A third party evaluation was conducted of an experiment in service training program (Project Interact) in career education using duplex (two-way) television to reach several groups in different cities simultaneously. Two main aspects of the project were under study: the particular curriculum content on career education and the use of the Texas Telecomputer Grid. The Texas Telecomputer Grid, a telecommunication network, is operated by Central Texas College in Killeen, Texas. Satellite facilities are located in Dallas, Fort Worth, and San Antonio, Texas. The project evaluation relied on two main inputs: questionnaires completed periodically by the participating teachers and review of the programs by an advisory committee of media and career education experts. Results indicated that staff dedication was high, but that the program was impaired by mechanical failures of the Grid. It was concluded that the Grid is a useful teacher training device for certain purposes and under certain conditions. An appendix includes examples of all the instruments employed in the evaluation.

(Author/SL)
An Evaluation Report of Project INTERACT:
A Teacher Inservice Training Course on Career
Education Using Two-Way TV in Texas to Several
Groups Simultaneously

Educational Development Corporation
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30 June 1975
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ABSTRACT

This is an evaluation report of an experimental inservice training program on career education using duplex (two-way) television to several groups located in different cities, simultaneously. There were two main unknown quantities: the particular curriculum content on career education was untried, and the use of the Texas Telecomputer Grid and the methodology to be used were also unknown quantities, although the Grid has been tried for simultaneous seminar or workshop methods.

The report describes the overall objective, plan, definitions, and the Grid. It describes the nature and methodology of the training that was attempted, and the procedure and expectations in using the Grid. It portrays the evaluation approach and process in this case. The evaluation data and statistics are presented with their implications. Certain findings are discussed and explained, and summary statements are made about the advantages, disadvantages and the findings. An appendix includes examples of all the instruments employed in the evaluation.

It can be summarized that a system like the Telecomputer Grid is useful for certain purposes and under certain conditions. It has inherent advantages and disadvantages; one of the factors that this study does not attempt to evaluate is the cost-benefit in comparison to other methods. Because so many states are planning various educational technologies and expansions, this report may be of significance to all those contemplating various audiovisual methodologies.
PREFACE

In September 1974 the Educational Development Corporation submitted a successful proposal for a third party evaluation of Project INTERACT, an innovative and somewhat experimental effort to present teacher inservice training in a relatively unfamiliar subject via the Texas Telecomputer Grid. Funds for such an evaluation were very limited, but by concentrating on design and analysis of instruments and requesting TEA assistance in many aspects of the work, this organization felt that a useful evaluation study was possible.

One particular concern, shared by project personnel and evaluators, was that the information gained from the various evaluative approaches should be made available as the work progressed, thus insuring that this material would have "formative" impact rather than remain a "summative" judgment. In order to accomplish this, several informal conferences were held throughout, and it is felt that these were of value to all parties.

The cooperation and support of Martha Westbrook and John Etheredge were freely given and are gratefully acknowledged. In addition, the evaluation design required the active participation of many busy people—teachers, administrators, and TEA personnel. To all who helped in this effort, and most especially to the Advisory Panel members, who gave generously of their time and expertise, the Educational Development Corporation would like to express sincere appreciation.
I. INTRODUCTION

General

This report comprises a third party evaluation of Project INTERACT, an experimental project involving the presentation of career education inservice programs to elementary school teachers by means of the Texas Telecomputer Grid, which is a telecommunications network. The evaluation has two main thrusts: evaluation of the career education content material, and evaluation of the use of the Telecomputer Grid as a technology for delivery of teacher inservice programs.

Objectives

More specifically, the evaluation was intended to address four separate dimensions of the entire project:

1. the programming and the content;
2. the teacher responses to the programming;
3. the indirect influence of the program upon the students; and
4. the telecommunications medium.

Several methodologies were used and several opportunities taken to address the various objectives and to obtain data and formulate opinions about their outcomes. These will be described in appropriate sections of the report.

Definitions

Generally, this report uses technological and educational vocabulary in a normal, everyday context. However, two phrases are used throughout which might require explanation or definition, as follows:

1. "Duplex television" or "duplex TV"—the Telecomputer Grid has the
capability of using two separate video channels simultaneously. The arrangement of equipment and circuitry is such that the pictures from the television camera at the studio where the program originates are presented on receivers at several locations at the same time. Each of these locations has several teachers watching the monitor. Simultaneously, cameras at each location are capturing the audiences; these pictures are sent back on the circuitry and are available on monitors at other locations, as well as at the studio itself. It is not possible for several locations to be shown at the same time in any one location; only two monitors can function per location and usually those show the program broadcast and the picture from their own camera. By astute control of the mixer panel at the main studio location, the substations can be switched during the interactive period and those on the network can all see either the broadcast or another substation with which they are interacting, in addition to themselves.

(2) "Interaction" occurring on this network can be defined as the use of cameras at all locations in such a way that teachers at one location may communicate with teachers at another location, or with the program director. They can see and hear each other, ask questions, explain viewpoints, and interact as specifically as they would if they were in the same room. This requires extremely agile and flexible control.

Program Plan

The methodology for the program was to organize the entire spectrum of career education so that it could be presented as an overview and inservice training to elementary teachers in eight one-hour sessions. The sessions were scheduled approximately two weeks apart, about the same time on the same day
of the week, and with all but one program originating from the network headquarters at Killeen, Texas. In all cases, at least 30 minutes and sometimes as much as an hour was taken up by program origination from the control point. In the earlier programs, several minutes in the second half hour were set aside for interaction between the program director and one or more of the network stations. As the teachers got more used to this type of interaction and as the programs picked up speed and efficiency, the interaction became more spontaneous and less scheduled. The eight sessions were designed to give a general overview of the entire field of career education and to employ several presentation methodologies, in order to maximize the impact of different types of presentation.

An advisory panel was formed comprising members of the Texas Education Agency and outside persons with competencies either in career education or in the use of television. This advisory panel met four times; each time it viewed video tapes of two of the programs and evaluated them by means of questionnaire forms. The findings and opinions of the advisory panel are included in the overall findings of the report. In addition, the teachers participating in the program, numbering some 85, as well as the facilitators, program directors, and others involved, were given forms to fill out prior to the programs to provide input data, questionnaires completed during the programs to provide process data, and a final form to complete after the project to provide output data. These findings are also included in the overall report.

(A complete list of Advisory Panel members will be found in Appendix 0.)
II. DESCRIPTION OF THE TRAINING

The Network

The Texas Telecomputer Grid, a telecommunications network with several capabilities, is operated by Central Texas College in Killeen, Texas and has its main studios there. A map showing the layout of the network comprises Figure 1. For the full distance of this network, two channels of television, six channels of data transmission, and four channels of audio communication are available.

The main originating studios, as indicated, are at Killeen, Texas, where master control and other switching facilities are available. Here, engineering, the camera work, and other studio work are performed by students of the college who are engaged in learning the fundamentals of television operation.

In Dallas, the facility is at Skyline High School, where fairly good equipment is available, along with reasonably competent students to operate it. This location has color cameras and the work here is done rather well.

At Fort Worth, the facility is located at Southwest High School, where the equipment is quite old and worn-out and the students who operate it are somewhat less well-trained than those in other locations. This caused some problems in that usually the interaction from that location could not be carried out as expertly nor viewed as well as that from other locations.

The facility in San Antonio was not in operation during this entire project, although it was scheduled to be. Nonetheless, San Antonio teachers participated in the program to the best of their ability by assembling once every two weeks, as the other groups did, except that in their case it was a week later and they viewed a video tape made at the time of the transmission. This, of course, excluded any interaction on their part. The facility in Aus-
tin was not yet operational and extension of the system toward Houston had not been completed.

Thus there was a total of four groups of teachers: one at Killeen, where the program originated, which was in the same room with the program cast during the broadcasting; a second in Dallas which was on line all the time; a third in Fort Worth which was also on line all the time; and a fourth in San Antonio which was never on the line and therefore had no interaction.

Brief of the Presentations

Each of the eight program presentations included an introduction by the program director, John Etheredge, who explained the purpose of the program, how it would be conducted, what should be achieved, and how the program related to other topics already covered or yet to be covered.

Almost every program provided handouts to the teachers that they could take home and keep. These handouts included some rather expensive and valuable documents pertaining to career education, examples of different career education training methods, and other materials which the teachers might find useful in their classrooms. Each program was conducted using a method and tempo somewhat different from that of the others. One highlighted demonstration; others featured filmclips, lectures, examples of right and wrong methodologies, and many, many other techniques to make points to the teachers and to explain the reasons behind various steps in the career education training.

All the programs provided the opportunity for interaction, some regularly scheduled so that the substations would know exactly when it was time for them to interact and the teachers could then communicate directly with the program director or with others in the studio. On other occasions, the interaction was extemporaneous and the program director would call on the substations for comments, ideas, and other expressions of opinion. Sometimes this procedure
would catch substations unexpectedly, so that responses were slow or not forthcoming. On the whole, the programs were conducted as originally laid out, although as they progressed, lessons were learned and improvements were made. Thus there was a steady gain in effectiveness of the techniques and methodology used in the programs, and John Etheredge went to great lengths to maximize opportunities for learning and improving as the programs went on.
III. DESCRIPTION OF EVALUATION

Approach

Because this project involved so many variables, because more than one problem had to be solved, and because the arrangements and the programming had been generally uncontrolled, it was rather difficult to formulate an evaluation method that would provide the best results. It was finally decided that the evaluation would rely upon two main inputs and some additional, subsidiary information that could be readily obtained. One of the two primary inputs comprised questionnaire forms, prepared on a statistical basis, that the participating teachers would complete periodically. Their gains in knowledge and changes in attitude would reflect the progress of the project. The other main source of input was established through the formation of an Advisory Panel, providing local expertise in career education, as far as the content of the programs was concerned, and in television and technology, as far as the methodology was concerned. This advisory panel would meet periodically, would review video tapes of all the programs, and, if possible, would witness live programs. It was felt that the conclusions and recommendations of the panel would be important in the eventual determination of project outcome.

