R E P O R T R E S U M E S

ED 011 458 JC 670 375

INNOVATIVE DEVELOPMENTS AT BAKERSFIELD COLLEGE.

BY- JONES, RICHARD A.

PUB DATE MAR 67

EDRS PRICE MF-$0.09 HC-$1.68 42P.

DESCRIPTORS- *JUNIOR COLLEGES, *INNOVATION, ADMINISTRATION, COUNSELING, INSTRUCTIONAL INNOVATION, READING LEVEL, PROGRAM IMPROVEMENT, *COMPUTERS, INSTRUCTIONAL MATERIALS, *SCHEDULING, TESTING PROGRAMS, READING INSTRUCTION, SPELLING, BAKERSFIELD

A CLIMATE SUPPORTIVE OF INNOVATION PREVAILS AT BAKERSFIELD COLLEGE. WHILE SOME OF THE INSTITUTION'S APPROACHES CAN BE CLASSIFIED AS UNIQUE AND ORIGINAL, OTHERS ARE MODIFICATIONS OF EFFORTS BEING MADE AT OTHER COLLEGES. EXAMPLES OF INNOVATION ARE--(1) COMPUTER PROGRAMING IN CONJUNCTION WITH STUDENT COUNSELING, WHICH OFFERS THE STUDENT A 92 PERCENT CHANCE OF OBTAINING HIS FIRST CHOICES OF COURSES, TIMES, AND INSTRUCTORS, (2) COMPUTER-SCORED AND ANALYZED FACULTY-CONSTRUCTED TESTS WHICH PROVIDE ITEM ANALYSIS AND STANDARD SCORES, (3) A TELEPHONE DIAL SYSTEM OF TAPE RECORDING FOR LATER TRANSCRIPTION OF THE FOLLOWUP NOTES FROM COUNSELING INTERVIEWS, (4) A COMPUTER PROGRAM CAPABLE OF PROJECTING WITH REASONABLE RELIABILITY THE BUDGET NEEDS OF THE COLLEGE FOR 5-YEAR PERIODS, (5) FACULTY ADVISER ASSIGNMENT RELATED TO STUDENT ACHIEVEMENT AND GOAL ORIENTATION, (6) REMEDIAL SPELLING, REQUIRED WHERE APPROPRIATE TO ASSURE BASIC COMPETENCE OF ALL STUDENTS WHO WISH TO COMPLETE TRANSFER ENGLISH REQUIREMENTS, AND (7) AN ENGLISH PROFICIENCY CLASSIFICATION SYSTEM OF DUAL TRACKS OFFERING FOUR ENTRANCE LEVELS FOR PRETRANSFER STUDENTS AND TWO ENTRANCE LEVELS FOR NONTRANSFERS. OTHER NOTABLE PROGRAM DEVELOPMENTS CAN BE FOUND IN HOME ECONOMICS, BASIC ELECTRONICS, SPECIAL STUDIES, AND HONORS COURSES. THE LANGUAGE ARTS BUILDING UNDER CONSTRUCTION WILL FEATURE A MULTIMEDIA LEARNING CENTER. (AL)

INNOVATIVE DEVELOPMENTS AT BAKERSFIELD COLLEGE

A Seminar Paper

Presented to Professors

James A. Yelvington

and

B. Lamar Johnson

Education 261D

University of California

Los Angeles

by

Richard A. Jones

March, 1967

CONTENTS

INTRODUCTION

Bakersfield College is not an experimental college nor is it, by intent, particularly innovative. Instead it is an established, on-going college now in its fifty-fourth year of operation. Its program at least could be classified as a normal and successful one by the standards of California's comprehensive, public junior colleges. A climate that is supportive of innovation does prevail, however, and the college does enjoy greater visibility than many junior colleges in other metropolitan areas because it is the only one in its vicinity either four-year or two-year.

As is appropriate to junior colleges generally, this is a period of significant transition for Bakersfield College, which until recently was part of the Kern County Joint Union High School and Junion College District. In 1964, the college formally was taken over by the new Kern Joint Junior College District functioning as a one-campus district. But that is changing. On July 1, 1967, Porterville College and its area will become officially a part of the Kern Joint Junior College District. Also, since 1961 Bakersfield College has operated its Desert Division in Ridgecrest, 120 miles east of the parent campus; however until recently the desert branch was looked upon and managed as a division within the main campus. According to current expectations, probably it will be only a few years before the desert branch will be identified and classified as a separate institution.

The enrollment of Bakersfield College has continued to increase regularly, approximately doubling over the past ten years. This does not reflect the dramatic rate of growth of many junior colleges, some of which have opened their doors and surpassed Bakersfield's enrollment during this same period. However, the moderate growth rate has contributed a great deal to the faculty's quality. Each year's new faculty--hired from throughout the United States--has offered the advantage of a renewed cross-fertilization of ideas and backgrounds. At the same time, there has remained a large enough proportion of returning faculty to give stability and permanence to the program.

At present there are more than 200 full-time and 100 part-time faculty members and a total of more than 8,000 full-time and part-time students. The campus is serving approximately 4,000 full-time day students. At this point in time, Bakersfield College, along with many other colleges throughout the country, is fortunate. Governing board policies, administrative leadership, community support, excellent faculty participation, student performance, and the growth rate have all assisted in developing a campus climate which is supportive and conducive to experimentation and innovation. Up-dating, experimenting, and innovating practices generally are in high regard today. Nationally, public attitudes favor accepting and encouraging new approaches to the improvement of instruction more so than has been common in the past.

A Gallop poll financed by the Kettering Foundation reported this August that parents "reveal an amazing capacity to accept new educational ideas even though some of them are far-reaching in character. . ." Of the sample polled, 93% favored setting aside a regular part of the

school day to teach students to organize their thinking and work, to concentrate, and to analyze problems. Eighty-four percent approved of team teaching; 70% favored in theory non-graded schools or placement based on achievement levels. A plan of independent study was favored by 67%, and 59% approved of the use of programmed instruction. (16:16)

Necessity undoubtedly has invented this new public concern. Not only is the public more and more aware of the beneficial result of research and experimentation, but it also is becoming aware of the necessity to make the machinery of teaching and learning more efficient for simple survival in the developing world suffering from a so-called knowledge explosion.

