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AN EXPERIMENTAL PROGRAM OFFERING JUNIOR COLLEGE REMEDIAL ENGLISH INSTRUCTION SIMULTANEOUSLY TO HIGH SCHOOL SENIORS AND JUNIOR COLLEGE FRESHMEN VIA OPEN CIRCUIT TELEVISION. FINAL REPORT.

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American River College (Calif.) devised an experimental program in remedial English intended to better prepare entering freshmen. It was given by open-circuit TV simultaneously to high school seniors and junior college freshmen in the hope that, in subsequent years, there would be fewer inadequately prepared freshmen and that more could enroll immediately in college-level English. Students (from six high schools) with scores in the upper and lower limits for college admission were randomly assigned to fall-semester experimental and control groups. The control group received the regular senior English course. The experimental groups, both high school and college, received the lessons by TV. The college control group was selected from students enrolled in both remedial English and basic reading. Course content emphasized reading proficiency, language usage, and composition. The direction of change generally favored the experimental group in the high schools. The college groups showed no significant difference in the upward movement. A 3-semester followup study of the high school students' grades in later college English courses showed no significant difference in either level of class attempted or quality of performance. Both the college groups showed the same lack of significant difference. (HH)

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June 1968

U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

An Experimental Program Offering Junior College Remedial English Instruction Simultaneously To High School Seniors And Junior College Freshmen Via Open Circuit Television

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Kenneth D. Boettcher

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American River College

Sacramento, California

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INTRODUCTION

The Problem

California public junior colleges are required by state law and by their own educational philosophy to accept as students all high school graduates, and others who are defined as "adults over age 18 who can profit by the instruction." The student population of junior colleges is perhaps more heterogeneous than that of any other kind of college. The preparatory schools in California vary widely in the amount and quality of college preparation which they offer. Family backgrounds of the junior college student body reflect dissimilar socio-economic patterns. A broad range of academic ability is represented.

While the majority of entering junior college students state their intention to follow a transfer program leading to the bachelor's degree in a four-year institution, a large proportion of entering students are not prepared for college level courses and must take additional, often non-credit, courses before being admitted to the normal freshman course work. Between 60 and 70 percent of American River College applicants fail on entrance tests to qualify for college English (English 1A). Before being admitted to English 1A classes, these students must successfully complete a semester's course in "remedial" English (English X), which focuses on writing expository essays. The course does not offer transfer credit but credit earned is counted toward the two-year Associate in Arts degree. The course may be supplemented by short nine-week classes in remedial spelling and Developmental Reading Skills (English 52).

Twenty to twenty-five percent of students enrolled in English X fail to make satisfactory progress in the course. They may then repeat the course without credit. Of those who progress from English X to English 1A, about 50% successfully complete the college level course. Examination of American River College records suggests that "marginal" students who first take English X perform better in a subsequent 1A class than do "marginal" students who enroll directly in English 1A.

In fall semester of 1965, a total of 96 English sections were offered for freshman students at ARC; of the 96, 63 sections were designed specifically for students who needed remedial English. These courses were conducted by a staff of fully qualified English instructors.

The condition is not unique to American River College. According to a report of the National Council of Teachers of English (published in "The National Interest and the Teaching of English") 87 percent of American colleges found it necessary in 1960 to test competence of entering freshmen in English, the cost of this

placement testing probably exceeded $800,000, and an estimated 150,000 students failed the tests in that year. Almost two-thirds of American colleges were offering remedial work in English, in 1960, at an estimated cost of over $10 million for the instruction alone. A study of trends over a ten-year period suggested that the number of entering college students not qualified for English 1A would continue to increase and that with the burgeoning growth of junior college enrollments the increase would be most evident in public junior college.

Relevant Studies:

Several studies have been made that are relevant to American River's attempt to test whether instruction in college remedial English via open-circuit television directed to high school students would result in better preparation of entering freshmen. The pioneering community television program of the Chicago City Junior College (summed up in the "Final Report of a Three Year Experiment," by Clifford G. Erickson and Hymen M. Chausow)[1] made achievement comparisons for various population groups. Unlike the majority of studies examined, the Chicago project showed that in almost all cases the television experimental groups either equalled or surpassed the achievement of conventional classroom groups. (This project was directed primarily to adults and to junior college students, but American River staff felt that its implications might be applicable to high school seniors.)

The studies reported by Arthur Lumsdaine and associates[3] in the American Institute for Research at Pittsburgh were useful in the preparation of this study, especially the findings related to effectiveness of small-step sequencing of lesson content, active student response followed by knowledge of results at each step, and preliminary tryouts of the lessons to reduce errors of omission and commission. These suggestions were incorporated where possible into development of the project reported here. Lumsdaine reported it was "difficult" to gear instructional TV programs effectively to audiences that were highly heterogeneous in learning ability. Among the children he studied, "high IQ" experimental groups benefited more from lesson programming than did "low IQ" experimental groups, compared with the respective control groups matched for ability.

Also relevant to preparation and analysis of this study was the work done at University of Miami on a 1961 summertime television course for recent high school graduates, reported by Sydney W. Head.[4] Head's study found it was "not possible" to motivate sufficient numbers of recent high school graduates to take summer interim television courses, and that students with academic deficiencies were the least likely to take televised summer courses voluntarily. His experimental group turned out to be distinctly characterized by above-average motivation and academic ability.

Summer scheduling for the remedial project reported here may have eliminated or simplified certain problems that were encountered in the project, especially in scheduling classes and in randomizing the samples. On the other hand, by offering the course during a regular school semester it was possible to minimize variables such as motivation and ability.

Objectives and Purposes:

The project described in this report represents an attempt to test whether the number of entering freshman students who are inadequately prepared for college English might be reduced by offering instruction in freshman remedial English through open-circuit television to high school seniors.

It was hypothesized, first, that 18 weeks of remedial English instruction transmitted to high school and junior college classrooms simultaneously over open-circuit television would produce "a significant increase in the proportion of high school seniors and junior college freshmen" who would qualify for admission to college level English; second, that such a course, taught simultaneously to groups of high school seniors and entering junior college freshmen, would effect a reduction in the need for on-campus college instruction in remedial English; and third, that a remedial English course applicable to students of different age and educational levels (high school and college) could be cooperatively produced by high school, junior college, and educational television personnel.

Assumption was that a major coordinated effort between secondary school and junior college would be necessary to meet the growing burden of remedial English programs at the college level, a condition which is causing an increasing amount of teacher talent, instructional time, classroom space, and educational budget to be siphoned off into the single area of remedial English, and which lengthens the time students must spend in college between entrance and graduation. If a cooperative effort utilizing open-circuit television should yield promise of a substantial saving in the areas mentioned, and if the effort should result in stronger articulation between secondary schools and college in the area of English instruction, the consequences might be generalizable to other areas of instruction and to other geographical regions.

METHOD

The procedures followed in this investigation were designed to meet the requirements posed by the various hypotheses that led to the study.

