ED 057 790   JC 720 026

AUTHOR   Johnson, B. Lamar, Ed.
TITLE   Toward Educational Development in the Community
                Junior College.
INSTITUTION   California Univ., Los Angeles. Junior Coll.
                Leadership Program.
REPORT NO   UCLA-JCLP-Occas-R-17
PUB DATE   Jan 72
NOTE   84p.; Report of a conference sponsored by the UCLA
                Junior College Leadership Program, the Amer. Assoc.
                of Jr. Colleges, the League for Innovation in the
                Community College, and the Nat'l Lab. for Higher
                Education, July 16-17, 1971
AVAILABLE FROM UCLA Students' Store, 308 Westwood Plaza, Los
                Angeles, California 90024 ($2.00)

EDRS PRICE   MF-$0.65 HC-$3.29
DESCRIPTORS   *Agencies; *Budgeting; *Educational Development;
                Foundation Programs; *Institutional Research; *Junior
                Colleges

ABSTRACT
        The national conference "Toward Educational
Development in the Community Junior College" was the fifteenth summer
junior college conference held at the University of California, Los
Angeles. Twelve papers were presented at the conference and
emphasized four major topical areas in addition to matters directly
related to instruction. Those areas were: (1) institutional research,
including findings of research that point to the need for change and
improvement in the junior college; (2) governmental agencies and
foundations, as external stimuli for educational development; (3)
budgeting, at both district and state levels for educational
development; and (4) organizing, for educational development.
(Author/AL)

Toward Educational Development in the Community Junior College

A Report of a Conference Sponsored by the UCLA Junior College Leadership Program, the American Association of Junior Colleges, the League for Innovation in the Community College, and the National Laboratory for Higher Education

July 16-17, 1971

Edited by

B. Lamar Johnson

Occasional Report No. 17

Junior College Leadership Program
Graduate School of Education
University of California, Los Angeles

January 1972

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FOREWORD

Change as a basis for improvement is fundamental to progress in education—and, indeed, in all society. This truism—and its application to the junior college—was the central focus of the national conference "Toward Educational Development in the Community Junior College." Both the theory and practice of educational development in the junior college were featured at the conference.

In a paper at the opening session, John E. Roueche voiced an emphasis that was to continue throughout the conference when he asserted "the need for change in American community colleges is obvious. . . . The initial focus for change in community colleges must be in the area of improved teaching—resulting in both greater student retention and in increased student achievement."

Supporting Roueche's view with a rhetorical question during a conference discussion period, one participant queried, "If the junior college is not in the instructional business, what business is it in?"

Papers at the conference, of course, were by no means limited to matters directly related to instruction. Among additional emphases in conference presentations were: *institutional research*—including findings of research that point to the need for change and improvement in the junior college; *governmental agencies and foundations* as external stimuli for educational development; *budgeting*, at both district and state levels, for educational development; and *organizing* for educational development.

The papers by Roueche and Stuart R. Johnson focused on the role and function of the educational development officer. Emphasis, however, was given to functions to be served—rather than to a particular staff position. Among variations suggested was a proposal for an educational development team.

The national conference was preceded by a five-day Workshop for New Junior College Presidents and Their Wives—under the direction of Frederick C. Kintzer. Since educational development was featured at the workshop as well, a sizable number of presidents and wives stayed on to attend the conference.

The national conference "Toward Educational Development in the Community Junior College" is the fifteenth summer junior college conference to be held at the University of California, Los Angeles. Attendance numbered more than two hundred from twenty states, Canada, and Australia.

The editor expresses his thanks to those who joined the UCLA Junior College Leadership Program in sponsoring the conference: the American Association of Junior Colleges, the League for Innovation in the Community College, and the National Laboratory for Higher Education.

He also thanks Hazel Horn, Assistant Editor, ERIC Clearinghouse for Junior Colleges, for her editorial services.

<div align="right">B. LAMAR JOHNSON</div>

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SECTION 1
A Need and an Opportunity

JAMES W. TRENT

INSTITUTIONAL RESEARCH: A BASIS FOR EDUCATIONAL DEVELOPMENT

THE CHALLENGE OF THE COMMUNITY COLLEGE

Past and present leaders of the two-year junior community college movement have reason to be proud. In the span of seventy years, they have formed a concept into an expansive, established system that is a key segment of American higher education and have made sure that it is the primary means of democratizing higher education. They have thus promulgated this country's one unique contribution to the worldwide higher education. With great progress, however, have come the inevitable great problems.

Many of these problems spring from the very fact that the mission of the two-year community college is unique. From the beginning, this movement has attempted to meet the greatest educational needs of the widest possible spectrum of the population. Early on, therefore, the community college has been multifunctional in nature, providing simultaneously trade-technical, transfer, general education, adult, and community service programs.

Active leaders in the community college know this, of course, but can they truly answer the following related questions? (1) How effectively does any one of these programs accomplish its objectives within any one or any combination of institutions? (2) Are these objectives best accomplished in a comprehensive two-year college that incorporates them all, or in a college that emphasizes only one or two? (3) How extensive are student, faculty, administrative, and community consensus *and* commitment to these objectives? (4) What are the effects when consensus on and commitment to these objectives do not exist among the college's constituent groups

A few more basic questions emerge from the fact that the two-year college unquestionably plays the dominant role in providing the currently espoused universal higher education—that is, at least two years of education beyond high school for all who can profit from it. The further questions we must face, therefore, are: (1) Just who can profit from this experience? (2) How is this experience to be determined? (3) What ultimate effect will it have on those who presumably can profit from it?

ISSUES

With these questions in mind, we have undertaken two projects at UCLA during the last year, and presumably will continue with them this year.[1] The

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first project entails seeking the counsel of junior college leaders on issues such as those raised above, learning all possible from the literature available, and pursuing the questions empirically and intensely through selected case studies of two-year colleges. The second project entails conducting a comprehensive series of analyses of a national sample of two-year college students, faculty members, administrators, and graduates.

The preliminary effort has been to learn from community college leaders either by sponsoring or by listening at major conferences, such as the one at which this paper was presented. Consistently the leaders have brought up pressing problems concerning: articulation, administration, governance, academic freedom, community relations, support services, finances, and have especially stressed program improvement and the need to evaluate programs.

Other concerns have included new roles for students, patterns of staff development, shared data-processing systems, the use of paraprofessionals in the classroom, the infusion of humaneness in education, faculty load, remedial education, educational relevance, the revamping or updating of vocational education, and the communication, understanding, and support of the role of the community college by the U. S. Office of Education.

Evaluation has been stressed for these programs generally and, more particularly, for teaching effectiveness, student services, special programs, validation of the functions of the comprehensive community college, systems of accountability, and cost effectiveness of the colleges' programs.

Appropriately, the essence of these concerns is embodied in the theme of this conference. This propriety is underscored by the research available on the community college, some of which is reviewed here.

THE STUDENT

Today's research corroborates that of the past decade. Speaking now of groups, and comparing two-year college students with those attending four-year colleges, we continue to find that junior college students are lower in socioeconomic status, have less academic aptitude, are less motivated academically, are less self-directed generally, understand less about their own interests and potentials, are less inclined toward leadership activities, are less open in dealing with the world of ideas and creative endeavors, are less aware of the diversity of the world of work, are more uncertain of their reasons for attending college, feel that they are less likely to complete their college education, and seem to possess lower self-esteem and sense of competence.[2]

The above is a regrettably long list of disadvantages found consistently from the first research on junior college student characteristics to the present. It definitely does not mean, however, that *all* two-year college students suffered from them, for the research also shows many highly motivated, high-achieving students. Indeed, the range of their abilities, aptitudes, and personality traits generally exceeds that of four-year students—perhaps a more realistic way of perceiving the situation. Also the two-year colleges themselves differ greatly, not only in the characteristics of their students, but also in a variety of important

[2] These and the following findings are documented in the forthcoming preliminary report of "The Study of Junior Colleges," *Roles and Realities of Community Junior Colleges* (Trent and Associates). In the meantime, the reader is referred to the selected references at the end of this paper.

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institutional characteristics. More to the point, however, the disproportionate number of students in two-year colleges who are relatively "handicapped" educationally is, in many ways, to be expected. A major purpose of the community colleges is to provide higher education for those who would otherwise be barred from this opportunity. Evidence shows that they are accomplishing this purpose to a greater extent than is any other educational institution.

Indicating this as a major purpose of the community college at the same time points out one of its chief challenges. To open the college doors to such a diversity of students is one thing; to assume that they make use of this opportunity is quite another. Unfortunately, the research on the effects of the college's programs on its students is much less clear and plentiful than it is on the characteristics of entering students.

The low-achieving, "remedial" student is a case in point. Commonly, 60 to 70 percent of two-year college students are directed to remedial programs, usually in English and mathematics. The label "remedial," however, does not necessarily constitute an adequate educational or vocational experience. William Moore, former president of Seattle Central Community College, may have reason for his indictment: ". . . no other student in higher education is subjected to the deliberate professional neglect that is shown the remedial student."

This indictment extends to *research* on the remedial student and makes it all the more glaring, considering what *is* known about this student in the community college. So-called remedial students are a heterogeneous group. Although the research is not extensive, it indicates that academic aptitude scores are frequently so misleading that students with low scores on standardized tests have been found to have above-average scores on individual intelligence tests.

On the other hand, although remedial students have been found to have a disproportionate number of both emotional and physical problems, these conditions are rarely diagnosed or considered in remedial programs. Likewise, lack of motivation affects many remedial students but is seldom considered systematically, either in junior college research or in educational programs. Again, the research to date is limited, but the results are too important to be dismissed.

Research and evaluation to develop remedial programs appears essential, yet, there is very little of these activities. What little does exist is circumscribed, particularly concerning the requisites of evaluative research.[a] In any event, most of the research indicates the ineffectiveness of remedial programs. This is particularly evident in the best-researched programs, where proper controls and interactions of variables have been used. As exceptions, however, elements of highly evaluated programs have been identified. Briefly, they include: active recruitment, diagnostic testing, special block programs, tutorial assistance, financial aid, transportation money, counseling, and special instructional materials. We might also add the committed, effective teacher, who no doubt compensates greatly for the lack of special programs.

Barriers to effective programs have also been identified as poor placement

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[a] Examples of the growing literature on the essentials of evaluation of educational and related programs are Dressel and Pratt (1971); Messick (1970); Suchman (1967); and Wittrock and Wiley (1970). See references at the end of this paper.

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procedures, lack of communication between counselors and instructors, over-sized classes, untrained or uninterested instructors, inadequate course outlines, vague objectives, scanty materials, methodological problems, and instructors' lack of knowledge about their students.

It is important to consider both the positive and negative points of these and other programs. They are identifiable and quantifiable for appropriate imple-mentations, replication, or elimination. The question, of course, is whether they are really being identified and dealt with where they matter.

PROGRAMS

The same question applies to vocational education programs, which, we know, have little appeal for most students. A 1970 report of the Bureau of California Community Colleges states that two years ago, just over 7 percent of the stu-dents were in trade-technical curricula (excluding business and health programs). According to Garrison, however, three-fourths of junior college students are of middle ability or less and therefore not likely to find a four-year curriculum appropriate for them (Garrison, 1967).

The best predictors of success in vocational programs are still the traditional academic aptitude tests, not tests of vocational aptitude. Predictive power is qualified in this instance, though, given the discovery that most students who enroll in vocational programs do not complete them. It is also possible that the college experience of these students contributed substantially to their vocational attainments and satisfaction even though they did not complete their programs. Once again we find it remarkable that the research to date leaves the voca-tional student largely undefined and vocational programs largely unevaluated.

We do not really know, therefore, what kind of student can profit from a vocational program, whether he really needs to complete it to achieve vocational proficiency, the value of these programs to the community, or what features of them deserve support and emulation. This is urgently needed information, in view of the important objectives of these programs and the great investment of human and financial resources in them.

The same is true for innovative programs specifically designed for develop-mental purposes. One of our staff has analyzed them into three broad areas: (1) individualized instruction, an important development you will hear much about during this conference; (2) technology as exemplified by Chicago City College's landmark TV experiment and the auto-tutorial techniques developed at Delta College, Michigan, annd at Golden West College, California; and (3) attempts at educational relevancy, noted in the development of ecology programs in numerous colleges or in Chicago's Urban Skills Academy.

What is innovative for one institution may be passé for another, but the potential of these programs for all is striking. Surely, too, the potential could be more fully realized if the rationale for choosing one innovative program over another had a data base. Also their potential would be enhanced if they were systematically evaluated on their cumulative, long-range effects, not on the limited, sporadic evaluative research that now exists. What research does exist is almost exclusively confined to specific student achievement in a specific course, generally with little or no control for teaching directly to the test or situation.