The production, distribution, and consumption of knowledge in all its forms account for 29% of the gross national product, Dr. Kerr quotes Fritz Machlup. As a growth industry, knowledge production is increasing at twice the rate of the rest of the economy. Never before has knowledge been so central to the conduct of an entire society. It is the focal point for national growth, and higher education is at the center of the knowledge process. (11:88) And within the family of higher education, the greatest growth industry is the junior college.

Randall Whaley suggests that more changes in how men live and work will occur in the next 35 years than occurred in all previous history. There will be, he asserts, more than one-thousand times as much knowledge in the year 2000 than there was in the year 1900. It will need to be recorded, sifted, stored, taught, and used. He said that universities and colleges have not sufficiently reformed curriculum to meet the pressure of this knowledge explosion. (19:107) Consequently, the need

for improvement is evident and people seem willing to accept the inevitability of experimentation and innovation as the route to a solution.

The title of this paper uses the term innovative rather than experimental because many of the programs and special efforts have not in a true sense been experiments in that they have not been controlled and evaluated in a particularly scientific manner--many, in fact, may not lend themselves to this type of control.

In its general application, innovation could apply as a term to anything that an institution is doing which is new to it. The application of the term in this paper is not much different from that. An innovation is interpreted here as a deliberate effort to find an unique and hopefully better solution to general or specific problems of curriculum and related areas. The innovations reported are approaches new to Bakersfield College; and, if not untried elsewhere, they are at least unperfected and still in a developmental stage wherever else they also may be under study.

In a departmentalized faculty of several hundred, it is reasonable to assume that many creative and innovative practices are in progress which have not been reported or recorded through administrative channels. There is no single source on campus which maintains specific control over what has been defined as innovations; therefore, the result of this study is selective because a number of excellent efforts doubtless have gone unreported.

The offices of the dean of instruction and the vice president are the main sources and the appropriate channels for information about curriculum innovations. The role of dean of instruction at Bakersfield

is rather unique since the dean is responsible primarily for the improvement of instruction, and she is not concerned directly with formulation of schedules or budgets.

Although some evaluative comments will be included in the final section, it is not within the scope of this report to offer appraisals of individual programs but rather to produce a reasonably reliable portrayal of the innovations currently, recently, and soon-to-be underway.

It is the purpose of this paper to report innovative practices in curriculum and related areas at Bakersfield College, Bakersfield, California.

I. COMPUTER RELATED INNOVATIONS

Three innovations involving the use of the 1620 computer and other equipment in the college's Data Processing Center offer outstanding examples of experimental and innovative achievement. They are SWITCH, Sectioning With Instructor and Time Choice; the faculty constructed test program; and a five-year budget forecasting program for California junior colleges.

The adoption and use of SWITCH resulted from more than three years of critical discussion and evaluations by the counselors, the Student Personnel Committee, data processing instructors, and others concerned with the registration process. There was general faculty representation on the Student Personnel Committee. Computer controlled student registration is certainly not unique by any means, but the members of the committee were unwilling to sacrifice what they felt were the strengths of the long-used manual registration and counseling systems to computer limitations. Under close examination it was found that many of the student advantages claimed for the old method actually did not materialize. (3:1) Finally, SWITCH was prepared around the three basic concepts of the manual system: that a student should be allowed to enroll in a course which meets his particular educational needs; that a student ideally should be free to select the instructors he wishes for his courses; and that a student should be free to define, within reason, the time he is available to attend classes. These were the three basic concepts which were believed to be the strengths of the manual method. Therefore, SWITCH means Sectioning (registering in classes) With Instructor and Time Choice (made by the student).

The basic student-counselor interview was not eliminated; in fact, more time was available for a true counseling session since it no longer was necessary for the two to be concerned with figuring out a non-conflicting schedule. A simple form was completed at the interview on which the student indicated (1) the first choices of courses and instructors, (2) several alternate courses in the general education sequence if appropriate, (3) the times of days and evenings the student would be available to attend classes and (4) a group of three appropriate physical education classes, any one of which may be assigned to him by the computer after the basic schedule is determined. Even in this latter case it is possible for a student to indicate only one physical education class if, in the counselor's judgment, there is justification for inflexibility in this choice.

Lanning Flint, the colleges head programmer and director of data processing, estimates that under SWITCH students have approximately a 92% chance of obtaining their first choice on all items as opposed to only about a 70% chance under the manual bin card system.

The procedure is simple: a student makes an appointment with a counselor who helps him prepare the form and conducts an interview; a copy of the form goes to the data processing center where it is transfered to cards and fed into the computer which cannot develop a schedule for the student except within the limitations set by the student's choices. The computer before rejecting a proposal first attempts every possible combination. It levels classes whenever an instructor choice does not dictate a certain section. Rejections are few if the counseling session was effective. The counselor must help the student to be realistic in his choices of time, instructors, and courses. Obviously, the student cannot sign up for eighteen units

between 9 and 11 A.M. Monday through Thursday. On the other hand, many students do have committments for work and other responsibilities which prevent their attendance at certain times.

According to Flint, good master schedule design is the critical key to the success of SWITCH. (3:5) During the developmental stages, counselors recommended that master schedule not be made in advance of registration. Instead they wanted the student requests based simply on a listing of courses and instructors to be fed into the computer and for the computer to formulate the schedule based on student time needs. Flint agreed that this could be done. The result would be that most students would get exactly what they wanted when they wanted and that the faculty would have no idea about what their hours and days of teaching would be until a few days before instruction began. They would know, however, their unit load and classes but not the times the classes would be offered. Flint, using data of previous years, was able to develop a program that could predict an almost conflict-free master schedule. (3:7) The predictions even included the number of students in each class section. Generally, these predictions were accurate to within at least a plus or minus two or three students.