The project was originally scheduled for spring semester 1966. However, funding was not made available until July, 1966, and the

program was therefore put into effect in fall semester, 1966. First-semester high school seniors and junior college freshmen received the televised remedial English in their classrooms. Thus, for high school students, between final exposure to the television course and eventual enrollment in the junior college there was a lapse of at least seven months. It was recognized that this intervening time might have a blurring effect on the influence of the program on later college performance.

Placement

It should be noted that American River College at this time (1966) placed its entering students in English classes at several different levels, based on their performance in the English Expression and Reading Comprehension sections of the English Coop Test Form 1C. (For details of cut-off scores and placement procedures, see Appendix A.) A supplementary part of the regular test battery for all entering students was the School and College Ability Test, yielding V and Q scores. For purposes of the present project, both tests were administered in the spring semester to high school juniors in six participating high schools of the San Juan district. The original intention, to limit the study to three participating high schools, was altered at the request of the San Juan school district because teaching personnel of six of its schools wished to be involved in the program, and to explore its possibilities.

English X is a course developed specifically to upgrade the competence of students who intend to complete a four-year college program but who fail on entrance to American River College to earn a test score at or above the lower limit for admission to college level English (English 1A). Students whose scores fall below the lower limit for English X are normally counseled into a "terminal" English program (English 50) for students who will complete their formal education at the junior college, or into special remedial classes in spelling or reading (English 52). Experimental instruction was titled English 52X, indicating its combination of English X and English 52 elements.

In order that students in the project who later enrolled at American River College would not be required to take the placement tests again, it was agreed among the college counselors that the median verbal and quantitative scores for all entering freshmen in fall 1966 would be compared to the median scores earned by the high school students represented in the project; where differences existed these would be used to compute "bonus point" adjustments. (The early testing was not expected to reflect serious developmental factors. The CEEB-SAT and National Merit Test literature both indicate a negligible difference in scores of students tested at the end of the junior year and during the senior year. In fact, students are urged by SAT to take the test as early in the

senior year as possible.) It was also agreed that high school students in the control groups who tested at the English X level in their original placement (OP) could later, upon entrance to American River College, register for English X regardless of their end-of-project placement (PP), if they so desired. Those whose OP did not qualify them for English X could take a special placement test in English late in the spring semester of their senior year, at the regular testing time for junior college applicants.

Nature of Sample:

Project design called for one large experimental television class on the college campus and one at each of the participating high schools. Subjects would be students randomly selected from among those whose scores on the English Coop test fell within the upper and lower limits recommended for entrance to American River's Remedial English X. This determined their Original Placement (OP). A similarly assembled class at each school was designed to serve as a control group, receiving regular instruction. The college control group was composed of students enrolled concurrently in English X (offering 3 units of credit) and English 52, the basic reading skills course (2 units).

It should be noted that English X classes normally admit some freshmen who have failed to earn qualifying scores for English X but who, because their intention is to be "transfer" students, do not want the terminal English course. This occurred to some extent in the composition of the experimental TV class at the college. The secondary school classes represented something of a mixed bag, too, since some of the schools appeared to have found that it was unfeasible to form classes containing only students who tested within specified limits, or who were identified as "college-bound." Class schedules and course requirements both influenced the high school class structure, as did the simple fact that public school classrooms had to be filled up. If there were not 25-30 students in a class, other students both above and below the range for English X were added.

It was felt that the effects of this adulteration of the samples would not be critical, however, since a major objective of the project was to test whether a television course could bring about an upward movement of students from one English level to another, and since there were enough students in the program at both high school and college levels to permit extraction, for study purposes, of a sufficient number of defined English X students.

This assumption seems to have been justified, as mean placement test scores on the English Expression section of the test in all major groups -- 1. High School TV, 2. High School Control, 3. College TV, and 4. College Control -- show only negligible differences. (See Table 1, p. 6). Grade-point averages show a similar absence of significant differences.

Table 1

Total Group
Mean Scores and SD's on English Expression Section of English Coop Test, Form 1C*

Group	N	M	S.D.
1. High School TV (E)	158	149.62	8.10
2. High School Control	172	150.80	10.14
3. College TV (E)	84	151.61	7.00
4. College Control	94	151.58	5.53

*t values derived for the differences between any two of these groups indicate the null hypothesis cannot be rejected; all four samples seem to have come from the same population. The small S.D.'s also suggest the sample's homogeneity.

Table 2

Total Group
Mean Score and SD's on Reading Comprehension Section of English Coop Test*

Group	N	M	S.D.
1. High School TV (E)	158	154.41	7.27
2. High School Control	172	156.35	8.26
3. College TV (E)	84	155.97	6.01
4. College Control	95	153.96	6.00

*Differences in reading comprehension are significant at the 5% confidence level between Groups 1 and 2; 2 and 4; and 3 and 4. The high school control group tests higher than high school experimental and college control groups in reading comprehension; college experimental group exceeds college control.

The college experimental group was measurably superior to all other groups on SCAT-Verbal ability. A degree of selectivity may have been introduced into the college TV sample by the fact that some students registered for the TV course by choice. In the high schools the element of student choice was minimized since all classes were arbitrarily assigned. (See Table 3, below)

Table 3

Total Group
Mean Scores and SD's on School and College Ability Test-Verbal*

Group	N	M	S.D.
1. High School TV (E)	115	33.53	19.13
2. High School Control	94	35.63	22.16
3. College TV (E)	83	45.80	19.38
4. College Control	93	37.04	19.95

*For the small difference in performance between Groups 1 and 2, the high school experimental and control classes, the null hypothesis cannot be rejected. The groups demonstrate about the same academic ability, with the control group having a slight edge. It may be noted that the distributions are positively skewed and rather flat. An obtained t of 4.39 between Groups 1 and 3, the high school and college experimental classes, indicates the null hypothesis must be rejected above the 1% level of confidence. The college experimental group sample demonstrates a clear superiority in the kind of academic ability measured by the SCAT-V. This is perhaps not surprising since these subjects are from a college population and thus are already screened to some extent. The obtained t of 4.00 between Groups 2 and 3, high school TV and college control, is similarly significant. Between Group 3 and Group 4, college experimental and control, the difference in performance shows an obtained t of 2.92, also beyond the value required for the 1% level of confidence. Since the element of choice was not controlled at the college level, the difference suggests that better-endowed students were more willing to "try something new."

The large S.D's shown for the four groups in SCAT-V mean scores suggest the broad range of academic ability within the groups. These differences are further emphasized when SCAT scores are compared for those students in each group who met, in the original placement tests, the standards for entrance to remedial English X (that is, fell within the defined range). When examined separately from the total TV group, these "defined" English X members of the high school experimental group are shown to test on the SCAT-V at a lower level than their counterparts (defined English X students) in the high school control group. (See Table 4, below) The difference may mean that a larger proportion of students in the high school experimental TV group were non-college bound. It appears that the schools tended to assign more declared "college prep" students to the "safer" regular course pattern for the senior year.

Table 4

English X Samples, students meeting English X entrance test requirements

Mean Scores and SD's on School and College Ability Test-Verbal*

Group	N	M	S.D.
1. High School TV (E)	59	40.94	18.24
2. High School Control	41	48.31	18.30
3. College TV (E)	54	48.44	19.72
4. College Control	57	37.28	20.17

*Between Group 1 and Group 2, high school TV and control, an obtained t of 1.96 indicates the null hypothesis must be rejected above the 5% level of confidence, for performance on the SCAT-V.