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ADMINISTRATION AND FACULTY

We must next examine the administration and faculty responsible for initiating, overseeing, and carrying out the college programs, innovative or not. There is evidence that innovation is more likely to take place and faculty and student morale to be higher under two conditions: (1) where the administrator acts and is viewed as an educational leader, not a manager of the system; and (2) where policy formation and decision making include faculty participation rather than the unilateral action of the president. These points apparently bear heavily on the conditions underlying effective educational development, at least by implication. We also know that roughly 44 percent of junior college presidents have their doctoral degrees, though the relevance of this information is not so immediately apparent. With the exception of these few findings with far-reaching implications, we know very little about the people and procedures that lead to the administration of an effective college.

We also know little about the faculty—but enough to know that we should know more to best go about educational development. I will give only a few examples that bear on previous points of our discussion. Community college faculty do not generally feel that they are a part of the "community of scholars" or that their colleges provide the climate for their professional growth. Nearly half the faculty would prefer to teach in a four-year college or university. Many have a negative attitude toward—or, at best, are indifferent to—nontransfer programs, including remedial programs. The morale of two-thirds of the faculty is not high, mostly because of administrative policy and practice, with the commonly held sentiment that the "administration is tradition-bound, confused in its aims, unimaginative, and too typically inflexible"—sentiments presumably reciprocated by the college administrators.

Faculty members most likely to accept the stated role of the community college, on the other hand, are usually under forty-five years of age, have had some formal course work and in-service training in junior college teaching, and spend more hours at their job.

We could profitably extend these observations to the community with almost no research on the nature of the community served or on its members' attitudes, images, or needs as they relate to the college. The foregoing, however, illustrates sufficiently the pivotal role of institutional research in community college educational development.

IMPLEMENTATION OF NEEDED INSTITUTIONAL RESEARCH

Note the emphasis on *institutional* research—it is essential at the national level to provide guidelines for system-wide planning, funding, and program implementation. Obviously it is equally essential at the individual institutional level, where ultimately problems must be solved and programs implemented.

I speak of problems, because the array of research indicates their prevalence and severity, but their enumeration should in no way be construed as a negative attitude toward two-year colleges. Four-year colleges and universities also have many problems, which, although they may differ from those in two-year colleges, are doubtless as pervasive and as severe. In any case, the understandable temp-

tation of many professionals responsible for maintaining the two-year college is to ignore the research as hostile and, therefore, inconsequential.

That many of the researchers whose findings are considered abrasive value the community college as much as those who are responsible for maintaining it is incidental to the fact that ignoring the research is detrimental, whatever the orientation of the researcher. Ignoring findings and their implications will not eradicate the problems, but may well increase them. Likewise, indulgence in pessimism over the research can only be debilitating. The more positive approach is to use the research—and the researchers—to delineate major problems and potentials in the most concrete terms possible so that they can be dealt with most efficaciously.

B. Lamar Johnson (1965) draws on a suggestion of Philip Coombs (1960) in asserting the need for a vice-president for heresy—the heresy meaning a departure from the status quo or a change to a better program or system of education. John Roueche, of the University of Texas, and members of the National Laboratory for Higher Education have the same idea in mind when they speak of the educational development officer (EDO), a change agent who must make the best use of research to indicate changes needed and the effects of the changes once initiated. This concept is critical: institutional research is essential to the determination of needed programs, the modes of implementing their objectives, the monitoring of their development, and the assessment of their effects. This role, going far beyond the counting and projection of class enrollments or space requirements (typically conceived as the whole of institutional research) does exist, although too rarely, and can flourish only if increased attention is given to several aspects. The following represent important directions.

1. *Administration Orientation and Support.* Institutional evaluative research can be done only with the strong moral and financial support of the administration. Often this will call for the orientation of administrative and governing officers to the nature and value of good institutional research and for seeing that the research relates to the information needs of administrators—keeping in mind, however, that the greatest needs are not always immediately perceived.

2. *Pooling of Resources.* Not every two-year college is well enough equipped to undertake its own institutional research, but a number of neighboring institutions can pool their resources, exchanging and enhancing each other's research talent, facilities, and ideas for their mutual benefit. More attention might also be paid to existing consortia for this purpose. Examples of such enterprises are the Research and Development Committee of the California Association of Junior Colleges, Florida's Junior Inter-institutional Research Council, and the League for Innovation in the Community College. In addition, the American Educational Research Association's recently formed Special Interest Group for Research in the Junior College aims to provide among other things, research and development services to specific colleges or groups of colleges greatly in need of them. With the inevitable wide gaps between objectives of this kind and their realization, the only way to close them is through proper support at federal, regional, and local levels.

3. *Use of System-wide Research and Development.* A number of federally funded and private educational research and development centers and cor-

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porations devote many of their efforts to junior colleges nationwide. Among the prominent organizations of this kind are the Educational Testing Service (ETS), the American College Testing Program (ACT), the National Laboratory for Higher Education, UCLA's ERIC Clearinghouse for Junior Colleges, and also UCLA's Higher Education Program of the Center for the Study of Evaluation. Independently and together, these organizations are developing informational and technological resources with great applicability to junior colleges, singly or as a system. No doubt, increased communication, as well as the sharing of needs and resources between the R&D organizations and the colleges, would contribute to the development and effectiveness of institutional research and its subsequent application. Such communication should also help the research organizations to be more aware of and responsive to information and resource needs in the colleges. Again, sufficient financial support is critical here. More support is urgently needed for the maintenance and improvement of the R&D efforts and for making it possible to implement these efforts in the individual institutions.

4. *Collaboration with University Researchers.* Numerous university researchers have a sincere concern for the excellence of the two-year college, whatever critical stance is indicated by their research. Whether they work independently or under the auspices of formal research and development organizations, increased collaboration between these individuals and their counterparts or "users" in the two-year college should still further enhance the gains from institutional research as discussed here. The sharing of information and resources to improve the data basis and applicability of institutional research from the university perspective should result in more implementation and increased relevance to the junior college.

The need for communication is just as important. Ways of increasing communication between university and community college personnel might be through joint seminars and workshops and the periodic exchange of key personnel to provide mutual "in-service training" experiences, and collaborative institutional research and development efforts.

These and any number of other possibilities could profitably occupy a whole series of conferences, but it is more important that they progress beyond mere discussion. If we seize the opportunity to work together on the implementation of suggestions such as those enumerated, we will assure that institutional research is indeed the basis for educational development and that this development will become more pervasive and effective.

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THE EDUCATIONAL DEVELOPMENT OFFICER: A FOCUS FOR LEADERSHIP

The idea of a change agent on a college campus is not new. More than a decade ago, the Ford Foundation's Philip H. Coombs proposed that every college and university appoint a "vice president in charge of heresy"—a top-level administrator responsible for introducing new ideas on the campus.[1]

In 1965, junior college authority B. Lamar Johnson suggested appointing "vice presidents in charge of heresy" to the staffs of experimental two-years colleges. He explained the position as follows:

> The proposal would provide a staff member—with no administrative responsibility—whose duty it would be to keep abreast of national developments and to initiate plans for exploiting them at his own institution, as well as to develop completely new plans for local use and application. Our vice president would be a "dreamer." He would attend conferences and assemble "far-out" proposals. He would needle administrators and his faculty colleagues and, in turn, be needled by them. He would study the findings of research and analyze their implications for his college. He would, in short, be a harbinger and instigator of change.[2]

Both proposals focus on needed changes in American colleges, both two- and four-year. It is ironic that in a world of rapid change, indeed revolution, colleges have changed more slowly and with greater resistance than almost any other human institution. For years we have discussed the "time lag" between the introduction of new ideas in education and their eventual adaptation on campus. Paul Mort has summarized the problem of adaptation as follows: "Between insight into a need . . . and the introduction of ways of meeting the need . . . there is typically a lapse of a half-century. Another half-century is required for the diffusion of the adaptation."[3] This is especially true in colleges and universities, whose need to be more responsive to changing conditions and requirements is obvious. The need to reduce the "time lag" is mandatory.

TWO-YEAR COLLEGES: PERSPECTIVES

Problems of change are especially critical for the two-year college. It is more closely identified with "local" societal needs than is any other segment of higher

[1] Philip H. Coombs, *The Technical Frontiers of Education*, The Twenty-Seventh Sir John Adams Lecture at the University of California, Los Angeles, March 15, 1960 (Los Angeles: School of Education, University of California, 1960), pp. 14–15.

[2] B. Lamar Johnson, "Needed: Experimental Junior Colleges," *Junior College Journal*, October 1965, p. 20.

[3] Paul R. Mort, "Studies in Educational Innovation from the Institute of Administrative Research: An Overview," in Matthew B. Miles, ed., *Innovation in Education* (New York: Bureau of Publications, Teachers College, Columbia University, 1964), p. 318.

education and its *raison d'être* is service to society. The mission of the community college represents an effort by society to democratize higher educational opportunities, but embarrassment arises when we ask the searching question: "How well is it doing?"

The typical university and four-year college are characterized by selectivity; their highly structured, traditional programs are available only to those who possess high scholastic qualifications and can afford the high costs of those programs. The two-year college, on the other hand, has adopted a philosophy of educational opportunity for all. Besides lower-level studies comparable to those at the university, the community college provides diverse offerings in occupational areas and general-interest programs. All are offered at minimum expense, if any, to the student. Unlike the selective and elitist four-year institution, the community college's democratic style, positive social philosophy, and indigenous features hold out the promise of a less hostile and more supportive environment for all of society's alienated students.

While community colleges admit most who apply, few actually recruit students and a few of the students persist for more than a few weeks. Well-documented studies reveal that our programs for nontraditional students have been poorly conceived and implemented. In fact, in a recent article, Christopher Jencks commented on the two-year college:

> These colleges are in many respects the embodiment of what advocates of social mobility should want. [They] cost little more to attend than high school, and very few require their students to demonstrate such "middle-class" skills as literacy. They offer a variety of curricula, including some designed for the academically apathetic or inept student. Yet [their] existence . . . has not improved the competitive position of the poor in any dramatic way.[4]

Even those who represent the community college movement are increasingly concerned with their performance in serving nontraditional students. Writing in the winter 1970 issue of the *Educational Record*, Edmund J. Gleazer, Jr., identified several problems now facing two-year institutions, including financing and faculty recruitment. He concluded that the most critical issue in the community colleges "is to make good on the implied promise of the open door."[5]

CHANGE: DIRECTIONS

Thus, the need for change in American community colleges is obvious. Although two-year colleges are called "superior teaching institutions,"[6] the typical fate of the nontraditional student demonstrates that they are not. Those who administer and teach in community colleges recognize that instructional improvement continues to be the most pressing need.

The initial focus for change in community colleges must be in the area of improved teaching—resulting in both greater student retention and increased student achievement.

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[4] Christopher Jencks, "Social Stratification and Higher Education," *Harvard Educational Review*, XXXVIII, No. 2 (Spring 1968), 304–305.
[5] Edmund J. Gleazer, Jr., "The Community College: Issues of the 1970's," *The Educational Record*, Winter 1970, pp. 47–52.
[6] Arthur M. Cohen, *Dateline '79* (Beverly Hills: Glencoe Press, 1969), p. xix.

THE EDO AND IMPROVED INSTRUCTION

For the past two and a half years, the Junior College Division of the National Laboratory for Higher Education has developed an in-service program for preparing vice presidents for heresy. Called EDOs (educational development officers), these catalysts are now furnishing on-campus leadership in achieving greater instructional effectiveness in the Carolinas and Virginia, and are being appointed on community college campuses across the nation.

Drawing on the original work of Ralph Tyler[7] and those who later added to his ideas, the Laboratory's approach to instruction focuses on the product of the educational program—the learning achievements of its students. In short, two-year colleges in the Laboratory-sponsored consortium are accepting responsibility (accountability) for the learning successes and shortcomings of their students. If students do not achieve predetermined learning objectives, the instructional program is regarded as ineffective and must be revised. In this context educational development officers have been trained and are now functioning in community colleges. EDOs are to initiate needed instructional reform on community college campuses.

The concept of an EDO can be applied to more than just one individual, for it is basically an aggregation of functions that can be divided among various staff members. Some larger colleges, such as Central Piedmont Community College (Charlotte, North Carolina) already have several staff persons performing EDO tasks. Other colleges have established educational development teams to initiate needed educational reform. The ED team is usually three to five staff members, representing student services personnel as well as research and instructional talents. Several colleges have added to their EDT a full-time staff member to do nothing but assist teachers in reorganizing their instructional strategies. The EDO thus really provides an institutional focus for change—not merely a slot for a new staff member, and he generally has the confidence and cooperation of the faculty.

In such an environment, the EDO strives initially to shift the focus of the instructional program from teaching to learning. In simple terms, he trains faculty members to present material so that their students, however diverse in background, can master it. Because of the great diversity among community college students, it is obvious that instruction of this kind must be individualized. It is also clear that instruction of students in groups cannot be individualized in the two-on-a-log sense. The systems approach to instruction provides an answer to this dilemma, and its implementation is the heart of the EDO's task.