After two years of use, the general appraisal of SWITCH by students, counselors, faculty, and administration is highly favorable. At the outset, of course, there was some opposition. The student press responded editorially to the threat against the "depersonalization" of being computerized. But SWITCH has stood the test now and students realize that no longer do they have to wait in long lines only to learn their class choices have been closed and then begin all over again as often happened under former procedures.

The second computer related innovation is designed to aid the faculty and ultimately to improve instruction through improving faculty skills in measuring achievement. It is a teacher constructed test program developed and introduced in January, 1964. The 1620 computer and supporting equipment offer faculty an opportunity for the machine scoring of objective-type tests. Results are reported to the instructors on alphabetic lists of their students with test scores, a frequency distribution including mean score and percentile ranks, and an item analysis. (12:1) To say the least, this is a convenient, time-saving service for the instructors, some of whom never previously analyzed their tests to this extent.

The item analysis is a particularly strong feature of the program because it discriminates between good and poor students, and it provides a measure of difficulty for each item. It also indicates the usefulness of the various incorrect alternatives in multiple choice items. The analysis divides the students into the bottom 25%, the middle 50%, and the top 25%. An index of discrimination is used to indicate how many in each group answered each of the questions correctly and incorrectly. The system is able to completely score and analyze ten tests per minute.

The third computer related innovation is that of budget forecasting. Sidney G. Tickton suggested: (21:11)

> Another step junior colleges should take is to lay out a ten-year educational and financial plan, using the planning technique outlined in the booklet, Needed: A Ten Year College Budget, published by the Fund for Advancement of Education in 1961. This involves making assumptions and decisions on the kind of education to be provided in the years ahead, the number and kinds of students to be handled, and the kind of programs to be offered; then putting price tags on every item that affects the budget and calculating for each budget category the appropriate figures year by year.

Edward F. Little of Harvey Mudd College, at Claremont, California, developed in 1965 a mathematical model for private four year colleges and universities. Little's A Computer Program for Budget Forecasting describes a program written for the 1620 computer. (2:1)

At Bakersfield College in 1966, Lanning Flint developed A Five Year Budget Forecasting Program for California Junior Colleges. He found that Little's program was of too limited use because it was designed for private colleges. The preparation of the Bakersfield program in terms of California's uniform accounting practices and uniform state controls should make this program generally useful. (2:1)

The program was written in Fortran with format, and it forecasts budgets for five years, considering such relevant items as student load, tax base, plant size and value, income experience ratios, faculty size and cost, operation and maintenance costs, miscellaneous controllable factors and surplus or deficit. In addition to its use with a single institution, the program also was used to make budget comparisons and project needs of both Bakersfield and Porterville Colleges as part of the research which culminated recently in Porterville's voters electing to join the Kern Joint Junior College District.

II. COUNSELING INNOVATIONS

Following a year of discussion and planning, two innovations were started this year to improve counseling services and to aid in reducing the counselor's loads. They are the IBM-Phone Dictation system and the Faculty Advisement program.

The IBM-Phone Dictation program offers the counselor a convenient method for making complete notes to be included in student folders following each interview. For counselors with 300 or more counselees the obvious advantage of complete notes which can be reviewed prior to a subsequent appointment several months later is obvious. These notes may include personal matters as well as matters concerned with educational planning. Following an interview, the counselor merely dials 7 and then dictates his responses. Each day a secretary transcribes the tapes, and the next morning the counselor's comments are inserted, neatly typewritten, into the students' folders.

According to Kenneth Fahsbender, counseling director, those who have used the unit have expressed great satisfaction with it and agree that they now have a much more complete record than the had previously. At present, six of the thirteen counselors are using the dial and dictate method, and so do the six faculty advisers.

The project is being financed under the National Defense Education Act, Title V-A. The system includes an IBM PABX Recorder (Model 221) costing $480, an IBM PABX Control Box (Model 251) costing $320, a Secretarial Unit (Model 212) costing $405, and a dictation link which is rented from the telephone company for $85 a year. The equipment and the secretary's salary are paid out of NDEA funds. So far approximately

1,800 students have been served by the system. Secretarial time needed amounts to only several hours a day.

The typewritten note system also functions as a more accurate source for the many reports required in latter years to be written by counselors who may not have been acquainted with the student. F.B.I. checks and other recommendations are examples of this potential use.

The other new procedure in the counseling department is the faculty advisement system. Faculty advisers, of course, are not new to education. What is unique about Bakersfield's plan is the screening and processing that precedes the assignment of a student to a faculty adviser.

Currently, six faculty advisers are working with 320 students for educational advisement. The students were selected by their counselors last spring as ones who were making satisfactory academic progress, making wise educational decisions, and indicating no special needs in their personal-social life. Only sophomore students with proven college academic records are assigned to the advisers. The advisers represent the areas of social sciences, humanities, police science-agriculture, business, mathematics-science-engineering, and trades-industry.

In-service meetings of advisers have been held monthly to guide their efforts in advisement and in referral techniques. Fahsbender reports that preliminary indications suggest that advisees and faculty are pleased with the system. Final evaluation will be conducted in the late spring, and an enlargement of the program is planned for next year.

It is important to note that considerable screening by the dean of students and the counseling director went into the choice of faculty invited to advise.

III. DEPARTMENTAL INNOVATIONS

Under the leadership of its chairman, Dr. Hulon Willis, the English Department has tried a number of innovations--some have been abandoned at least temporarily and some have proved successful.

The English S (Spelling) program now in its fourth year has enrolled at one time about one-fourth of the day students. During the first week of each semester, students in English 1a and in English 50, the first remedial level below English 1a, are given a spelling test dictated in sentences. The test contains approximately 100 commonly misspelled words. Students who miss more than the amount of words determined by the department, must enroll in English S, a one-half unit spelling class which meets one-hour a week. Students with twenty or more errors on the test who do not enroll in spelling will be dropped automatically from their regular English courses. Since the college requires all full-time students to be enrolled in English until they have passed at least one course, this is a rather rigid ruling.

