

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

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AN ANALYSIS OF THE EFFECTIVENESS OF CLOSED CIRCUIT TELEVISION  
ON TEAM TEACHING.

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THE EFFECTS OF TELEVISED INSTRUCTION WITH LARGE ENROLLMENTS IN COLLEGE HISTORY COURSES WAS DEFINED AND EVALUATED. ONE INSTRUCTOR PRESENTED LECTURES BY TELEVISION TO AN EXPERIMENTAL GROUP AND DELIVERED THE SAME LECTURES TO A CONTROL GROUP. DISCUSSION SECTIONS OF BOTH GROUPS WERE LED BY THE SAME INSTRUCTORS, AND THE SAME MIDTERM AND FINAL EXAMINATIONS WERE GIVEN TO BOTH GROUPS IN BOTH SEMESTERS. TEST RESULTS OF THE EXPERIMENTAL GROUP WERE SIGNIFICANTLY HIGHER THAN THE RESULTS OF THE CONTROL GROUP. WHEN THE EXPERIMENTAL GROUP DISCUSSION SECTIONS WERE COMPARED WITH THE DISCUSSION SECTIONS OF THE CONTROL GROUP THAT WERE TAUGHT BY THE SAME INSTRUCTOR, THE EXPERIMENTAL SECTIONS HAD HIGHER AVERAGE SCORES. (AL)

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FINAL REPORT

Title

An Analysis of the Effectiveness of Closed Circuit Television on Team Teaching as an Instructional Technique for Accommodating Exceptionally Large Enrollments in History 32-33, Titled THE TWENTIETH CENTURY at St. John's University, New York.

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\_\_\_\_\_  
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PART I  
GENERAL REPORT

1. Organizational Activities up to and including the Mid-Term Examination

Preliminary work on the project began under the directorship of Dr. Arpad Kovacs in June, 1964. In cooperation with Mr. Kenneth Murr, Director of Educational Television, he began work to devise effective techniques for presenting lecture material before the cameras. By the end of August an overall basic plan was agreed upon as to (1) procedures for reproduction and handling of visual aids, and (2) general guidelines for the instructor's manner of presentation in the studio.

A graphic artist was employed on a part time basis for drawing and reproducing visual material on acetate transparencies. In advance of the opening day of classes, all visual aids for the first three lectures of the semester were assembled and appropriately mounted, including polaroid textbook pictures and diagrams. On September 22nd, the course was inaugurated on the closed circuit, preceded by the first auditorium lecture given to the control group. Both groups were given, as far as possible, the same presentation. All visual material given to the experimental group was prepared and mounted by the graphic artist, as far as possible, so that it could be projected on the large screen in the auditorium. In this way differences of presentation in the two groups were reduced to the minimum.

At the time the application for the federal grant had been made in January, 1964, enrollment in the whole project was estimated at approximately 1,200 students. The original proposal contemplated the setting up of two television groups and one control group. Dr. Kovacs had been scheduled to teach one television group and the control group, and Dr. Frederick Benincasa, the coordinator of the project, was to teach the second television group so as not to overburden the lecturer.

Since many students registered and completed History 32-33 in the summer session of 1964, September enrollment was substantially reduced. Under these circumstances it became possible for Dr. Kovacs to teach the entire student body in one television and one control group, so that a possible variable - two different television lectures - was eliminated.

Total enrollment in History 32-33 in September was 671. Of this number, 197 were enrolled in the control group and subsequently divided into five discussion sections. The television group had 474 students, who were divided into thirteen discussion sections. Six instructors were assigned to lead the discussion sections: five conducted both television and auditorium or control group sections, and the sixth, owing to scheduling difficulties, was in charge of only television sections.

In an educational project of this nature, where the student body is divided into one large group listening to the main lecture and then into discussion sections led by a number of instructors, a great stress has to be laid on coordination. In order to ensure such correlation, the television lecturer, the coordinator, and the instructors held weekly meetings. On the basis of an extensive abstract of History 32-33 written by the television lecturer, and with the help of outlines prepared in advance of each main lecture, the entire team considered further elaboration of the leading themes introduced to the experimental and control groups. The team also examined various techniques of conducting effective discussions in the sections, and compared student reactions.

At the end of the fifth week of classes, the television staff prepared a technical evaluation questionnaire to ascertain performance of equipment, especially receivers located in the viewing rooms. Despite the fact that no specific request was made on the questionnaires for comments on course presentation and content, a number of students wrote in comments at the end

of the questionnaire. In the light of these remarks the instructor decided to develop the lectures according to a frame of reference written on the blackboard. The same procedure was followed in the control group, where the frame of reference was projected on the screen. This innovation received favorable comment on the part of the students, for it facilitated note-taking, serving as an organizational chart of the main themes of the lecture.

