug salesman.

Examples of Continuing Education

I propose to illustrate something of what is now being done in attempts to provide continuing education opportunities. Most of my
examples will be from the U.S. However, I will conclude with an illustration here in Ireland.

I will illustrate by referring to what my own institution, The University of Wisconsin, is doing in organized efforts to provide continuing educational opportunities for the people of the state of Wisconsin. The annual budget for the University of Wisconsin-Madison on-campus operation is about 133 million U.S. dollars. Its budget for off-campus programs (programs of continuing education which we call University Extension) is about 31 million dollars. There are about 800 faculty members engaged in this continuing education effort. The effort reaches, in one way or another, about one in every four (1 million) residents of the state.

The following will illustrate the range of programming in University Extension:

1. A doctor and nurse from Beloit participated in a course last year to review ways they could work more effectively as a team for pediatric care. They were among more than 14,000 health professionals in Wisconsin involved in continuing education programs.
2. A Milwaukee businessman was recently given a certificate indicating he had trained as a volunteer in counseling probationers. He is one of 700 who have become involved in such a program.

3. More than 1400 Wisconsin homemakers attended June College Week for ideas and inspirations aimed at helping them reshape their personal lives, families and communities.

4. A former mayor of Milwaukee recently earned his eighteenth credit hour through independent study. He is one of nearly 10,000 students who earn credit each year through correspondence study.

5. An Ashland third grader listens to an instructional radio program each Wednesday morning. She is one of more than 312,000 Wisconsin primary students who attend the university's Radio School of the Air each week to supplement regular classroom work.

6. A farmer in Brown County can use a pushbutton phone to punch in some information relative to questions about his farm loan. Within seconds a computer returns an electronic answer programmed to sound like a human voice.
7. Each Wednesday a Beaver Dam lawyer takes a lunch in a paper bag and joins his fellow attorneys in a local conference room to participate in a statewide seminar sent out over the Educational Telephone Network. He is one of 15,000 Wisconsin adults who have "returned to school" by way of a telephone network.

8. Washington County farmers are concerned about developing more effective animal waste management and manure recycling programs. They are assisted through efforts organized by their county agricultural Extension agents (advisors).

It will be noted that all these programs are not aimed at people with university education.

Consider my own department at the university. In addition to having faculty who are engaged in the outreach program of the university to the state we have the equivalent of eight full-time faculty who are concerned with teaching and research. Our students are largely university graduated practitioners who return for postgraduate work after some years of experience. They come from all over the world. Drs. John Reidy
and Joseph Mannion of the Faculty of Agriculture, UCD (the Kellogg Agricultural Extension Centre) would somewhat typify our students.

Our students are men and women with families, several years of professional experience (10 years on the average). They are in their mid-thirties. They return to the university for advanced degrees.

Among our graduates are presidents, vice presidents, and deans of universities, directors of extension services and the like. In its 15 years of existence the department has graduated 520 with Master of Science degrees and 196 with Ph.D.s.

Concern for Curriculum

Institutions of higher education in the U.S. are beginning to get actively concerned with the kind of education they are providing their students who are preparing for or seeking further preparation for careers as practitioners. In the design and redesign of curricula, considerable attention is being given (1) to what the student needs to do in order for his studies to mean most to him, and (2) to what he will be engaged in following completing his course of study. The rapid growth of cooperative education (work-study/sandwich courses) illustrate a significant development in attempts to assist the student, among
other things, in understanding the purposes of much of his study.

The typical way of organizing the substance of curricula is on the basis of the logic of the structure of knowledge. That organization is not proving to be adequate for the professional-practitioner. Recognizing such inadequacies in typical curricula, efforts are underway to conceive of the organization of the substance of curricula from different perspectives.

An example is the work underway at the Minnesota Metropolitan State College (university) in Minneapolis. Curricula for this new institution is what is referred to as competency-based. Their enrolling students have two years or equivalent of third-level education when they enroll. They are typically full-time employed. Average age is in the 30s.

In order to qualify for a degree the student must demonstrate that he is adequately competent in five areas. The university is not concerned with where, how or when the student acquires the required competence; only that he has the competence. The university does not have a campus. It utilizes the resources of the metropolitan area in providing instructional assistance to students.
When the student and his counselor (a member of the staff of the university) agree on his program of study, it becomes the responsibility of the student to find the assistance he requires. Some he may find by enrolling in courses; others he may find by getting help from managers of the concern where he works, from some professional employed by government, or wherever.

When the student qualifies he receives a narrative credential which explains what he has demonstrated competence to do. He gets no grades (no numerical or alphabetical mark).

Competence encompasses skills, knowledge, understandings and attitudes. The five areas are:¹

1. **Basic learning competence**: A person holding a baccalaureate degree should demonstrate competence in methods of inquiry, communication, analysis, and evaluation. He should know the "how" of discovering and delivering: from reading to writing to mathematics to using the learning resources in his community.

2. **Civic competence**: An educated person knows how his society and its institutions function. He recognizes issues affecting him and his

¹*Science Education News*, April, 1972, pp. 6-7.
social-natural environment. Equally important to "knowing about," he participates in the civic-social processes of his environment. He not only is influenced by his environment, he influences it.

3. Cultural-recreational competence: The urban man must be knowledgeable about his cultural heritage and the rich variety of cultural resources available to him. He must demonstrate the skills and understanding necessary to use these resources. It is increasingly important that modern man develop life-long leisure skills that enable him to recreate both himself and his environment.