Because a primary function of the EDO is to assist faculty members in employing the systems approach, he must help them develop not only the necessary skills but also an accurate understanding of, and a positive disposition toward, the approach itself. The systems approach is not, as the uninitiated assume, cold and mechanical. It does not dictate or limit curriculum content. In fact, its framework applies to any course content.[8] It encompasses not only the teaching

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[7] Ralph W. Tyler, *Basic Principles of Curriculum and Instruction* (Chicago: University of Chicago Press, 1950).

[8] John E. Roueche and Barton R. Herrscher, "A Learning-Oriented System of Instruction," *Junior College Journal*, October 1970, pp. 22–26.

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of facts and principles but also the development of attitudes and values, and permits a virtually unlimited variety of teaching-and-learning situations.

Essentially, the systems approach consists of six steps:

1. The instructor (and in many cases, his students) derives a rationale for the course, analyzing what the students are to learn and why. In other words, the learning goals are defined and defended for students.
2. Learning goals are broken down into a sequence of learning tasks, and each task is stated as an objective with precise performance indicators against which student progress can be measured.
3. The instructor develops a variety of learning activities to match the requirements of each learning task and the different learning styles of individual students.
4. He pre-tests his students to determine their individual needs and to identify at what point each of them should begin work in the sequence.
5. The teacher post-tests his students to determine their mastery of each task in the sequence.
6. The instructional program is continuously evaluated and revised as necessary to increase student mastery.

The EDO is involved in every step of the process. After acquainting the faculty with the systems approach and earning their support for it, he supervises its implementation and serves as the faculty's chief source of guidance and of research data.[9] His major functions are—

1. To train faculty in the skills they need to use the systems approach effectively, providing them with leadership and technical assistance;
2. To help select and state measurable learning objectives. For this, the EDO asks two key questions:
   a. Is each objective a clear statement of what the student will be able to do as a result of successfully completing a specific task?
   b. Do course objectives include some that show a positive attitude toward the subject matter?

The EDO supplies data on student and societal needs to help faculty determine course content, deriving his conclusions from literature review and surveys. For example, the EDO might survey student problems, community employment needs, skills required for various occupations and those for transfer to senior institutions. He is less concerned with the third area of determining course content—subject matter needs—because the teachers are presumably experts in their own disciplines.

To help with measurement problems, the EDO serves as a consultant to faculty as they construct criterion tests for the before-and-after measuring of student achievement. Here again, the EDO raises two questions:

a. Is the test accompanied by a scoring key or other information indicating what constitutes adequate performance?
b. Are all test items specifically related to the predetermined learning objectives?

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[9] John E. Roueche and John R. Boggs, *The Education Development Officer: A Change Catalyst for Two-Year Colleges* (Durham, No. Carolina: National Laboratory for Higher Education, 1970), p. 18.

The EDO suggests procedures for item sampling, for using data-processing systems, and for measuring complex objectives. He also helps establish interinstructor scoring reliability to promote consistency in assessing student achievement.

To help design learning activities, the EDO asks about learning variables:

a. Do the activities include frequent practice for the student?
b. Will the student have immediate knowledge of his own progress?
c. Is course content broken into small units, and does each unit contain learning steps in sequence?
d. Are there provisions for different learning rates?
e. Are directions for the student clear?
f. Are various media employed to allow for different learning styles?

At this stage, the EDO calls on his knowledge of learning principles and theories and of the behavioral sciences. He sees that learning activities are designed to take advantage of psychological findings regarding the learning process.

To help with the continuous revision of programs, the EDO operates on two levels. He continues to serve as a resource for faculty, and he conducts instructional research and evaluation. To help teachers revise their learning objectives, activities, and tests, the EDO asks three questions:

a. Did the teacher gather all necessary data on student achievement?
b. Did he interview students for added diagnostic data?
c. Did he gather data on student attitudes?

In his own research and evaluation, the EDO observes and describes the total impact of the instructional system at each stage of revision. He also investigates alternative learning activities aimed at the same objectives. A principal function of the EDO is to exploit research methodologies for the improvement of instruction, investigating any factor thought to influence learning and applying the results directly to the college's program.

To promote research-based decisions in all areas of institutional life that affect student learning, the EDO provides data for the college president and others determining administrative policies, practices, and procedures. Some of these areas are: admissions policies, counseling and placement services, grading practices, and class withdrawal procedures. When decisions are made in learning-related areas, the EDO evaluates the results by their impact on learning. This is major function, because the EDO is expected to increase the number of administrative decisions based on research related directly to learning.

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SECTION II
Extramural Stimuli for Educational Development

FEDERAL PROGRAMS: A STIMULUS FOR EDUCATIONAL DEVELOPMENT

History is full of absurdities large and small. A large one was the great debate of the 1960s over whether the country would embrace federal aid to education as a matter of national policy, as though the basic question were still to be settled. Not only has the federal government long been a partner in educational development but, in fact, aid to education as a national policy is older than the country itself. The first ordinances earmarking certain public lands for the benefit of education were adopted in the Continental Congress and are, thus, even older than the Constitution.

There are other landmark contributions to the development of education, notably higher education. More than a century ago came the Land Grant Act and the ensuing support of agricultural science, which helped to trigger the production breakthroughs that revolutinoized our economy and our way of life and made us the dominant industrial power of the world. The federal commitment was further deepened by the Smith-Hughes Act, again in the educational benefits enacted for World War II veterans—benefits retained and revamped for the veterans of more recent hostilities—and again in the formation of the National Science Foundation, to name only a few.

A look at the past seems necessary to bring into proper focus the target of this report—federal programs as a stimulus to educational development in the community and junior colleges. The federal role, of course, is much larger today than it has ever been, and it is likely to go on growing steadily—perhaps dramatically. Those who have followed the series of reports from the Carnegie Commission on Higher Education, chaired by Clark Kerr, will recall their forecast that federal support for higher education could swell four or five times in the next decade. Kerr's forecast was keyed to two assumptions. First, with the public interest in universal opportunity and post-secondary educational benefits mounting steadily, the national investment in such services as a share of the gross national product is likely to rise also, from a 1970 level of around 2.2 percent to perhaps 3 percent ten years later;[1] and second, with local sources of

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[1] The Emergency Committee for the Full Funding of Education Programs, founded during the 91st Congress, is a broadly based, nonpartisan, informal coalition of individuals, groups, and institutions dedicated to achieving adequate federal financial support for all levels of the nation's educational structure. The Committee attempts, through its Executive Director and representatives from Washington-based educational assocations, to persuade the Congress to appropriate, at full authorization, educational programs.

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revenue already taxed to the limits of tolerance, more money for this commitment will have to come from the federal treasury.[2]

Recent developments have tended to substantiate that forecast, despite the tendency of the Nixon administration to hold the line on educational support and perhaps, by its budgetary restrictions, to force some adjustments, reforms, and economies in the higher education and post-secondary complexes among the states.

That forecast was published about the time that the Emergency Committee for the Full Funding of Education Programs, an education coalition formed to rally support for increased federal support, was getting off the ground. This committee has been controversial both inside and outside education, as successful crusades almost always are. The results, however, speak for themselves. In less than three years (the span of congressional action on three successive budgets, fiscal years 1970, 1971, and 1972), federal appropriations for education programs have been increased by an overall total of more than $3.5 billion, above the watermark represented by the last Johnson administration budget for fiscal 1970. The support in these three years has risen at an annual rate of roughly $600 million, which means the fiscal 1972 budget stands roughly $1.8 billion higher than the White House requests for education of three years ago.

This increase in federal support is important for three reasons. First, it shows how substantially the partnership between education and the federal establishment is growing, even measured by only U.S. Office of Education programs (without reference to the many other agencies that support education). Second, it shows that education as a community can, by concerted action, dramatically influence and change the scope of the partnership. Third, history may very well show that this effort has been at least a step forward in the direction of "reordering national priorities."

I think the challenge now is what specifically we can do—higher education and the community college in particular—to improve our role, to improve the partnership. What is the federal partner likely to expect? What should education and the colleges be aiming for?

The Kerr forecast of a four- or fivefold increase in the federal commitment will not happen simply by chance. Education can expect such support only if it is better prepared than it is now to use it effectively. Higher education's performance on federal programs has been vulnerable on at least two counts: (1) it has an erratic record on identifying potential federal resources; and (2) where it has joined federal programs, the outcome in many instances has shown a poor use of the resources.

In most states the educational establishment, segmentally and collectively, is poorly organized (perhaps I should say poorly orchestrated) for the use of federal resources. The federal establishment has tried to cope with this problem to some degree by requiring the formation of state facilities commissions, advisory councils on vocational education, and other groups, to work out priorities; but for most states the proposition holds. In fact, we could simply say that

[2] "Quality and Equality: New Levels of Federal Responsibility for Higher Education," a special report and recommendation by the Carnegie Commission on Higher Education (New York: McGraw-Hill Book Co., December 1968), pp. 7–8.

education is poorly organized, *period*. The July 1971 issue of WICHE's "Higher Education Management" newsletter observes:

> Education is a billion-dollar industry, yet it has operated largely without detailed cost analysis, management systems, and effective evaluations. Pressure is applied to administrators to justify programs, develop new ones, and discard old ones primarily on the basis of their own subjective experiences rather than with the sophisticated analytical tools used by executives in business and industry.

I have not yet encountered a state office or an institution—either university or community college—that is fully effective in identifying and using federal programs. Perhaps a small handful of the larger community colleges and districts now approach full effectiveness. Dallas is one example, and other schools are making strong progress in this direction. North Carolina, for instance, is outstanding. I feel regret for other states when I look at the list of federal programs that North Carolina has drawn upon for its community colleges. The North Carolina system has picked up support from some forty different federal programs, ranging from the Appalachia and Coastal Plains Regional Commissions and the Public Works and Economic Development Act to the National Aeronautics and Space Act and the National Foundation for the Arts and Humanities:[3]

I base my contention of low and erratic use on two observations. First, the universities have concentrated largely on the programs within HEW and USOE —as might be expected, since these programs were tailored by and for the university. They typical university has drawn consistently at this well, perhaps to the point of overreliance, without examining other federal agencies. Second, the community college pattern has been even less sound. While a few community colleges are making headway in federal programs, and while scores have reached a state of diversified federal involvement either by design or by circumstance (more than one hundred community colleges now operate MDTA programs under federal contract), the general community college use of federal resources could best be described as mere "tokenism."

Many community college leaders are reluctant to pursue federal programs, and this reluctance has several roots. For one thing, I believe the fraternity of educators is at heart more conservative than is its image. Ironically, that great debate of the 1960s mentioned earlier has been one root. So much harangue about the specter of federal control (remember the battle cry "Federal aid means federal control"?) has left us with a distorted image of the issue.

Federal aid *is* the national policy. It always has been. Yet I still hear an occasional college president say that he and his school resist federal programs because they want to avoid the snares of red tape and federal control. Their view, naive and injurious, suggests that the issue is still open. Any president who persists in applying that bias in his administrative role is crippling his institution. He is closing the door on millions of dollars of potential support, which is available to him as a matter of settled public policy.

Many presidents have a delicate problem in working with conservative boards, but I think the enterprising president can find ways to convince his trustees of

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[3] J. D. Faust, "Federal Funds Received by the North Carolina Community College System During the Past Tree Years" (unpublished manuscript, No. Carolina Dept. of Community Colleges, 1970). J. D. Faust is Coordinator of Federal-State Relations of the North Carolina Department of Community Colleges.

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what the federal programs provide, and thus of what is at stake for the college. Unfortunately, the tendency is to take the easy way and play down or ignore this area.

A single program at USOE sharply illustrates the degree to which junior and community colleges suffer from the tokenism, the bias, and the general lack of awareness and leadership on federal programs, namely, student financial aids. USOE files show that hundreds of two-year colleges are short-changing themselves in their requests for student financial aid because they fail to identify all the legitimate costs their students bear in attending college. Since the annual turnover in student financial aid officers at the two-year colleges may exceed 30 percent, it is hard to understand why these colleges cannot see the importance of top career leadership in this post. The few dollars it takes to build career commitment into this post will come back to the college a hundredfold. Furthermore, the significance of the student financial aids administrator is likely to grow, since Congress seems inclined to provide more and more support for the students, including the veterans, and to channel less of it directly to the institutions. The student financial aid programs, including the veterans' benefits and the Social Security aid to dependent children, are far and away the largest source of federal dollars flowing into higher education. They dwarf every other form of support.

When community colleges lament that they are outdone by their university rivals in the use of federal higher education programs, they are crying over spilled milk. A far more significant point is that the two-year colleges continue to be badly outhustled in federal programs. A glance at the Washington, D.C., phone book bears out my point. It has listings (hence, staffing) for the University of California, the California state colleges, Chapman College, the University of Detroit, Duke University, the Illinois Institute of Technology, the University of Oklahoma, the South Dakota University System, and Virginia Polytechnic Institute, to name but a few. Nowhere does it list any Washington liaison officers for a junior college, large or small, for a community college district, or for a state system of community colleges.