In order to utilize all available visual materials, particularly the 16 MM motion picture films presently available in the area of the Twentieth Century, a production assistant, Dr. Tibor Horanyi, was added to the staff on November 1st. Since he had previously worked for years in a film laboratory his principal task was to prepare suitable film clips out of contemporary newsreel stock available in large volume in the stock rooms of film companies in New York City. He was also helpful and instrumental in devising new lecture techniques in the studio.

## 2. The Mid-Term Examination on November 17, 1964

On November 17, 1964, a mid-term examination was administered to both the television and control groups. It had been prepared on the course content by the staff of the project in conjunction with University personnel active in educational research.

An analysis of the resulting averages revealed that, as a group, the students involved in the television teaching scored significantly higher on the mid-term examination than did the students in the control group. This difference was significant on the .05 level of confidence. It should be noted that, when the sections were contrasted according to individual discussion leaders, in every instance the television students of a given discussion leader earned a higher average on the mid-term than did the control group students of the same professor. In one instance, however, two television sections could

not be included in the study since their discussion leader did not have a section from the auditorium group to serve as a control. (See Appendix A.)

The preliminary analysis of the results of the mid-term examination would indicate that the data might yield more information than was originally anticipated. It was felt that the effectiveness of team teaching is measurably increased when it is supplemented by the technical advantages of television. Although different sub-groups react to different degrees, the extent to which television improves the motivation and extent of insight of the average and below average student offers a promising area of investigation.

### The Second Semester

#### General Organization

History 33, the second semester of History of the Twentieth Century Television Research Project, began on February 4, 1965 with 669 students. These were organized first into a television viewing group consisting of 509 students divided into 13 discussion groups, and second into a control or auditorium group consisting of 160 students divided into four discussion sections.

In order to reduce the number of possible variables, discussion leaders were given both television and auditorium groups. A deliberate and conscious effort was made to keep the teaching faculty involved in the experiment restricted to as small a group as possible so as to facilitate the closest cooperation and make for greater coordination.

#### Coordinating Activities

- a. Meetings of the instructional staff after each general lecture were held in order to prepare for the discussion sessions based upon each main lecture in the auditorium and television group. Specifically, a meeting was held each Tuesday at noon; these meetings were followed by additional

meetings when necessary.

- b. Television and auditorium students were given the same mid-term and final examinations. These examinations were prepared by a board composed of faculty members aided by testing and guidance personnel of the University.
- c. Visitations to various discussion groups on a non-announced, spot check basis were conducted by the project coordinator. These were done with the knowledge and consent of the discussion leaders.

### Aspects of Television Production

Once a well-defined pattern of on-camera presentation of lecture materials was agreed upon by both instructor and television staff, very little deviation from this pattern occurred during the second semester. Experimentation and refinement within the limits of certain tried and proven techniques did take place periodically in order to improve the coordination of lecture and visual reinforcement in a more effective manner.

A consistent effort was made to supplement, enhance, and enrich the lecture through the use of appropriate and meaningful visual aids, such as 16 MM motion picture films, acetate overlay transparencies, maps, charts, and especially large, on-the-scene photographs.

During the second half of the semester, when the course dealt with current problems, special efforts were made to underscore relevant relationships between historical events of the past and present, along with employment of prescribed camera techniques. They have produced encouraging results and point towards the use of additional presentational methods and techniques for the forthcoming year.

More exploratory work in such areas as the addition of the dialogue or interview method, the use of the classroom-to-studio intercom system, and the employment of video tape for immediate self-evaluation is being

planned for the future.

### The Mid-Term Examination

A careful analysis of the discussion sections has revealed that the students in the television groups, on the whole, have scored better than those in the auditorium classes. This difference has been found significant at the .05 level and almost at .01 level, indicating a considerable improvement.

It should be noted that the comparison included only the classes of those discussion leaders who had both types that is, television and auditorium groups so that proper control could be maintained.

An overall view of the mid-term as well as of the two end-of-term examinations is given in the following statistical analysis.

## PART II

### Statistical Analysis

#### a) Basis of the Study

In both the fall and spring semesters the students in control and experimental groups were given the same mid-term and final examinations. The results of these examinations provide the basis for this analysis.

#### b) Comparison and Methodology

The results of the mid-term and final examinations were used and compared first, on the basis of the total control group as against the total experimental group; second, on the basis of the total control group as against the experimental groups which were conducted by instructors who were also conducting the control groups; and, finally, on the basis of instructors: that is, control groups as against experimental group for each teacher involved in the experiment.

The statistical methodology used was the Fisher's "t" Tests.



c) Results

Clearly, the sampling was at random. Students who registered for the course were permitted to take it. Thus control and experimental groups contained freshman, sophomore, junior, and senior students.

Allotment to groups and sections depended upon the pre-registration of students and the indiscriminate methods of clerks in the Registrar's Office and IBM selectors for sections.

Further, a survey of the sections did not disclose any overloading of students in either the control group or the experimental group with regard to the student's major field or his educational achievement. (See Appendix B.)

