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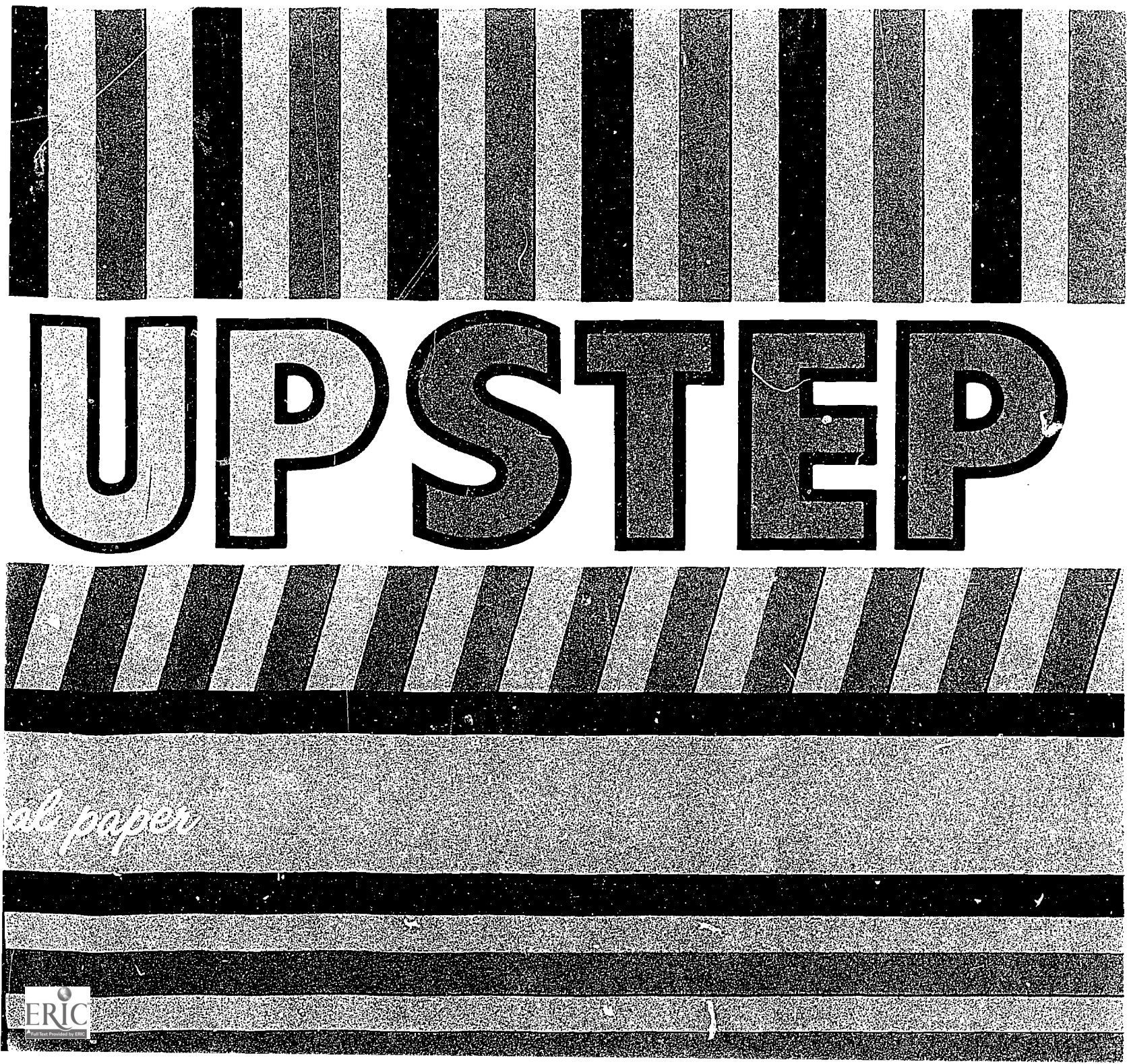
ABSTRACT

This document is the first in a series of occasional papers to be published by the Undergraduate Pre-Service Teacher Education Program (UPSTEP) at the University of Colorado (CU). The papers are intended to inform universities, public schools, and educational service agencies about noteworthy innovations in UPSTEP and to publish articles on educational issues of interest to anyone concerned with the education of prospective teachers. "Why Support UPSTEP?" by Donald McGuire of the National Science Foundation is the introductory article that points out the raison d' etre and major goals of the program. "The Margin of Freedom" by John Haas, codirector of CU UPSTEP, explains the motives, methods, and overarching design of this program, which is defined as a vehicle to encourage improved instruction in both liberal arts and teacher education. There are also two interviews with the deans of CU's arts and science department and education department who discuss the effect of UPSTEP on their departments. (Related documents are SP 006 876, 006 877, and 006 874.) (Editors/JA)

UPSTE

an occasional paper



FOREWORD

This is the first in a series of *Occasional Papers* to be published by the UPSTEP Program at the University of Colorado (CU). The intent of this paper is twofold, and its audience is nationwide. First, the Occasional Paper is designed to inform universities, public schools, and educational service agenices about what we believe are noteworthy innovations in UPSTEP. The paper also will contain articles on educational issues of interest to anyone concerned with the education of prospective teachers.

This premiere issue of the *Occasional Paper* begins with an article by Donald McGuire of the National Science Foundation. Dr. McGuire spells out the need for coordinating the efforts of scientists and educators in preparing today's teachers. This article points out both the "raison d'etre" and major goals of UPSTEP programs. Next, John Haas, codirector of CU UPSTEP, explains the motives, methods, and overarching design of the Colorado program in *The Margin of Freedom*.

The paper closes on personal interviews with two CU Deans, William Briggs of the College of Arts and Sciences and Karl Openshaw of the School of Education. As codirectors of CU UPSTEP with Haas, they discuss a host of questions including their views on teacher education, the effect UPSTEP is having on their departments, and the future of UPSTEP at the University of Colorado.

We hope you find this paper stimulating and we welcome comments, criticisms, and recommendations. Future issues will include a column of "letters to the editors."

WHY SUPPORT UPSTEP?

DR. DONALD MCGUIRE
National Science Foundation

Donald McGuire is Program Director, Pre-Service Teacher Education Program, at the National Science Foundation.