The experimental high school group, when screened for those subjects who qualified for English X on the placement test, appears to have been "negatively selected" for academic ability as measured by SCAT-V. The control group, screened for those who qualified for English X on the placement test, appears to be better endowed in academic ability.

Between Groups 3 and 4, college TV and control, the obtained t of 2.93 indicates the null hypothesis must be rejected above the 1% level. In the college samples the "defined" English X students in the experimental TV group actually test significantly higher on the SCAT-V than do their counterparts in the control group. The finding is consonant with the fact that while these experimental students did not perform well academically, and thus required remedial English, they did have enough confidence in their own ability to select the experimental class over traditional instruction.

For difference between Groups 1 and 3, high school and college experimental classes, the obtained t of 2.07 indicates the null hypothesis must be rejected above the 5% level. When the samples are drawn out of their larger corresponding samples on the basis of being defined English X candidates, both sub-samples show higher academic ability than the total group from which they are drawn, but the "negative selection" of the high school TV sample is still evident.

Procedures

Faculty of the college English division began planning the course content a year in advance of the actual project. Television teachers, drawn from among interested and available English faculty, were selected after auditions with the Channel 6 director and producer. The TV instructors did not memorize or read scripts; they spoke instead from outlines which were developed in consultation with their colleagues to ensure that a combined remedial English X and basic Reading Skills course were adequately covered. Participating high school instructors were given the semester broadcast schedule (Appendix B) along with advance information of program content and the ARC approach to remedial English instruction. They were supplied with daily lesson materials, questions, dates for diagnostic and achievement testing, test keys, and the like. Books and other supplies were ordered and made available in advance. High schools provided their own television receivers and in some cases their own equipment for the reading segment. (The materials are included in the Supplement.)

In May, reading instructors prepared the teacher syllabus, tests, course outline, and TV script outlines for the reading segment. Videotaping began in July at ETV station KVIE and continued through September. These tapes were shown daily from September 12 to October 17, in 30-minute segments of the class periods.

Work on the grammar section began in mid-May. The Language Usage Handbook[5] was completed by ARC's Helen Mills and printed by the middle of October; videotaping continued to the middle of November, and tapes were shown daily from October 20 to November 28.

For the composition segment the teacher syllabus, script outlines and taping went on from mid-October through mid-January 1967. Tapes were shown between November 30 - January 20.

Taping the television presentations was done at the studios of station KVIE. Released time was provided by the college to all participating faculty members for purposes of writing, rehearsing, pre-testing and validating of materials; taping and retaping; and arranging for guest speakers and demonstrations.

Printing and mimeographing, secretarial and clerical help, and qualified reader for the final achievement tests were provided by the college. ETV station KVIE employed a visuals artist to assist the TV instructors.

Time of day when the class could be presented over television was limited by the fact that the TV station had programs regularly scheduled for transmission to elementary classrooms during certain school hours. The project was narrowed down to the 8 a.m. period. Televised instruction was given between 8:20 and 8:50 a.m., representing a compromise between the class schedules of high school and college. In the 20-minute period following presentation at the high schools, students discussed the lesson, did exercises, and took quizzes as assigned under leadership of the classroom teacher. For the college class, which met from 8:00 to 8:50 a.m., the review period took place preceding the next day's TV presentation.

The videotapes were also shown over Channel 6 at 6:30 p.m. Interested viewers followed the programs at home without college credit, and many viewers purchased the texts. A small credit class met on Saturday mornings for a two-hour period on campus, to discuss lessons and take the tests.

College project staff members made themselves available to the classroom teachers for consultation throughout the semester; at the end of the semester high school personnel were asked to evaluate the program and to invite evaluations from their students. A meeting was arranged at the college in which each high school and college classroom teacher gave his impressions, criticisms and recommendations.

Course Content

The course consisted of three parts: reading, language usage, and composition. In the reading segment the TV instructor

demonstrated ways to increase reading comprehension, improve eye movement, build vocabulary, understand test directions and test questions, preview a textbook, and use library references. The tachistoscope and EDL Controlled Reader were routinely used. Students did exercises in Breaking the Reading Barrier[2] by Doris W. Gilbert, supplementaty exercises, and took a diagnostic test, four quizzes, and a final exam.

Each of the 25 lessons in the reading segment had a specific objective which was spelled out for both teacher and student. Some sample objectives follow: "To understand the barriers to effective reading" (reference to subvocalization, regression, eye fixations, concentration, limited vocabulary); "To introduce the concept and practice of phrase reading;" "To review an approach to dictionary study;" "To encourage flexibility and speed by reading light materials" (providing a list of recommended books which focussed mainly on light but mature fiction and non-fiction, and which were available in paper-back editions and in the school library); "To explore techniques to be used in newspaper reading" (guest speaker was a former newspaperman and deputy secretary of state); "To gain competence in selecting main ideas in a paragraph;" "To understand something of the history and changing quality of the English language" (presented by an entertaining professor of speech and drama); "To investigate effective ways of preparing, reading and writing examinations;" "To introduce the student to the wealth and availability of supplementary materials." Throughout the reading segment there was emphasis on assisting the students to improve vocabulary skills, directly and indirectly; materials and approaches were selected that would stimulate reading and encourage the reading habit.

The language usage segment was a general review of grammar, punctuation, syntax, and usage. TV lectures were explanations and discussions of "grammar rules" illustrated with examples. Students did daily assigned exercises in Language Usage, the book prepared especially by a staff member for the course. In addition, they took a diagnostic test, an achievement test, and a final grammar exam.

The final segment focussed on rhetoric and discussion of essays both as examples of rhetorical principles and as bases for writing paragraphs and expository essays. The TV lessons had presentations by the TV instructor and a number of guest speakers: men in professions and business, high school and college instructors, and college students. Students wrote papers both in class and outside of class on assigned topics. They wrote a 500-word essay as a part of their final examination.

This segment drew heavily on guest speakers or performers who had something unusual to offer. The first TV presentation featured three college instructors discussing the philosophy of

English 1A. The textbook, "From Thought to Theme,"[6] by Smith and Liedich, formed the core of the reading, and provided a wealth of controversial essays used to trigger student reaction and encourage their spontaneous writing. Emphasis in composition was less on form than on content.

More than the average amount of student production was probably required of the TV students. Materials were sought for the course that had immediacy and relevancy, and students were involved in the evaluation of their own work at all stages. Rapid feedback on their production was provided despite the extra workload this placed on the classroom teachers.

Analysis: Data collection during the course of the project was designed to measure student gains in English performance. Diagnostic tests and achievement tests were administered for each segment of the course, and for the entire course.

The primary question to which the project addressed itself was this: Can a cooperatively developed program of remedial English, offered over open-circuit television, be effective in preparing otherwise unqualified high school seniors and junior college freshmen for entrance to college level English classes?