Perhaps the small junior colleges can fairly say they do not have the manpower to invest high-level staff in a constant bird-dogging of federal grants, but the larger community colleges, the multicampus districts, and the state systems have no such excuse. When the University of California system, serving some 110,000 students, can have its own team plying the Washington scene, one wonders why the community college system of California, with 800,000 students enrolled, cannot also afford a Washington scout. The same applies to other community college systems and multicampus community college districts.

In small states perhaps the two-year colleges, public and private, should form consortia to pursue federal programs. Certainly every state with public junior colleges and a state office to help them should have a federal program specialist.

Emphasizing the tragedy of this neglect by the colleges is that the federal government, in the last three or four years, has had a grand awakening and has quite suddenly discovered the community colleges. This new awareness is shown by the eagerness of the agencies to work with AAJC and my office on our re-

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gional federal grants workshops, particularly on the National Workshop on Federal Programs and on the convention.

At the last AAJC convention and the national workshop in December 1970, nearly forty federal agencies sent teams to give one-to-one counseling on their programs. The success of this supermarket approach, with the agencies manning their own booths, has persuaded us to use it again this year. Our first national workshop outside Washington will be held on November 3–5, 1971, in the San Francisco Hilton, immediately following the CJCA convention for the added convenience of that audience.

While talking eagerly of independence and innovation, the community colleges have been too long dominated by the university tradition and influence. They continue to be overconcerned with the academic, when clearly the challenge of the next decade and the greater potential in federal resources lie in the direction of manpower development and career education. Areas that show growing momentum in federal programs, in addition to manpower, are:

> Environmental protection
> Consumer education
> Drug education
> Small business development, especially for nonwhite enterprises
> Health technology
> Transportation technology
> Law enforcement
> Educational reform

Just as the community colleges are themselves an instrument of change within education, they also should be change brokers in the community. For this they need federal resources, and the federal programs need the colleges.

Much is said these days about accountability, something the community colleges have been living with for a long time and a key element behind community support for the colleges. Proposal-making is in itself an exercise in accountability—a developmental process.

As in taking a college exam, the time required to prepare a good proposal is usually in inverse proportion to how well prepared the writer is. Generating a proposal in a vacuum is likely to be expensive and unrewarding. On the other hand, with solid institutional research, a comprehensive mission plan, as well as economic profiles and development plans, putting the needed elements into the typical federal proposal format can be fairly a routine exercise. Unfortunately, colleges are often handicapped in this process by lack of hard data about themselves. Many do not know enough about their own constituencies and their own programs to write good proposals. They do not know, for instance, how many nonwhite students are served, how many low-income students are enrolled, what percentages of them receive federal financial aid, what courses are most attractive to part-time students, which programs serve specific local manpower needs, or which have the highest graduate placement rates.

The constant lack of data is a handicap to higher education in both federal programs and the legislative process. Higher education as a whole needs a strong data bank, and community colleges need a national data base of their own. The

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data needed to write sound legislation will be available only if the individual colleges do a better job of examining their constituencies and their services and targeting the output. Both data collection and planning have a way of generating a host of workable ideas.

Such an effort can also help the institution become an initiator of, rather than simply a reactor to, new legislation. If it is correct that community colleges are natural "delivery systems" for countless federal programs, they should also be active partners in the framing and development of these programs. The colleges can and should do more about making themselves delivery systems for federal programs and do more to trigger new legislation. Even as they cultivate many federal agencies outside the Office of Education, the community colleges should continue to work for some basic changes in USOE. The first change should be more professional personnel in USOE with community college credentials.

Senator Harrison A. Williams (D-N.J.), chairman of the Labor and Public Welfare Committee, proposed, in his Comprehensive Community College Bill, S. 545, a separate unit to coordinate the higher education programs as they apply to community colleges. Certainly the colleges should support this change, which is now embodied in the Senate's omnibus higher education bill, S. 659, the Pell Bill.

Moreover, they should seek a general reorganization of USOE to provide stronger field staffing. Given the lack of professionals with community college credentials, and the heavy concentration of the program leaders in Washington, USOE is substantially isolated from the community colleges.

Summing up these points, it appears that:
1. The federal role in higher educational development is an old and many-faceted partnership, not a new one.
2. It is also a growing partnership, offering almost limitless possibilities so far only nominally cultivated by the college community, and particularly the community college.
3. While the Office of Education programs for higher education have been enjoyed by the university, many other agencies have been ignored or poorly cultivated by them, and the community college has been widely influenced by this example.
4. Community colleges should be a prime delivery system for locally oriented federal programs.
5. The community colleges in the best position to tap and utilize federal resources are those with—
   a. a comprehensive mission plan for the college, one closely geared to regional and community economic development plans, and with detailed long-range financial planning, i.e., comprehensive resource development, public and private;
   b. strong and unified staffing for planning, fund raising, and community services, augmented by equally strong staffing in student financial aids and in public relations.

The colleges that have the two strengths cited above will find more and more

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federal programs open to them. Those that do not are likely to continue to be frustrated (and defensive) about obtaining federal grants and contracts. While everyone abhors the prospect of spinning off valuable staff time in abortive proposals, the colleges with strong planning and development teams will eventually find that proposals become almost self-generating.

The process I am talking about means more than simply making proposals for federal grants, In part, it is a broad assault on the credibility gap that now hangs between higher education and both the public and the Nixon administration. Higher education's honeymoon on the federal scene is largely over. The colleges now face the challenge of making a solid case for the expanded federal support they want. Like it or not, the challenge boils down to accountability—not to federal agencies, but to the community itself, including the taxpayers, the students, labor, the business community, state agencies, and the legislators.

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THE U.S. OFFICE OF EDUCATION: A STIMULUS FOR EDUCATIONAL DEVELOPMENT

The question of how the Office of Education stimulates educational development can be answered in six words—by money and by withholding money.

Some may wonder why certain proposals are not funded while those from less creative colleges, less innovative administrators and faculty, and less deserving students are being funded. Some may wonder why the federal government funds a project for up to three years and, when it is ready to become part of the regular curriculum, withdraws the funds.

You are right to wonder, for, after all, it is your money that flows to Washington and back to help run the colleges of this country. Some does flow back. In fiscal 1970 the expenditures for education, kindergarten through college, were $70.6 billion.[1] The U.S. Office of Education budget in 1971 was $4.4 billion.[2] For 1972, the appropriation is $5.1 billion.

People, as well as money, flow in and out of Washington—educators with proposals, public and private consultants, planners, evaluators, project readers, advisory committee members, researchers, and others arrive and leave each week.

WITHHOLDING OF FUNDS

A few comments on the withholding of funds may help in writing future proposals. The community colleges need a great deal of assistance in this, for they lack funds for research and personnel trained in proposal writing. The competition from universities, who for years have had the formula for getting grants, may be working against them. The few principles that follow may help, as common weaknesses show up in the proposals.

Frank Newman's *Report on Higher Education*[3] is highly critical of teaching methods, particularly the lecture method. At a recent conference in Northern California, Newman stated that 90 percent of the classes are still being taught by the lecture method. Numerous articles also criticize it as not being innovative, creative, or even renovative. Yet proposal after proposal contains statements such as:

[1] The Commissioner's Annual Report, submitted to the Congress by the Commissioner of Education, March 31, 1971, p. 7.

[2] *Special Analyses, Budget of the United States Government*, Fiscal Year 1972, p. 117.

[3] Frank Newman, *Report on Higher Education* (Washington, D.C.: U.S. Department of Education, 1971), 130 pp.

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This project will be taught by means of intensive lectures, followed by short discussions.

This course will be taught by in-depth lectures.

Outside lecturers will form the basis of this course.

Many projects show evidence of mere tinkering rather than bold change in teaching or curriculum or evaluation. The readers of the proposals look askance at projects like those already in the curricula of other colleges. One project, for instance, wanted over $1.5 million for a new college where the administrators would make *all* the decisions, the faculty would have *no* tenure, and the students would *study* and *learn* the projects selected for them by the project director. Evaluation techniques are important in determining whether the proposal is any better than something already being done.

The proposal writer should avoid denigrating the community college student and faculty, as in the following excerpts:

The junior colleges stress only skill-training.

Junior college students are all low-level academically.

All community college teachers have been recruited from junior and senior high schools and they do not know how to teach on the college level.

He should offset such negative statements with positive ones on community college education.

Assuming that the project will *cure all* the problems of learning weakens the chances of getting funds. Also unattractive are those five-day conferences, where the faculty listens to lectures on the culture of the American Indian, and completes the conference with an expensive ten-day trip to East India at the government's expense. On this point, the American Indians are a bit sensitive. Recently an Indian reservation wanted help to establish a community college, and asked for a college-educated Indian to help in the educational program. They were sent a Pakistani with a Ph.D. from Oxford!

The breakdown of the budget and the credentials of the participants in the projects are important. If the per capita costs run over the state average, questions are asked about the overhead. The salary of the project director should be in line with other salaries in the college.

If the project has many pages, funding is hard to come by, since confusion is implied in the length, the many pages of philosophy, statements on non-connected programs, and the lack of a tight design. The various agencies have certain priorities; the proposal writer should be aware of them and write directly to the point.

Withholding funds from ineligible institutions, and from degree mills, is a function of the Accreditation and Institutional Eligibility Staff in the USOE. (Fifty-nine accrediting agencies and associations are currently recognized.) The National Advisory Committee on Accreditation has begun action against professional schools that discriminate against women in *their admission practices.* The USOE also withholds funds from colleges with a record of poor management, or where enrollment trends indicate a need for continuous massive federal support.

By withholding funds from poorly designed projects, degree mills, and poorly

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run colleges—more aid is available for the well-designed innovative project, and for the college with a chance of survival.

FUNDING OR FEDERAL AID

When the Department of Education was established in 1867, its functions by law, were to—

1. collect statistics and facts on the condition of education in the states and territories;
2. diffuse such information respecting the organization and management of schools and school systems, and methods of teaching, as shall aid the people of the United States in the establishment and maintenance of efficient school systems;
3. otherwise promote the cause of education.[4]

Data on higher education were gathered showing—

1. the number of colleges in each state and their admission policies;
2. the number of students, graduates, and professors;
3. the curricula and courses offered, and the equipment of libraries and other material for instruction;
4. what the colleges professed to do, what they really accomplished, and their relationship to professional and private schools.

The National Center for Education Statistics is still carrying on these functions; only a few administrators fail to supply accurate information.

Research in the form of surveys, begun in 1912, is getting increasing emphasis today by the Center of National Education Research and Development. The Center is now *developing* model programs, which the federal government will fund, direct, monitor, and evaluate, and is setting up career educational models for home study, cooperation with business, and a school. It has spent over $700 million on research during the past ten years. NCERD also funds proposals from the schools and colleges in the area of research and development. Within the USOE, *139 programs* offer such funding support.[5] A few of these programs will be mentioned here.

Since the National Defense Education Act of 1958 was passed, more than 2 million students have borrowed approximately $2 billion under Title II of the Act. The loan program is jointly funded by the federal government and the 1,881 participating institutions. Twelve thousand National Defense Fellowships, Title IV of the NDEA, were awarded in 1970 at a cost of $70 million, and 8,600 in 1971 at a cost of $48.5 million. This program is placing increased emphasis on supervised college teaching experience.

Highly prized are the twenty Office of Education Fellowships awarded each year for Washington, D.C., offices. Application must be made through the ten regional offices. They pay $10,000 to $13,000 for a ten-month period, during which the fellows work at formulating policy and drafting Office of Education legislation. They work in at least two offices in Washington; they have special

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[4] 14 Stat. L., 434, March 2, 1867.

[5] A *Guide to O.E. Administered Programs* is issued each year by the U.S. Government Printing Office. Another bulletin, *How the Office of Education Assists College Students and Colleges*, contains more detailed information.

project seminars; they meet with government officials; and they take field trips to various colleges. Although this is not a recruitment program for the USOE, there is a temptation to keep the fellows on in Washington. Guidelines stipulate they are to go out into the field.

A Special Services Program for Disadvantaged Students was started in 1970. Of the $15 million available for community colleges, $2 million went to California institutions. All requests for the available $15 million totalled over $63 million. The Special Services Program, the Talent Search, and the Upward Bound Programs will be placed in the ten regional offices by January 1, 1972. Although these three programs served only twenty-two thousand students last year, the federal government may soon stimulate some of the universities funded for Upward Bound and Talent Search but who, in nine years, have admitted only one or two of the students they recruited.

"Sesame Street," which cost $6.5 million ($1.5 million from the USOE), has been shown to 7 million children. The cost per viewer is $1.29 per year. Its success has encouraged the USOE to help fund an adult "Sesame Street," which is now being prepared.