When planning this publication, the UPSTEP publications committee determined that a statement about the nature and philosophy of the Undergraduate Pre-Service Teacher Education Program conducted by NSF should be made by the Program Director. Dr. McGuire agreed to highlight some of the underlying assumptions and themes about the UPSTEP program. We are grateful to him for the following letter.

For years the National Science Foundation has supported efforts to increase the competence of the science teachers in American schools.

Most of the activities were basically remedial—buttressing inadequate initial training, providing updated information, or equipping teachers to handle assignments in subjects for which they had not prepared while in college. The value of these programs has not been successfully questioned. There have been loud protests, however.

The protestors point to the unending need—there will always be progress in science and many teachers will be too busy to include the more recent material in their instruction. School officials may always feel free to hire and assign teachers, regardless of their subject-matter preparation, if an outside agency stands ready with instant retraining. Early recognition of these possibilities elicited fervent expressions of hope that whatever was better about programs for active teachers would filter down into the curricula in colleges which are preparing teachers. These hopes have been realized in only a few special situations.

The resulting frustration stimulated continuing attention to the problem. Several themes or organizing concepts emerged:

1. Undergraduate institutions do not create teachers. Individuals who become competent teachers make use of their college background and their on-the-job experience and teach themselves how to teach. If this statement is valid, then prospective teachers should have as much early responsible teaching experience as circumstances permit. If they discover that they aren't cut out for the job, they can change directions with minimal loss; if they like teaching, they will take maximum advantage of their college studies.

2. In universities particularly, students must go through two years of core courses before they are acknowledged by the College of Education. Even those who want to teach will have had several earlier opportunities for other majors. Teaching deserves wholehearted dedication—and is much more likely to receive it from students recruited into teacher education programs right out of high school. Furthermore, such a practice might increase the attractiveness of teaching careers to the more talented students who are now, more than ever, seeking opportunities in socially constructive careers.

3. The relationship of the college-level experiences of undergraduates to their later competence as teachers has never been obvious. Recent research has shown no significant correlations of a teacher's hours of college credit—in science or in education—with learning by that teacher's pupils. Nothing would be achieved by pointing out that research in this field is still young and shaky. The negative information is of value in reducing our respect for such traditions as studying for the purpose of gaining certification. Certification may be a requirement for some years to come; but one studies to learn how to teach. If a certificate is conferred, it should deceive no one—least of all the recipient.

4. Although we can't be sure that knowing more of a subject makes one a better teacher, we can be absolutely certain that knowing less will *not* make one a better teacher. Hence, if one is preparing to teach a subject, he should study the subject. There are also positive reasons for studying the subjects we later expect to teach. Here is one. Each specialty has a language of its own. Every teacher should, of course, be a learner. (How else can he set an example for his students?) But the study time available to a teacher is so limited that the need for a new jargon will constitute a major barrier to learning in any new field.

5. The teacher must of course be competent in areas beyond the subject (the CONTENT!). Most obviously, it is necessary to be equipped to manage the new curricula in the subject. Here we confront a major dilemma. College students find it demeaning to give serious attention to materials designed for younger students. But these materials are often far more sophisticated and subtle than traditional ones. Mere "coverage" rarely suffices to assure effective learning management. It therefore becomes necessary to consider carefully what good teachers *do* and to design preparatory programs so as to provide experiences that result in gaining the ability to do these things, even if it requires college students to risk embarrassment in third-grade science exercises.

6. The ability to do things generally is linked, in man, to ways of thinking about things. We must be much more direct in our consideration of attitudes, beliefs, and values. It is unscientific to reject any evidence, whether it bears on the behavior of molecules or men. It is scientific to acknowledge that some students fear science. When we find that to be true, it is scientific to design science experiences for scared students. It is scientific to try to understand the learner's situation—intrinsic as well as extrinsic—and, since humans learn by emulation, to develop procedures that will make it worthwhile for each learner to emulate his teacher. Hence the teacher must be an overt learner. He must be as objective about his own performance as he is about the performance of

his students. He must attempt to improve his own skills in inducing learning. In higher education as well, the professor *will* be emulated. It is scientific for faculty members to accept this fact and to teach in the way their students should later teach.

7. Teachers should renew their own teaching competencies and keep their command of their subject fresh. In our publications we have used the term "self-renewing teaching competence." There has been some feeling that nonself-renewing is unprofessional behavior, and that greater pride in the profession would increase the self-renewing by teachers. But it can also be argued that students who have never witnessed teachers doing any self-renewing are unlikely to feel it is worth doing when they become teachers. The question of teachers' access to time and the necessary facilities for self-renewing is, admittedly, beyond the reach of the Foundation. We regard the teacher's attitude to be the most significant factor, however, for learning opportunities occur frequently in our world. Without the desire to learn, any formal programs for teachers are pointless. With it, even modest programs will yield generously.

8. Since the Program began its direct concern with teacher preparation, we have become aware of a key problem that pervades our education: students are all too frequently given the impression that naming constitutes knowledge. A student who "knows a concept" may totally lack a predictive or theoretical base. It is this predictive base that confers exploratory competence or provides tools for resolving discordances in the empirical field. In an age characterized by problems that seem to be growing beyond hope of human solution, we could at least be teaching our young to sharpen their innate and experientially learned problem-solving skills.

9. In the domain of education, there are many subdomains or territories that seem independent—in some cases unaware of—other groups. The fact that our society is composed of discrete subsocieties or affinity groups is irrelevant. In no other case is a matter so important or so omnipresent attended by professions that so diligently ignore each other.

There are learning theorists who have never stepped inside an elementary school classroom since they became teenagers—and there are elementary teachers who have never read a word written by learning theorists. Between these two extremes are educational researchers whose work is made known only to other educational researchers while teachers use procedures they have invented out of desperation necessity. There are professors of education who never consult the teachers who work in the classrooms—not even the teachers who were once their own students.

The Pre-Service Teacher Education Program requires that proposals be prepared by collaborating scientists and educators. Less than half of the proposals include references to research on science teaching, even that of the writers.

We have provided support to several different kinds of projects. Several projects that seem highly successful include a close working relationship with schools.