In addition to these two main sources of information, there were other inputs from interviews with people on the program, and from questionnaires filled out by principals of the teachers involved and by other, peripheral teachers who were able to observe changes in those participating. In addition, the facilitators, (those persons who supervised and arranged each of the teacher groups at each location for each program), also completed questionnaires indicating their opinions concerning the project.
Finally, some consideration was given to getting information from parents, students, and possibly still other sources, but neither time nor money permitted these sources to be tapped.

Questionnaires. The participating teachers prepared an input or pretest-type questionnaire which was filled out before the first program and which was then read and scored by computer. This questionnaire is shown as Appendix A. After the first two programs, the teachers completed another questionnaire which was also fed into the computer and which appears as Appendix B. This is the form dated 30 October 1974.

After the fourth program of the project, the teachers were given a second process questionnaire, which is shown as Appendix C. After four more programs, the teachers were given a final process questions, primarily covering the last four programs. This questionnaire, dated 5 March 1975, comprises Appendix D.

Finally, the teachers were given an overall questionnaire to obtain their opinions on and evaluation of the entire course. This form is dated 5 March and appears as Appendix E.

These five questionnaires given to participating teachers were all compared statistically by computer, and represent the bulk of the findings of this report. Although other questionnaires were given to other groups, none of them were handled by computer, and they comprise a less important segment of the overall conclusions.

The facilitators were present during all of the programs. They were given a pretest questionnaire much the same as that administered to the teachers, to obtain similar kinds of advance information. This form, dated 15 October, appears as Appendix F. The facilitators were not given process questionnaires,
but they were given the opportunity to make a final evaluation, not in questionnaire form, but through open-ended or essay-type questions presented to them to answer as they chose. The letter to the facilitators soliciting their overall opinions is dated 7 March and is shown as Appendix G. The questionnaire given to other teachers, principals, and members of the school staffs at the beginning of the program comprises the form dated 30 October and is attached as Appendix H.

The questionnaire given to the Advisory Panel to determine their background and prior knowledge was administered via a form dated 6 November 1974, which appears as Appendix I. The critique form that the panel used to evaluate the video tapes was used for the first two presentations as it appears in Appendix J; subsequently, it was changed to the forms shown in Appendices K and L; then used thereafter. The overall, final form given to the Advisory Panel at the end of the project is dated 25 March, and appears as Appendix M.

Interviews. Early in the program it was envisioned that interviewing the participating teachers at appropriate times and possibly observing them in the classroom would provide useful input to the overall evaluation. As it turned out, the teachers barely arrived in time for each of the scheduled programs to start. Teachers were quite nervous before the programs started, interviews were clearly impossible during the programs, and because much of this project took up the teachers' own time, they generally left as soon as the programs were over, so that it was not possible to conduct very productive interviews. A form was prepared for interviews nevertheless, and it is shown as Appendix N. However, so few interviews were conducted and so few observations made in this manner that the information obtained via this form is virtually
The five questionnaire forms filled out by participating teachers were coded and keypunched and then tabulated by a University of Texas computer. Keypunching of the coded material was done by staff of the Texas Education Agency. The computer run involved statistical summaries for the purpose of obtaining totals and percentages.

As previously noted, findings and comments from the various evaluation instruments were made available to those responsible for the project as it progressed. In addition, suggestions for desirable input were received from project personnel and from Advisory Panel members, and these were incorporated into subsequent instruments whenever possible.
IV. EVALUATION DATA

As stated previously, the limited financial resources available for this evaluative study dictated a dependence on opinion surveys of the participants and generally precluded a more thorough effort that would involve extensive and objective follow-up measures in the impacted classrooms. In addition, the desirability of formative input suggested occasional changes in the instruments in order to gain immediately useful information, at the expense of strict comparability of results. For these reasons, and because of the inherent unreliability of questionnaires completed under uncontrolled conditions, the analysis of the results is limited to number and percentage comparisons, where possible, and generally to simple statements of fairly obvious preferences.

The input from the Advisory Panel was quite complex, and members of this group steadfastly resisted any attempt to force choices on them. For this reason, the main findings from their opinion questionnaires involve their responses to the open-ended questions, where they answered most freely and helpfully. Though material of this sort has important impact, it is more amenable to treatment in terms of narrative discussion than in terms of statistical analysis. Some data from their questionnaires are included in this section, but most of their comments are summarized in the following sections of the report. Actually, since the participating teachers also responded to open-ended questions, some of their valuable insights are also covered more in later sections than in this one.

1. Participating Teacher Questionnaires.

The first (October 16th) questionnaire contained questions that were intended to describe the sample. In addition, a brief "pretest" consisting of questions about information in the field of career education was included. The extremely tight time schedule made it impossible to develop a pretest dealing
specifically with material to be presented in the classes; therefore, some items from an already-existing test in this area were selected, with the permission of its developer, Dr. Walter Stenning of Texas A and M University.

A. Questionnaire of 16 October, 1974

(Not all respondents answered all questions.)

<table>
<thead>
<tr>
<th>Questionnaire Details</th>
<th>Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age: Range 22 - 63; M = 38.</td>
<td></td>
</tr>
<tr>
<td>Sex: 72 Female; 6 Male.</td>
<td></td>
</tr>
<tr>
<td>Highest Degree: 47 B.A.; 31 M.A.</td>
<td></td>
</tr>
<tr>
<td>Grade Taught: K - 4; 1 - 11; 2 - 5; 3 - 8; 4 - 13; 5 - 11; 6 - 6.</td>
<td></td>
</tr>
<tr>
<td>Area of Specialization: Elementary Education, most frequent; Language Arts, second; Art and Counseling, third.</td>
<td></td>
</tr>
<tr>
<td>Years in this school: Range 1 - 20; M = 5.50.</td>
<td></td>
</tr>
<tr>
<td>Years in this system: Range 1 - 29; M = 9.03.</td>
<td></td>
</tr>
<tr>
<td>Years teaching: 1 - 36; M = 12.28.</td>
<td></td>
</tr>
<tr>
<td>Career Education Training: 24 yes; 54 no.</td>
<td></td>
</tr>
<tr>
<td>Formal courses: Range 0 - 8.</td>
<td></td>
</tr>
<tr>
<td>Workshops or short courses: Range 1 - 3.</td>
<td></td>
</tr>
<tr>
<td>Read books or articles about career education: 51 yes; 26 no.</td>
<td></td>
</tr>
<tr>
<td>Inservice training in any field: 33 yes; 43 no.</td>
<td></td>
</tr>
<tr>
<td>Experience with educational TV: 27 yes; 49 no.</td>
<td></td>
</tr>
<tr>
<td>Experience with duplex TV: 1 yes (Medical-Dental training).</td>
<td></td>
</tr>
<tr>
<td>Use of career education curriculum materials: 29 yes; 49 no.</td>
<td></td>
</tr>
<tr>
<td>Career education taught in your school: 42 yes; 36 no.</td>
<td></td>
</tr>
<tr>
<td>1 as a separate class; 27 as a part of several subject areas; 23 as the teacher feels it is needed.</td>
<td></td>
</tr>
<tr>
<td>Involvement in career education: classroom teacher, interested but no special training, most frequent; specific training or experience, second; faculty representative for this program, third.</td>
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The most frequently mentioned as hoped-for gains from participation in the project were, first, to learn methods of teaching others about career education; second, to gain a better understanding of career education; and third, to get ideas about activities and materials for classroom use. The results of the pretest will be discussed in comparison with the post-test, administered with the March 5th questionnaire (see below).

B. Questionnaire of 30 October, 1974
(Administered after the first two INTERACT programs - not all respondents answered all questions.)

Enjoyed participation: 66 yes; 1 no.

Asked questions or made comments "on the air": 18 yes; 45 no.

Will use materials or information in classroom: 62 yes; 9 no.

Found the technical equipment:
- working well all the time, 12;
- mostly satisfactory, 48;
- having many problems, 6;
- highly disappointing, 4.

Found the material presented:
- helpful, 62;
- new, 15;
- not relevant, 3;
- familiar, 21;
- mostly useless, 2;
- old, 3.

Found the format and physical arrangements:
- comfortable, 30;
- acceptable, 38;
- clumsy, 3;
- discouraging to interaction, 1.

A comparison of the duplex TV technique with other types of inservice training:
- Workshops better, 14; same, 18; duplex TV better, 29;
- Training films better, 8; same, 13; duplex TV better, 39;
- Tape-slide or filmstrips better, 4; same, 1; duplex TV better, 48.