The data lent itself to treatment by a simple analysis of variance; t-tests were applied to placement test scores of the four groups (high school TV and control, college TV and control) to determine if the samples differed in significant ways before exposure to the semester's instruction. Data were examined for evidence of difference in gains made in English performance by the experimental and control groups. Chi square was used to test significance of difference among groups in their movement from one English level to another during the semester. Simple proportionate analysis was adequate to show the percentage of students who actually succeeded in qualifying for English 1A, after exposure to the two methods of teaching. Chi square was applied to follow-up studies in which the performance of students in the various groups was compared after two semesters of college level English courses at American River College.

RESULTS

Differences appeared among the groups in the proportion of students who made changes in placement during the semester from one English level to another. Frequencies, direction of change, and percentages are shown in Table 5, p. 12. The direction of shift generally favors the experimental group in the high schools. The college groups do not show this difference.

Table 5

Change from Original Placement to Project Placement, TV and Control Groups

High Schools	Experimental (N=186)		Control (N=198)	
	N	%	N	%
Improved	50	26.8	29	14.7
From X to 1A	32	64.0	21	72.4
From 50 to X	5	10.0	5	17.2
From 50 to 1A	13	26.0	3	10.3
No Change	66	35.5	79	39.8
Placed Lower	18	9.7	47	23.7
Incomplete/Dropped	52	27.9	43	21.7

Junior College	Experimental (N=89)		Control (N=93)	
	N	%	N	%
Improved	F46	51.6	45	48.4
From X to 1A	27	58.6	21	46.6
From 50 to X	15	32.6	18	40.0
From 50 to 1A	4	8.7	6	13.3
No Change	26	29.6	27	29.0
Placed Lower	0	0.0	11	11.8
Incomplete/Dropped	17	19.1	10	10.7

The table shows that 26.8% of the high school experimental group made gains (i.e., earned a post-semester Project Placement higher than their pre-semester Original Placement), compared with 14.7% of the control groups. Some students regressed: 9.7% of the high school experimental group actually lost ground during the semester (i.e., earned a Project Placement lower than their Original Placement), compared with 23.7% of the control group. Of the experimental high school class 35.5% received the same Project Placement at the end of the semester as they had at the beginning; of the control group, 39.8% made no change in placement.

Examination of the nature of shifts within individual high schools involved in the project reveals that upward movement was most apparent in those schools whose experimental classes were formed mainly of students who had originally tested within the English X range on the English Coop test. These are the students for whom the remedial English instruction was designed. The spread of upward movement among the six schools ranged from 15% in one school to 50% in another, the former representing a

school whose TV class contained a relatively low percentage of "defined" English X students, the latter representing a school whose TV class had a large proportion of correctly placed English X students.

The college population yielded less difference between experimental and control groups. In the experimental television class, 51% made gains in placement, and in the control group, 48.4% made gains. Differences in the "no change" category were also negligible -- 29.6% for experimental and 29% for control group. No students in the experimental college group placed lower at the end of the semester than at the beginning, but 11.8% of the control group regressed in placement. Offsetting this latter difference between the two college groups was the fact that 19% of the experimental class dropped out of the course or failed to complete it before the end of the term; only 10.7% of the college control group failed to complete the course, and no withdrawals were recorded for the control students.

Application of chi square to the data summarized in Table 5 is shown in tables that follow. High school control students, not exposed to the experimental television instruction, are shown to have made less gain during the semester as measured by pre- and post-semester English level placement. The obtained values were well beyond the 1% level of confidence. For comparison of the high school subjects who completed the semester course, see Table 6.1 below.

Table 6. 1

High School Groups:
Chi Square for Changes in Placement: TV and Control Groups*

Group	Improved Placement	No Change	Earned Lower Placement	Total
HS-TV (E)	50 (36.62)	66 (67.23)	18 (30.15)	134
HS-Control	29 (42.37)	79 (77.76)	47 (34.87)	155
Total	79	145	65	289

*χ^2 = 18.23 The larger gain in placement made by the high school TV group appears significant at the 1% level of confidence. In 99 cases out of 100 this difference would not be obtained by chance. The frequencies in the TV vs Control groups would seem therefore to be not independent of the instructional approach.

This data was reexamined with a simplified chi square having 1 degree of freedom. By collapsing the figures in the two right-hand columns (No Change and Earned Lower Placement), and

considering only the question whether the students who completed the course improved their placement level or did not, a chi square of 13.14 is obtained. Again, the null hypothesis is rejected at the 1% level, with a statistically significant difference appearing between the two groups. The advantage is on the side of the experimental classes which received remedial English instruction via television. (Table 6.2 below.)

Table 6.2

High School Groups:
Chi Square for Semester Gains: TV and Control Groups*

	Improved Placement	Failed to Improve	Total
HS-TV (E)	50 (36.62)	84 (97.37)	134
HS-Control	29 (42.37)	126 (112.62)	155
Total	79	210	289

*$\chi^2 = 13.14$

The question arose as to whether or not there was a meaningful difference between number of subjects in the two groups who failed to complete the semester's course. A slightly larger proportion of subjects in the high school TV classes (27.9%) dropped out before the end of the term or took Incomplete grades. In the control group, 21.7% withdrew or earned Incompletes. Chi square applied to the frequencies revealed only negligible differences, suggesting that for the high school groups the factor of instructional approach did not affect persistency. (Table 6.3, below.)

Table 6.3

Total High School Groups:
Chi Square for Attrition in TV and Control Groups*

	Completed Course	Did Not Complete Course	Total
HS-TV (E)	134 (139.98)	52 (46.01)	186
HS-Control	155 (149.01)	43 (48.98)	198
Total	289	95	384

*$\chi^2 = 2.00$ The null hypothesis is not rejected. The difference in attrition for the two groups may be seen as a chance occurrence.

The data was arranged to produce one more measure, in an attempt to identify the effect of possible irrelevancies. In this application, the groups are compared for frequency of 1) Improved Placement, 2) No Change, and 3) Regression or Failure to Complete Course. (See Table 6.4,below.)

Table 6.4

Total High School Groups
Chi Square for Changes from Original Placement to Project Placement*

	Improved	No Change	Regression Drop/Inc.	Total
HS-TV (E)	50 (38.26)	66 (70.23)	70 (77.50)	186
HS-Control	29 (40.73)	79 (74.76)	90 (82.50)	198
Total	79	145	160	384

*$\chi^2 = 5.86$ While not quite reaching the chi square required for statistical significance at the 5% level of confidence (5.99, with 2 df), the result does suggest an unlikelihood that differences this large would be obtained from this population by chance. Again it appears that of the two instructional approaches at the high school level, the advantage is on the side of the experimental TV group.

Chi square was applied to discover any differences in upward movement made by the college experimental and college control groups. Since no subjects in the experimental college class regressed at the end of the semester to a lower English placement than the one received at the beginning, the two categories -- No Change and Earned Lower Placement -- were combined to yield chi square. For the college groups, unlike the high school groups, only a negligible difference appears when the number of cases making no change in placement is combined with the number of cases regressing to a lower placement. (See Table 7.1, below.) Data applies to students who completed the course.