In general, experience with the PSTE projects has shown our aspirations to be achievable, or even that we should have had higher aspirations. A graduate of a physics teacher education program that was one of the first to receive our support accepted a position in a school without a physics course. She had prepared in physics via the new curriculum for teachers but was hired to teach math. At the end of the first year her students petitioned that a physics course be established, and more than fifty high school students are now enrolled.

One project requires research experience for prospective teachers. Two students undertook research on the laboratory of the freshman physics course they had just completed and, as a result, undertook a complete revision. During their sophomore year they were teaching assistants in charge of a full lab section that used the new approach. Student reports rated the new lab superior to the standard.

These two anecdotes do not constitute evidence. Real evidence is gathered painfully and slowly. In the meantime, however, we treasure such gems of information because they reflect the human side of teaching and learning. Isn't that the really important side, after all?

THE MARGIN OF FREEDOM

JOHN D. HAAS
Co-Director, UPSTEP

John Haas is an Associate Professor of Education at the University of Colorado and Director of the Center for Education in the Social Sciences. In 1970, Professor Haas together with Lawrence Senesh and other concerned educators at CU drew up plans for what is now the UPSTEP program. Haas assumed the position of program director at its conception in 1971 and has guided it to the present.

"Teaching is notoriously worse off in the universities than in the colleges. Not only is the university traditionally more committed to pure research, but it is particularly vulnerable to the pressures that have eroded the teacher's status. Vast numbers of students, huge classes, intense competition for federal funds and therefore for distinguished research professors, political and professional pressures—all these have operated to downgrade and even discredit teaching. But even in the university *it is the creative use of the margin of freedom* that matters."
—William Arrowsmith, "Teaching and the Liberal Arts: Notes Toward an Old Frontier," in Donald N. Bigelow (ed.), *The Liberal Arts and Teacher Education*, Lincoln: University of Nebraska Press, 1971, p. 49.

Those who seek the improvement of instruction and learning and the increased responsiveness of educational institutions to their clients can be thankful that there is a margin of freedom in these institutions within which creative approaches can flourish. What should be the creative use of this margin of freedom so that it does matter is the crucial question for university faculties and administrators.

The margin of freedom exists in a university in the instructional autonomy allowed to the faculty member and in the time available to pursue research and creative work. This margin of freedom, of course, can be used to pursue improved instruction *or* for research and publication *or* for both. Given university reward systems, however, the faculty member is presented with unequal options. With a support system, an intra- and interdepartmental cadre concerned with instruction, however, the faculty member can withstand the pressures to research and publish and use his margin of freedom to improve instruction and respond to client needs.

At the University of Colorado (CU) we conceive of UPSTEP (*U*ndergraduate *P*re-Service *T*eacher *E*ducation *P*rogram) as a vehicle to encourage improved instruction—in both the liberal arts and in teacher education. UPSTEP is one use of our margin of freedom.

UPSTEP is a "bridge-building" operation, and the bridges are many. The "bridges" we have built or are building are (1) between the School of Education and the College of Arts and Sciences; (2) between the various departments in Arts and Sciences and the departments in Education; (3) between mathematics and science, between science and social science, and between mathematics and social science; (4) between elementary and secondary teacher education; (5) between graduate students and undergraduate students; and (6) between the university and the public schools. In UPSTEP, in general, this is the essence of our efforts—building bridges and building new interdisciplinary and interinstitutional cadres.

The National Science Foundation is providing funds over a three-year period to assist us in creating UPSTEP. UPSTEP will be assessed very critically by the University, both during and at the end of this three-year period. Based on evaluation data, University administrators will make decisions about the adoption and modification of this program.

The program consists of five substantive components: (1) Mathematics, (2) Science, (3) Social Science, (4) Elementary Education, and (5) Secondary Education. We are currently in our first year of full implementation of all five components.

ASSUMPTIONS OF UPSTEP

Our UPSTEP design is based on several assumptions about the education of prospective teachers:

1. Their undergraduate program should include general education, subject matter specialization, and professional education.

The program should prepare them to be ready to work in innovative schools or to accept leadership and change-agent positions in traditional schools.

3. The climates of such a program should approximate those found in successful public schools; and therefore, the program should be "reality-based" or "in-school based" with maximum experience in working with public school administrators, teachers, and students.

4. Because people learn different things in differing ways, in differing environments, at varying rates of speed, it is desirable to create a program that has a variety of planned and personalized interactions or "critical mixes" involving teacher education students, faculty, public school teachers and students, and instructional materials.

5. Processes of inquiring or ways of knowing should be the primary focus and the mode of instruction in teacher education.

6. Flexible teachers are best educated in flexible environments which implies a variety of uses of time, space, activities, and personnel.

GOALS OF UPSTEP

Many persons feel that much of the training of elementary and secondary teachers at the undergraduate level has been fragmented, largely irrelevant, and unrelated to the realities of both the classroom and the world at large. CU is developing a program for the

training of teachers which intends that graduates of its UPSTEP program will:

1. Have a strong foundation in the structures of knowledge of the physical and social sciences and in how these disciplines are important in coping with the real world.
2. Understand the nature of scientific reasoning and investigation and how these processes are related to rational problem-solving.
3. Possess the skills necessary to translate "frontier thinking" in the physical, natural, and social sciences into the elementary and secondary curricula.
4. Display a clear comprehension of the inseparable nature of the content and methodology of science.
5. Know the needs of elementary and secondary students as individual learners and acquire knowledge and skills for creating effective settings for individualized learning.
6. Possess an intellectual curiosity about science and the tools of science. This curiosity will grow as the teacher matures into a fully professional person entrusted with the education of youth.

UPSTEP PROGRAM

Teacher education involves the collaboration of three groups of educational personnel: (1) the professors from Arts and Sciences faculties who teach the courses which collectively form the general education and subject-matter specialization of prospective teachers; (2) the professors of education who teach the pedagogical theory and practice courses which collectively form the professional base of prospective teachers; and (3) the public school administrators and teachers who provide for and directly supervise, with the aid of university personnel, the field experiences and student teaching internships of prospective teachers.