Statement concerning present opinion of this training:
- needs to improve, 7;
- really great so far, 37;
- material fine, technique a problem, 14;
- mostly a waste of time, 6;
- technique interesting, subject matter so-so, 3;
- probably the best they could do, 1.
Single most useful thing learned:
- possibility and importance of teaching career education at any level, most frequent;
- becoming acquainted with career education, second;
- importance of career awareness at an early age, third;
- how to communicate, relate, and interact, fourth.

Single most obvious fault or shortcoming:
- inadequacy of equipment, leading to distraction and breakdown of interaction, most frequent;
- uncomfortable setting (too hot), second (mostly from the studio in Killeen);
- participation and interaction less than expected, third;
- lack of appropriate level materials, fourth.

Suggestion for improvement:
- more involvement and/or interaction, most frequent;
- more dependable equipment, second;
- more information and material to share and use, third.

C. Questionnaire of 10 December 1974
(Not all respondents answered all questions.)

This instrument differed from the others and was mostly for the specific purpose of comparing the third and fourth programs with the first two. Thus it does not fit into the total design, but is of formative interest in ascertaining the differential acceptance of two modes of presentation, one concentrating the interaction in the second half of the program and stressing information (Programs 1 and 2), and the other featuring continuous interaction and stressing demonstration (Programs 3 and 4).

Preference:
- Programs 3 and 4, 44;
- Programs 1 and 2, 0;
- Equal, 18.

Satisfaction with interaction:
- Programs 3 and 4 better, 45;
- Programs 1 and 2 satisfactory, 2;
- No real preference, 13.

Materials packets:
- complete, 20;
- useful, 41;
- incomplete, 0;
-mainly good as a resource, 26;
-not relevant to my classroom needs, 5;
-stale or over-used, 1;
-require unavailable material, 2.

Difficulty in finding appropriate activities for your grade? yes, 6; no, 53.

Opinion of project so far:
- effective, 34;
- too hurried, 8;
- confusing, 9;
- no interaction so far, technical problems, 15.

Passing microphone around is:
- too troublesome, 0;
- distracting, 8;
- not too bad, 31;
- interesting, 6.

Talking on camera is:
- frightening, 3;
- inhibiting, 4;
- fun, 10;
- getting easier, 29;
- haven't done it, 3.

I would like more interaction: yes, 34; no, 10.

I am more interested in speaking with:
- the presenters, 22;
- teachers at other sites, 20.

Compared to workshops, the amount of interaction was: more, 24; less, 8; the same, 12.

The one-hour period was
- about right, 41;
- too rushed, 5;
- crowded with too much material, 1;
- too long, 2.

What will you be looking for in future programs?
- more useful grade-appropriate materials and activities, most frequent;
- more interaction and participation, second;
- more specific information about career education, third.

What would you change about the programs?
- accent materials and activities (like numbers 3 and 4), most frequent;
- more time to complete projects and ask questions, second;
- accent interaction and sharing, third.
D. Questionnaire of 5 March 1975

The brief first portion of this questionnaire requested reactions only to the last four INTERACT programs. The second portion comprised the "post-test" previously referred to. (Not all respondents answered all questions.)

The material presented was:
- helpful, 62;
- OK, but not relevant, 2;
- mostly useless, 3;
- new, 21;
- familiar, 17;
- old, 3.

Would you use anything shown in these programs in your classrooms?
yes, 69; no, 4.

The format and physical arrangements:
- comfortable, 29;
- acceptable, 38;
- clumsy or distracting, 0;
- discouraging to interaction, 6.

The single most useful thing learned:
- objectives of career education, career awareness, most frequent;
- classroom techniques, activities, interesting the students, second;
- variety of different resources, new ideas, third.

The most obvious fault or shortcoming:
- technical problems, noise, most frequent;
- inconvenience of place and time, "rushing", second;
- lack of continuity, third.

Results from the pre- and post-tests can be summarized as follows:

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>10.1</td>
<td>11.0</td>
</tr>
<tr>
<td>Median</td>
<td>10.07</td>
<td>11.35</td>
</tr>
<tr>
<td>Mode</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>1.554</td>
<td>1.592</td>
</tr>
</tbody>
</table>

The difference between the means is significant beyond the .01 level of confidence (t = 3.38). The difference between the medians, which is a more appropriate measure of central tendency because of the skewness of the post-test distribution, is even more significant (t' = 12.00). The indication is that the teachers learned general information about career education that was not specifically part of the curriculum, and thus that this was an effective teaching
method.

E. Questionnaire of 6 March 1975

(Not all respondents answered all questions.)

This was an instrument designed to provide an overview and summation of the project's impact on the participating teachers.

Number of programs attended:

- 8 - 26
- 7 - 11 (Many respondents left this blank.)
- 6 - 9
- 5 - 5

Enjoyed the experience: yes, 53; no, 3.

The technical equipment:
- worked well all the time, 3;
- was mostly satisfactory, 18;
- had a large number of problems, 23;
- was highly disappointing, 13.

Did you personally ask questions or make comments "on the air"? yes, 38; no, 14.

Comparison with other inservice training methods:
- Workshops better, 22; same, 16; duplex TV better, 14;
- Training films better, 11; same, 16; duplex TV better, 24;
- Tape-slide or filmstrips better, 9; same, 11; duplex TV better, 30.

Opinion of the training experience:
- needs to improve, 8;
- was really great, 9;
- material fine, but technique a problem, 32;
- mostly a waste of time, 3;
- technique interesting, subject matter so-so, 4;
- probably the best they could do, 1.

The materials packets were:
- complete, 19;
- useful, 38;
- incomplete, 0;
- mainly good as a resource, 26;
- not very helpful, 1;
- mostly a waste, 1;
- not really necessary, 0.
The activities demonstrated were:
- useful, 47;
- not clearly presented, 2;
- too simplistic, 3;
- not relevant to my classroom needs, 10;
- stale or over-used, 2;
- require unavailable materials, 3.

Was it difficult to find appropriate material for the grade level of your class?
yes, 44; no, 9.

The TV interaction was:
- effective, 23;
- too hurried, 10;
- confusing, 12;
- not possible or available, 10;
- ineffective, non-essential, 4.

Passing the microphone around was:
- too troublesome, 7;
- distracting, 16;
- not too bad, 20;
- not available, never used, 8.

Talking on camera was:
- frightening, 2;
- inhibiting, 5;
- fun, 16;
- getting easier, 16;
- infrequent, 9.

I would have liked more interaction: yes, 40; no, 10.

I was more interested in speaking with:
- the presenters, 23;
- teachers at other sites, 28.

Compared to workshops, the amount of interaction was:
- more, 16;
- less, 20;
- the same, 15.

The one-hour period was:
- about right, 44;
- too rushed, 7;
- crowded with too much material, 4;
- too long, 4.
Did participation fulfill the hopes you had for it?
- yes, 17;
- no, 10;
- partly, 27.

What would you change or do differently?
- better planning and coordination, most frequent;
- more direct feedback from participants and more participation from teachers, second;
- better location and better technical set-up, third.

What aspect of the programs would you particularly praise?
- books and materials, most frequent;
- organization and "fun" of programs, second;
- John Etheredge and presenters, third.

What aspect of the program would you particularly criticize?
- duplex TV technical problems, most frequent;
- lack of continuity, second (only 3 respondents).

The facilitator was:
- a real help, 33;
- essential to the project, 22;
- too bossy, 0;
- not much help, 4;
- not that necessary, 6;
- not enough of a leader, 2.

I recommend that this kind of inservice training be:
- developed further, 45;
- dropped, 8;
- used in its present form, 1.

Additional comments:
- informative and interesting experience, most frequent (31);
- technical problems made evaluation difficult--it needs much work, second (15)
  (no other comments made by more than 2 participants).

Summary of Teacher Questionnaire Findings

Though these teachers became somewhat disillusioned about the technique as the programs proceeded, they generally felt increasingly comfortable in the situation and felt positive about the experience. They valued the idea of interaction and were disappointed when it didn't work as well as they hoped. They were looking for both background and skills in career education, and they were pleased with the materials and the lessons. Workshops are evidently preferred
over all other inservice training methods, but, in spite of the technical inadequacy of duplex TV at this time, they placed it second in preference—higher than training films, tape-slide presentations, or filmstrips.

2. Advisory Panel Checklist—Critiques

As pointed out in the introduction to this section, the main evaluative material gained from the Advisory Panel members was found in their comments and responses to open-ended questions. However, they faithfully filled out the requested checklists, and there are some objective data from these. As a general rule, the Advisory Panel members were much more critical than the participants, which is natural, since they were selected as experts in either education and training or television and communication technology.

A. Concerning the Technical Aspects

From the first segment viewed by the panel, there was criticism of the technical functioning, though in the early program critiques the comments concentrated on specific faults, such as poor camera movement and clumsy and disjointed mixing. This had improved somewhat in the third and fourth segments, where switching locations was seen as the greatest problem. Problems with technical dependability began troubling the panel in Program 6, since efforts to interact with Ft. Worth and Dallas seemed very slow and distracting. By the sixth program, the Advisory Panel members were really questioning the technical feasibility of the concept. The seventh and eighth programs did not reassure them, and their final evaluation of the technique was quite pessimistic.