Furthermore, students must pass English S with a "C" or better before they are eligible to go on to the next English class in sequence. For example, if a student in English 1a failed the spelling test and took English S earning a "C" in it and also a passing grade in English 1a, he would be eligible to enroll in English 1b; but he would not be allowed to enroll in English 1b even though he passed 1a unless he also earned a "C" or better in English S. As another example, assume a student was in English 50 and failed to pass the Spelling Classification Test. He would have to enroll in English S. Assume he passed both with a "C" or better; he then would be eligible for English 1a. When he enters English 1a he <u>again</u> will be given the Spelling Classification Test. If he fails it,

he will have to repeat the spelling course even though he passed it once. The rules would apply to him in the same way they would to a student who had not previously taken and passed the spelling course.

The seeming severity of this program is lessened considerably by an examination of the actual spelling course and its requirements. The course deals with the mastery of certain basic spelling principles. The addition of suffixes beginning with vowels, the i-e, e-i combinations, and the uses of the apostrophe are examples. The words he must master are not difficult; they are common, every day words from average vocabularies.

Interestingly enough, the department's philosophy contends that spelling is little more than a social amenity; that it is not necessarily pertinent to effective composition, and that its inclusion in the curriculum is an effort to face up to the responsibility that a community college has for meeting the felt needs of the community. In essence, the approach could be paraphrased as follows: The public wants its college students to be able to spell normal words correctly, so that's what is required.

Student responses to the program are interesting. Usually it is negative at the outset but often it becomes quite positive by the end of the spelling course.

In concluding the discussion of English S, it should be pointed out that the course has been taught by Dr. Willis or other senior members of the English Department. Usually between 80 and 100 students are enrolled in each spelling section. Student readers and proctors are provided. English instructors as well as faculty in other departments, report a decided improvement in the spelling of those students who complete the program. Considerable space has been given here to English S because it certainly is such an unusual program.

Other aspects of the English Department's offerings warrant comment. Its general classification system should be reviewed because it is in essence dual track with multiple levels. Entering students are administered an English Classification Test and assigned to one of four levels according to previously determined cut-off scores. Level I is the transfer level, English 1a. The other three levels represent remedial gradations below it. At levels two and three are a series of courses in general English, business English, reading, and literature for the non-transfer curriculum, in addition to the basic remedial grammar courses for students attempting to qualify for transfer level courses. The fourth level has only one course, English 080 (Opportunity-80). Both students who indicate pre-transfer objectives and those who indicate non-transfer objectives who classify for English 080 must complete the course with "C" or better before they can move on. It is an extremely elementary class designed mostly for students who score around the twelfth percentile or below. It is at the 80 level that students are lumped together regardless of their state educational goals.

In addition to this unique classification system, the English Department has experimented with large lecture classes in basic grammar at the third level and found them to be about as effective as smaller classes. Massive lecture groups of several hundred coupled with smaller discussion groups have been presented successfully the past two years in Psychology 1a and in Economics 1a.

The English Department twice attempted to involve the entire faculty in an English Clinic program that depended on referrals of students from faculty of other disciplines. Instructors in other departments who found their students' English usage inadequate for success in their courses

were encouraged to refer the students to the clinic by using a simple gum-label system. The clinic actually was a tutorial situation in which the students met on a one-to-one basis at designated times with regular English instructors. English instructors also referred to the clinic their own students who suffered specific problems not necessarily appropriate to the instruction of the courses in which they were enrolled. The number of referrals was minimal, and after attempting the program in 1959 and 1961, the department abandoned it.

Another department that has been actively reaching out to meet community needs is the Home Economics Department led by Mrs. Barbara Hoyt. Currently the department is running two pre-school nursery programs, one on campus and one across town in a disadvantaged area.

Traditionally the department has operated an on-campus nursery which included not only the program for the children but also required participation from time to time in the nursery and required parent attendance in a child development course. The nursery itself provides a suitable laboratory for students in home economics as well as in psychology and sociology. It is equipped with a one-way glass observation area. An innovation this year in the on-campus nursery is the operation of a special program for Spanish speaking children and parents who know little or no English who are participating in a program integrating them with children and parents from middle-class English speaking homes. The Spanish speaking families classify under Assembly Bill 13.31 for pre-school compensatory education. Many of the parents of this group do not speak English at all. Both groups of parents are required to come attend two mornings a week for three hours. One parent group studies Spanish

while the other studies English; then they participate together for ninety minutes each week. There are two major goals: to help the Spanish speaking families to learn English and to offer a basis for group cooperation and increased understanding and communication. Thus far it has been quite successful. The Spanish speaking children and parents do seem to be learning more English than the English speaking families are learning Spanish.

At Friendship House, the low-income area nursery, the college provides teachers through Vocational Education funds. The nursery also is used as a laboratory during morning and afternoon sessions by students in the department. From six to eight students participate at one time. Mothers who enroll their children are required to complete a parent education class. Like the on-campus program, this pre-school nursery is operated only during the academic year. The depressed-area nursery program is in its second year of operation since the college took it over in 1965 from the A.A.U.W. which sought the college's assistance in continuing the program started by university women.

Other innovations by specific departments include an experiment in the teaching of basic electronics with programmed instruction on the AutoTutor Mark II. Flint and Hatch used three experimental groups in an effort to determine the effectiveness of the program with the AutoTutor which incorporates remedial looping, immediate feedback and various branching procedures. The Optimal Group received the conventional course plus equal time on the machine; the Machine Groups received instruction on the machine only; and the Lecture Group received the course via lecture only. (4:2)

Three of the experimenters' conclusions are pertinent to this report: (1) The Optimal Group performed at almost one standard deviation above the other groups; (2) No statistically significant differences in achievement between the Machine and Lecture Groups resulted. This indicated that the programmed instruction may be at least as effective as conventional instruction; (3) academic intelligance appears to predict achievement with the same degree of success in either automated instruction or conventional instruction.