Table 7. 1

College Groups:
Chi Square for Semester Gains: TV and Control Groups*

	Improved Placement	Failed to Improve	Total
College-TV (E)	46 (42.27)	26 (29.67)	72
College Control	45 (48.72)	38 (34.20)	83
Total	91	64	155

*$\chi^2 = 1.47$ Differences between the two groups in the amount

of improvement are pretty much balanced out, when the question asked is simply what proportion improved placement and what proportion made no progress after completing a semester's course of instruction. The finding is not surprising, in view of the fact that the college control group received remedial English instruction in classes regularly offered at the junior college, whereas the high school control group was not exposed to the remedial course.

Examination of the two college groups in terms of attrition vs. perseverance yielded no differences from which any inferences could be drawn. (See Table 7.2, below.)

Table 7. 2

Total College Groups:
Chi Square for Attrition in TV and Control Groups*

	Completed Course	Did Not Complete Course	Total
College TV (E)	72 (75.79)	17 (13.20)	89
College Control	83 (79.20)	10 (13.79)	93
Total	155	27	182

*χ^2 = 2.49 Measured against the total number of subjects in each college group taking the remedial English course, by television or by traditional instruction, the frequency of withdrawals and incompletes does not yield any interesting difference. The element of chance could explain the small advantage of the control group for perseverance; stated differently, chance factors could account for the slightly poorer showing of the television class.

The final approach to the data of the college subjects involves combining frequencies of those who regressed and those who withdrew or failed to complete the course; here chi square again supports the inference that differences in course performance between the two college groups were probably due to chance. (See Table 7.3, below.)

Table 7. 3

Total College Groups:
Chi Square for Changes from Original Placement to Project Placement*

	Improved	No Change	Regression/ Drop/Inc.	Total
College TV	46 (44.50)	26 (25.91)	17 (18.58)	89
College Control	45 (46.50)	27 (27.08)	21 (19.41)	93
Total	91	53	38	182

*χ^2 = .40 When subjected to this kind of examination the

data reveal no difference in growth between college experimental and college control groups during the semester.

Measured by upward movement, college students profited by the course in greater proportions than did high school students. When the high school and college experimental groups are compared, chi square indicates a difference beyond the 1% confidence level, even though both groups had the same 20 minute daily period of televised remedial English instruction. (See Table 8, below.)

Table 8

High School and College Experimental Groups: Chi Square for Semester Gains*

	Improvement	No Improvement	Total
HS-TV (E)	50 (62.44)	84 (71.55)	134
College TV (E)	46 (33.55)	26 (38.44)	72
Total	96	110	206

*χ^2 = 13.26 The semester gain for the college TV class is significantly greater than that for the high school TV group, and the null hypothesis must be rejected at the 1% confidence level. (When all 265 individuals in the two groups are considered and the results examined in three categories including Drop/Incomplete, a χ^2 of 14.55 is obtained for the difference in gain between high school and college experimental groups.)

Admission records at American River College were checked in the academic year 1967-68 to identify enrollments from among the 153 high school experimental and control students whose Original Placement had been English X in spring 1966. Data were collected only for students who enrolled at American River College, not for all students in the group who were graduated from high school in spring 1967 and entered college. (Other campuses to which San Juan district graduates commute include Sacramento City College, Sacramento State College, and the University of California at Davis.)

Of the 72 high school subjects who had been tested in spring 1966 and correctly placed in the fall 1966 English 52X television classes, 29 were attending American River College in 1967-68. The 29 students completed a total of 34 English classes, which included 26 college-level classes of Freshman English or above. In 24 of these 26 enrollments, satisfactory grades (C or higher) were earned; for two enrollments, unsatisfactory grades (D or F) were recorded.

Of the 81 students in fall 1966 high school control classes whose Original Placement scores fell in the English X range,

42 were registered at American River College a year later. The 42 students completed a total of 52 English courses, which included 38 college level classes. In 32 of these 38 enrollments, satisfactory completion with grades of C or above was recorded; for six of the enrollments, unsatisfactory grades were recorded.

A chi square computed for this follow-up (Table 9, below) indicates no real difference in later performance in English classes at college for the two groups of high school students.

Table 9

High School TV and Control Groups with Original Placement English X:
Chi Square for Later College-Level English Performance*

	Satisfactory	Unsatisfactory	Total
HS-TV (E)	24 (22.75)	2 (3.25)	26
HS-Control	32 (33.25)	6 (4.75)	38
Total	56	8	64

*χ^2 = .90 What differences in performance existed between the two groups in this 64-subject sample may be dismissed as due to factors other than the TV instruction received a year earlier by one of the groups. The fact that the two groups showed equally satisfactory progress in subsequent college-level English courses may be notable, however, in view of the lower SCAT scores earned the previous year by the high school experimental group, and in view of their lower reading comprehension.

Of the 57 students in the fall 1966 junior college TV class whose Original Placement scores were English X, 36 were still at American River a year later. The 36 students had accumulated 61 enrollments in English classes, including 47 enrollments in English 1A or advanced English. In 44 of the 47 college level English courses, satisfactory progress was made, as defined by grades of C or above; three attempts were unsatisfactory.

Of the 59 students in the fall 1966 junior college control group whose placement scores fell in the English X range, 44 were still enrolled at American River a year later. These 44 had enrolled in a total of 81 English classes, including 64 classes of English 1A or advanced English. In 50 of the 64 college level English attempts, satisfactory progress was made; in 14, the grades earned were unsatisfactory.

Chi square was computed for the difference in performance in college level English classes between the two college groups. (See Table 10, Page 19)

Table 10

College TV and Control Groups with Original Placement English X: Chi Square for later College Level English Performance*

	Satisfactory	Unsatisfactory	Total
College TV	44 (39.80)	3 (7.19)	47
College Control	50 (54.19)	14 (9.80)	64
Total	94	17	111

*$\chi^2 = 5.00$ The success of the experimental college group in subsequent enrollments in college level English was greater than that of the control group; with 1 df, the obtained χ^2 is significant at the 5% level.

To test whether or not the higher scoring students in the defined English X sub-group responded more successfully to the remedial instruction than did lower scoring students in the same range, t-ratios were computed from data provided in Appendix C. The data lists frequencies, means, and sigmas on English Expression, English Comprehension, and SCAT-V for 1) the sub-groups of defined English X students in all four groups, and 2) students within these defined English X groups who earned English 1A placement at the end of the semester. The computations yield only two measures that approach significance: Between students within the defined X-range in the high school experimental class who earned English 1A project placement and similarly successful students in the defined X-range of the high school control group, an obtained t-score of 2.19 on pre-measured English Comprehension is significant at the 5% confidence level. Between mean scores on English Comprehension earned by the defined English X students in the college control group and means on the same test for the control sub-group earning English 1A project placement, an obtained t-score of -1.86 suggests that a similar difference would occur about 94 times in a hundred. In all other comparisons among "successful" sub-groups the t-measures are without significance. The data suggests that among subjects who originally qualified for English X instruction, higher academic ability scores were not predictive of success in the course. Stated otherwise, for students who started at the same level of English achievement, success in qualifying for college English was related more to the treatment than to native ability.