Both panel members and others invited to comment pointed out that technical innovations are often poor and discouraging in their first appearances.
However, at least some of the disillusionment expressed by Advisory Panel participants involves the general deterioration in technical quality toward the end of the project. There were always reasons for the noticeable lapses, such as atmospheric conditions, the Christmas holiday break, and the use of student trainees as technicians, but explanations really didn't help to dispel the disappointment felt by the panel.

B. Concerning the Subject Matter Presentations

The major criticisms expressed by the Advisory Panel involved stereotyping, superficial and unrealistic presentation of career education, and occasional pointless activity. Panel members generally appreciated John Etheredge's vulnerability during the programs, and there was considerable praise for his personal qualities. The "awareness" aspects of the presentation were particularly approved, but the very elementary level of some of the activities presented was noted. In their final summary, most panel participants felt mostly positive about the program content, though they pointed out that the technical failures made it nearly impossible to get an accurate picture of the program impact.

3. Non-Participating Teacher Questionnaire

A sample of non-participating teachers from the same school districts as were represented in the project kindly consented to take the brief pretest. This group can be considered as providing base-line data to check the project pretest statistics. The mean score of this sample of 109 teachers was 9.91, while the median was 10.28.

These scores do not differ significantly from the pretest mean and median for the project sample, indicating that the participating teachers were comparable before project INTERACT, with other teachers in terms of general back-
ground knowledge of career education. Financial limitations made it imposi-
table to re-test the non-participant group.

4. Data from the Facilitators and Others Identified with Project INTERACT, Career Education, or the Telecomputer Grid

The project facilitators and their alternates were asked to comment on the project, as were a number of others who had close ties with some aspect of INTERACT, career education, or the Telecomputer Grid. The documents received were thoughtful, balanced, and most helpful.

Their overall reaction was generally positive, mirroring that of other participants. They saw considerable potential value in use of the Grid as a resource for education, and they tended to take a broad view, encompassing a number of possible applications of this technology rather than inservice training alone. Like the Advisory Panel, they were critical of the present status of Grid maintenance, yet, on the whole, they concentrated on what could be done if the technical difficulties were overcome. They were realistic enough to view the project as very expensive inservice training, but they were future-oriented enough to mention that innovation is often not cost-effective in early applications.

They suggested that any future effort of this nature start earlier in preparation and orientation. They also questioned the value of the interaction with large groups, feeling that the duplex TV technique is most effective for small-conference-size classes. There was a suggestion that duplex TV needs central coordination, preferably by a specifically responsible TEA staff.

Local evaluations were evidently carried out by facilitators and other responsible school personnel. These evaluations, as outlined in the summaries,
generally support the data presented in this report, with generally positive responses regarding program effectiveness and many concerns expressed about technical readiness of the system.
V. DISCUSSION OF FINDINGS

About the Telecomputer Grid

There is little question but that the Telecomputer Grid was not ready for this project at its inception, nor was it ready at the completion of the eight lessons. The Grid does not operate full time and is, in fact, closed down a good part of the time, so that for each program or presentation of this project quite a bit of work was necessary to move the system toward peak efficiency. On several occasions this was not carried out satisfactorily and technical failures occurred during the presentation. Further, the system is comprised of some new and some old equipment, some expensive and some cheap, and it is operated by students who are just learning the skills of television production and cannot cope with all the problems as they occur. The Grid will never function efficiently or effectively until it is operated full time by fully qualified persons. However, it cannot reach this level of excellence until it finds enough clients to lease circuitry to warrant its staying on the air full time, and it cannot obtain enough clients until it can demonstrate a higher level of performance. Thus, a vicious cycle exists in which the network cannot perform well without clients and the clients will not come in until they see that the network can perform well.

The Texas Education Agency has been supporting the Telecomputer Grid for the past few years in different ways: through money for the purchase and installation of equipment, through tryout of various methodologies, and possibly through other means of assistance as well. Actual input is not known, but the total funding for the operation of the Grid has not yet reached "critical mass." That is to say, until and unless the network is brought up to professional standards and kept in that condition (by professional standards we mean the
levels of performance with regard to equipment, personnel, maintenance, and repair that would be expected of commercial TV broadcasters, carriers such as AT&T, etc.), possible clients are going to view the working of the system as unsatisfactory. This means that continuing to provide small amounts of funding will result in continuing disappointment, because although one problem may be solved, others will be discovered or will suddenly develop. Only sufficient bootstrap funding support can get the system into satisfactory shape.

Counteracting John Etheredge's high dedication, good organization, and effective programs was the fact that the Telecomputer Grid itself operated very inefficiently and encountered frequent failures during the course of these programs. Sometimes the failures were video, sometimes audio, and sometimes both; often the cameramen were not doing a good job (zooming when they should have been fading, switching to the wrong camera at the wrong time, or cutting away from people in the middle of a sentence); and there were many other problems caused by the generally poor equipment and the inexperience of the operating crew. Many times during the course of the programs the microwave links failed or malfunctioned, probably because of atmospherics. This prevented interaction or communication between sites at times when it should have taken place. Thus, the conclusions of most of the participating teachers and of the Advisory Panel are that this process of interaction by two-way television might possibly be successful if everything worked well, although they felt uncertain that, even with everything working well, the results of the program and the interaction would have been as beneficial as originally hoped.

**About the Program Content**

John Etheredge had originally decided not to follow the usual pattern for presentation of career education, but to design his own, with two major con-
siderations. The first was that career education is not a separate subject, but one which needs to be highlighted frequently during the teaching of other subjects; this requires good organization and broad career education awareness and knowledge. The second consideration was that the Telecomputer Grid made use of a technology that was not normally available, and rather unusual techniques and sequences were required for maximum impact. As a result, no two of the eight programs in the project followed the same pattern of organization and presentation or the same sequence of techniques. Each program had a different structure and was designed to produce a different and measurable impact on distant audiences. Each was also designed to maximize what had been observed and learned in the previous programs. Thus, the eight programs could not be laid out far in advance, although they were sketchily designed in advance, but the later programs were reorganized and adapted to correct previous mistakes. It must be remembered that these programs were presented live, with no prior videotaping. (This does not include material which was clipped from other films and presented as part of a live program.) There is no question about the extreme dedication of Etheredge and his attention to details in organizing and presenting the programs. He travelled to all sites between programs to discuss them, to get suggestions for improvement from facilitators and teachers, and to develop further interest in the programs.

This methodology does not permit very much individualization of instruction, although the books, pamphlets, guides, manuals, and reading materials that were given out at most programs could be read by teachers on their own. It must be realized that this technique basically provides mass, one-way instruction, although here there was some opportunity for interaction. For this interaction to occur, however, some 80 to 90 teachers in four different locations all had
to be at an appointed place at a given time. Whether or not they felt well, whether or not it was raining, and whether or not they could find a parking place, they still had to be in the room at the time the program started and had to stay there for exactly one hour. There was no opportunity for make-up if they missed a program or lesson. The conclusion that must be reached here is that such a methodology has only very limited flexibility, and does not consider individual tastes, choices, or preferences as to methods of learning. In short, it is an enforced methodology to which participants must make their contributions at precisely the right time. It should be noted, however, that workshops, which were evidently the participating teachers' preferred method of inservice training, share some of these drawbacks.

About the Organization and Presentation

There is no question but that John Etheredge’s enthusiasm, dedication, and excellent performance are major factors responsible for the program’s generating interest and obtaining good results. Further, without visits between programs, without someone making continuous efforts to generate interest and improve the programs, the outcomes might have been less positive.

In a project like this, one must consider the possibility of the Hawthorne Effect* operating throughout, as a result of the general excitement and enth-

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* Experiments were conducted in the Hawthorne Works of the Western Electric Company (Chicago) from 1927-1932 to determine factors influencing the workers' performance, motivation, attitudes, loyalty, etc. After several years of statistical and behavioral study, the experimenters finally realized that a small group selected for any kind of experiment or for whatever reason experienced an uplift of morale and attitude and an improvement in performance just as a result of having been selected, and regardless of any other factors. This phenomenon has come to be called the "Hawthorne Effect."
siasm generated. This is not necessarily bad, nor does it necessarily lead to erroneous conclusions, for if the programs were presented again and the Telecomputer Grid used again, then the Hawthorne Effect might again produce significant and encouraging results. However, when a program or project is presented on a routine, operational basis, then the Hawthorne Effect is likely to be lost.
VI. SUMMARY STATEMENTS

Summary of Advantages

On the basis of the above discussions and the consensus of the teachers and Advisory Panel, the following possible advantages are indicated:

(1) The Telecomputer Grid offers the opportunity to reach groups of people in several locations simultaneously, on short notice, to provide information and to obtain comments and reactions;

(2) Use of the Grid presents an opportunity to reduce travel requirements for a number of people;

(3) The Grid permits interaction and discussion between groups, thus providing the opportunity for venting of opinions and emotions;

(4) A variety of techniques can be used to convey information, as on commercial television;

(5) There is an opportunity for several kinds of group conferencing: formal lectures, open discussion seminars, and very informal brain-storming;

(6) In many ways, the Grid can (potentially) duplicate the advantages of workshops, especially in making the expertise or special skills of certain individuals widely available, and at some savings in time and, perhaps, money (e.g., "master teachers," popular and expensive lecturers, etc.).

Summary of Disadvantages

It is always easier for anyone to be critical than to be commendatory, and we are no exception to the rule. However, the following summary represents the consensus of others, and not merely our own opinion, although we also viewed the taped programs and feel that these findings are accurate.