The use of the AutoTutor as a supplement to instruction is gaining on the campus. During the 1964-1965 academic year 1,182 students and faculty used AutoTutors in the college's audio-visual services office. They have been used to supplement mathematics and English classes as well as electronics.

Since the AutoTutor as a teaching machine first gained attention in the late 1950's and early 1960's, other media are now commanding considerable interest also. In fact, the general labels of multi-media and systems approach are now commonly used to describe an approach to instruction which may include "gadgets" which appeal to different senses. One of the best known multi-media approaches to instruction is that of Dr. S. N. Postlethwait of Purdue University who has successfully used such a program in teaching botany classes. His approach emphasizes independent study. He explained that under a conventional approach, the inconvenience of getting information is an impediment to learning. (15:4) At the heart of Dr. Postlethwait's integrated experience approach is an emphasis on learning, not the mechanisms of teaching: (15:5)

> ...It involves the teacher identifying as clearly as possible those responses, attitudes, concepts, ideas, and manipulatory skills to be achieved by the student

and then designing a multi-faceted, multi-sensory approach which will enable the student to direct his own activity to attain these objectives.

With regard to physical facilities for his program, he emphasized that the integrated experience system is not necessarily expensive. He used simple booths built inexpensively with pegboard partitions on ordinary laboratory tables. (15:24)

An audio-tutorial approach modeled after Dr. Postlethwait's experiences currently is being used in the teaching of basic biology at the Desert Division, and NDEA funds are being sought to develop appropriate stations for independent study in all the biological sciences for next year at the Desert Division.

Similar to this proposed project for the Desert Division is one operating in the biological sciences this year on the main campus. It utilizes 8mm movie projectors designed for the single concept loop films and is intended to serve as supplement to class lectures and as a basis for independent study. This project is being supported on a matching fund basis under Title III-A of the National Defense Education Act. Dr. George Lawrence, head of the biological sciences department, is supervising the project which is intended to serve as a lecture supplement with the objective of helping students to gain an understanding of life processes and micro-dissection techniques. Some 8mm film loops will be purchased and other appropriate ones will be made as a part of the project.

These beginning steps in no way represent any total commitment to a systems approach, but they should provide a basis from which the college could move more in that direction.

IV. INTER-DEPARTMENTAL INNOVATIONS

Some new programs on the Bakersfield College campus are inter-departmental or inter-disciplinary in nature. Among them are some uses of audio-visual facilities, special studies classes for offering courses by arrangement for selected students, remedial block programs for students who are educational risks, and Honors at Entrance and Honors courses.

To avoid using valuable class time for the showing of applicable motion picture previews, instructors are able to schedule showings of their films in projection rooms in the audio-visual center. For example, a psychology film will be scheduled on a staggered basis five different times in a given week so as to give an opportunity to all students in the class to attend at least one of the showings. This has been quite successful. In the year 1964-65, for example, 2,584 students viewed psychology films in the preview room. Listening laboratories have been established in the Humanities Building with 36 stations (a language laboratory) and in the Audio-Visual Department with 28 stations. Each station in the language laboratory can be monitored from a console by the instructor providing a two-way communication between him and the student. All stations are equipped with headsets.

Moving more in the direction of independent study is a newly developed course called Special Studies 49 which can be taken for one, two, or three units upon faculty approval. It is designed for outstanding students and may be offered to them on an individual basis by any academic department. The course is by arrangement and is essentially a tutorial or directed project course. It may be used for outstanding students who

may be out of normal course sequence or who, in the faculty's judgment, could profit effectively from such class.

In contrast Basic Skills 100 was inaugurated last summer to try to provide a transitional step to college for students whose minimal skills would have meant certain failure for them. Covering the areas of remedial English, remedial reading and remedial mathematics in an intensive four-hour-a-day, five-days-a-week situation was found to appreciably raise the scores of the fifteen students enrolled in the entrance tests given at Bakersfield College. The students were chosen from a group whose initial test scores fell below those usually considered necessary for college success. This group further pared to those students willing to return for further voluntary testing, and then to those who also needed financial assistance.

The attendance was almost perfect and, since pressure for a grade was relieved by initial agreement of a C in six units upon completion of the assigned work, nearly all the assignments were found to be turned in on time. With help of a teacher-aide the corrected papers were returned in individual conferences. The instructor felt that the group responded generally very well to this type of situation, and that the results warranted further study with a control group and more effective procedures for checking results. If his recommendations are followed, and the good results are repeated, such a program could have far reaching consequences. This approach is gaining popularity as in innovation on many campuses. It often is referred to as basic block program.

While the use of a block approach for ill-prepared students is increasing, so is the idea of an honors program for superior students with outstanding high school records. Bakersfield College developed an

Honors at Entrance program three years ago. It now has been expanded to include honors courses in English, History, and health. The Honors at Entrance program recognizes outstanding high school graduates and gives them a great deal of special attention. Based upon their indicated majors they are assigned to selected, volunteer faculty sponsors. Teas, receptions, and other events are held for the group and give the students and their sponsors a good opportunity to become acquainted. Generally, the sponsors have made extra, out-of-class efforts to encourage and guide the students assigned to them. For example, one sponsor took his Honors at Entrance students with him and his family to enjoy various concerts in the Los Angeles area.

Advanced placement of superior high school students, honors programs for outstanding high school graduates, and credit by examination for certain standard courses are procedures gaining in acceptance. Among other junior colleges which use one or more of these methods are Orange Coast College, Allen Hancock, and Santa Barbara. Mira Costa Junior College allows outstanding local high school students to take summer classes for regular college credit. (17:4)

In essence the special honors classes are seminars which meet a limited number of times during a semester. Course requirements include either a final examination or a research paper. The development of the Honors program fits readily one of the categories Baskin suggests is representative of current innovations in higher education, the ". . . Disposition to loosen the curriculum through advanced placement, credit-by-examination, and the challenging of prerequisites." (1:10) In essence, the program offers a means of achieving aspects. In addition, the college has for a number of years offered an advanced placement opportunity in cooperation with local high schools.