DISCUSSION

This project was an attempt to discover whether instruction in junior college remedial English and reading proficiency could be effectively extended, via television, to high school students. It was not a "relative effectiveness" study, although its design permitted comparison at the junior college level between student achievement in a large television class and in small traditional classroom groupings.

Each of the four groups identified in the program differed from the others in certain aspects of composition and instructional treatment. Within each of the two major populations -- high school and junior college -- the experimental and control groups were formed of students randomly assigned from among those whose scores on the English Coop placement tests fell into the range for which remedial English instruction is required by American River College.

Among the six participating high schools it appears that student placement was influenced in some cases by the fact that an 8 o'clock English class needed to be filled, or that it was the only class available to meet a student's required course pattern. However, since these 'exceptional' cases were randomly assigned to whatever classrooms needed to be filled, and since they represented students both above and below the recommended level, the biasing variable probably had an equal chance of affecting both groups. Also offsetting the variables somewhat was the fact that the same teachers who handled the television classes conducted the traditional instruction for control groups.

At the college level, where students could not be administratively assigned to a course they did not choose to take, a certain amount of self-selection occurred in the samples.

The high school population is of course younger in age and educational experience than the college group. The latter is composed of persons who were already admitted to college and already prepared to enroll in a remedial English course, and a difference in academic motivation may be assumed to be operative.

Thus in all four groups, the samples include some students whose original placement scores were either above or below the recommended levels for the junior college television course offered as Remedial English 52X; but from each of the four samples a sufficient number of defined English X subjects could be extracted to permit examination of the effect on them of the televised course.

In English Expression, the measure considered at American River College to be most critical in differentiating students who are

adequately prepared to handle college-level English courses from those who are not, there was an initial absence of difference among the four groups. On supplementary pre-measures of reading comprehension and in the kind of verbal ability that is measured by the School and College Ability Test, differences did emerge. On these measures the high school experimental classes appear to have been negatively selected in comparison with their control group counterparts. For the college samples the reverse is true, with the experimental class testing measurably higher on reading comprehension and verbal ability than the college controls.

It is theorized that the difference at the high school level may reflect a tendency to assign to the traditional senior English "track" more potentially successful college preparatory students and to assign to the remedial TV class more poor performers or non-college-bound students. At the college level, it was discovered that counselors in some cases had permitted students to make their own selection between experimental and traditional instruction; this could have created a self-screening process, with students enrolling in the TV class who may have been less committed academically but who were better endowed academically. Nature of the motivation is unidentified, but it may have been something as simple as selecting what looked like a different experience or an "easy" course.

Thus while the project design called for composition of samples to be neatly randomized, certain uncontrolled variables inherent in public secondary and higher education procedures entered the sampling process. A cooperative project such as this one involves a large number of participating school personnel representing different fields of competence and different systems of education, and having different objectives for students. It is therefore especially difficult to match control groups with experimental groups precisely on all relevant variables. At each point there are the influences of unplanned, fortuitous events. It was not known at one high school,for example, until late in August whether that school would be able to participate in the project. Another school was forced to cancel its planned participation at the last minute, when double sessions had to be introduced. The vagaries of non-research-oriented practices in public education are probably inescapable, too, just as are the vagaries of administrative processes, grading practices, instructional techniques, teacher personalities, and mobility of participating students and staff. During the period that this project was being planned, conducted, and evaluated, there were personnel changes among project directors, writers, teachers, testers, planners, and producers.

The project design provided for collecting relevant evidence in such a way that at least tentative inferences could properly be drawn about relationships existing between the experimental

treatment and end-of-course English placement. Within each of the two major populations, the E and C groups were matched on those variables that were considered most relevant to the issues and hypotheses to which the project addressed itself.

Concerning procedures, in a sense the project provided its own replication, under different conditions, for two experimental and two control groups. It will be recalled that the high school E-group had students in groups of 25 or 30 in six different schools, assigned to classrooms equipped with television receivers, meeting under direction of a classroom teacher, and having a 20-minute review period immediately following the televised lesson. The high school C-group had students randomly selected from among students qualifying for English X. These students were assigned to regular classes in each of the six schools; they were not exposed to the junior college remedial English course but instead took regular high school senior English instruction; and they were taught by the same teachers who served as classroom teachers for the television classes.

The college E-class met in one large lecture hall on campus. Viewing and audio conditions were adequate, but the individual attention that is traditionally considered important and is normally provided for these students was at a minimum. All experimental students had the same instructor, unlike the comparable high school group. Because of a difference in time scheduling of college and high school class periods, the 20-minute review had to be held on the morning following each televised lesson. The college C-group was composed of matched students concurrently enrolled in remedial English X and in English 52, the basic reading skills course. Thus the college C-group, unlike the high school control, was exposed to both remedial English and reading as regularly offered in the junior college. At this point the program permitted comparison between large-group televised and small-group individualized instruction for the same course material at the junior college level.

Greatest difference in results, as measured by upward movement from one English level to another, occurred between the two high school groups. The high school E students realized significantly greater gain than did the high school C group, although the former exhibited somewhat lower academic ability than the latter. Since these subjects represent one of the most important populations for which the project was designed -- prospective college students who would not qualify, at entrance, for college-level English -- the project yielded positive, promising results.

In other studies, including Lumsdaine's, children in "high IQ" experimental groups have benefited more from experimental treatment than have children in "low IQ" experimental groups, compared with the respective control groups matched for ability.

This differential gain appears to have occurred in the present study to the extent that the college experimental class -- which had tested significantly higher on supplementary pre-measures of academic ability -- benefited in greater degree from the remedial instruction than did the high school experimental classes. (The differential factors of age and motivation were recognized as being uncontrolled variables between high school and college groups.) No difference in learning gain occurred between college E and C groups, which were subjected only to differential treatment of the same course content, even though the college E-group was better endowed in academic ability than the college control.

When the comparisons were carried one step further, and the four groups of defined English X students were divided between those who successfully earned end-of-course English 1A placement and those who did not, there was no observable difference in academic ability between those who qualified and those who did not. The findings suggest that among students who are matched in pre-measures of English achievement, difference in degree of academic ability is not a useful predictor of who will qualify for college English. The most useful predictor, especially evident in the high school groups, was whether or not the students are exposed to a junior college course combining English skills and reading proficiency.

The three-semester follow-up study of performance in advanced junior college English classes would seem to obviate any temporary "Hawthorne effect" that may have occurred while the program was in progress. With different instructors for subsequent college courses, different teaching methods and grading practices, and no identification of the subjects as having been in the 1966 project, the subsequent performance of the experimental students may well be related to factors operative in the televised remedial instruction they had received. The fact that a year later, the high school experimental students were able to succeed in college English just as well as the high school control students suggests that the instruction probably did in fact improve their preparation for college English.

For the junior college class , the experimental group a year later was performing in advanced English as well as or better than the control group which had had remedial English instruction in the regular way. This suggests that remedial English and reading skills can be effectively taught by television to large groups of under-achieving junior college freshmen. The disadvantages of the method (large classes, lack of individual attention) may be balanced by its advantages (fewer classrooms, fewer instructors occupied full time with remedial instruction).