One approach to the change and improvement of teacher education is to intervene at "critical points" with increased collaboration among the three groups described above. We conceive the critical points to be: (1) those courses which introduce prospective teachers to the scope, concepts, structures, and methodologies of disciplines within a broad field (i.e., natural and physical science, social science, and mathematics); (2) those experiences and self-instructional materials and units comprising a "professional year" in elementary and secondary teacher education; and (3) the internships and student teaching experiences in a "professional year" involving university public school faculties in providing classroom teaching experiences for prospective teachers. These critical points are where we focus on the nature of knowledge, the nature of teaching, and the practical application of these in classroom settings.

The CU UPSTEP program is divided into two phases. The first phase is composed of three one-year components —one each in science, social science, and mathematics—a total of twelve courses. Each of these components is striving to be interdisciplinary, with the use of projects and laboratory experiences. We feel that courses in Phase I are both excellent liberal arts or general education courses *as well as* excellent preparatory courses for prospective teachers.

Students progress from the first phase to a second phase which is composed of two components—a "professional year" in elementary education and one in secondary education. Each Phase II component reinforces the subject-matter learned in Phase I while emphasizing the professional knowledge of teaching. Both Phase II components include laboratory, internship, and student teaching experiences. Present throughout Phases I and II are a variety of public school classroom experiences, including observation, tutoring, and small group instruction which are integral parts of all five components. (See CU UPSTEP DESIGN, page 6.)

MULTIPURPOSE LABORATORIES

One element common to all aspects of UPSTEP, which significantly enhances interaction between phases and components, is the "multipurpose laboratory." We have four of these laboratories—two for science education and one each for social science education and mathematics education. The laboratories provide places where all components of the program "meet and mix."

Integrative activities in a laboratory include shared physical space, joint use of equipment by the various components, and, most importantly, a common meeting-place for all and a marketplace for ideas from students, scientists, educators, and public school teachers. It is in the multipurpose laboratory, in particular, that the tools of science and pedagogy are fused in a new approach to educating future elementary and secondary teachers.

ADMINISTRATION

The governance of UPSTEP cuts across formal college, school, and departmental lines. Although this might seem to be creating a new suprastructure, it is not the case. The three codirectors are two deans and a faculty member who has experience in "cross-campus" projects. The Dean of the College of Arts and Sciences, the Dean

of the School of Education, and the Director of the Center for Education in the Social Sciences are the three UPSTEP codirectors who act as "executive directors" for fiscal and managerial responsibilities. In effect, the codirectors are but three members of the UPSTEP Executive Committee which is the locus of power in the program.

The Executive Committee is composed of regular and ex-officio members. Regular members are the assistant directors for each component (5), student representatives (2 graduate students), and the three project co-directors —a total of 10 regular voting members. Ex-officio members are the specialists for diffusion and evaluation and the project's administrative assistant. The Executive Committee decides all project policies including annual budgets.

The UPSTEP Executive Committee has proven to be an excellent vehicle for problem-solving. During the first nine months of CU UPSTEP the members have learned about each other and how to work together as a group. Most of all, this group has provided the support and leverage for faculty from various departments to commit themselves to the improvement of university instruction.

DIFFUSION

The University of Colorado UPSTEP is concerned that other institutions of higher learning have an opportunity to observe, evaluate, and experiment with the CU UPSTEP teacher training design. To us, diffusion means both *dissemination* and *implementation*.

The major objectives of *dissemination* are to translate and communicate specific information about the CU program—its structure, its function, its processes, and its patterns—to all other teacher training institutions *in Colorado*.

Our Model of Diffusion will also attempt to create an *implementation* model in addition to dissemination. Our *implementation* efforts will be highly focused. That is, we will concentrate on other Colorado institutions of higher learning concerned with new teacher education programs that will join us in our experiment.

During the first year we will enlist interested faculty from other Colorado teacher training institutions to work cooperatively with the University of Colorado in experimenting with various elements of UPSTEP. The cooperating institutions will test our questions: Is the program generalizable? What parts can be implemented elsewhere? What parts are unique? Over a three-year period, sufficient data and change prospects will be evident to answer these questions. We do not anticipate full-scale adoption or implementation of the CU program at the cooperating colleges or universities, but rather pilot efforts of adoption or adaption.

EVALUATION

An undertaking of the magnitude and quality of UPSTEP requires an attentive effort at assessing the progress of the program and its effects on students, staff, and the institution. The UPSTEP evaluation has borrowed from several sources, but its design is original, based on the unique needs of the program. The basic rationale for program evaluation is that sound decisions by the staff are necessary if the program is to succeed. In order to make such decisions, the staff must have available pertinent information at critical points in program development. At the outset program evaluation concentrated on *formative* evaluation—defined as gathering information about the program while it is developing—to discover weaknesses and strengths in time for corrections. Within this realm, the evaluation procedure can be described further as assessing both the *processes*, what is taking place in the program, and the *products*, what outcomes are being produced.

The program concentrated on process evaluation during the initial year of operation. This procedure emphasized the development and clarification of program objectives, the formulation of evaluative questions, the construction, administration and analysis of instruments, and feedback to the program staff. Currently, we are devoting a greater effort to product evaluation. It is planned that, as the program develops, monitoring program operations can give way to measuring the effects of the program on student knowledge, skills, and attitudes.

THE TEAM APPROACH

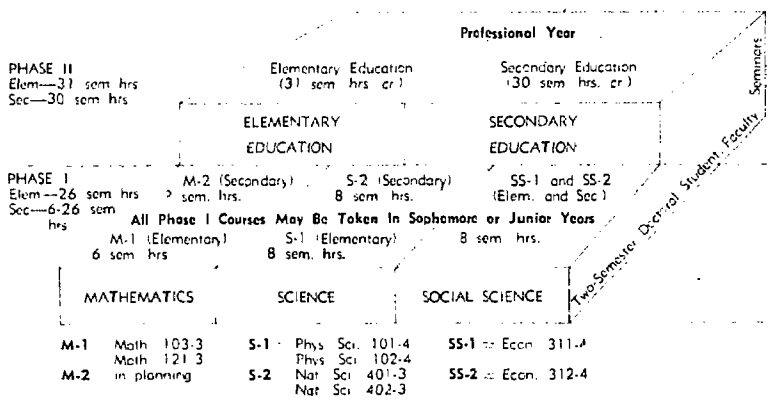
When a faculty member, singular and isolated, in a university department decides to use that margin of freedom available to professors to pursue improved teaching and learning, he/she risks much. What is risked are lower salary increases and less opportunity for promotion and, perhaps more importantly, risks of being perceived as a "sell-out," a second-class citizen sans research grants and publications list. If one is a senior faculty member with tenure, the risk is less than for the new assistant professor. Yet in either case, there is risk of ostracism.