That the loosening of the curriculum through these means is a developing trend also is suggested by Dr. Johnson who lists credit by examination and the enrollment of high school pupils in junior college classes as the direction of development. (8:63-67)

V. NEW FACILITIES FOR MULTI-MEDIA INSTRUCTION

Currently under construction is probably the most completely innovative single potential that the campus has produced. The new Language Arts Building will house a multitude of equipment related to the multi-media and systems approach to teaching, and, equally important, it is being constructed with the electronic capability for going beyond the plans for its first stage of operation.

Contained in the new complex will be electronically equipped carrels for 96 students, two language laboratories with 36 stations in each one, two large forum rooms, ten regular classrooms, and faculty offices, faculty lounge, and other facilities.

Of particular value will be a dial retrieval system which will allow access to 60 recorded programs from 107 different locations on campus. One of the language laboratories will be two-level for listening and responding, and the other will be three-level for listening, responding, and recording. The proximity of these facilities for independent study to the faculty offices is a strong feature emphasized by those institutions which have committed themselves to a total adaptation of the systems approach. Oakland Community College in Oakland, Michigan, which opened its doors its first year to more than 4,000 students, is completely oriented to a systems approach offering students the opportunity for independent work in carrels with faculty and turors always available. (22:21)

Another college with a complete commitment to independent study at individual carrels is Oklahoma Christian College, a small, residential college with an enrollment of 1,000 students. At Oaklahoma Christian

there is a Carrel for every student! (20) Its approach through the use of a taped workbook method is less sophisticated electronically than Oakland's, but the emphasis here is on the existence of the learning center as the focal point for independent study and student-teacher conferences. Independent study as a method and goal of education is clearly a trend among innovative institutions. Further, the development of learning centers, and library-learning centers available to students during regular class hours plus unusual hours has gained much attention. In fact, the possibility of operating learning centers on a 24-hour basis has been recognized as one way of meeting needs in certain areas. (9:32) What hours Bakersfield may eventually operate its new center has not been determined at this point.

At least, Bakersfield is developing the potential for an effectively designed learning center. Whether it ever will go beyond these current plans will be a decision made on the basis of its experiences in the future. Robert Gauvey, president of Roger Williams Junior College, while discussing implications for junior college experimentation, cautioned "It would probably be a serious mistake for any institution to make a specific commitment to one specific means or technique of instructional methodology." (5:11) He went on to emphasize flexibility in the planning of inside spaces.

Flexibility is clearly a mark of planning in Bakersfield's new facility which represents an effort to plan and include all the electrical conduit and capability for whatever future uses may be desired. Wiring is being made compatible with local telephone lines so that at a future time hookups possibly could go off campus, perhaps to the Desert Division, to Porterville, and to any other campuses. Such planning

potentially could lend to the development of computer assisted instruction now being used at Pennsylvania State University and Stanford University. (6)

Bakersfield College's new Language Arts Building also will have the potential for whatever future uses of television may be considered appropriate. For many years, the college has had an active faculty-administration Educational Television Committee, and in the past few years a number of experimental classes have been conducted using the college's current magnification set-up for teaching in the sciences.

Recently the California Coordinating Committee on Higher Education recommended to the U.S. Commissioner of Education the approval of the college's application for a grant under Title 6, Category 2 of the Higher Education Act. Considerable equipment including one portable and one permanent video tape recorder has been requested primarily for use at this time in the sciences. It is intended for use in several rooms on a closed circuit basis. The portable recorder and portable generator requested do expand the possibility of use to other areas of the college and to its sister campuses. The college is not moving by leaps toward educational television, but it is attempting to establish a program of sufficient potential to offer the opportunity for a thorough examination of the uses of television. Many other colleges at the present time do considerably more in the area of education by television. A notable nearby example is San Bernardino Valley College. Prominent examples nationally are the Television College of Chicago City Junior College and Delta College in Michigan, which uses closed-circuit television as an integral part of its teaching. (13)

VI. MISCELLANEOUS INNOVATIONS

A number of innovations defy placement in the previous categories. Among them is the Volunteer Tutor Program which was originated in 1963 by a friend of the college who organized a team of women in the community to work with foreign students and others who were unable to speak, read, understand, or write English well enough to survive minimally in the college environment. Later, this program was coordinated with a special remedial reading section for the same students. The students usually pay one call a week to the home of their tutors, and there they visit, exchanging ideas, and generally improve their understanding of each other's culture. This on-going program is an outstanding volunteer effort that has helped to salvage a number of students headed toward academic disaster. Generally, the students have been quite impressed that people in the community not affiliated with the college care enough to work with them.

A special project which transcends the entire junior college district is the Peterson Report completed in May, 1966. Dr. Basil H. Peterson, President Emeritus of Orange Coast College, was commissioned by the Kern Joint Junior College District to prepare a survey of the needs and developmental trends in the district and to make recommendations. Technical consultants for the survey were Dr. Leland L. Medsker, Vice-Chairman, Center for the Study of Higher Education, University of California, Berkeley, and Dr. Robert E. Swansen, President of Cabrillo College. Serving as Survey Assistant was Mr. Milton R. Sanden, then an Administrative Intern, Junior College Leadership Program, University of California, Los Angeles, and now Administrative Assistant at Bakersfield

College. (14) The report projected the probable needs of the junior college district to year 1980 and on to 2000. Growth trends and population distribution led Dr. Peterson to recommend that a total of six college campuses be planned in the district, assuming the Porterville District would decide to join, which it did. Two of the six campuses recommended would be on the desert side of the mountains, one in the Ridgecrest-China Lake area and one in the Mojave-California City area. The other two new campuses in addition to the existing Portervills and Bakersfield sites were recommended for Edison-Lamont-Arvin area and the Shafter-Wasco-Delano area.