In June 1970, more than $25 million was allocated to the fifteen regional educational laboratories to help fill the gap between research and classroom improvement. These laboratories have trained hundreds of junior college instructors in a new approach to designing and accomplishing specific classroom objectives.

With an Educational Resources Information Center, under the direction of Arthur Cohen, located at UCLA, mention must be made of the important work of ERIC. The nineteen clearinghouses throughout the nation, all supported by the Office of Education, report research through professional journals to more than half a million educators and analyze urgent educational problems and their solutions for use by educational decision-makers.

The Division of University Programs in the Office administers Part E of the Education Professions Development Act. *Seventy-four percent* of the available $3.5 million was given to junior college personnel in 1971 to assist higher-education institutions in training persons serving or preparing to serve as teachers, administrators, or educational specialists in colleges.

The *Division of College Support* administers the funds for special projects, institutes, and short-term training programs under Part E. The priorities for 1969 and 1970 were—

1. to train teachers, administrators, or education specialists to serve in two-year colleges;
2. to offer programs for personnel to serve minority and low-income college students;
3. to train personnel to serve developing institutions.

This summer, John Lombardi and B. Lamar Johnson have been conducting Division Chairman Leadership Development seminars under this program. Four community colleges (Orange Coast in California, Cuyahoga in Cleveland, Central Piedmont in North Carolina, and Seattle Community College) have been the centers for these programs, which were started by the League for Innovation in the Community College last year.

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A similar EPDA program, *Community Junior College Facility Planners Institute*, is being planned in four colleges—Dallas County Junior College District, Metropolitan Junior College in Minnesota, College of Allegheny County in Pennsylvania, and Portland Community College in Oregon. Subjects will include: comprehensive master planning, influence of educational methodology, architectural programming, site selection, use of existing community resources, facilities information, and management systems.

In 1969 and 1970, ten thousand people were trained through short-term projects under Part E of the EPDA. Many EPDA projects could not be funded, however, for in 1969 only $4,700,000 was available toward requests totalling $34 million. In 1970, $5 million was available to fill requests totalling $26 million. The publication "Higher Education Personnel Training Program—1972–73" gives the institutes, short-term training programs, and special projects by state, institution, and amount.

The importance of the Student Financial Aid Officer is being recognized by the federal government. In response, the Division of Student Financial Aid, with the cooperation of the Division of College Support, has funded Green River Community College, Washington, to conduct a two-week institute for improving student financial aid practices in community colleges. Additional two-day workshops for fiscal officers and Student Financial Aid Program personnel will be held in the spring of 1972, under a contract with USOE and the National Association of College and University Business Officers.

The student financial aid package, college work-study, educational opportunity grants, NDEA loans, and insured loans help keep the students in college. More than $13.5 million was given to the students under the opportunity grants, and approximately $35 million went to college work-study programs in 1971.

Title III of the Higher Education Act provides assistance to developing institutions to strengthen their academic, administrative, and student service programs so that they may participate adequately in the higher education community. Funds are available for cooperative arrangements, teaching fellowships, and professor emeritus awards. Cooperative arrangements include exchange of faculty or students, visiting scholar programs, introduction of new curricula and curricular materials. Of the annual appropriation, 23 percent is allotted to institutions with two-year programs. One restriction under this Title is that the school must have been in existence for five years. In 1971, $7 million was allocated to community colleges. The AAJC has been giving valuable assistance to a number of these developing institutions.

The Teacher Corps is a nationwide effort to give economically poor students a better education. It helps universities improve the ways they *prepare* teachers and helps local schools improve the way they *use* teachers. It gives poverty-area schools, their communities, and nearby universities the chance to work together to plan and operate innovative programs for the training and use of teachers. The heart of each program is its Teacher Corps team— committed young Americans who have volunteered for two years of service in poverty classrooms.

Nearly all universities working with the Teacher Corps report that their programs have resulted in change. Most often these changes have meant new curriculums, but many colleges have extended the internship approach to all

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student teachers, have revised their admission policies, have moved toward granting degrees based on demonstrated teaching competency rather than on an accumulation of course credits, and have greatly increased their contacts with the local schools and their communities. The focus on low-income children's needs by the Teacher Corps has shown the need for special training for students seeking assignment to low-income schools.

For many schools, the Teacher Corps has revitalized ties with the community and enabled them to influence teacher education directly, and to introduce new courses and curriculums, differentiated staffing, individual instruction, and other educational advances—not just for Teacher Corps members but for regular teachers, student teachers, and teacher aids as well.

SPECIAL CONCERNS

The current commissioner, Sidney P. Marland, has established offices to coordinate problems in specific areas:

> African-American Affairs
> American Indian Affairs
> Students and Youth Affairs
> Spanish-American Affairs
> Nutrition and Health Services
> Equal Employment Opportunity
> Community Colleges

These are referred to as advocacy offices, since they do not have funds to distribute.

CONCLUSION

Since its establishment in 1867, the U.S. Office of Education has been the federal conscience of education in the nation. Until the 1960s, it was thought that the federal government should promote higher education but should not provide forceful leadership.

Sundquist and Davis, in *Making Federalism Work*,[6] have stated the three successive phases in accepting federal aid:

1. The problem is first seen as *local,* outside the national concern.
2. As it becomes clear the state cannot solve it unaided, federal aid is sought, but the problem remains a local one,
3. The problem is recognized as not local at all, but as national, requiring a national solution.

Massive amounts of legislation attempted to correct the education imbalances within society, and the emphasis in USEO changed from statistics gathering to operations and fund dispersing.

For the 1970s, "redirection, change, reform" may be applied to the attitude of the federal agencies. This shift is reflected in renewed emphasis on drug-abuse education, increased federal support of private colleges, management reform, accountability in the classroom, performance contracts, model programs, career

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[6] James L. Sundquist and David W. Davis, *Making Federalism Work* (Washington, D.C.: The Brookings Institution, 1969).

education, increased attention to minorities and the disadvantaged, recognition of TV as the other real world, continuing education, and educational technology.

In 1867, the 4 employees in the Office of Education had a budget appropriation of $12,000. By 1950, the staff had increased to 314 and the appropriation to $2,178,600. Today the Office has 3,300 employees and the latest appropriation budget signed is $5.1 billion.

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THE FOUNDATION: A STIMULUS FOR EDUCATIONAL DEVELOPMENT

The private foundation in the United States is a social device not too well understood, even by those educators who deal with it regularly when they seek financial assistance for particular aspects of the educational enterprise. Let me share some thoughts about foundations, their role in society, and their relationship to education, as illustrated by the programs of the W. K. Kellogg Foundation.

The popular image of the foundation is well described by the old saw that defines it as a body of money entirely surrounded by people who want some of it. It is my impression that many people consider a foundation a mother lode that exists simply as a challenge to individuals and institutions to mine it with the most appropriate tools and correct techniques. However, it is my thesis that, in addition to its best-known activity of grant making, a foundation performs unique roles in our society that multiply many times the value of its financial assets. To illustrate, I will place the roles of the foundation under three headings. First, it should be a perceptive *interpreter* of the social scene and of the implications for positive developments in education, health care, the arts, or any other concern that the individual foundation has selected for its area of emphasis. Second, the foundation should function as a *catalyst* for the problem solving that is at the heart of meaningful social progress. Third, located in a strategic position to monitor innovations for others seeking financial support, the foundation should serve as an *idea broker*. While foundations undertake many other roles, I will confine by remarks to these three—interpreter, catalyst, and idea broker.

To illustrate how foundations serve these roles, I will turn to the one I know best, the W. K. Kellogg Foundation, even though equally appropriate examples abound in other major foundations.

THE FOUNDATION AS INTERPRETER

One early conclusion of the Kellogg Foundation, based on observation, was that education is not just for youth but is a lifelong process, which must be assisted in an organized way even after the pursuit of formal education and degrees is far behind. This conclusion and subsequent convictions of Foundation personnel about the importance of continuing education were based on work in the 1930s in seven southwestern Michigan counties to improve the quality of life by strengthening community institutions related to health, education, and recrea-

tion. In helping to establish county health departments, and in other ways bringing these counties up to date, the Foundation soon realized that community leaders needed access to training opportunities through continuing education. The term *continuing education* was actually used for these pioneering efforts that permitted everyone—physicians, dentists, nurses, school superintendents, teachers, school boards, church pastors, dairymen, veterinarians—to take short courses at various universities and colleges. (I do not know of any earlier use of the words *continuing education* to indicate education for the adult throughout his lifetime.)

Thus was born a central program emphasis of the Kellogg Foundation. It has persisted over the years, modified, of course, as social needs and institutions have changed. One phase of this long-time interest can be studied in this book *Continuing Education in Action: Residential Centers for Lifelong Learning*, which describes ten Foundation-assisted university Continuing Education Centers that serve as national models. The latest manifestations of this enduring interest in continuing education are the community services project of the American Association of Junior Colleges and a university-based community college community service leadership training program, to which I will refer later.

Another example of the Foundation's role as educational observer and interpreter is its early identification, along with a number of other individuals and organizations, of the key role the community college would play in the decade of the 1960s. The Foundation correctly anticipated that the essentially elitist approach to higher education characterizing much college and university education would be significantly altered by a general acceptance and an explosive growth of the "people's college." This conviction led to a series of projects: plans to strengthen the American Association of Junior Colleges, the creation of community junior colleg leadership training programs in twelve universities, the introduction of nursing and other health careers into the community college setting, and many similar developments.

Several other examples of Kellogg Foundation observations that have led to action programs are: (1) the now obvious shift of training programs for a variety of health careers from the apprenticeship-like system long prevalent in hospitals into the mainstream of higher education; (2) the need for more curriculum flexibility in higher education with more opportunities for short courses and around-the-calendar educational opportunities, as well as a growing demand for "cycling" or moving easily from the educational world to the world of work and back again to the classroom when most appropriate; (3) a pressing need for the private liberal arts college to abandon its traditional, isolated role in society before it becomes the dodo of American higher education.

THE FOUNDATION AS CATALYST

The intensification of efforts to modify and dramatically change our social institutions has called for more and more financial aid to assure that the objectives are soundly conceived and the processes effectively executed in response to social issues and problems. Many planners look to government as the principal support for social and educational innovation, but the governmental process often raises an insurmountable barrier to the early trial of new educational solutions.

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Support for educational programs from govermental sources may only assist activities previously approved by legislators, often through the process of legislative compromise. Once the bill pertaining to educational support becomes law, expenditures must be made within this legal framework, regardle-- of shifting needs and changing demands fro-- '' field. Legislative revisions are sometimes slow and unpredictable. The go· ntal budget is generally fixed for at least a year with extreme rigidity, a nmitments for more than one year are sometimes uncertain. Administration of appropriated funds is often subject to the same political pressures as the original legislation. If the governmental support program challenges the status quo too radically or incurs the wrath of potent pressure groups, regardless of its overall benefit to society, it may soon find its appropriations in jeopardy.

In contrast to these strictures, the foundation has no constituency, no fixed budget, and no rigid legislative directive to confine it. A foundation can make decisions based on the demonstrated need for pioneering or on experimental projects for the general benefit of mankind. It can shift focus as the facts warrant. This is not to say it is free to operate without regard for other social institutions. The federal government sets specific ground rules for foundation conduct. Full disclosure of all its activities is a basic tenet, and the trustees must operate within the framework of the original charter. Nevertheless, flexibility, where indicated, is the hallmark of the foundation. This characteristic should govern the different kinds of educational assistance offered by government and foundations.

The federal government has massive resources not available to foundations, but it cannot be as experimental or take as many risks. The foundation, with relatively limited resources, often supports pioneering efforts that are followed by governmental support once they have been successfully tested.

The pressure for change seems to increase each day and the demands on foundation staff, Officers, and trustees mount proportionately. The process of problem analysis and of social and educational prognostication is challenging and often reminds me of Robert Frost's description of education. "Education," said he, "is the ability to listen to almost anything without losing your temper or your self-confidence." Perhaps John W. Gardner has best expressed the dynamics of the pressures faced by foundations to support more and more activities brought to them by self-appointed change agents. He points out that

today any bright high school student can discourse on social forces and institutional change. A few centuries ago, even for learned men, such matters were "given," ordained, not subject to analysis, fixed in the great design of things. Up to a point the new views were immensely exhilarating. In the writings of our founding fathers, for example, one encounters a mood approaching exaltation as they proceed to shape a new nation. But more recently another consequence has become apparent: the new views placed on enormous—in some instances, an unbearable—burden on the social structures that man has evolved over the centuries. Those structures have become the sole target and receptacle for all man's hope and hostility. He has replaced fervent prayer to God with a shrill cry of anger against his own institutions.
Men can tolerate extraordinary hardships if they think it is an unalterable part of life's travail. But an administered frustration—unsanctioned by religion or custom or deeply rooted values—is more than the spirit can bear. So increasingly men rage at their institutions. All kinds of men rage at all kinds of institutions, here and

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around the world. Most of them have no clear vision of the kind of world they want to build; they only know they don't want the kind of world they have.[1]

Given the resulting endless stream of educational problems, let me cite selected examples of how the Kellogg Foundation has functioned as a catalyst by helping shape meaningful new approaches and providing financial assistance for implementation by other institutions and organizations. From over 250 current projects being assisted by the Foundation, typical examples include several that are community-college related.