(1) The entire network needs to be "debugged," then kept in top operating
condition. There is a serious question as to whether the equipment and personnel now on hand can actually attain satisfactory levels of performance, since almost the entire network is operated and maintained by students, who lack the maturity and experience to ensure satisfactory operation;

(2) Although specific dollar figures have not been obtained and costs calculated have been omitted from this evaluation, it nevertheless seems to be evident that the cost per student hour of a system like the Telecomputer Grid is far higher than that of most of the other instructional methods available;

(3) A system of this nature lacks certain types of flexibility. Whereas delivery of the content can be quite flexible, demands on the audience are very rigid. Time, place, appearance, and subject are all beyond the participant's choosing; the entire audience, in all locations, moves in lock-step;

(4) Any interactive system such as this one lacks individualization of instruction. Considering that the trend in teaching children is more and more toward personalized diagnostics, scheduling, and measurement, it would seem logical to use this methodology increasingly rather than decreasingly in teacher education;

(5) Similarly, instructing separate groups, as in this project, is hindered by the fact that each group will have a different level of both knowledge and interest. Thus, such instruction can only aim at the mid-point, or average, of the groups, and in so doing it runs the risk of missing all of them;

(6) Once commissioned, a network such as this one might become a perennial millstone—it costs money whether used or not. Hence, the compulsion to use it "to get the money's worth" arises, and it is used whether such use is actually
advantageous or not.

The statement of these disadvantages seems rather severe and ruthless; it is, not so, intended. It is, however, best to be frank, and even somewhat extrapolative, rather than to "brush anything under the rug."

Findings

In the light of all the foregoing facts, opinions, computations, interviews, and observations, the following findings emerge:

As to the Telecomputer Grid—

1. The Grid is not operating well for duplex television, and it is doubtful that it can operate satisfactorily without a sufficient transfusion of funds for replacement or rehabilitation of equipment and procurement and/or training of skilled personnel.

2. The frequent and recurrent failures of the network prevented really accurate evaluation of the career education program. Not only did some of the instruction disappear into an inoperative system, but cumulative frustration and annoyance at the system turned into at least some disillusion with the whole project, including the content.

3. If the Grid continues to be used as a vehicle for student instruction in television production, it may never be suitable for professional educational use.

As to the career education content—

1. A very large proportion of the teachers felt that they had learned a lot about career education, and had gotten many new ideas for classroom use.

2. The facilitators, Advisory Panel, and other professionals who observed parts of the programs felt, with few exceptions, that the presentations were interesting, diversified, stimulating and appropriate for inservice training for
elementary teachers, and that, on those rare occasions when the whole concept was working efficiently, the experience was quite exciting.

(3) Career education concepts and various teaching techniques both received adequate treatment; there was no material of either kind that could not be covered well by this medium.

As to the organization and presentation--

(1) John Etheredge did a fine job of organizing the course; developing, making, and improving the presentations; and in general maximizing the instructional impact. One would have to go far to find the equal of his talent and dedication.

(2) Unfortunately, the frequent non-performance of the Grid undermined much of his extensive organizational effort and programming talent. It would be difficult to say what would have happened if an inservice training effort such as this were "routinized" and forced to "go it alone," without constant attention and the kind of trouble-shooting Mr. Etheredge had to do.

Overall--

(1) There are no objective data concerning the long-term influence of the course upon participants or any follow-up activities, although several teachers did indicate on their overall evaluation forms that they had started to use ideas from the course in their classrooms and intended to continue.

(2) The course in career education as presented was successful, in spite of the poor performance of the medium.

(3) The cost of the course per student hour was possibly prohibitive, and this level of cost will continue into the foreseeable future.

(4) Except for a few brief and generally unsuccessful inter-active interludes in the course, all the material presented could have been presented in other training formats, and by other media at least equally well, and possibly with less expense and confusion.
(5) The more the lessons resembled workshops (in stressing demonstration and active involvement of participants), the more positive were the teacher evaluations, and there was a strong tendency to value the idea of potential interaction; thus, in spite of the poor dependability record of the Grid, most respondents continued to feel that the technique has promise for education.

(6) Neither the participating teachers nor others who had evaluative input saw the duplex TV technique as a replacement for any existing inservice training method; rather, it was generally perceived as a potential addition to the repertory of available training resources, assuming consistent technical performance, of course.
Dear Teacher:

Project INTERACT is a new venture in educational use of television technology, and a considerable amount of evaluation will be necessary in order to get maximum benefit from this innovative effort. We really need your help in every phase of the project, and we know you will understand that the frequent brief "forms" you will be asked to complete are our way of helping to get a clear idea of the strengths and weaknesses of the duplex TV technique as an educational tool.

Because we would prefer that much of the evaluation have the freedom that comes with anonymity, we are assigning each participating teacher a code number, which will be used throughout the project. You will find your code number in the top right-hand corner of this letter. Please detach this number and always use your number in responding to the evaluation tests and questionnaires, starting with this one.

Sincerely,

Dorothy A. Fruchter, Ph.D.
President

5. Grade taught ______ 6. Area of specialization, if any ______
7. Years you have taught this grade ______ 8. Years in this school ______
9. Years in this school system (a) ______ 9. Total years of teaching (b) ______
10. Briefly state your involvement in career education: ______

11. Have you had any career education training? ______ yes ______ no
12. If "yes," please answer the following: (a) Number of formal courses ______
(b) Number of workshops or "short courses" ______
13. Have you read books or articles dealing with career education? ______ yes ______
(b) Number of books ______ (c) Number of articles ______
14. Have you had inservice training courses in any area? ______ yes ______ no
15. Have you had any previous experience with educational TV? ______ yes ______
(b) If "yes," describe briefly: ______
16. Have you had any previous experience with duplex TV, as used in this project? ______ yes ______ no (b) If "yes," describe briefly: ______
17. Please list 3 things you are hoping to gain from participation in this training. (Be as specific as you can.)
   (a)
   (b)
   (c)

18. Check (to the left) the one you consider most important.

19. Briefly define career education as you would describe it to a parent of one of your students:

20. Have you ever used special career education curriculum materials in your classroom? yes no

21. Have you ever personally developed any career education curriculum materials? yes no

22. Is career education taught in your school now? yes no

23. If "yes," is it being taught:
   (a) as a separate class
   (b) as a part of several subject areas
   (c) as the teacher feels it's needed

24. On each characteristic below, describe the student that you would see benefiting most from career education. (check one for each line)
   (a) Male  Female  Either
   (b) Elementary student  Jr. High student  High school student
   (c) Academically oriented  Vocationally oriented
   (d) From a "blue collar" family  From a "white collar" home
   (e) From the Anglo ethnic group  From a minority group

25. What are your expectations from this type of training? How would you compare its effectiveness with other types of inservice training?

26. The major emphasis in career education is toward:
   (a) Vocational education  (c) Special students
   (b) College bound students  (d) All students

27. Approximately what percent of Texas' student population drops out of formal education each year? (a) 5%  (b) 44%  (c) 20%  (d) 13%

28. The emphasis of career education in the elementary school is on:
   (a) Awareness  (c) Experimentation
   (b) Exploration  (d) Preparation

29. In this decade approximately what percent of the jobs will require a college education? (a) 50%  (b) 5%  (c) 75%  (d) 20%

30. One of the methods used to group all jobs into categories is:
   (a) Professions  (c) Job Clusters
   (b) Trades  (d) Job Description

31. What model of career education does Texas emphasize?
   (a) Community-home based model  (c) Rural-residential model
   (b) School based model  (d) Employer based model

32. Career education is another term for vocational education. (true or false)

33. One of the main purposes of career education is to get students to make a fairly definite career choice in elementary or junior high school. (T or F)

34. The best way to teach career education is by teaching it as a separate course at each grade level. (T or F)

35. The fundamental concept of career education is that all educational experiences should be geared to preparation for economic independence, personal fulfillment, and an appreciation for the dignity of work. (T or F)

36. In the schools, career education is the responsibility of only teachers. (true or false)

37. I personally (do, do not) believe that career education is needed in schools.

38. I believe that career education (does, doesn't) need to be taught in my school district. (circle correct answer in #37-39)

39. I think that career education (will, will not) be a concept that will be a permanent part of the schools of the future.

PLEASE RATE THE FOLLOWING ITEMS ON A SCALE FROM ONE TO FIVE, IN ORDER OF IMPORTANCE IN CARRYING OUT A SUCCESSFUL CAREER EDUCATION PROGRAM. (5 = most important)

40. Use of printed materials
41. Use of tape recordings
42. Use of career games
43. Use of video tapes
44. Use of field trips
45. Use of resource speakers
EVALUATION QUESTIONNAIRE

You have now participated in two "sessions" of Project INTERACT. Please answer these questions, based on your overall experiences so far.