In the report Dr. Peterson made a number of specific recommendations about the Desert Division which he suggested should move off the Burroughs High School campus to a site of its own as early as 1968. The isolated location of the Ridgecrest-China Lake area makes the establishment of a complete college there the only means of providing junior college services to the 30,000 people currently in the vicinity. In a sense the Desert Division as a satellite or branch campus is rather innovative in itself. It offers a day and evening program on a Monday through Thursday basis.

VII. SUMMARY AND CONTENTS

Many different phases of the Bakersfield College program are currently affected by innovative and experimental programs in progress. Some of these are unique and original, while others are modifications of efforts also being made at other colleges. It has been the purpose of this paper to present an overview of such developments. Neither the time nor the necessary data are available for adequately complete evaluation of these programs. In conclusion, therefore, I would like to review some of the most generally applicable programs with brief editorial comments on each.

The use of the computer in conjunction with the counseling department to program students electronically, while still offering them choices of classes, times, and instructors is indeed a singular achievement that has drawn considerable attention from other colleges. The unique feature of this plan is that a student has a better than 92% chance of obtaining his first choices of courses, times, and instructors; whereas he had only about a 70% chance of all three under the more traditional manual system. Other institutions utilizing computers for student programming generally offer no more than two of these choices, usually omitting the instructor choice.

Computer scored and analyzed faculty-constructed tests provide a service that can lead to improved instruction and student evaluation. Item analysis, standard scores and other electronically provided data save literally thousands of instructor hours and provide information that many instructors previously had neither time nor skills to calculate.

The counselor's telephone dial system of tape recording for later transcription of the follow-up notes from counseling interviews greatly expands the effectiveness of the counseling system. Despite the concern of some counselors that important personal information may be someday made available to people who might not exercise professional responsibility for the contents, this method has proven advantageous. Some sorting of materials to be kept permanently in a student's folder can, no doubt, be done. Another question has been that of confidential material passing through the hands of secretarial personnel. This poses as a legitimate problem the type of screening to be done on the people who will be employed in this area.

The specific utility of this innovation may not be too apparent to readers who have not faced the pres ure of "counseling" appointments scheduled every 20 minutes throughout the day. It is not unusual to run late, and the only place to make up time is by short-changing the follow-up notes. The value of complete, typewritten notes attached in the folder prior to the next interview with the same student is great and noticeable improvement of counseling effectiveness should be made, particularly in the area of personal counseling.

A computer program capable of projecting with reasonable reliability the budget needs of the college for five years into the future has manifest implications and advantages for institutional planning. Actually, the use of computers to aid the instructional and administrative personnel of a college to do more effectively their work has vast potential that has merely been suggested in such examples as these. The outstanding feature of these three programs points to the ease with which machines can help to personalize the relationships that a

student has with his college by relieving the personnel who are serving him of a vast load of clerical and mechanical tasks which have formerly taken so much of their time. Used sensitively, the computer need not be guilty of further depersonalizing a student's college experience.

Thus far, the faculty advisers who are assigned successful sophomore students already committed to given majors seem to be working out well. This system is another innovation growing out of the need to modify the counseling program to give the trained counselors the time to counsel, a major function of the curriculum in a junior college. Faculty advisement systems are not at all new. In fact, this writer found in 1963 that about twenty-five percent of California's junior colleges used faculty advisers instead of trained counselors. (*10*:13) The difference here is simply that no student is assigned to a faculty adviser until he has worked with a counselor for at least a year and is found to be academically and personally successful as a student. Heresay feedback during this first year of operation seems to indicate that the students are attaching prestige to being assigned to a faculty adviser as a symbol of having "arrived" in the environment.

The English S program reflects the college's attempt to respond to felt needs expressed in the community. Reasonably correct spelling is considered a social amenity, not necessarily related to effective composition. However, since the college's graduates often are evaluated as heavily on their spelling as on their more significant accomplishments, the institution has developed this program which requires competence in basic spelling of all students who wish to complete the transfer English requirements.

The general English classification system in itself is innovative

in that it offers a dual-track system with four entrance levels for pre-transfer students and two entrance levels for non-transfer programs. The non-transfer track also has its own group of literature courses in addition to regular grammar and composition classes. In some remedial classes, the English Department has successfully experimented with large lecture section-small discussion group classes. (Psychology 1A and economics classes have also been scheduled in this way.)

The projects of the Home Economics Department are worthy of special mention. The faculty and students are manning a pre-school nursery of the popular head start variety in a low socio-economic neighborhood utilizing parental participation and training in a parallel program to the observation-type nursery operated on the main campus. On campus the department is also running a special Spanish-English program along with its regular pre-school nursery. These experiments benefit many other areas of instruction such as psychology, sociology and the actual training program for nursery school workers.

The AutoTutor has been used successfully in Basic Electronics and in some technical mathematics classes. Preliminary experiments with three control classes in electronics indicated that the use of this electronic teaching machine, as a supplement, helped to increase student achievement.

Special Studies 49, a course which can be offered by arrangement by any department to its qualified students, emphasizes independent study which allows previously identified successful students to carry a special course when it is not offered or when they are out of sequence. Basic Skills 100, on the other hand seeks to solve the problem of the socially and culturally deprived whose chances of success in college

are very small. During the six weeks' period in the summer basic skills were taught intensively in a small group situation. It is to be hoped that this small beginning will be continued and expanded . No simple solution is possible to a problem this large, but the results of this program in terms of improved scores on the entrance examination do provide some hope.

Honors programs have existed for three years on the Bakersfield College campus. The Honors at Entrance program recognizes outstanding high school graduates who enter college. They are given special attention and assigned to carefully screened, volunteer faculty sponsors in their major area. Honors classes in English, history, and health are available to qualified freshmen.