In the forefront of national contemporary problems is the outmoded system of operating our state courts. The first and most obvious attack on the problem was to provide a mechanism for educating newly appointed judges so that they in turn might prepare to improve the system. For this, the National College of State Trial Judges was created with Foundation assistance by groups associated with the American Bar Association. A logical expansion of this effort has been the creation of a National Study and Services Center for State Courts, which is working with individuals serving as court administrators to bring technological developments, modern management techniques, and social service concepts to the administration of state trial courts, with a view to making them more effective and efficient.

Another example involves the "empty-nest syndrome" facing so many mature women in our modern society. The unfulfilled housewife, with her mothering days behind her, is familiar to thoughtful observers of the American scene. In response to this problem, the Foundation has helped develop a prototype Continuum Center for Women, now widely known and considered an important model for providing university-based continuing education for women. It is providing mature women with a unique system of continuing education designed for their special needs. Based on an analysis of "The Seven Stages of a Woman's Life," a plan has been inaugurated to provide testing, counseling, education, and placement for women seeking fulfillment through a new career outside the home.

Predominantly Negro colleges have made and continue to make an important contribution to American higher education. However, as opportunities for black students have expanded dramatically with recent social changes, the colleges find it difficult to broaden their curricula to include more than preparation for teaching and other traditional careers open to black college graduates. The Foundation, working with many of these colleges, has assisted them by developing or improving curricula and strengthening faculty resources in such fields as engineering, business administration, social science, library science, and basic natural science.

Community colleges are making an important contribution to nationwide education for health careers, but many problems stand in the way of realizing their full potential for the preparation of allied health workers. For instance, many community colleges cannot or should not develop instructional programs in health technologies even though they see a great need for such technicians in their community. In some instances, the number needed is too small to justify the expense of developing a special curriculum. In other cases, they have no

[1] John W. Gardner, "Uncritical Lovers, Unloving Critics," commencement address, Cornell University (n.d.), p. 3.

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clinical facilities nearby to use as the extended campus necessary for many health careers. Also, health technology instructors are in short supply. Therefore, they would not have adequate faculty to staff programs if all the community colleges being asked to inaugurate these programs actually decided to do so. The Foundation has aided a number of educational programs seeking solutions to these problems.

A joint effort between a university medical center and seventeen junior colleges uses a regional technical institute for health occupations at the medical center. The institute represents a pilot effort to concentrate portions of the community college health technology programs near extensive clinical facilities. The seventeen community colleges recruit students locally for health technology training and provide and preclinical and general education aspects of the two-year program. After a semester at the home college, students move to the technical center for two semesters, then return to their home campus for the final semester. Hopefully, moving the students back to their community will result in more of them taking employment in their local community health facilities. The general problem of how to meet the severe shortage of allied health workers throughout the nation is being approached with Foundation aid from another direction. Several universities are developing Allied Health Instructional Personnel Centers. These will prepare both teachers and leadership personnel and operate as consortia with nearby community colleges to provide practice teaching and leadership interships. They will also help to define the most crucial instructional needs.

Another response to an emerging educational issue is a national program on the community service dimension of community colleges. The Community Service Project of the American Association of Junior Colleges has created a national advisory committee to assist in providing guidelines and advice, and to sponsor national and regional conferences and institutes to develop and inspire new leadership—both administrative and community. The project provides for the identification and use of consultants in the community service area and makes available case studies of successful projects. In another approach to the problem, a university community service leadership training program has been created both to prepare community service adminstrators and to conduct surveys of community needs and summer workshops. In coordination with the university, three nearby community colleges have developed model community service programs with Foundation aid. These models also serve as internship settings for the leadership training program.

A final example of the partnership between foundations and educational leaders is Project Focus. This undertaking concerns long-range planning for anticipated educational developments. Project Focus anticipates that the increase in enrollments at public community colleges in the next decade may be comparable with that of the last ten years, during which enrollments doubled. Where this thriving program is headed and what student population it will serve is already being shaped by current forces. The project will study the long-range goals and present practices of the nation's community and junior colleges and recommend alternative strategies as guidelines in the coming decade. The hope is that the project will aid the people responsible for directing the nation's effort

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in achieving the unique social purposes of this sector of postsecondary education. The extent to which community colleges reach out to a cross-section of students through their open-door policies, technical education programs, career guidance procedures, college transfer programs, and adult education efforts requires careful appraisal now if desired changes are to be achieved ten years hence.

THE FOUNDATION AS IDEA BROKER

Foundations serve an important role in disseminating ideas. Last year, the Kellogg Foundation had to decline 2,241 written requests for financial assistance as well as many informal verbal proposals. Many of these applications were on behalf of projects outside the scope of the Foundation's present emphasis. In addition, many relevant requests were declined because of limited resources and prior commitments. Many innovations were suggested in written proposals, through informal telephone requests, or in personal interviews. Reports of progress from Foundation-supported projects are often packed with new ideas, and the field study of potential Foundation support for a project fequently uncovers exciting developments in education. Thus, the Foundation and its staff are the confluence of streams of ideas and knowledge on who is doing what and where. To help reduce duplication of effort, Foundation personnel try to refer those people with ideas to others who have already done pioneering work in the field and to help institutions identify experts who have become known to the Foundation over a period of years.

SUMMARY

How do private foundations provide a stimulus for educational development? They can support promising new educational ideas without regard to any philosophical or procedural "party line." They can be especially responsive to imaginative new approaches to social and educational problems. They serve as valuable "idea brokers" without regard to political or geographic boundaries. Although they possess relatively limited resources, they can assist a variety of approaches to an educational problem and help assure maximum impact. They can often provide wide dissemination of information about new methods and activities successfully tested in pilot programs. One of the most valuable services of all granting agencies is that of program critics. They force the institution with an idea or a plan to set it forth in clear and practical terms and to consider thoroughly its social implications.

The W. K. Kellogg Foundation will always have concern for educational innovation. The information explosion, technological progress, automation, cybernation, social, economic, and physical mobility, vocational and avocational change, the longer lifespan, and increasing leisure time—all are insisting on the concept of education as a dynamic process. To cope with these constantly changing economic and social forces, individuals, communities, and their educational systems must have the ability to change readily with the times. The Foundation hopes it can help.

SECTION III
Educational Development in Action

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STUART R. JOHNSON

THE EDUCATIONAL DEVELOPMENT OFFICER IN ACTION

THE EDUCATIONAL DEVELOPMENT OFFICER—A NEW ROLE

The role of the educational development officer (EDO) evolved from applying a systems approach to instruction. We will now examine the EDO in action. Recently a small consortium of twenty-one community colleges in North and South Carolina and Virginia agreed to work toward self-instructional programs that would allow students to enter or exit any time of the year and would allow for self-paced learning. Staff members of the Regional Education Laboratory, now the National Laboratory for Higher Education, helped the consortium in its curricular reorganization efforts.

The expectation of the consortium was that research-based decision making would provide sufficient impetus for instructional (and institutional) reorganization, but it soon became apparent that one reading of, for example, Bloom's article "Learning for Mastery"[1] did not produce instant converts to self-paced instructional procedures. In retrospect, this failure of the traditional institutional research approach as a generator of change should shock no one. Even those university researchers who established certain behavioral-science principles have failed to modify instructional practices in the very institutions where the research was done.

For example, knowledge that reward is more effective than punishment in producing learning has eliminated neither the red-penciling of errors on student papers nor the cataloging of student failures on college transcripts. Knowledge that learning takes place better in fact-to-face interaction with frequent, intense, two-way communication has not eliminated formal, one-way and distant instructional procedures. We in college education appear to resemble the farmer who supposedly told the agricultural agent, "Don't tell me about any new improved farming methods—I already know how to do twice as much as I am doing now." In describing program development efforts, Smith noted another false assumption: that people make decisions rationally on the basis of objective facts.[2] This may account for the observation that institutional research officers' jobs tend to degenerate into grantsmanship or the filling out of forms.

In searching for alternate approaches to generating instructional reorgani-

[1] Benjamin S. Bloom, "Learning for Mastery," Evaluation Comment (Los Angeles: UCLA Center for the Study of Evaluation), I, No. 2 (May 1968)

[2] C. E. Smith, "Difficulties in 'Helping' the 'Disadvantaged,' " in Oscar G. Mink and Bernard A. Kaplan, America's Problem Youth: Education and Guidance of the Disadvantaged (Scranton, Pa.: International Textbook Co., 1970), p. 26.

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zation, it is tempting to rely on primitive leadership theories such as trait ("great man") theories. The reasoning is that perhaps we could find compelling and energetic persons with charisma to influence key decision leaders in each institution, but, even if we could produce institutional change through such people, we would have no replicable mechanism for other schools to use.

As a result, the role of the EDO that emerged in our program was sharply skewed from both the traditional institutional research officer and the charismatic leader. We decided to focus every effort on trying to change classroom practices. *The educational development officer thus became the on-campus agent who would stay close to the faculty to generate and support desired changes in instructional practice.*

OPERATIONALLY DEFINING THE ROLE OF THE EDUCATIONAL DEVELOPMENT OFFICER

The last two years of the program have seen a fairly high turnover in the group of EDOs representing the schools in the consortium. Some turnover was due to exploratory participation by only marginally interested institutions and some to individual changes in job assignments or entry into doctoral programs. However, some generalizations about the EDOs are possible.

A few are deans of instruction at their own institutions. Most are teachers with subject-matter training. They are mostly young, personable, seemingly enthusiastic about the program, energetic, and good at communicating. The consortium schools vary in degree of interest: in some, maximum support comes from the board of trustees and the president; in others, faculty and EDO interest exceeds that of the dean of instruction and president. For this diverse group, definition of the educational development officer role and how he could facilitate the development of self-instructional procedures on each campus was clearly needed. He was thus defined as someone with the following qualifications—

1. skill in producing self-instructional packages;
2. ability to influence faculty members into trying to produce packages;
3. ability to use and maintain formative evaluation techniques;
4. ability to document program impact.

Self-instructional training materials were developed to help the EDO acquire these abilities. The materials themselves best describe the role of the educational development officer in action.

Skill in Producing Self-Instructional Packages

The training materials are the same as those used in workshops to train the faculty. In fact, it is strongly recommended that all key administrators go through the basic faculty training workshop. (As one faculty member put it, "How can he [the Dean] understand my problems if he's never even made a package?") The objective is that each participant will produce a short self-instructional package[3,4] that meets the following criteria:

1. It will be usable with real junior college students.

[3] Stuart R. and Rita B. Johnson, *Developing Individualized Instructional Material* (Palo Alto, Calif.: Westinghouse Learning Press, 1970).

[4] Rita B. and Stuart R. Johnson, *Improving Instruction* (Durham, N.C.: Regional Education for the Carolinas and Virginia, 1971).

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2. It will include short steps, clear cognitive *and attitudinal* objectives, practice exercises for *each* objective, post-test *with scoring key,* and sufficient directions to carry students through the package without the teacher being present.
3. It will have been tested on a small group of students and any needed revisions planned.

Ability to Influence Faculty

The series of four booklets used to develop this ability focuses on leadership skills and the need for a supervisory staff to attend to the emotional or attitudinal components of leadership. The booklets are called The Affective Series.[5] The objective of each are summarized below:

1. *Leading.* The EDO—
   a. can analyze a supervisory situation and determine whether the focus is on the task, on personal feelings, or on control;
   b. can describe his own leadership style and detect any discrepancy between his own and the optimum style;
   c. can modify his own leadership style when working with teachers.

2. *Dealing with resistance.* The EDO—
   a. can identify how supervisors squelch expression of personal feelings;
   b. can recognize negative feelings experienced by resistant persons;
   c. can respond in new ways that foster expression of feelings.

3. *Interpersonal communication.* The EDO—
   a. can communicate in a congruent, first-person, and present-oriented manner;
   b. can accurately receive the feeling components of others' communication.

4. *Risk-taking.* The EDO—
   a. can distinguish between behavior that tends to place blame or control elsewhere and behavior that is self-directed or autonomous;
   b. can develop new risk-taking responses as a supervisor that are intended to foster self-direction in others.

The affective factors and leadership model examined in this series were not randomly extracted from the literature—they emerged from extensive workshop experience with faculty members as most effective in generating change in the faculty.

Ability to Maintain Formative Evaluation Technique

The EDO must also help evaluate and revise the self-instructional materials developed for the junior college students.