1. Code # __________ 2. Have you enjoyed this participation? _______yes _______no
3. Do you feel that the technical equipment has: (check one)
   ______ worked very well all the time?
   ______ been mostly satisfactory?
   ______ had a large number of problems?
   ______ been highly disappointing?
4. Did you personally ask any questions or make any comments while "on the air"?
   ______ yes ______ no
5. Did you find the material presented: (check one in each column)
   ______ helpful?
   ______ new?
   ______ "OK", but not relevant?
   ______ a little familiar?
   ______ mostly useless?
   ______ "old hat"?
6. Would you say that you would probably use anything shown in this project in your classroom? ______ yes ______ no
7. Did you find the format and physical arrangements: (check one)
   ______ comfortable?
   ______ clumsy or distracting?
   ______ acceptable?
   ______ discouraging to interaction?
8. How would you compare the duplex TV technique in-service training (so far) with: (a) workshops?
   ______ workshops better
   ______ same
   ______ duplex TV better
   ______ films better
   (b) training films?
   ______ same
   ______ duplex TV better
   ______ tape-slide or filmstrips better
   ______ filmstrips?
   ______ same
   ______ duplex TV better
9. Which of these statements comes closest to describing your present opinion of this training experience? (check one)
   ______ (a) It needs to improve
   ______ (b) It's really great so far.
   ______ (c) The material is fine, but the technique is a problem.
   ______ (d) It's mostly a waste of time.
   ______ (e) The technique is interesting, but the subject matter is only so-so.
   ______ (f) It's probably the best they can do.
10. What is the single most useful thing you have learned from this Project so far?

11. What is the single most obvious fault or shortcoming of this Project so far?

12. Can you suggest anything that would help to improve the presentations, or make you feel better about the time you are spending on this Project?
TO: Teachers participating in Project INTERACT

You have recently attended two project sessions that were different in many ways from the first two that we asked you to evaluate previously. Your response to this questionnaire will be especially valuable in planning future programs.

Code # __________ (If you do not have a code number, please check with your Project Facilitator.)

1. In comparing the first two programs with sessions 3 and 4, please check one of the following:
   (a) _____ I prefer the "information" approach of programs 1 & 2.
   (b) _____ I prefer the "demonstration" approach of programs 3 & 4.
   (c) _____ To me the two approaches are equally effective.

2. Please check one of these statements about the interaction format:
   (a) _____ I was satisfied with the way the interaction was handled in the first two programs.
   (b) _____ I liked the "continuous" interaction in programs 3 & 4 better.
   (c) _____ I have no real preference in this matter.

3. Please check any of the following that apply concerning the materials packets you have been receiving:
   ____ complete  ____ not very helpful
   ____ useful  ____ mostly a waste
   ____ incomplete  ____ not really necessary
   ____ mainly good as a resource
   Any comment you would like to make: __________________________

4. Please check any of the following that apply concerning the activities demonstrated in programs 3 & 4:
   ____ useful  ____ not relevant to my classroom needs
   ____ not clearly presented  ____ stale or over-used
   ____ too simplistic  ____ require unavailable materials

5. Do you find it difficult to find appropriate activities for the grade level of your class?  ____ yes  ____ no  (grade taught _____)

6. Considering your experience in the Project so far, please check all the following that describe your opinions.
   (a) The TV interaction is:
      ____ effective  ____ too hurried
      ____ confusing
      Other (describe): ________________________________
(b) Passing the microphone around is:  
   ____ too troublesome  
   ____ distracting  
   ____ not too bad  
   Other (describe):  
   
   (c) Talking on camera is:  
   ____ frightening  
   ____ inhibiting  
   ____ fun  
   ____ getting easier  
   Other (describe):  
   
   (d) I would like more interaction:  ____ yes  ____ no  

(e) I am more interested in speaking with:  
   ____ the presenters  
   ____ teachers in other sites  

(f) Compared to workshops, the amount of interaction generated is:  
   ____ more  
   ____ less  
   ____ the same  
   ____ about right  
   ____ too rushed  
   ____ crowded with too much material  
   ____ too long  
   ____ too short  
   Other (describe):  
   
   (g) The one-hour period is:  

7. What will you be looking for in future programs?  

8. What specific things would you change or do differently in the program you have attended?
TO: Teachers participating in Project INTERACT

You have now completed programs 5, 6, 7, and 8 of the Project. Please answer the first 5 questions about these four programs only.

Code 

1. Did you find the material presented: (check one in each column)
   - helpful?
   - new?
   - OK, but not relevant?
   - a little familiar?
   - mostly useless?
   - "old hat"?

2. Would you say that you would probably use anything shown in these 4 programs in your classroom? yes no

3. Did you find the format and physical arrangements: (check one)
   - comfortable?
   - clumsy or distracting?
   - acceptable?
   - discouraging to interaction?

4. What is the single most useful thing you have learned from these 4 programs?

5. What is the single most obvious fault or shortcoming of these 4 programs?

Now please answer the rest of the questions which you will find familiar!

6. On each characteristic below, describe the student that you would see benefiting most from career education: (check one for each line)
   (a) Male Female Either
   (b) Elementary student Jr. High Student High School
   (c) Academically oriented Vocationally oriented
   (d) From a "blue collar" family From a "white collar" home
   (e) From the Anglo ethnic group From a minority group

7. The major emphasis in career education is toward: (check one)
   - (a) Vocational education
   - (b) College bound students
   - (c) Special students
   - (d) All students

8. Approximately what percent of Texas' student population drops out of formal education each year? (a) 5% (b) 44% (c) 20% (d)

9. The emphasis of career education in the elementary school is on:
   - (a) Awareness
   - (b) Exploration
   - (c) Experimentation
   - (d) Preparation

10. In this decade approximately what percent of the jobs will require a college education? (a) 50% (b) 5% (c) 75% (d) 20%
11. One of the methods used to group all jobs into categories is:
(a) Professions (c) Job Clusters
(b) Trades (d) Job Description

12. What model of career education does Texas emphasize?
(a) Community-home based model (c) Rural-residential model
(b) School based model (d) Employer based model

13. Career education is another term for vocational education. (true-false)

14. One of the main purposes of career education is to get students to make a fairly definite career choice in elementary or junior high school. (T or F)

15. The best way to teach career education is by teaching it as a separate course at each grade level. (T or F)

16. The fundamental concept of career education is that all educational experiences should be geared to preparation for economic independence, personal fulfillment, and an appreciation for the dignity of work. (T or F)

17. In the schools, career education is the responsibility of only teachers. (T or F)

18. I personally (do, do not) believe that career education is needed in school.

19. I believe that career education (does, does not) need to be taught in my school district.

20. I think that career education (will, will not) be a concept that will be a permanent part of the schools of the future.

PLEASE RATE THE FOLLOWING ITEMS ON A SCALE FROM ONE TO FIVE, IN ORDER OF IMPORTANCE IN CARRYING OUT A SUCCESSFUL CAREER EDUCATION PROGRAM (5 = most important)

21. Use of printed materials 24. Use of career games
22. Use of tape recordings 25. Use of field trips
23. Use of video tapes 26. Use of resource speakers
Dear Teacher:

The programs offered in Project INTERACT are now completed, and we need an overview from you to complete our evaluation. Please answer these questions from the point of view of your total experience in the Project. When you have completed the form, please send it to us in the stamped self-addressed envelope provided.

Thank you for your help— it has been a valuable source of evaluation materials.

Sincerely,

Dorothy A. Fruechter, Ph.D.
President

Code #______  Number of the eight programs you have attended______

1. Have you enjoyed this participation?  ____yes  ____no

2. Do you feel that the technical equipment has:  (check one)
   ____ worked very well all the time?
   ____ been mostly satisfactory?
   ____ had a large number of problems?
   ____ been highly disappointing?

3. Did you personally ask any questions or make any comments while "on the
   ____yes  ____no

4. How would you compare the duplex TV technique in-service training with:
   (a) workshops?
      ____ workshops better
      ____ same
      ____ duplex TV better
   (b) training films?
      ____ films better
      ____ same
      ____ duplex TV better
   (c) tape-slide or filmstrips?
      ____ tape-slide or filmstrips better
      ____ same
      ____ duplex TV better
5. Which of these statements comes closest to describing your opinion of this training experience? (check one)
   (a) It needs to improve.
   (b) It was really great.
   (c) The material was fine, but the technique is a problem.
   (d) It was mostly a waste of time.
   (e) The technique is interesting, but the subject matter was only so-
   (f) It was probably the best they could do.

6. Please check any of the following that apply concerning the materials packets you received:
   ___ complete  ___ not very helpful
   ___ useful  ___ mostly a waste
   ___ incomplete  ___ not really necessary
   ___ mainly good as a resource
   Any comment you would like to make: __________________________________________

7. Please check any of the following that apply concerning the activities demonstrated:
   ___ useful  ___ not relevant to my classroom needs
   ___ not clearly presented  ___ stale or over-used
   ___ too simplistic  ___ require unavailable materials

8. Did you find it difficult to find appropriate activities for the grade level of your class?  ___ yes  ___ no (grade taught____)

9. Considering your experience in the Project, please check all the following that describe your opinions.
   (a) The TV interaction was:
      ___ effective  ___ too hurried
      ___ confusing  ___ other (describe): __________

   (b) Passing the microphone around was:
      ___ too troublesome
      ___ distracting  ___ not too bad
      ___ other (describe): __________
(c) Talking on camera was:  
___frightening  
___inhibiting  
___fun  
___getting easier  
___Other (describe):  

(d) I would have liked more interaction:  
___yes  ___no  

(e) I was more interested in speaking with:  
___the presenters  
___teachers in other sites  

(f) Compared to workshops, the amount of interaction generated was:  
___more  
___less  
___the same  

(g) The one-hour period was:  
___about right  
___too rushed  
___crowded with too much material  
___too long  
___too short  
___Other (describe):  

10. What specific things would you change or do differently in the programs you have attended?  

11. Did participation in this project fulfill the hopes you had for it at the beginning?  
___yes  ___no  ___partly  

12. What specific aspect of this training experience would you particularly praise?  


13. What specific aspect of this training experience would you particularly like to criticize?

---

14. Was your Facilitator (check any that apply)
   ____ a real help?  ____ not much help?
   ____ essential to the Project?  ____ not really that necessary?
   ____ a little too "bossy"?  ____ not enough of a leader?