While the analysis does denote the existence of much variability resulting, from the ability, knowledge, personality, and so forth of the individual instructors who conducted the discussion groups, yet the study clearly evidenced that there was a consistent bias in this variability. In other words, the relationship between the control group and the experimental group was always consistent, no matter how variable the particular instructor's results might be.

The findings of the analysis are all ex post facto. The conclusions reached pertain to the comparisons made on all four testings, and are as follows:

1. When the Total Control Group was compared to the Total Experimental Group, the latter group was significantly better than the former - above the .05 level of significance.
2. When only Control and Experimental Group sections with the same instructors were compared, the Experimental sections ranked significantly better than

the Control sections-above the .01 level of significance.

3. When the results of the examinations given to the discussion sections of the Control and Experimental Groups were examined with reference to ascertaining the results achieved by the individual instructors, the Experimental Group sections always ranked higher than the Control Group sections. The difference, while significant in the majority of cases at either the .05 or the .01 level, was not always significant statistically. (See Appendix C.)

PART III

Financial Statement

Concerning the financial aspects of this grant, we refer to the Budget Report prepared by Francis B. Hinton, C.M., Assistant Treasurer of St. John's University and sent to the Office of Education on July 12, 1965. It contains the following items:

Total Salaries and Wages . . . . .	.\$8,965.00
Materials and Supplies . . . . .	<u>618.00</u>
Sum of the Above . . . . .	.\$9,583.00
Federal Funds Received . . . . .	<u>.\$9,583.00</u>
Balance on Hand. . . . .	\$ 0

Receipt of the above Budget Report was acknowledged by Mr. Joseph A. Murnin on August 17, 1965.

Submitted by:

*Arpad F. Kovacs*

Arpad F. Kovacs  
Director of History 32/33 TV

St. John's University

New York, New York

October 28, 1965

APPENDIX A  
CRITICAL RATIOS

<u>Section</u>	<u>Variable</u>	<u>C.R.</u>	<u>Level of Confidence</u>
Lecture on T.V.	Mid Term	2.007	.05
	History Grades	.8421	Not Sig.
	General Average	1.959	.06 - <u>Not Sig.</u>
C.A.D. vs. AJD AND ARD	Mid Term	1.954	.05 - <u>Not Sig.</u>
	History Grades	.324	Not Sig.
	General Average	1.436	Not Sig.
C.B.D. vs. AED ALD	Mid Term	.0885	Not Sig.
	History Grades	1.171	Not Sig.
	General Average	1.077	Not Sig.
C.C.D. vs. AGD APD	Mid Term	2.314	<u>.05</u>
	History Grades	.0587	Not Sig. } Not enough reported to justify conclusions.
	General Average	1.019	Not Sig. }
C.D.D. vs. AHD AMD	Mid Term	.244	Not Sig.
	History Grades	.152	Not Sig.
	General Average	1.075	Not Sig.
C.E.D. vs. AQD ASD	Mid Term	.258	Not Sig.
	History Grades	.981	Not Sig.
	General Average	.134	Not Sig.

APPENDIX B

TABLES OF VARIABLES

Academic Progress

	Fresh.	Soph.	Jun.	Sr.	N.M.
Aud.	2	112	26	10	4
T.V.	10	372	81	26	2

z- scores of proportions - none significant

Major

	Bus.	Math & Sci.	Arts*	Educ.	Hist.
Aud.	21	11	61	50	11
T.V.	63	78	181	130	39

z- scores of proportions - Math & Science - .01 lev. of diff. (T.V.)  
 Educ. - .05 lev. of diff. (Aud.)

Quality Point Index

	7	6	5	4	3	2	1	M
Aud.	1	4	23	56	62	7	1	4.1798
T.V.	1	16	76	142	204	51	1	4.0401

S.E.D. = .0824; C.R. = 1.69                      significant @ .05 level

Number Previous History Hours

	0	1	2	3	4	5	6	25	M.
Aud.	0	16	16	93	21	5	2	1	3.01
T.V.	3	91	60	290	52	27	8	6	2.82

S.E.D. = .0659; C.R. = 2.88                      significant @ .01 level

APPENDIX C

CRITICAL RATIOS

1. Auditorium vs. T.V. (all sections)

	<u>Mean</u>	<u>SEM</u>	<u>C.R.</u>	<u>Significance</u>
Aud.	72.07	.87		
T.V.	74.09	.46	2.06	> .05 level

2. Auditorium vs. T.V. (comparing common discussion leaders)

Aud.	72.07	.87		
T.V.	74.74	.58	2.54	> .01 level

3. Comparison of Corresponding Groups according to Discussion Leaders

A. Aud.	71.38	2.03		
T.V.	76.01	.98	2.06	> .01
B. Aud.	70.42	1.60		
T.V.	78.65	1.12	4.22	> .01
C. Aud.	77.50	1.84		
T.V.	75.63	1.09	.52	not significant
D. Aud.	67.44	1.76		
T.V.	69.40	1.47	1.46	not significant