If programs such as the University of Colorado UPSTEP are to succeed, what is needed are supportive administrators and a reinforcing team approach. The team

approach will provide ego enhancement and a feeling of mutuality for all involved faculty. In UPSTEP, we have provided for support and reinforcement by use of teams or cadres at several levels: in administration, we have a trio of co-directors (including two key deans) and a 10-member executive committee; in each component, at least 2 faculty members (3 or more is usual) and at least 2 graduate students form a component cadre; in each faculty/graduate student seminar (6 operating currently), there are 2 or more faculty from different components involved; and finally, in the program as a whole, over 25 faculty and 22 doctoral students are involved representing ten different university departments.

If the collective margins of freedom of faculty in higher education are to be focused on the improvement of college teaching and learning with any hope of success, it would seem that a team approach on a cross- and inter-disciplinary basis supported by key administrators are necessary, though not sufficient, conditions. In CU UPSTEP we feel we are building the bridges and forming the cadres which will provide the structure for the creative and effective use of available margins of freedom. In the future we may even be able to extend the margins.

CU UPSTEP DESIGN



This design illustrates the separate phases and components, and the relationship between phases of the CU program. It is anticipated that the prospective elementary teacher will experience in the sophomore or junior year one course in each Phase I component—M-1, S-1 and SS-1 and SS-2. As this student enters the senior year, he or she moves into the "Professional Year" in elementary education. For a prospective secondary school teacher, one of two patterns are expected. One pattern would be that a student takes M-2 or S-2 or SS-1 & 2 during the sophomore or junior years, then in the senior year enters the "Professional Year" in secondary teacher education.

BRIDGING THE GAP

An Interview with Karl Openshaw, Dean, School of Education

Karl Openshaw is the Dean of the School of Education at the University of Colorado, having assumed this position in July 1971. Dr. Openshaw was awarded his doctorate from Teachers College, Columbia University, and has served on the faculties at the University of Utah, Adelphi University, and Ohio State University. It was at Ohio State that he organized the Center for the Study of Teaching. Openshaw also served as the Associate Director of the National Association for Supervision and Curriculum Development (ASCD).

QUESTION: *What was your personal r coming involved in UPSTEP?*

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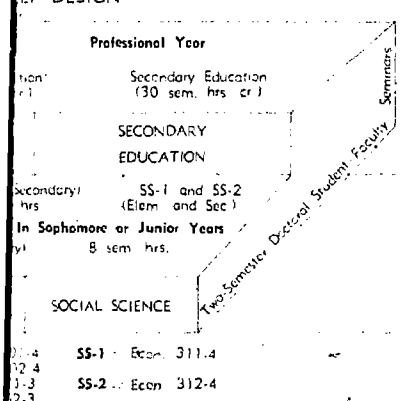

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QUESTION: *What was your personal motivation for becoming involved in UPSTEP?*

It must have been at least two years ago when I was visiting Boulder that I first heard about UPSTEP and the possibility of instituting a new cooperative program here at the University. At that time, the concept was a little nebulous in most people's minds. From what I was able to determine in discussions, it was the kind of approach that seemed to hold greater potential for the training of teachers than what then existed. As Dean-elect, I encouraged those with whom I had correspondence to become a part of this pr ess. That was my first contact with UPSTEP. By the time I arrived here to assume my position in the School of Education, the proposal had been drawn up and the program had been funded. UPSTEP was operationalized a couple of months after my arrival.

QUESTION: *Are there parts of the UPSTEP program that you would have altered early on before they became operational?*

Had I been here during the planning stages, I may have tried to push in different directions. However, I have a deep commitment to having people with expertise in certain disciplines work toward the solution of important problems in those areas. I think the role of leadership in this endeavor is to give or withhold support as warranted. My criteria for making such judgments include the exercise of professional competence, the rationale supporting the idea, and evidence of what is being developed in other places.

The elementary program here had undergone a study the year prior to my arrival and the faculty made decisions that were in close harmony with the spirit of UPSTEP. I'm sure there were some modifications in their thinking and in their program structure proposals as a result of becoming involved in something beyond the elementary program itself. At that level, they went through a careful reconceptualization of their program. It provided a stimulus to reconceiving the nature of what is done in the professional education of elementary teachers.

One of the limitations of the professional component at the moment is that there is not enough opportunity to practice teaching behaviors under the guidance of the professorial staff. I would like to see more simulation, for example. I would like to see opportunities for prospective teachers to try out ideas as they are developed in science and other academic components. Hopefully, this will

evolve as the program goes on. The major task in the School of Education has been to develop a direction with supporting materials and experiences toward achieving goals in a unified way. I do think significant progress has been made. However, I feel one limitation of the program is that there isn't a great deal of opportunity for students to engage in teaching behaviors—either simulated or otherwise—under the appropriate kind of supervision prior to the time they go into schools on a full-time basis.

QUESTION: *Can you give us a brief overview of your background and involvement in teacher education?*

In terms of my public school experience, I was a teacher of English in secondary schools for a period of six years in two different locations. I had a unique experience. Most of that time was spent in a laboratory school in which students and faculty as a whole engaged in curriculum development activities with a continuous restructuring of the curriculum as the prime objective. There was not a year in which some facet of one's work did not undergo evaluation and modification. This set the direction of my professional interests when I pursued my doctorate; the thrust of my study was curriculum development, particularly as it related to preparation of professional personnel for public education.

I worked for National ASCD for a period of two and a half years. This gave me an opportunity to meet with most of the curriculum leaders in the country. From there I went to Ohio State where I organized and helped develop a Center for the Study of Teaching.