4. Human growth and development competence: This area in some ways represents a gestalt of the other four. Man, in a complex social matrix, must be able to establish his own identity--to assess himself, to establish goals, and to devise strategies for realization of goals. He must appreciate differences, diversity, and complexity among people and among social structures.

5. Professional vocational competence: A baccalaureate degree program should lead to the acquisition of skills, knowledge, and understanding appropriate to the goals established by the individual. For some the degree may be preparation for further study in a graduate or
professional school. For many, however, it is the terminal
degree and should provide the individual with marketable skills.

An educated person should possess both specific and general
skills, knowledge, and understanding. He must be able to accommodate
to the dynamics of a rapidly changing job market in a rapidly
changing society.

University College, Dublin has a program of continuing education
for professionals in agricultural extension (advisory) work. This
program was initiated in 1967/68 through efforts of the university and
the Department of Agriculture and Fisheries, with financial assistance
from the W. K. Kellogg Foundation. The program is concerned both with
the professional's requirements to be technically competent as well
as competent as a planner, organizer, facilitator and evaluator of
program (a facilitator of learning) in the nonstructured situation in
which the Agricultural Advisory Service operates.

I spent three years as a visiting professor at UCD (1969-72)
assisting with the establishment of this program. An associate of mine
from the University of Wisconsin (Professor Patrick G. Boyle) spent a
year (1968-69) prior to my coming. Curriculum for that program (which can lead to a masters degree or Diploma in Agricultural Extension) is being developed around five areas of competence. This program is in the Faculty of Agriculture and is known as the Kellogg Agricultural Extension Centre (KAEC).

These five areas of competence are as follows:

1. **Reckoning with human behavior:** To do this the professional might profitably acquire systematic ways of thinking about human growth and development and behavior (physical, emotional, intellectual, social). Much of his work requires that he deal with human beings. There exists in the university certain disciplines and areas of study from which such ideas can be gleaned which we can judge have possible relevance.

2. **Conducting systematic inquiry:** Much of what the professional does needs to depend upon observations he makes, his own systematic organization and analysis of such observations, and judgments he makes as a result. The most formal means of doing this we call research. However, much of the observing the professional does
is less formal. There are ideas (ways of thinking) that exist within identifiable areas of study that have the potential for increasing the systematic nature of our perceiving and handling our own observations, whether they be random or structured. Acquiring these may increase the professional's consciousness of the inquiry he can and should be making on the job and facilitate his doing so.

3. Programming: Arranging for, conducting and assessing the consequences of intended/premeditated efforts to facilitate improvement (change) is usually considered the focus of the role of the professional adult educator. We have attempted (in adult and extension education) to develop such an area of study by utilizing ideas gleaned from a range of sources in the university.

4. Functioning as a professional: There are identifiable ways of thinking about the role of the professional, how he conceives of his role, how he relates his role to other roles in his employing organization and to other relevant people, how he organizes and manages available resources, what it means to be and function as
a professional, etc. Such ideas have potential utility and appear to be significant.

5. **Coping with his work environment (milieu):** Not only must a professional operate in an identifiable work environment, he must work and cope with that environment. The definition of that environment is fairly broad, including political, social, cultural, economic, physical, technological aspects. There exists a range of systematic ways of thinking about such phenomena that have potential to the professional. Note that I include the technological here—the typical, and often exclusive formal preparation of agricultural extension workers. It seems to me that this arrangement helps one put technological considerations in perspective.
You will note similarities between these five areas and the five developed for the curriculum of the Minnesota Metropolitan State College (MMSC). The similarities between these two independent efforts are noteworthy—especially in view of the fact that one is being developed for upper level undergraduate education (MMSC) and the other as postgraduate for experienced practitioners (KAEC).

The areas relating to Human Behavior/Development are the same in both conceptions. The MMSC area referred to as Basic Learning has many similarities to the Systematic Inquiry area used in the KAEC curriculum. The combined MMSC areas of Professional-Vocational and Civic have recognizable similarities to the combined areas of Professional Role and Environment used in KAEC. The area of Cultural-Recreational for MMSC has little similarity to any matter covered by the KAEC areas. Neither does the MMSC areas encompass what is covered by the KAEC area of programming.

In addition to the current students at the Kellogg Agricultural Extension Centre, thirty students have participated in the curriculum
based on this competency conception. Eight of those have been fairly intensely exposed to the conception itself; their dissertation projects have been related to the conception. Evidence to date indicates that the conception has merit not only in organizing what the student is to give attention to during his course of study, but also in providing him with a more useful conception of his role as a professional--his functioning on the jcb.

In its curriculum design/development project the Faculty of Agriculture, UCD, has a task force working on the definition of competence requirements of the graduate in agriculture.

Conclusion

I have been trying to illustrate: (1) that university education for the practicing or aspiring professional-practitioner should be conceived as the beginning or extension of a continuous educational requirement; (2) that the best basis for organizing the substance of curricula for the professional-practitioner may not necessarily be the logic of the structure of knowledge (into its disciplines fields of university study); (3) that cognizant of what is required of the
professional-practitioner as he performs his professional obligations to society needs to be taken to increase the chance of his educational efforts being most productive; (4) that concern for continuing education may be an appropriate concern of the university. Universities in the U.S. are being compelled to give high priority to problems and concerns of society.