Some parts of the televised course were more effective than others, and the textbook used in the course went out of print

a year later. Thus not all of the tapes would be re-usable, but a large number of them are considered by college staff as being valuable supplementary material in regular remedial English courses, and as a core upon which to construct another full-semester television course. Teacher and student evaluations of the experimental program in both high school and college indicate that in any future course patterned after this one, it would be more effective to present the videotapes three times a week instead of five. This reduction in number of tapes could serve as a guide for elimination of the least effective lessons. It is anticipated that by re-taping portions of the course, and reducing its over-all content, the quality will be improved.

CONCLUSIONS AND IMPLICATIONS

The project provided junior college remedial English instruction simultaneously to high school seniors and junior college freshmen via open circuit television. The experimental program was cooperatively developed by college, high school, and educational television personnel. While rough in some aspects of production and data collection, significant and meaningful results were realized.

One of the most promising results was the greater gain made by the randomly assigned experimental groups of high school seniors whose placement test scores had indicated academic potential but whose level of English achievement would disqualify them for admission to college level English.

The findings clearly suggest that developmental English for college, supplemented by instruction in reading proficiency, can be effectively offered via television with significant learning gains made by both high school seniors and junior college freshmen. Results suggest the possibility that many more high school seniors could be prepared for college English through the medium of television programs cooperatively developed by high school and college specialists. The high school control group which was not exposed to the concentrated reading and skills instruction also made upward movement, but in less degree.

An unexpected finding was that 26 percent of those who showed gains in the experimental high school group made a "double jump" in placement -- from "terminal" English 50 (a course designed for junior college students who are not expected to attempt a four-year college course) to English 1A. This 26 percent included many students who were probably destined for the academic "slag heap," since they had failed even to qualify for sub-college level remedial English at the beginning of the

semester. The results suggest that many more such students could be prepared at entrance to handle college English than is now the case.

Follow-up examination of student transcripts in a two-year period revealed that the students who had enrolled at American River College from the experimental high school groups were making as satisfactory progress in advanced English classes as were students from the control group, even though original test scores of the latter had shown somewhat superior academic endowment.

At the junior college level the project design permitted tentative conclusions to be drawn on the question of whether remedial English, which is normally offered in small and highly individualized groups, could be effectively offered in a large lecture hall utilizing videotaped materials. The findings show that students who were exposed to the televised course performed in later semesters of advanced English as well as or better than the control students who had taken the remedial English course by traditional instruction. The long-term follow-up period -- three semesters -- probably canceled any possible "Hawthorne effect" that may have been operative during the actual experimental period.

The implications of these results are many. Hundreds of high school students and college freshmen might be offered the essentials of developmental English and reading skills via selected videotape programs, thus enabling both kinds of educational institutions to make significant savings in teacher and student time and talent, and in classroom space and scheduling. By continually improving the quality of the tapes, and increasingly incorporating into them the tested techniques of programing -- especially in the skills sections -- the course would become steadily more effective in accomplishing the purposes for which it was designed. The disadvantages of the pilot program (instructors being overburdened with paper work and unable to give individual attention to the students, for example) are not insurmountable.

Recommendations:

The availability of these tapes and the promise they hold for extending remedial English instruction have already been recognized by the English division of American River College. It is recommended that the tapes be reviewed, the less effective winnowed out, and others evaluated, edited or retaped. The overall quality could be systematically improved over a period of time, without entailing the disproportionate amount of time and energy that necessarily went into the original course development. The basic general material appropriate to all students needing remedial work would be preserved for several semesters.

As need for revision or updating were recognized, new tapes should be made and added to the library of material or should replace tapes no longer considered useful.

It is recommended that the tapes be used in closed circuit presentations in a projected college learning center to provide instruction in language usage and rhetoric, and that they be shown to large sections of students at a time. Students feeling the need for additional exposure could call for extra showings, consulting with an instructor between viewings, until they grasped the material or decided not to complete the course. Each student would thus work at his own speed in completing the requirements of remedial English. The instructor would be able to devote more time to working with students in small groups or individually instead of repeating the same lecture material several times a week. The effectiveness of the pilot project in preparing persons of different ages, educational development, and academic ability for college English clearly suggests the possibility of redeploying much teaching talent now being expended on the single area of remedial English instruction.

By special arrangement with the community educational television station that participated in this project, it is recommended that the revised tapes be used by high school and college classes in a future program patterned after the pilot experiment. A major criticism of the original experiment was that it was a daily program leaving little time for review, discussion, clarification. A double schedule in which the course is shown morning and evening two or three days a week should eliminate this problem and also permit students who missed one showing to see it later in the day.

Adults in the community should be encouraged to enroll for the course, view the programs at home, and sign up for tests or guided writing experiences in late afternoon or evening sessions on campus.

It is recommended that a separate program be created for adults in reading skills, following the format developed in this project but lengthening each presentation to one hour and selling the texts to interested viewers. The area of reading is one in which many persons not in school could realize benefit. The project's reading section offers especially challenging potential and promise, and the efficiency of television instruction in reading proficiency has probably not previously been so clearly tested and demonstrated.

These are some of the ways in which the valuable tapes developed for this course, and the instructional skills and technical experience gained through their use, may serve long-term educational purposes.

SUMMARY

The Problem: This experimental program was addressed to some problems that are besetting public junior colleges, problems associated with a rapidly increasing number of entering freshman students from a broad range of backgrounds who are not qualified to meet the requirements of college English. Remedial or developmental English courses which focus on grammar, rhetoric, spelling, and reading must be provided by the colleges in order that these entering students can qualify for admission to freshman English. The additional work usually means an additional semester of study for the student; it means also that a progressively larger proportion of college budget, instructional time and talent and effort, and classroom space and scheduling, must be siphoned off by the college into the single area of sub-college level remedial course offerings. The classes are traditionally small, since the assumption has been that "remedial" students require a maximum of individual attention.

Objectives: The project was designed to test one way of bringing to large numbers of students in high school and junior college the essential components of remedial English and reading proficiency. Based on the hypothesis that a course similar to the "developmental" course already in use for college freshmen would be appropriate also to college-bound high school seniors, the project attempted to test whether the number of inadequately prepared college freshmen might be effectively reduced through an open-circuit television course in English X (remedial English) cooperatively developed and produced by college, secondary school, and educational television personnel.

Method: The Cooperative English Test Form 1C, which was used in 1966 by American River College to determine English placement of all entering students, was given to high school juniors in six schools of the San Jaun school district in spring, 1966. The School and College Ability Test, used in 1966 as a supplementary placement device, was also administered to the high school students. Those whose placement scores fell within the upper and lower limits established for admission to American River's remedial English X were randomly assigned to fall semester experimental and control groups. The control classes received regular high school senior English. The experimental classes received the junior college course five mornings weekly via open-circuit television transmitted to the classrooms in 30-minute time blocks. Each lesson was followed by a 20-minute review under leadership of the classroom teacher. The same classroom teachers handled both experimental and control classes. At the junior college, the experimental group met in a large lecture hall equipped with several receivers, where the televised lessons were simultaneously transmitted. The college control group was formed of students

concurrently enrolled in English X and basic Reading Skills (English 52). College controls had different instructors for the reading and the remedial English courses. T-tests indicated no significant differences among the four groups in their performance on pre-measured English Expression which largely determined English placement. Course content emphasized reading proficiency, language usage, and composition. Television teachers were members of the ARC English division, selected in auditions by the ETV station director and producer.