QUESTION: *During the 1960s when the dominating influence in public school curriculum development was in the academic disciplines, did you have much contact with them at Ohio State?*

I had contact with selective numbers of the national curriculum projects, first when I was in Washington and later at Ohio State, but not with all of them. I think one of the early oversights in this curriculum development movement was that they dealt too heavily with the structure of disciplines without enough attention to the implications for the teaching of them, i.e., without the thoughtful development of teaching strategies and without sufficient attention being given to various modes of instruction. I think some of the projects were modified as they were used and evaluated. Others, unfortunately, were not and still are not. In my judgment this is a serious limitation because the work of the national curriculum development group is becoming universally the curriculum structure of the public schools.

QUESTION: *Did you perceive UPSTEP as a vehicle for institutional change at the University of Colorado? If so, what changes did you foresee and how did you believe they would be implemented?*

Let me answer that with an overstatement. If there is to be no institutional change and no integration of the results of any program effort into the fiber of the institution, I see little or no reason to engage in those activities. There obviously are some kinds of professional activities, such as research, that have a different focus, namely, the generation of knowledge. However, when one begins to engage in training processes, I think the major motivation ought to be to bring about some change in the practices of that institution. As such, I certainly would view UPSTEP as a vehicle for innovations in the training of teachers at the University of Colorado.

QUESTION: *For what other kinds of institutional changes do you think UPSTEP has been, or could be, a vehicle?*

This is difficult for me to answer. I have no way of knowing now whether the kinds of healthy developments in the academic departments will persist beyond the funding stage. It would be too bad if they did not, because the traditional approaches to academic preparation are inadequate to the tasks of teaching those disciplines. I also think that some of the approaches that have evolved in certain departments hold great potential for doing a better job of educating. It would be a tragedy if the developments being fostered in the disciplines were to cease when funding was no longer available. I would like to see even more integration among disciplines than presently exists in UPSTEP.

QUESTION: *What sort of cooperation do you see evolving between the School of Education and the College of Arts and Sciences?*

Some very important things have happened, both in the School of Education and the College of Arts and Sciences, in this cooperative interdisciplinary effort. The way one changes an institution is to change perceptions of people involved in the life of that institution. In certain programs the interdisciplinary cooperation, unfortunately, is not with the departmental scholars—scholars defined as university-appointed people with prestige. I am not disputing the fact that there have been cooperative efforts among representatives of different disciplines; departments have not always given sanction to the UPSTEP program. If departmental commitments are not made, the programs may not persist after the funds are gone.

QUESTION: *This is one of my concerns also. I see very healthy relationships developing with Dean Briggs in Arts and Sciences, for example. I've also seen some other examples of cooperation from the faculty, but far too little.*

Yes. I would add that it is my impression that the UPSTEP components are too insular. They are still pretty much islands unto themselves within departmental groupings.

QUESTION: *Does UPSTEP infringe upon the autonomy of academic departments?*

I don't think that it does in terms of the School of Education. We don't have the same kinds of narrowly defined specialized interests which are claimed in the name of academic autonomy. The majority of people in teacher education don't feel as threatened as someone who has a speciality and whose allegiance is to that academic speciality, as opposed to those with an allegiance to a broader area like teacher preparation.

QUESTION: *What is your opinion of the UPSTEP Executive Committee trying to come to decisions through group process rather than having one person decide issues?*

My personal opinion is that decisions are not really reached through group process without having some pretty well conceived alternatives presented in advance of decision. Consideration of structured alternatives seems to be the way that tasks become accomplished. I would not have one person decide issues in isolation from a reference group. On the other hand, I think it is an impediment to progress and a waste of everyone's time to have a discussion without some alternatives related to that issue. The man who has to assume responsibility for implementing a decision is the one who should have the major voice in its formulation. I guess my answer to the question is that the individual who must assume responsibility seeks involvement, perceptions, and input from those with whom he has worked. However, one cannot really make decisions based on a vote of people with disparate vested interests.

QUESTION: *What has been the major advantage of having the executive committee?*

I think the executive committee fosters communication among the components, and that is something very valuable. There would be even less integration of effort without the continual contact among the people of the executive committee. I sarily have a better scop the options and alternati Once you involve the con ple, on fiscal matters, ther to be bound by their adv want their support and c to them a proposal for co ing that if there are son modifications will take p an alternative proposal re obliged to give it serious kinds of decisions that deeisions.

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QUESTION: *What type of feedback do you get about UPSTEP from other corners of the University, including other academic departments within the College of Arts and Sciences?*

The feedback I get is essentially positive; but I should hasten to add that I do not get a great deal of feedback within the University. I get more in meetings with other colleagues around the country who are deeply concerned with professional education. I rarely go anywhere, especially in the last six months, where someone does not ask me a question about UPSTEP.

QUESTION: *If the National Science Foundation contribution to UPSTEP is about $200,000 per year, how do you expect the University to assume this cost after federal support is completed?*

While perhaps not in its current form, it is the intention of the faculty in the School of Education to assume professional responsibility for its continuation. It is much easier for us to continue supporting it, since our components are the teacher education programs. The elementary and secondary preparation programs at the University will be those that are developed through UPSTEP; therefore, they will have institutional support. We will not have competing programs that would draw off resources.

We will not be able to support TA's at the same level, because available money for the whole School of Education for teaching associate support is much lower than what we have through UPSTEP. I hope that we would have success in continuing to get specific kinds of training grants—those in discipline areas for teaching purposes.

QUESTION: *What changes in the UPSTEP program do you anticipate or would you encourage?*

I think there must be more opportunity for students to personalize the whole process—to deal more completely with the academic preparation for teaching beyond pointing out implications. There must be more meaningful integration of University study and direct involvement with learners in schools. I think microteaching sessions may be helpful early in the program and, with enough repetition, students would get some kinds of insights into teaching the subject matter that are not otherwise available.

QUESTION: *How do you think UPSTEP teachers will be better prepared when they leave the University of Colorado to enter the teaching profession?*

I think the UPSTEP teachers will be better prepared in that the nature of their preparation is more appropriate than, say, the usual major in history. They are receiving a kind of academic training that has much greater utility when they teach young children. They will be better prepared in that they will have at least a passing acquaintance with a much larger range of materials and curricula available for instructional purposes.