15. Would you recommend that this kind of inservice training be
   ____ developed further?
   ____ dropped?
   ____ used extensively in its present form?

16. Any additional comments:

---

PLEASE COMPLETE AND MAIL BY 15-MARCH.
October 15, 1974

This organization will be evaluating Project INTERACT during the entire course, and we have two objectives—to improve the course during the cycle, if possible; and to aid in later decision-making about the utility of this method of training.

As a facilitator working with Project INTERACT, you are in a key position to help in the evaluation process. Your perceptions of the strengths and weaknesses of the INTERACT approach, from both technical and educational points of view, will be most valuable, and your assistance is earnestly requested. To provide some preliminary information, it would be appreciated if you would answer a few brief questions. Thanks!

Sincerely,

Dorothy A Fruchter, Ph. D.
President

1. Name:_________________________ 2. Age:__________ 3. Sex:__________
4. Position:_______________________
5. How long have you been in this job? (a) __________________________________________________________
   In this school? (b) ___________ In this school system? (c) ___________
6. Briefly describe your involvement in the area of career education:__________________________

7. Have you had formal training in Career Education? (a) yes _______ no
   Number of university or college courses: (b) ___________
   Number of workshops or other short training experiences: (c) ___________
8. Have you previously served as a discussion leader in any educational context, other than elementary classroom? _______yes _______ no
9. Have you had any previous experience or contact with the duplex TV method of presentation? _______yes _______ no
10. If your answer to #9 was "yes," would you describe this contact as:
    (a) generally positive, giving an impression of considerable educational promise;
    (b) neutral, with the good and bad aspects about equal;
    (c) generally negative, with too many problems to allow for real effectiveness.
The presentation program of INTERACT is over, but our interest in it lingers on! And we hope yours does too.

Seriously, we need your help to make a worthwhile evaluation and to arrive at useful conclusions and recommendations. We recognize that the Facilitators probably had a strong influence on how the teachers feel about the project, so knowing how you feel will help us to analyze the whole outcome, and possibly to understand why.

We have decided against a simplistic form to fill out. Rather, we'd prefer that you just put down your feelings and observations on paper and send them to us. Of course, we'll have to read each response carefully and let it sink in—not make a statistical number of it. If you'd rather talk on a tape cassette, that will be equally acceptable; we'll transcribe it and return the tape to you.

Here are some things we'd like you to cover, but you are not limited to these, by any means.

1. Please identify yourself and remind us of your position and school.
2. Comment about the content of the whole course—its development, presentation, intelligibility, etc., as distinct from the technical methodology.
3. Please tell us how you feel about duplex TV and the usefulness of interaction, feedback, discussion, etc.
4. Make an estimate of the percentage of teachers who (a) really enjoyed the project; (b) got much from it; (c) will utilize a significant quantity of suggestions; or (d) would rather have been doing something else.
5. Tell us whether you think the whole idea of duplex TV with interaction is worth trying to improve, or whether we would be throwing good money after bad.
6. Add anything else you'd like to say about Project INTERACT and your part in it.

Please consider these in whatever context, or to any depth you'd like. We truly want your frank views and uninhibited concerns. Naturally, we will not reveal sources to any persons outside this corporation.

Thank you very much for your help.

Sincerely,

Dorothy A. Fruchter, Ph. D.
Dear Friend:

Some of the teachers in your community are participating in Project INTERACT, a new venture in educational use of television technology. Because the whole concept is innovative, a considerable amount of evaluation will be necessary to get the maximum benefit from the project. Your help is needed, mostly to provide control and "baseline" information. We would appreciate your filling out this form on a completely anonymous basis.

Thank you,

Dorothy A. Fichter, Ph. D.
President

1. Name of school __________________________ 2. City ________________

3. Position ________________________________ If teacher, grade taught (b)

   area of specialization, if any (c)

   years you have taught this grade (d)

4. Age ________________ 5. Sex ________________ 6. Highest degree earned ______

7. Years in this school ____________________ 8. Years in this school system ______

9. Total years in school-related employment ______

10. Have you had any "career education" training? ______ yes ______ no

11. If "yes," please answer the following: (a) number of formal courses ______

   (b) number of workshops or "short courses" ______

12. Have you read books or articles dealing with career education? ______ yes ______

   (b) number of books ______ (c) number of articles ______

13. Have you had inservice training courses in any area? ______ yes ______ no

   (b) If "yes," describe briefly: ________________________________________

14. Have you had any experience with educational TV? ______ yes ______ no

   (b) If "yes," describe briefly: ________________________________________

15. Have you had any experience with duplex TV? ______ yes ______ no

   (b) If "yes," describe briefly: ________________________________________

16. Briefly define "career education" as you would describe it to a parent of one of your students: ________________________________________

17. Have you ever used special career education curriculum materials in your classroom? ______ yes ______ no

18. Have you ever personally developed any career education curriculum materials? ______ yes ______ no
19. Is career education taught in your school now? ______ yes ______ no

20. If "yes," is it being taught: _______ (a) as a separate class

       (b) as a part of several subject areas

       (c) as the teacher feels it's needed

21. On each characteristic below, describe the student that you would see benefiting most from career education. (check one for each line)
    (a) _______ Male _______ Female _______ Either
    (b) _______ Elementary student _______ Jr. High student _______ Hi school
    (c) _______ Academically oriented _______ Vocationally oriented
    (d) _______ From a "blue collar" family _______ From a "white collar" home
    (e) _______ From the Anglo ethnic group _______ From a minority group

22. The major emphasis in career education is toward: (check one)
       (a) Vocational education _______ (c) Special students
       (b) College bound students _______ (d) All students

23. Approximately what percent of Texas' student population drops out of formal education each year? ______ (a) 5% ______ (b) 44% ______ (c) 20% ______ (d) 13%

24. The emphasis of career education in the elementary school is on:
       (a) Awareness _______ (c) Experimentation
       (b) Exploration _______ (d) Preparation

25. In this decade approximately what percent of the jobs will require a college education? ______ (a) 50% ______ (b) 5% ______ (c) 75% ______ (d) 20%

26. One of the methods used to group all jobs into categories is:
       (a) Professions _______ (c) Job Clusters
       (b) Trades _______ (d) Job Description

27. What model of career education does Texas emphasize?
       (a) Community-home based model _______ (c) Rural-residential model
       (b) School based model _______ (d) Employer based model

28. Career education is another term for vocational education. (True or False)

29. One of the main purposes of career education is to get students to make a fairly definite career choice in elementary or junior high school. (T or F)

30. The best way to teach career education is by teaching it as a separate course at each grade level. (T or F)

31. The fundamental concept of career education is that all educational experiences should be geared to preparation for economic independence, personal fulfillment, and an appreciation for the dignity of work. (T or F)

32. In the schools, career education is the responsibility of only teachers. (T or F)

33. I personally (do, do not) believe that career education is needed in school.

34. I believe that career education (does, doesn't) need to be taught in my school district.

35. I think that career education (will, will not) be a concept that will be a permanent part of the schools of the future.

PLEASE RATE THE FOLLOWING ITEMS ON A SCALE FROM ONE TO FIVE, IN ORDER OF IMPORTANCE IN CARRYING OUT A SUCCESSFUL CAREER EDUCATION PROGRAM (5 = most important)

36. Use of printed materials _______ 39. Use of career games

37. Use of tape recordings _______ 40. Use of field trips

38. Use of video tapes _______ 41. Use of resource speakers
(512) 476-6868
FROM: D. Fruchter, Ph. D., President of Educational Development Corp.

Thank you for taking some time from your busy schedule to help us in the evaluation of Project INTERACT. Your insights, comments, and criticisms will be an important step in seeing that maximum benefit is realized from this innovative effort. The questionnaire below will give us some background information. In addition, you will be asked to complete a brief critique after each of the four videotaped presentations you will monitor, as well as an overall assessment at the end of the last presentation. Please keep in mind that we are evaluating both the educational content (career education) and the presentation method (live duplex television); in the latter case, we hope to be able to assess its value for in-service teaching training and speculate about its probable worth for teaching children. Please feel free to make suggestions about any aspect of this project, including the evaluation process and instruments. We need and appreciate your input. Please return this at the first session of the Advisory Panel— that you attend.