One training booklet, *Selection of Instructional Variables in Light of Learner Characteristics,* is meant to assist the EDO to

suggest insertions or revisions in instructional materials before tryout.

[5] Rita B. Johnson, *The Affective Series* (Durham, N.C.: Regional Education Laboratory for the Carolinas and Virginia, 1971).

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During tryout, the booklet, *Objectivity in Data Gathering*, teaches the EDO to
propose guidelines and questions to an instructor to increase objectivity in data
gathering during student interviews.

After tryout, the instructor must interpret certain data to guide his revision. The
booklet, *Revising Instructional Materials in Light of Tryout Data*, teaches the
EDO to assist the instructor in—

1. locating the inadequate portions of the instructional package;
2. discriminating between inadequate *test items* ...d inadequate *instruction*;
3. making the revisions in ways consistent with the data.

It should be noted that systematic and on-going revision of instructional
materials, based on empirical effectiveness data, is the single most important
aspect of the program. We already *have* inadequate instruction, which is *not*
being revised!

Ability to Document the Impact of the Program

As more instructors are drawn into packaging portions of their course, an
increasing proportion of the institution's curriculum becomes available to the
students on a self-paced basis. The newer "criterion-referenced approaches"[6] are
useful both in evaluation for package revision and in documenting the effective-
ness of the overall program. The criterion-referenced approach simply tabulates
accomplished learnings:

Criterion-Referencing	vs.	Norm-Referencing
These puppies can jump over this fence; however, these other puppies cannot yet jump over.		These puppies can jump 6 inches higher over this fence (Grade of A), while these can jump only 3 inches higher (Grade B), ... etc.

Instead of comparing traditional and packaged programs, the EDO needs only
to measure student learning against the intended outcomes of the course (as
specified in its objectives). Traditionally trained evaluators frequently view this
procedure with alarm even though the rationale is quite respectable:

Evaluation research should concentrate on mapping the outcomes of each pro-
gram. ... You can evaluate how much your experimental program moves the pupil
in various desirable directions *without* using a control group. ... You judge against
your ideal, not against a wooden-legged competitor.[7]

The books in the training series designed to help the EDO document the
program impact are titled:

Program Criterion Measures

Documenting Multiple Effects of Instruction on Learners

Summary Statistics for Documenting Criterion-Referenced Instruction

Validity and Reliability of Tests for Criterion-Referenced Instruction.

[6] W. James Popham and T. R. Husek, "Implications of Criterion-Referenced Measurement,"
Journal of Educational Measurement, I, No. 9 (Spring 1969).
[7] Lee J. Cronbach, "The Psychological Background for Curriculum Experimentation," *Modern
Viewpoints in the Curriculum*, ed. Paul C. Rosenbloom and Paul C. Hillestad (New York: McGraw-
Hill, 1964), p. 24.

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Some important objectives for these training materials are itemized below. The EDO—

1. given a set of curricular objectives, can generate a list of measures of change;
2. given a set of course objectives, can develop agreement with the faculty member over appropriate ways to measure achievement of objectives;
3. can negotiate a content validation procedure among faculty members;
4. can assist in discarding or rewriting test items to make them consistent with criterion-referenced instruction;
5. can compute and graphically display data summaries in ways meaningful to the layman.

Using this operational definition of the role of the EDO in action, we can see if progress toward these objectives has been made during the last two years in the regional consortium schools.

CONSORTIUM ACCOMPLISHMENTS TO DATE

Accomplishments

As mentioned earlier, EDOs have sustained about a 50-percent turnover during the last two years; some schools cooled in interest, while others joined because of high interest. Less than a dozen schools are currently trying to increase the proportion of their curriculum that could accommodate open enrollment procedures.

A few of the EDOs have had as many as 150 hours of training over the two-year period, including institutional research procedures, instructional packaging, and some leadership training. A few have had little more than packaging training and some exposure to criterion-referenced documentation procedures. The first version of the EDO Training Series[8] cited previously will be completed in the summer of 1971.

Most of the EDOs in the active schools have shown considerable leadership.

Exemplary accomplishments include—

1. less punitive grading procedures in some colleges;
2. over 150 self-instructional courses in a number of disciplines, several commercially published;
3. merit pay options available to those faculty members who want to produce packages;
4. some recruitment procedures that now take willingness and ability to package into consideration;
5. a sizable cadre of EDOs and teachers being used nationwide by nonconsortium colleges and school districts for training and dissemination of self-instructional procedures (these people are conducting workshops and taking speaking engagements);
6. a slow reduction of the doubts and reservations of both faculty members and administrators;
7. intra- and interdepartmental cooperation as alternate instructional packages

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for similar concepts have been designed, and as cooperative development of whole courses has occurred;

8. numerous requests from schools outside the region for copies of materials developed on home campuses.

Accomplishments such as these are *not* uniform, nor are they due necessarily to the EDOs leadership. One faculty group, being urged to ask their EDO for help in solving a problem, asked, "Who's he?"

Another need is the systematic revision of instructional packages that have been tried out with only one generation of students. It is difficult to convince the faculty of the need for revision, since so often the first generation of packages produces student achievement well beyond what was expected or what had been achieved with traditional instruction. One college has a built-in package revision on a contractual basis. Teachers are offered $500 to package one course, two-thirds to be paid on its completion, and the remaining third when the course is revised after the first tryout.

EDOs document program impact in two important ways. First, they report the changes in instructional practice, e.g., at the point when 540 of the con-sortium faculty had been trained (30 percent), over 100 entire courses were being packaged. Extensive information is maintained in the computer on how the packaging is proceeding, both by school and by subject matter.

The EDOs also provide program documentation as they report changes in administrative and institutional policies, changes that normally accompany a shift to packaged curricula. For example, institutional moves toward flexible scheduling and nonpunitive grading procedures are recorded. Several schools have removed D's and F's and no longer convert I's to F's.

Problem Areas

External agents who would like to assist the EDO in his efforts see several recurring problems.

First, it is difficult to convince the EDO that package revision and program documentation are important. Apparently in most institutions, the EDOs are burdened with requests for help with tasks not so directly related to instruction. Documentation of the effectiveness of the college's major mission (i.e., instruc-tional effectiveness) seems to lag behind the normal bureaucratic maintenance activities.

A second problem is the perceptions of the EDOs, who appear to feel both role conflict and role ambiguity. Some report that they feel helpless in minor administrative power struggles, and that their efforts are at odds with the dean of instruction and, occasionally, with the president. All report a need for assistance in the human-relations area. (It is probably significant that nearly all EDOs have asked for help in the form of external intervention by the Laboratory staff.)

AN EFFECTIVE ACTION PROGRAM FOR THE EDUCATIONAL DEVELOPMENT OFFICER

A *general principle:* If a college wishes to concentrate on its major mission of upgrading instruction, all other institutional activities must be consistent with it.

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1. The institution must give primary importance to all measures of instructional effectiveness.

   The board of trustees should request regular reports on as many measures of curricular impact as possible. Cohen and Roueche[9] have been explicit on this point. They evaluate the quality of educational leadership in terms of institutional accountability for student learning. Metfessel and Michael provide specific suggestions for the measures available.[10]

   Such data gathering should be cooperatively planned and executed by both administration and faculty for measures taken both *on* and *off* campus. An external educational auditor should probably spot-check and validate the data gathered on instructional effectiveness.

   Ideally, instructional effectiveness should be discussed regularly by state legislators, boards of trustees, administrators, and instructors to determine whether or not the students have succeeded in learning what was intended.

2. Administrators should reward effective instruction. A list of reinforcers has been compiled[11] by the author; they represent simple ways in which administrators can facilitate the efforts of instructors who commit themselves to securing learning in their students.

3. The clearest conclusion is: If you want instruction to succeed, make it replicable (i.e., package it). Commit yourself to the position that, if an instructional program fails, *it will be revised*. This will assure its eventual success.

SOURCES OF SELF-INSTRUCTIONAL MATERIALS

1. *Faculty Training Series in Self-Instructional Packaging*
   Each new version is a revision of the preceding version:

   Version 5: *Developing Individualized Instructional Materials*, with accompanying *Institutional Support Manual*, Stuart R. and Rita B. Johnson,

   Westinghouse Learning Press
   2680 Hanover Street, Palo Alto, Caif.   94302

   Version 6: *Improving Instruction*, series of five booklets and audiotape, Stuart R. and Rita B. Johnson,

   National Laboratory for Higher Education,
   Mutual Plaza, Durham, N.C.   27701

   Version 7: *Assuring Learning: Up the Up Staircase*, single manual, Stuart R. and Rita B. Johnson,

   Self-Instructional Packages, Inc., P.O. Box 2009,
   Chapel Hill, N.C.   27514

[9] Arthur M. Cohen and John E. Roueche, *Institutional Administrator or Educational Leader?* ERIC Junior College Clearinghouse Monograph No. 5 (Washington, D.C.: American Association of Junior Colleges, 1969).
[10] N. S. Metfessel and W. B. Michael, "A Paradigm Involving Multiple Criterion Measures for the Evaluation of the Effectiveness of School Programs," in *Educational and Psychological Measurement*, 1967, pp. 27, 931—43.
[11] Stuart R. and Rita B. Johnson, "Institutional Support Manual," to accompany *Developing Individualized Instructional Materials* (New York: Westinghouse Learning Corporation, 1970), pp. 5—6.

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2. *Affective Series*
    1. Leading
    2. Dealing with Resistance
    3. Interpersonal Communication
    4. Risk-Taking

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3. *EDO Training Series*
    1. Objectivity in Data Gathering
    2. Selection of Instructional Variables in Light of Learner Characteristics
    3. Revising Instructional Materials in Light of Try-out Data
    4. Program Criterion Measures
    5. Documenting Multiple Effects of Instruction upon Learners
    6. Locating, Interpreting, and Displaying Research Evidence
    7. Summary Statistics for Documenting Criterion-Referenced Instruction
    8. Validity and Reliability of Tests for Criterion-Referenced Instruction
    9. Sampling
  10. Information Technology Decisions for Instructional Improvement

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WALTER E. HUNTER

BUDGETING FOR EDUCATIONAL DEVELOPMENT: AN EIGHT-YEAR REPORT OF EXPERIENCE FROM ST. LOUIS

The policies and operations of the Junior College District of St. Louis–St. Louis County, Missouri, emphasize catalyzing the change process. The board of trustees allocates an additional 4 percent of the total faculty salary budget to underwrite faculty-generated research and development. This enlightened policy is a basic as the following beliefs about faculty and administration:

1. Productive ideas and energy needed for meaningful change may be unrecognized and untapped within the college staff. Teachers and counselors are most closely acquainted with college operations, and this familiarity is requisite to change.

2. College administrators can be sensitive to ideas generated by the faculty and, when they listen, the faculty member is encouraged to further develop his idea. If the idea persists, "green lights"[1] go on so that a plan for research and/or development may result.

3. Meaningful and progressive change is the result of a carefully nurtured climate of support providing time, facilities, materials, and financing.

LIMITATIONS

This paper describes the impact of eight full years of encouraging faculty-generated research and development in St. Louis. It will undoubtedly fall short of its goal insofar as the easy descriptions must represent reduced data, *ex post facto* descriptions, and second-party observations. Probably the real impact of these exciting eight years in St. Louis lies in the irreversible changes in the individuals undertaking the hundreds of projects. The writer believes that this immeasurable, and probably indescribable, change within the many individuals has—

1. significantly improved the learning climate in the district's classrooms, lecture halls, and laboratories;

2. helped the district rise to a prominent position among institutions of higher education;

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[1] Walter E. Hunter, "At St. Louis: A Green Light Climate for Innovation," *Junior College Journal,* March 1969, pp. 15–17.

3. helped the district maintain the strong support of the total St. Louis community;
4. helped to maintain *high* faculty morale and *low* faculty turnover.

OBSERVATIONS AND TRENDS

A search of the library files at the central office reveals that 227 projects (approximately 60 percent of the completed projects) have been cataloged and are available on microfiche. These recorded projects represent about eight hundred weeks of faculty time and an investment by the district of more than $270,000. District records show that more than $520,000 has been budgeted for innovation and educational development during the eight-year period.

If the projects cataloged as of May 1971 represent the entire R&D effort in the district, they attest to a well-balanced effort. Table 1 shows that most projects were in the humanities-English divisions (29 percent). The smaller percentages of projects in the social science–business area (15 percent) and the career-entry (technical) area (12 percent) probably indicates less pressure for change in these areas during the past several years. On the other hand, the relatively numerous projects (18 percent) related to developmental subjects reveal the pressure of the open-door philosophy along with the district's commitment to provide programs that meet the entry needs of individuals.

TABLE 1
SUBJECT DISTRIBUTION OF PROJECTS

Humanities-English	80
Science-math-engineering	69
Developmental subjects	45
Social sciences-business	40
Career entry (technical)	34
Other	04

NOTE: Some projects have been classified in more than one area.