Much has been accomplished in a year. I hope that in the next couple of years there will be a better effort to bring about increased integration of academic and professional training and that there will be a greater emphasis on expanding possibilities and looking for something that will enrich the preparation of teachers as an integrated thrust, placing emphasis on on logical structures of the individual facets of the program.

BRIDGING THE GAP

An Interview with William Briggs, Dean, College of Arts and Sciences

William Briggs earned his Ph.D. at the University of Colorado in 1953 and remained as a member of the mathematics faculty for ten years. In 1963 he became Dean of the College of Arts and Sciences. Since that time Dr. Briggs has been a major force in making the college responsive to the needs of teacher education at the University.

QUESTION: *What was your motivation for becoming involved in UPSTEP personally?*

As far as personal involvement, I think the simplest answer is the importance of having the College of Arts and Sciences involved so that my involvement would be in an official capacity. I do have some personal concerns about teacher education, and it's not possible to divide these up precisely as to where one's official actions stop and where one's personal actions begin.

QUESTION: *As the Dean of Arts and Sciences, you could easily pass the involvement on to an Associate Dean or Assistant Dean, and yet you haven't done that.*

My decision to get personally involved did stem from the fact that I have had some connection with teacher education in the past and a concern about it which I think led me to feel this was something that I wanted to do instead of assigning it to somebody else.

The departments wanted to find common grounds where we could have some sympathy and support for the UPSTEP program. There was a fundamental restraint on this having to do with the nature of the subject matter which NSF was willing to support. This support traditionally has been with science and mathematics and, later, the social and behavioral sciences. So we had two convictions from the outset: (1) a desire to promote one area which we thought would have some impact on the secondary and elementary curriculum and (2) a need for those departments that would qualify to declare with NSF their convictions of support in at least some areas where we have people to add to that program. The obvious case here is political science rather than economics, because there is a lot more government taught in secondary school than there is economics, but we thought we had some things going for us in economics which would spread out better. At least we have social science which led us to go with economics.

QUESTION: *Can you give us a brief overview of your background and involvement in teacher education?*

I suppose my personal involvement started when I decided to get a teacher's certificate as an undergraduate. I had thought about some other things in science and mathematics, and finally decided that teaching was something that I might enjoy, so I went through a mathematics program in education. Personally, teaching has always been an important part of my professional interests.

My involvement at this University is a very peculiar one; namely, I did my Ph.D. and started to look for a

job at a time which was not dissimilar from the situation we have now—jobs were scarce. As I was looking around and getting pretty close to one, a research project opened up here. I was able to stay on as a postdoctoral research associate for a year. The next year, the chairman of the mathematics department offered me a position in the department involving the teaching of a special methods course and the supervision of student teachers. Then the academic year institute programs of NSF came along and I was asked to direct our program. I was involved in that for about four years as well as in a number of inservice summer institutes. In those years, I spent quite a bit of time with the Colorado Council of Teachers of Mathematics. In light of my personal background which has been very much involved in teaching, I was not at all reluctant to involve myself in UPSTEP.

QUESTION: *Did you perceive UPSTEP as a vehicle for institutional change at the University of Colorado? If so, what changes did you foresee and how did you believe they would be implemented?*

I view UPSTEP as a vehicle for institutional change, and that is one reason why I was interested in this. In view of my own history and involvement in teacher education at this university, I think I was somewhat aware of the need for some institutional change. One of the disappointments that I felt about our academic year institute programs for teachers of high school science and mathematics was that it was never perceived as part of the teacher education program of this university. We tried to involve some faculty members from the School of Education, but this seemed to be token representation from the other side of the fence. I felt that it was never perceived as anything more than a kind of peripheral sort of thing from the standpoint of teacher education. We had quite a bit of impact on the departments and got a lot of good involvement from subject matter people at that time, but it was quite an isolation and there was very little coordination with people interested in the psychology of learning and methodology. The emphasis was deliberately placed on subject matter preparation, because at that time preparation of science and mathematics teachers was abysmal on the subject matter side. The only means this institution had to prepare a high school teacher of mathematics, physics, or chemistry was through the School of Education. There was no other way, so this was one of the first changes I attempted—to provide a basis for subject matter preparation of mathematics teachers. Now, however, there is a broader point of view of what teaching and learning de
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QUESTION: *Could you give a brief overview of how the Integrated Studies Department in Arts and Sciences was created? What is the future of this Department?*

The history of the Department of Integrated Studies goes back to about sometime during the 1945-46 academic year when the faculty of the College of Arts and Sciences passed a requirement for the bachelor of arts degree, insisting on successful completion of four basic courses—physical science, social science, humanities, and biological science. This was a philosophical legislation, because the facilities were not there to do it. The idea was to move in this direction with a commitment from the faculty to implement this definition of liberal arts education.

I believe the humanities and the physical science courses were the first ones to be started. Around 1950, these two courses got off the ground; that is, they were taught on a lecture basis, but involved people with this kind of commitment. The social science course and biological science course came along later in the 1950s.

About 1961 Malcolm Correll came as the first director of general education. This was not a department, but the idea was to coordinate these courses and develop other courses. The implementation of these course requirements never did come to pass, because it never got involved enough in terms of funding and personnel. This finally was changed to a departmental status about 1965—the Department of General Education. That continued for about three years. The nomenclature got confused with general education, and it was changed to Department of Integrated Studies about three or four years ago. It is now a separate department with the responsibility for these basic courses which do fulfill some of the distribution requirements.

There has been a movement in humanities and, to some extent, in social science and physical science into upper division courses. There are no majors in the department; we do have a humanities major in the College which has the concern of many of the humanities people in Integrated Studies, but it's really not a departmental major.

QUESTION: *What role do you see UPSTEP playing in Integrated Studies?*

I have had discussions with Aaron Sayvetz, suggest-

ing the department should exercise more leadership in initiating general education programs or experimental programs through developments in teaching and so on. The department has acknowledged this in the past. Whether it will continue to do so, I don't know; a lot depends on the leadership that Aaron will bring to the department. It's hard for me to say why the movement has been so slow. Perhaps one reason is that the faculty members were members of regular academic departments who saw teaching as an opportunity to express their concern about education. But that was about as far as it went. The rest of their time was involved in a normal kind of departmental orientation.

