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## Iowa - UPSTEP: A Program Overview

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## IOWA - UPSTEP: A PROGRAM OVERVIEW

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Over the past five years the program for science teacher preparation at the University of Iowa has been in the process of gradual evolution. The changes have been stimulated by a grant from the National Science Foundation, by teachers, and by science educators. Many teachers in the state of Iowa have played a major role in the development of the current program.

In the current UPSTEP program the professional education sequence has become more thoroughly integrated with the student's total program and incorporates a series of clinical experiences in the schools (Fig. 1). The current UPSTEP professional program sequence is:

### **IOWA UPSTEP PROFESSIONAL EXPERIENCES**

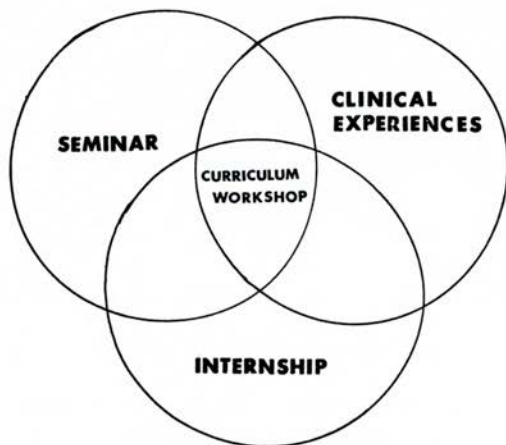


Figure 1.

### Freshman Year

In the fall, evening seminars and occasional social events introduce incoming students to the University and to issues in science and education. Guests from scientific disciplines are invited to discuss their perceptions of science and teaching with the UPSTEP students. The seminars focus upon communication skills and group processes.

In the spring students participate in a clinical experience in the schools (often an elementary school classroom) and in a seminar designed to provide a foundation for the clinical experience. Students participate in seminar meetings once every week; the seminars are devoted primarily to activities designed to make the clinical experiences more productive for both the children involved and for the UPSTEP students. Seminar activities include working with materials from new curricula, discussing field experiences, presentations, and interactions with classroom teachers and other professionals, discussions of relevant psychological theory, discussions of appropriate teaching strategies, discussions of alternative schools, discussion and use of educational technology, role-playing and microteaching.

### Sophomore Year

In the fall students are introduced in a more formal way to issues in secondary school teaching, and they may select a clinical experience in the schools as an option. They look at historical/political/cultural issues and their effects on education and teaching, they have an opportunity to experience a variety of creative educational alternatives, and they begin to examine goals and values in education. In the spring of the sophomore year students participate in a specially designed section of educational psychology; an UPSTEP clinical experience is again encouraged as an option. During this time a two-course sequence in History and Meaning of Science is initiated.

### Junior Year

Junior students take two methods seminars in successive semesters. One of these includes an array of clinical experiences in schools including: development and evaluation of a self-instructional module; levels of intellectual development; slow learner/fast learner case studies; individualizing instruction; human relations skill development; inquiry/discovery teaching and learning. Students in this course are involved and progress through a series of experiences in the Self-Instructional Laboratory. (The laboratory provides models, resources, and assistance for the design and production of self-instructional modules.) The other junior course provides an intensive review of curriculum resources utilizing the new Interactive Curriculatorium. (This laboratory is a center where UPSTEP students and teachers can interact with materials and explore the strategies of new science curricula.) In this course students are involved in simulated teaching experiences and they perform numerous laboratory activities their own students will use in the public schools.

### Summer Program

The Summer Conference has been one of the most valuable features of Iowa-UPSTEP. It is designed to break down pre-service/in-service barriers in teacher education. The program provides two major options for junior students: the students can work as teacher-interns and counselors in the

various activities of the SSTP program with high school students (teaching on campus or on extended field trips to natural areas); or the students can serve as staff in the UPSTEP Summer Curriculum Workshop for teachers. In that capacity, the undergraduate students help the teacher-participants review the resources relating to their own curriculum development objectives and to prepare materials and plans to meet those objectives.

#### Senior Year

Teacher-interns participate in an advanced clinical experience that is similar in some respects to student teaching, though normally the experience does not consume a full-time semester. Teacher-interns assume responsibility for planning and teaching secondary science classes under the supervision of a cooperating teacher. In addition, they fulfill a number of skill requirements as part of UPSTEP program. The advanced experience may continue at a reduced pace throughout two semesters, and it may be paired with selected teaching experiences in classes for UPSTEP underclassmen.

The use of clinical experiences in teacher education provides a convenient means to combine the skills and perspective of the university environment with the realism of the public school classroom. They permit a variety of experiences with people in diverse environments that parallel experiences leading to proficiency in science, they permit entry and exit points for students who want to explore teaching as a career alternative, and they facilitate attitude and behavior change appropriate for effective teaching.

#### A New NSF Grant

All aspects of the current UPSTEP program are now either supported by the University of Iowa or self-supporting. Late in June 1975, word was received that a new three year grant had been awarded by N.S.F. The new grant is for the purpose of formative evaluation and for the production of modular materials that will enable others in teacher education to employ relevant parts of the UPSTEP MODEL. We are now in the initial stages of preparing modules that will detail specific parts of the UPSTEP model for faculty users. Each module will include: Objectives, Overview, Rationale, Activities, References, Evaluation and Student Handouts.

We have benefited from the help and advice of students, teachers and a variety of faculty and staff members during the formative years of Iowa UPSTEP, and we look forward to continuing close dialogue in the future as we work to develop new materials and to build a better program. In fact, we continue to seek the advice, the critical commentary, and the assistance of as many people as we can. If you would like to participate in our module development effort, please do correspond with us.

If you have some activities appropriate for teacher education that you think should be included as modules or parts of modules, we'd like to talk further with you about authoring or coauthoring a portion of the effort. Perhaps we can even provide you with assistance of some sort! We are looking forward to some creative contributions from a variety of sources.