Table 2 presents a profile of R&D projects as a function of technique or medium. Balance is again demonstrated in that several projects have been completed in each of several areas. The ninety-four projects completed in the development of courses or curriculum represent about 40 percent of the cataloged R&D effort. They often include the newer media or techniques, but are listed as primarily curricular in nature.

To date, at least thirteen faculty projects have produced manuscripts that have been selected by publishers and are now or soon will be in print. In addition, at least five more manuscripts are being prepared for publication. They include texts, programed materials, references, workbooks, tapes, and visuals. Partly as a result of the district's policy of supporting R&D internally, the district has received nearly $1 million in support from foundations (Carnegie, Danforth, Esso, Ford, Kellogg, and several government agencies—*see* Appendix). In nearly every case, one of the granting agency's major reasons for support has been the

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TABLE 2
Media Development (Technique) Distribution of Projects

Course or curricular development	94
Audio-dial retrieval	30
Programed learning-behavioral objectives	30
Visual (film-transparencies)	22
Audio-visual	16
Computers-programming	12
Video-television	11
Audio-tutorial	09
Team teaching	03

district's willingness to budget risk capital to support R&D as an on-going effort.

Eight years of investment in faculty-generated R&D projects reveal some rather interesting facts:

1. *Many of the recognized obstacles to change are overcome;* for example:
   a. Change does not appear to *descend from on high*—rather, faculty feel responsible for change and, of course, accountable for their R&D efforts.
   b. Faculty do not feel *threatened by change* or *isolated* from the mainstream, because they become the essential mover in the change process—not the recipient of change.
   c. Credit is rendered *where credit is due,* publications carry the author's name, reports refer to the innovator, and visitors interact directly with those responsible for the action.

2. *Both the quality and efficiency of teaching and learning are improved:*
   a. More students achieve the course objectives—failure is decreased and thus the cost per unit mastered is decreased.
   b. Faculty, being part of the change process, are therefore committed to quality and efficiency.
   c. Curricular structures are improved by greater relevancy and reflect a better match between college programs and student needs.

3. *Specific problems are solved at the operational level:*
   a. Faculty are recognized as problem solvers.
   b. A cooperative spirit is maintained between faculty and administration.

The district's R&D efforts appear to be responsible for several clearly defined trends:

1. *Toward freeing the learners to learn:*
   a. *Open laboratories* are established, encouraging students to seek answers through firsthand experience.
   b. *Multimode learning* and *variable pacing* are becoming the rule rather than the exception.
   c. *Independent learning* (self-directed) is available in almost every college department.

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d. *Specification of behavioral objectives*—although still rudimentary, outcomes are bei: g specified.

2. *Toward developing strategies that assure student achievement:*
   a. Development of careful *diagnostics* of the learner's initial state by both standard and teacher-made tests.
   b. *Behavioral objectives* are developed so that students may judge achievement.
   c. *Prescriptive learning activities* are devised to fit the learner.
   d. *Continuous, nonpunitive evaluation* recognizes that self-evaluation is most useful.
   e. *Validation of performance* at the time appropriate to the learner recognizes and rewards achievement when it happens.

3. *Toward more careful evaluation of innovation activities:*
   a. Improved experimental design from the start of the experiment assures that the total impact may be evaluated.
   b. Increased self-accountability results in follow-through and continued interest in each innovation.

4. *Toward increased transferability of innovative activity:*
   Recognition that constructive activity is a two-way street demands that results of R&D be shared on a reciprocal basis.

A BUDGET FOR DEVELOPMENT IS RISK CAPITAL

The board of trustees recognizes that money invested in faculty R&D projects may or may not yield measurable, positive outcomes. Thus, a budget for educational development is considered risk capital. Individually—

1. some faculty members have not used R&D money wisely;
2. some have applied for R&D money primarily to provide summer employment;
3. some projects have been poorly designed and carried out;
4. some projects are misleading with respect to outcomes;
5. the transferability of projects and the willingness to share the outcomes of projects are less than desired;
6. some projects proposed are supported by too little research and prior consideration;
7. some projects have lost their first creative support and are now less viable.

These recognized flaws probably will not go away, but the virtues of the program outweigh them in this writer's opinion.

The mix of positive and negative statements about the district's support of faculty engaged in educational development is indicated by responses we received to the following questions:

1. What has been the impact of eight years of district-budgeted "risk capital" for innovation and education development on the total district?
2. What is the future of the district policy of budgeting for R&D?

Respondents included college deans and presidents. In general, college ad-

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ministrators support the concept of risk capital for R&D, but they are careful to point out that a strict cost/benefit analysis may not be salutary to the policy. Let us examine their responses in more detail.

An assured percentage of district funds for R&D has given an aura of innovation, which, in measurable outcomes, is unjustified. If true accountability for these expenditures were demanded, the funds would dry up. Except for a few instances where the researcher/developer has assured the application of the outcome of his project, the results have been submerged and forgotten. Some benefit probably accrues to the researcher, but transfer, at best, is only implicit and indirect—that is, others will not actually use the end results, but they may be motivated to undertake unrelated or uncoordinated projects of their own.

The financial support of released-time and extended-time projects within the last eight years has generally had a salutary effect on the instructional and student service activities of Meramac Community College and the Junior College District (JCD). Various innovations have resulted from this investment: e.g., effective audio-tutorial courses or units in botany, biology, chemistry, and physics; a successful team-teaching venture in the humanities; and other useful instructional aids of substance have been developed through this modest source of funds. Through a long-range, coordinated effort, learning objectives have been developed and used for the various technical courses in nursing education. A functional open "skills" laboratory has been established for student nurses. Successful developmental courses have been established in the mathematics and English departments. All in all, the morale of many creative and energetic instructors has been improved or maintained by these projects. It may well be, howerever, that the great interest in the instructional process—in teaching and learning—shown by key administrators within the colleges and the JCD is the primary reason for providing the risk capital and for having good teaching in general. The emphasis on imaginative and effective teaching has influenced the recruitment of faculty and deans.

In the years ahead, it is my hope that the JCD will continue to emphasize teaching and learning, with all their implications, and will find ways to support projects that promise to help good instructors become better. In times of financial stress, all budget items need solid justification—hence, more precise evaluation of experimental projects will be necessary.

Available risk capital has served in two general ways to set a climate of inventiveness and exploration. First, by sanctioning and rewarding exploration of new approaches, the budget has encouraged faculty to accept innovation as the desired effort. Second, since the promise of possible summer employment has encouraged faculty to look aggressively for viable summer projects, the budget operates as an incentive to imagination. The net result has been a faculty much more knowledgeable about educational methodology, hardware, and even issues than one could find in a college without such funds. Moreover, this budget item has encouraged the search for outside money to supplement district funds and, in some cases, has served as evidence of the institutional support sometimes necessary to elicit such funds.

The major thrust should be continued at the college level, but with periodic

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review. More careful development of long-range college goals and objectives may suggest which efforts should be encouraged with the money.

The major impact of the district's investment for research and development has been as a measure of the commitment of the administration and the board to a progressive and innovative educational program.

The future of the district's policy of budgeting for R&D should, and will, depend on the design of meaningful and significant projects. Too much time, effort, and money have been invested in predictably unproductive projects.

INNOVATIVE APPROACHES TO COURSES OF STUDY

The Junior College District has used innovative approaches to several of its courses of study.

General College Chemistry

In March 1965, the JCD examined the feasibility of developing an audio-tutorial chemistry course (based on success of the biology AT system). The American Chemical Society agreed to underwrite a regional workshop to expose chemists to the systems concept. This has been continously carried out in the JCD since 1969 and used with more than 450 students to date. Their achievement shows significant improvement over more traditional systems.[2] The chemistry systems materials have been processed for publication by Wiley and will be available in 1971.

Mathematics

A project to develop an individualized approach to basic mathematics was begun in the 1968 spring term, and one for elementary algebra in the 1968 summer term. A period of trial with about 150 students and subsequent revisions continually improved the reliability of the materials. More than 1,200 students have used the system. Wadsworth has offered to publish and distribute the individualized learning materials for both basic math and elementary algebra.

Sociological Research and Materials

In 1968 a research project to study "Negro Political Patterns in St. Louis" was presented for funding. It was designed to develop instructional materials relating to the Negro voting patterns, ward activities, political strength, and traditions. One significant finding was that, for at least three generations, blacks have been politically active in St. Louis. The study also compared the Negro political patterns of St. Louis with those of several other major cities.

A succeeding project is now being completed by the same staff member: "The Relationships of Social Characteristics, Attitudes and Political Behavior of Inner City Community College Students." It is jointly supported by the Junior College District and HEW.[3]

General Curriculum

A well-known and viable program in St. Louis is the "General Curriculum" at Forest Park Community College. The program's basic concept is that the low

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[2] Rudolph L. Heider, "A System for the Instruction of Chemistry," Report to Esso Education Foundation, ed. W. E. Hunter, February 1970, p. 52.
[3] Research Project #O-F-083, Grant #OEG6-70-0040(509).

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achiever needs not only the basic skills of reading, writing, and arithmetic, but also social and other intellectual support.

The Danforth Foundation early recognized the potential of this program and agreed to support it. Thus, the program was able to validate its materials and techniques and to share its findings with other professionals on a similar mission.

Business

"The Independent Study for Business" project, begun in the summer of 1970, was designed to reduce the strain on faculty and students produced by scheduling and limited physical facilities.

Two independent study sections and two regular sections of students follow the same course outline. The success of the two groups is still being compared, and the course is modified accordingly. For the 1971–72 academic year, it has been recommended that the teacher's assigned load be increased by fifteen students (about 12 percent), and that the Independent Study section be continued as an alternate approach to Introduction to Business.

CONCLUSION

A historical report of this sort is useful (although dangerous) for predicting the future. Will the JCD and community colleges in general still be viable institutions in 1980? We know that, as the institution becomes more complex, it will require more time for maintenance.[4] Some feel that this maintenance will attenuate the innovative thrust, but I am more optimistic: I risk the prediction that the JCD (and many other topnotch community colleges) will continue to lead the way in creating, demonstrating, and adopting alternative models for instruction, counseling, and administration.

Certainly the current competition for the dollar, the cry for accountability, the need for relevance, the changing demands for an academic degree, the new technology, the pressure of the knowledge industries, the broadened research base, the availability of new media and hardware, the changes in national priorities and policies, and the trend toward state coordinating councils of higher education all combine to assure significant change. Since the community college is closest to the public and has opening accepted its mission, it follows that the community college movement will continue to find itself at the leading edge of the change process.

APPENDIX

Major Restricted Funds for Research and Development (Rounded to Thousands)

Fund Name	Amount	Purpose	Academic Year
Carnegie Foundation	23,000	Technical Educ. Center	1965–66
Kellogg Foundation	31,000	Allied Medical Project	1965–66
U.S. Office of Education	7,000	Small Contract	1965–66
	15,000	Instructional Resources	1966–67
	7,500	Audio-tutorial Chemistry	1966–67

[4] Arthur M. Cohen, *Dateline '79: Heretical Concepts for the Community College* (Beverly Hills, Calif.: Glencoe Press, 1969), p. 59.

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Ford Foundation	172,000	Midwest Tech. Educ. Center	1966–67
Esso Foundation	27,000	Systems Approach	1966–67
National Fund for Humanities	2,500	Humanities Course	1968–69
U.S. Office of Education	2,000	Physics Education	1968–69
	5,000	Calculus by Computer	1968–69
Kellogg Foundation	29,000	Allied Medical Project	1967–68
Ford Foundation	54,000	MTEC	1967–68
Esso Foundation	22,000	Systems Approach	1967–68
Danforth Foundation	100,000	General Curriculum	1968–69
Ford Foundation	86,000	MTEC	1968–69
Danforth Foundation	90,000	General Curriculum	1969–70
Ford Foundation	71,000	Project AHEAD	1969–70
Health, Educ. and Welfare	30,000	Computer Simulation	1969–70
Ford Foundation	17,000	City of Kinloch	1969–70
National Restaurant Fund	4,000	Teaching Intern	1969–70
Health, Educ. and Welfare	19,000	Allied Health	1969–70
Others	19,000	Miscellaneous	1965–70

Restricted Fund Totals*
(Rounded to Thousands)

1966–67	$368,000
1967–68	$443,000
1968–69	$488,000
1969–70	$552,000

Budgeted District Funds for R&D

1964–65	$ 5,000
1965–66	$ 10,000
1966–67	$ 47,000
1967–68	$ 65,000
1968–69	$ 76,000
1969–70	$ 97,000
1970–71	$106,000
1971–72	$115,000

Foundation Grants** for Projects

1965–66	$ 61,000
1966–67	$220,000
1967–68	$205,000
1968–69	$196,000
1967–70	$141,000

* Includes Vocational Educ., NDEA, HEA, etc.
** Carnegie, Danforth, Esso, Ford, Kellogg, etc.