QUESTION: *So most people that came in to teach have appointments in other departments . . .*

This was the pattern until only five or six years ago. Because of the difficulty in running this thing with volunteer cooperation and contributions from departments, we started to form the department with positions of its own. This meant that there would be a teaching resource definitely available to the department to do these courses. So we now have a number of people full time in that department—some who are on split appointments and some who are still involved in the program.

But in view of the new people coming in, we somehow have not developed within that department a feeling that this ought to be the locus of innovation. I don't know why this hasn't been the case.

QUESTION: *Have you ever done any brainstorming about fostering interdisciplinary and cooperative work between scholars in the Arts and Sciences and those in the School of Education? I mention this because we started in UPSTEP a faculty/doctoral student seminar that provides for an exchange of ideas between these two groups. It is the first graduate level course that Integrated Studies has ever offered in there, and its potential is great.*

There is no question that the pattern of development is interdisciplinary. I look back just in the past year and there are a number of interdisciplinary programs that have come up, including UPSTEP. Almost everything we are talking about is interdisciplinary—our environmental counselor, our geophysics—in fact, the Director of the Institute for Arctic and Alpine Research is interested in a multidisciplinary graduate program in geo-ecological something or other. The whole thrust of all of this is interdepartmental, and I see an important function for Integrated Studies.

You must understand that the people in Integrated Studies, as in other departments, do not see themselves as flamboyant innovators. There is a strong feeling that their function is to build basic, introductory, interdisciplinary courses in the fundamental subdivsions of knowledge. I'm not sure this attitude should be abandoned, but there is an opportunity to do lots of things in Integrated Studies. One of the things that may account for this is that over the years the department has been a place where you put things when you don't know where else to put them. This, I think, explains why many involved faculty members resist new plans; they've had all kinds of things thrown out at them. The most outlandish one was in 1962 when the Department of Home Economics was phased out and one or two of the faculty members were put in General Education for care and keeping. They have felt a little sensitive about being a dumping ground whenever there was no other place to put something or somebody.

QUESTION: *Would you see UPSTEP being housed in the department in the future? The Science component now is firmly embedded there.*

I suppose my answer to that would be "yes" because that is the natural home for interdisciplinary studies. This may help the department get more involved, but, as you know, we've already had some problems with the extent to which the department feels responsible for this kind of activity. I think eventually we will have to come to a different kind of college-wide organization and we're moving very slowly in the direction right now. Within the past year we've already created a thing called the Division of Biological Sciences which happens to consist of nothing more than the two biology departments so far. I've been pushing the same kind of concept during the last year with foreign languages and literatures and they're very reluctant to accept the notion of a more inclusive organization which would de-emphasize, but not eliminate, the current department designations. There may be, underneath, some informal organizations, and I think the UPSTEP interdisciplinary courses would fit into this broader division context.

The problem that I would see now about Integrated Studies goes back to the role of that department and of the faculty members. We've got good people, who make outstanding contributions to research, but in some ways they are different. Their mission is undergraduate teaching.

Integrated Studies becomes a home for too much, which tends to take the responsibility for the 70 other departments. There may be no reasonable alternative in

terms of time. But, to try to make Integrated Studies the academic home for a lot of this activity ultimately is the wrong model. I think we have to go in the direction of a broader division of social sciences which has the responsibility for everything—everything from teaching remedial courses for EOP students right up to the Ph.D. thesis.

QUESTION: *What feedback do you get about UPSTEP from other corners of the University including academic departments within the College of Arts and Sciences?*

Very little. Departments do not perceive themselves as playing a part in career development or in professionally oriented programs. Most are committed to conveying their own speciality or advancing the knowledge of their discipline. If they affect the education of future teachers it is only through the students' coincidental exposure to their courses and subject matter. The extent to which departments within the College of Arts and Sciences take an interest in teacher education or any professional training is on an individual basis. That is, some individual faculty members may have concerns in this direction.

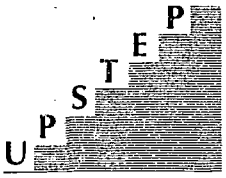
QUESTION: *If the National Science Foundation's contribution to UPSTEP is about $200,000 per year, how do you expect the University to assume at least some of this cost after federal support is completed?*

I don't believe that there is any expectation to maintain that level; the key word there is *some* of the costs. The University is committed to supporting the ideas and development that UPSTEP has fostered during the funding of the National Science Foundation. The funds were given largely for developmental work. As a result of UPSTEP, new courses have been developed at the University, faculty members are devoting their teaching and other time to the growth of these ideas, and students are taking the courses. These effects are outgrowths of the program, and it is in this way that the University not only supports the UPSTEP idea but encourages its growth. I guess that you can say the University will assume the residual effects of what UPSTEP has initiated. Obviously, there will need to be some cutbacks in the form of less developmental funds and fewer personnel such as teaching assistants.

QUESTION: *What changes in the UPSTEP program do you anticipate or encourage?*

The biggest problem facing the program right now is the need for a swift and intelligent resolution of the Social Science component. By this, I mean not just getting the course settled on the books of some department and established as a catalog item, but rather shaping the nature of the program. It is true that the social science courses face obstacles far more difficult than those of the other components, but I suspect that the problem runs deeper than this. If the course is going to be relevant to the needs of future teachers, elementary and secondary alike, and if cooperation is going to take place between the social scientists and the educators concerned with teacher training, then the structure and nature of this course will have to reflect those student needs. It is not enough that the course be well planned and prepared. This preparation ought to be the result of the collaboration by both social scientists and educators bringing their different perspectives to bear on the nature of the course.

Another change or innovation related to but not necessarily coinciding with the UPSTEP program itself —and a change that I both anticipate and encourage— has to do with looking at the whole issue of teacher education at the University. The idea of a Center for Teaching and Learning has been suggested. This would be a joint enterprise bringing together people from around the University concerned both with teacher education and the broader problem of teaching at the University. I suspect that the Center for Teaching and Learning would serve as a vehicle to foster this type of introspection on our part. In effect, it would represent a spin-off from the UPSTEP concept.



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