Results: Significant differences appeared among the four groups in the proportion of students who made changes in placement during the semester from one English level to another. The direction of shift generally favored the experimental group in the high schools, where chi square computations showed a difference significant at the 5% confidence level. The college groups, which were both exposed to remedial English and Reading, although in different ways, showed no significant difference in the upward movement.

Of the high school experimental group, 26.8 percent made placement gains. Of those who gained, 26 percent made "double jumps," from an original placement that was lower than English X to freshman English 1A. Ten percent of the experimental group regressed to a lower English level. Of the high school control group, 14.7 percent made gains and 23.7 percent lost ground during the semester.

A three-semester follow-up study of grades at American River College earned in subsequent college-level English courses by students who had been in the high school groups showed no significant difference either in level of English classes attempted or in quality of performance. The same lack of significant difference appeared in subsequent achievement of the college experimental and control students in three semesters of advanced English.

Implications: Greatest difference in upward movement from one English level to another occurred between the high school experimental and control groups. The former realized significantly greater gain, although they had actually displayed somewhat lower academic ability at the beginning of the semester (on supplementary reading measures and the SCAT-V). These subjects represent one of the most important populations for which the project was designed -- prospective junior college students who would not qualify at entrance for college English -- and the project therefore appeared to demonstrate a promising way of reaching students on a large scale with instruction specifically directed toward upgrading the skills required for entering and successfully completing college English. For the college students in the project, the fact that a year later the experimental group was performing in advanced English classes as well as or better than

the control group suggests that the essential skills of college English can be effectively offered via television to large groups of under-achieving junior college freshmen, and that their retention will measure up to that of students taught in small classes.

Recommendations: Replication of this project may be suggested by the fact that substantial differences in preparation for college English occurred between the high school groups. Such a replication should involve similar but different populations, and perhaps a smaller number of participating students and staff. In its implementation, tight controls should be provided to ensure close adherence to the project design at all stages of development, production, and data gathering.

It is recommended that the videotapes developed for this project be reviewed, the less effective ones withdrawn and the remainder evaluated for possible editing and retaping to improve the quality; that the tapes be kept current and periodically reassessed; that they be used on the college campus in closed circuit presentations to large groups, preferably in a learning center or in a comfortable lecture hall; that the individual tapes be made accessible for re-play on request, so students can work at their own speed in completing the requirements of English X; that they be made available to other high school or college classes in future programs patterned after this pilot experiment, but reflecting the revisions and alterations that were proposed by teachers and students involved in the pilot project; and that a separate reading program be developed on videotape for adults in the community, which would follow the successful format of lessons and demonstrations used in this project.

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Appendix A

English Placement Procedures

1. Original Placement

In 1966, American River College placed students in classes at the various English levels primarily on the basis of performance on the English Expression section of the English Coop Test Form 1C, as follows:

English 50 (Basic English Skills):

Converted score below 150 on English Expression; or
Counselor recommendation of English X based on score plus H.S. English g.p.a.

English X (Remedial English):

Converted score 150-154 on English Expression (25-47%. Midpt. -36%); or
Converted score 155-163 (36-61%, Midpt. -49%), with a Total Reading Comprehension score of 162 or less (44-68%, Midpt. -56%).

English 1A (Freshman English):

Converted score 163 or above on English Expression (61-68%, Midpt. -65%); or
Converted score 155-163 (36-61%, Midpt. -49%) with Reading Comprehension score 163 or above (64-71%, Midpt. -68%).

2. Project Placement

At the end of the project, students received Project Placement ratings of English 50, English X, or English 1A, determined by scores earned on the Writing Sample in combination with Reading, Grammar, and English X final test scores. Readers were employed to score the tests, and placements were made by the testing office. Project Placement was separate from course grades, which were assigned by the high school teachers according to their own district standards.

Appendix B

"DEVELOPMENTAL ENGLISH FOR COLLEGE"

Fall 1966 Schedule for TV Classes

	Sept.	6	Classroom instructor introduces idea of TV course.
	Sept.	7,8	Writing sample prepared in class and forwarded to college coordinator.

Semester Plan

Reading	Sept.	12	(Mon.) Diagnostic reading test (A)
	"	13	(Tues.) First TV program.
	Oct.	17	(Mon.) Reading; last TV program.
	"	18	(Tues.) Reading test (B), forwarded to coordinator.
Grammar	Oct.	19	(Wed.) Pre-test for grammar and writing.
	"	20	(Thurs.) Grammar- first TV program.
	Nov.	28	(Mon.) Grammar- last TV program.
	"	29	(Tues.) Achievement test on grammar section, forwarded to coordinator.
Writing	Nov.	30	(Wed.) First TV program.
	Jan.	19	Last TV program; end-of-course writing sample
Test	Jan.	20	Two-hour test on course.

APPENDIX C: PLACEMENT TEST DATA

Total Group, E and C*				Sub-groups with OP-X *			OP-X and PP-1A *		
I. ON ENGLISH EXPRESSION									
Group	N	M	S.D.	N	M	S.D.	N	M	S.D.
1. HS-Exp.	158	149.62	8.10	72	153.81	3.99	29	153.93	4.51
2. HS-Cont.	172	150.80	10.14	81	155.12	3.37	21	155.47	3.32
Total	330	150.23	9.22						
3. Coll. Exp.	84	151.61	7.00	55	155.29	3.68	25	155.88	3.47
4. Coll. Cont.	94	151.58	5.53	59	154.86	3.36	20	154.80	2.70
Total	178	151.60	6.25						
II. ON ENGLISH COMPREHENSION									
Group	N	M	S.D.	N	M	S.D.	N	M	S.D.
1. HS-Exp.	158	154.41	7.27	72	156.11	5.60	29	156.51	5.45
2. HS-Cont.	172	156.35	8.26	81	158.14	4.64	21	159.23	3.22
Total	330	155.42	7.85						
3. Coll. Exp.	84	155.97	6.01	55	157.27	5.44	25	158.08	5.47
4. Coll. Cont.	95	153.96	6.00	59	154.44	5.87	20	157.35	5.94
Total	179	154.91	6.07						
III. ON SCAT-V									
Group	N	M	S.D.	N	M	S.D.	N	M	S.D.
1. HS-Exp.	115	33.53	19.13	59	40.94	18.24	22	43.00	17.53
2. HS-Cont.	94	35.63	22.16	41	48.31	18.30	11	52.18	14.13
Total	209	34.48	20.53						
3. Coll. Exp.	83	45.80	19.38	54	48.44	19.72	24	53.16	19.25
4. Coll. Cont.	93	37.04	19.95	57	37.28	20.17	19	43.00	22.91
Total	176	41.17	20.11						

*Key to Tables - E: Experimental, C: Control, OP-X: Original Placement Eng. X, PP-1A: Proj.Placement Eng. 1A