Under construction is the Language Arts Building, a new learning center which will feature a dial-retrieval system, student carrels, and other facilities for independent study in a carefully controlled multi-media environment. The facility will have a built-in capacity for closed and open-circuit television instruction, video-tape replay, etc. This represents a significant commitment on the part of the junior college district toward a systems approach. It will, undoubtedly, open more new horizons for possible innovation as its full potential is realized. The electronic capability of the new center includes the possibility of hook-ups via telephone lines to the Desert Division and the Porterville Campus.

The Desert Division campus represents innovation itself. Currently operating a small day and evening program, this division tentatively plans for expansion into a separate college within the present district.

The Peterson Report strongly recommended that a site be acquired and a college built in the Ridgecrest-China Lake area by 1968, which would provided this isolated area of about 30,000 people with the services of a junior college. Dr. Peterson recommended that the desert campus make full use of a systems approach with an adequate library-learning center.

The Peterson Report itself is an innovation as it represents a contracted study and projection of district needs to 1980 and on to the year 2000. It also includes numerous recommendations regarding the development of the district. If the recommendations are followed, the district will, by 1985, be a large, multi-campus district with six separate colleges. Full use of educational television and a systems approach to instruction were recommended with the suggestion that programs be prepared that may be used at more than one campus.

In conclusion, it is reasonable to assert that the innovative practices reviewed in this report indicate, at least in part, the breadth of Bakersfield College's commitment to attempting modifications for the purpose of improving its program. What lasting benefits may accrue to the curriculum from all these efforts will not be known for years; however, a few things are apparent.

The supportive attitude, both from the campus administration and at the district level, has resulted in many innovations which have been directly advantageous to the institution. Even in such a climate as this, it cannot be expected that every new idea will produce a useful innovation.

It is commendable that the college generally has followed the basic axiom heralded by the literature in this area as the ingredient--faculty participation and involvement.

Some innovative efforts are not controlled and not evaluated systematically. At the risk of stifling some creative approaches, it may be wise for the institution to consider some means of keeping track of and evaluating its new efforts in an attempt to make them more scientifically experimental in nature and, subsequently, more valuable as a means of indicating the best directions for development.

ACKNOWLEDGMENTS

This student is particularly grateful to the faculty and administration of Bakersfield College for making available the information reported here. Dr. Edward Simonsen, president; Mr. Burns Finlinson, vice president, and Miss Margaret Levinson, dean of instruction, were very cooperative and willing to offer suggestions.

A special note of acknowledgment and gratitude is deserved by Mr. Milton Sanden, administrative assistant, whose liaison work was invaluable in the collection of information for this report.

BIBLIOGRAPHY

1. Baskin, Samuel, editor. Higher Education: Some Newer Developments. New York: McGraw-Hill Book Company, 1965.

2. Flint, Lanning, "A Five Year Budget Forecasting Program for California Junior Colleges," A mimeographed paper. Bakersfield College, Bakersfield, California, March, 1966, 25 pp.

3. Flint, Lanning, "SWITCH: Sectioning With Instructor and Time CHoice," A mimeographed paper. Bakersfield College, Bakersfield, California, March, 1966, 33 pp.

4. Flint, Lanning, and Richard S. Hatch, "Programmed Learning: A Comparative Evaluation of Student Performance Variables Under Combinations of Conventional and Automated Instruction," A mimeographed paper, March, 1962, 10 pp.

5. Gauvey, Ralph E., "Experimentation: Implications for Junior Colleges," Junior College Journal, 37 (October, 1966), 10-11.

6. Gilman, David A., letter and memoranda, November 9, 1966. Dr. Gilman is Research Coordinator, Computer Assisted Instruction Laboratory, The Pennsylvania State University, University Park, Pa.

7. Johnson, B. Lamar, "Experimental Junior Colleges: Some Stirrings," Junior College Journal, 37 (October, 1966), 6-9.

8. Johnson, B. Lamar, Islands of Innovation, Occasional Report Number 6, Junior College Leadership Program, UCLA, March, 1964.

9. Johnson, B. Lamar, "Needed: Experimental Junior Colleges," Junior College Journal, 36 (October, 1965), 17-20.

10. Jones, Richard A., "A Comparison of the Structure and Scope of Counseling Programs in Selected California Public Junior Colleges as Reported in Accreditation Applications," Unpublished seminar paper for Education 264AB, Junior College Leadership Program, UCLA, July, 1963, 41 pp.

11. Kerr, Clark. The Uses of the University. Cambridge, Mass.: Harvard University Press, 1964.

12. Levinson, Margaret, "Item Analysis for Teacher Constructed Tests," A memorandum to the Bakersfield College faculty, Jan. 17, 1964, 2 pp.

13. "A Look to the Future at Delta College," A Report fof a National Survey of Educational Environments (Summer, 1966), Part II.

14. Peterson, Basil H., Planning and Development of the Kern Joint Junior College District: 1966 to 1980. A Report to the Governing Board, May, 1966, 228 pp.

15. Postlethwait, S.N., and others. An Integrated Experience Approach to Learning with Emphasis on Independent Study. Minneapolis: Burgess Publishing Company, 1966.

16. "Public Wants Innovation, National Gallup Poll Shows," Nation's Schools, 78 (August, 1966), 16.

17. Roman, Paul A., "Miracosta College," Unpublished Seminar Paper, UCLA School of Education (April, 1966), 5 pp.

18. Skinner, B.F., "Teaching Machines," Science, VXXVIII (October 24, 1958), 969-979.

19. Smith, G. Kerry, editor. Pressures and Priorities in Higher Education. Proceedings of the Twentieth Annual National Conference on Higher Education. A Publication of the Association for Higher Education of the National Education Association, 1965.

20. The Sound of Learning at Oklahoma Christian College. (A Sample of a Taped Workbook) Oklahoma Christian College, April, 1966.

21. Tickton, Sidney G., "What's Ahead for Public Junior Colleges," Junior College Journal, 34 (November, 1963), 9-11.

22. Tirrell, John E., "(Total!!) Independent Study at Oakland," Junior College Journal, 36 (April, 1966), 21-23.