1. Name
2. Age
3. Sex
4. Highest Degree
5. Where earned
6. Major subject
7. Present position
8. Briefly describe your present or past involvement with career education:
9. Briefly describe your present or past involvement with educational television:
10. Briefly describe your present or past involvement with educational applications of audiovisual media other than television:

(If none, check here:)
11. Briefly describe your present or past involvement with workshops, seminars, or other "live" educational techniques:

(If none, check here:)
12. Have you had experience specifically involving duplex TV? yes no
13. Have you ever been a classroom teacher on any level? yes no
14. Have you had any previous contact with Project INTERACT materials? yes no (If "yes", briefly describe:

Please continue on reverse, as necessary, for any of the above items.
ADVISORY PANEL CHECKLIST-CRITIQUE

You have just monitored two videotaped INTERACT presentations. Based on your immediate impressions, please complete the following:

1. Name

2. Would you describe your overall reaction as: positive? _____ neutral? _____ negative? _____

As far as the subject matter is concerned,

3. the presentation was: outstanding ______ adequate ______ spotty ______ poor ______

4. the material was: (Check 1 of the 2 possible responses for each letter for both segments 1 & 2.)
   (a) mostly helpful
   (b) generally useless
   (c) appropriately aimed
   (d) off-target
   (e) mostly fresh and innovative
   (f) somewhat old-hat
   (g) stimulating
   (h) often boring
   (i) clear and well-organized
   (j) diffuse or poorly integrated

From a technical point of view,

5. the picture quality was: outstanding ______ adequate ______ spotty ______ poor ______

6. the camera work was:

7. the mixer control was:
   (a) smooth ______ clumsy ______
   (b) logical ______ disjointed ______

8. What was, in your opinion, the best feature of the subject matter presentation? (Segment 1)
   (Segment 2)

9. What was, in your opinion, the least satisfactory feature of the subject matter presentation? (Segment 1)
   (Segment 2)

10. What do you feel was the best technical achievement of the segment? (Segment 1)
    (Segment 2)

11. What do you regard as the worst aspect of the technique in this segment? (Segment 1)
    (Segment 2)
12. Please give your comments about the handling of the discussion periods (if they were, in fact, recorded and presented).

13. If you have any suggestions for changes in these presentations that might enhance their future usefulness, please list them:
   (Segment 1)
   (Segment 2)

14. If you have any suggestions for changes in the style, tone, or level that might be applied to the remaining, still uncompleted, segments, please mention them here.

Additional Comments:
ADVISORY PANEL CHECKLIST—CRITIQUE

You have just monitored another videotaped INTERACT presentation. Based on your immediate impressions, please complete the following:

1. Name ___________________________

2. Would you describe your overall reaction as: (check one)
   - positive?
   - negative?
   - neutral?
   - Other? ___________________________

3. As far as the subject matter is concerned, the presentation was: (check one or more)
   - outstanding
   - adequate
   - spotty
   - poor
   - Other: ___________________________

   Please give specific comments: ___________________________________________________

4. As far as the subject matter is concerned, the material was: (check one of the possible responses for each letter)
   - mostly helpful
   - generally useless
   - off-target
   - appropriately aimed
   - mostly fresh and innovative
   - somewhat old-hat
   - stimulating
   - often boring
   - clear and well-organized
   - diffuse or poorly integrated
   - Other: ___________________________

   Once again, please give specific comments: (f) _________________________________

5. What was, in your opinion, the best feature of the subject matter presentation?

6. What was, in your opinion, the least satisfactory feature of the subject matter presentation?

7. From a technical point of view, the picture quality was: (check 1 or more)
   - outstanding
   - adequate
   - spotty
   - poor
   - Other: ___________________________
8. From a technical point of view, the camera work was: (check one)  
   ________ an asset  ________ a drawback  
   ____________________________  
   Other: ____________________________

9. From a technical point of view, the mixer control was: (check one each from a&b)  
   (a) ________ smooth  ________ clumsy  
       ________ Other:  
   (b) ________ logical  ________ disjointed  
       ________ Other:  

10. Please give specific comments about the overall technical achievement:  
   ____________________________

11. What do you feel was the best technical achievement of the segment?  
   ____________________________

12. What do you regard as the worst aspect of the technique in this segment?  
   ____________________________

13. Please give your comments about the handling of the interaction shown.  
   ____________________________

14. If you have any suggestions for changes in this presentation that might enhance its future usefulness, please list them:  
   ____________________________

15. If you have any suggestions for changes in the style; tone, or level that might be applied to the remaining, still uncompleted, segments, please mention them here.  
   ____________________________

16. Please comment on the obvious difference between this segment and nos. 1 and 2, seen in the last screening session.  
   ____________________________

Additional Comments:  

ADVISORY PANEL CHECKLIST--CRITIQUE

You have just monitored another videotaped INTERACT presentation. Based on your immediate impressions, please complete the following:

1. Name ________________________________

2. Would you describe your overall reaction as: (check one)
   _____ positive?  _____ negative?
   _____ neutral?  _____ Other?  ________________________________

3. As far as the subject matter is concerned, the presentation was: (check one or more)
   _____ outstanding  _____ spotty
   _____ adequate  _____ poor
   _____ Other:  ________________________________

   Please give specific comments: ____________________________________________

4. (As far as the subject matter is concerned, the material was: (check one of the possible responses for each letter)

   mostly helpful  
   (a)  _____ generally useless
       _____ Other:  ________________________________

   stimulating  
   (d)  _____ often boring
       _____ Other:  ________________________________

   appropriately aimed  
   (b)  _____ off-target
       _____ Other:  ________________________________

   clear and well-organized  
   (e)  _____ diffuse or poorly integrated
       _____ Other:  ________________________________

   mostly fresh and innovative  
   (c)  _____ somewhat out-of-the-ball
       _____ Other:  ________________________________

   (f)  Once again, please give specific comments: ________________________________

5. What was, in your opinion, the best feature of the subject matter presentation? ________________________________________________

6. What was, in your opinion, the least satisfactory feature of the subject matter presentation? ________________________________________________

7. From a technical point of view, the picture quality was: (check one or more)

   outstanding  _____ spotty
   _____ adequate  _____ poor
   _____ Other:  ________________________________
8. From a technical point of view, the camera work was: (check one)
   ______ an asset
   ______ a drawback
   ______ Other: ____________________________

9. From a technical point of view, the mixer control was: (check one each from a & b)
   (a) ______ smooth
   ______ clumsy
   ______ Other: ____________________________
   (b) ______ logical
   ______ disjointed
   ______ Other: ____________________________

10. Please give specific comments about the overall technical achievement:
    __________________________________________________________________

11. What do you feel was the best technical achievement of the segment?
    __________________________________________________________________

12. What do you regard as the worst aspect of the technique in this segment?
    __________________________________________________________________

13. Please give your comments about the handling of the interaction shown.
    __________________________________________________________________

14. If you have any suggestions for changes in this presentation that might enhance its future usefulness, please list them:
    __________________________________________________________________

15. If you have any suggestions for changes in the style, tone, or level that might be applied to the remaining, still uncompleted, segments, please mention them here.
    __________________________________________________________________

Additional Comments:
TO: Members of the INTERACT Advisory Panel

FROM: Dee Fruchter

25 March 1975

First, we want to express our sincere gratitude for your conscientious and helpful service on this panel. The experience has not always been painless for you, and this makes your willingness to help all the more impressive!

There are just a few more questions about this effort that we would like you to consider and respond to, and this will require some change of set, including at least some "suspension of disbelief!"

After conversation with John Etheredge, we would like to propose the following as at least strong hypotheses, and then ask some responses based on them:

1. The technical problems could largely be solved with a money commitment that would support two technicians and one coordinator, full time.

2. There is statewide, national, and even international interest in the future of duplex TV.

3. The interaction, as experienced in the studio, was not available on the tapes, because the audio wiring did not allow for it.

4. The present situation in the development of the grid is a little complex, in that technical dependability must proceed before programming can be effective, but programs must be available before money will be spent on technical improvement.

5. The tapes this panel reviewed are not, and were not intended to be, products, and their utility is largely for evaluation.

Lest you feel that we're framing a preconceived "pat-on-the-back" evaluation, be advised that we're not. But we don't want a few unfortunate events to cloud objectivity. So, with these factors in mind, please address yourselves to these few questions, place the completed form in the provided envelopes, and send it as soon as possible. Thanks again, in retrospect and in advance!
Questions:

1. What would be your priorities in further development of this concept?

2. How could you see the duplex grid best serving the TEA?

3. Assuming that technical difficulties can be overcome, and that good programming is available, what do you see as the major advantages and disadvantages of the telecomputer grid to education in eastern Texas?

4. How do you compare this technique of training and education with other methods such as: self administered programmed instruction; conferences and conventions; workshops; instructional films in groups; exploratory and discovery groups; combinations of these?
PROJECT INTERACT
EVALUATION GUIDELINES FOR INTERVIEWS AND/OR OBSERVATIONS

In an effort to give some structure to your observations and insights, the following questions are offered. (Of course, all comments are welcome--these are only a few of many areas of interest.) Note that these items are presented as a guideline for topics to be covered in the interview, rather than as a rigid format for interviewing. Ideally, the interview should be conducted informally, without reference to this form while speaking to the participant, and comments and observations should be noted on this sheet after the session.

1. How is the technique working?

2. Does the "production" get in the way of the "training" for the Killeen audience? Comments:

3. Are the teachers really responding to this training experience? Comments:

4. In your opinion, is the duplex TV technique comparing favorably with "live" workshops? with other media methods? Comments:

22 January 1975
5. How effective is the facilitator in encouraging interaction?

________________________________________

(This impression is mostly based on ________ observation. (check one) ________ interview.)

6. Could you make any statements concerning the sense of involvement of the local participants?

________________________________________

7. Do you feel that direct observation gives a different impression from videotape screening? ________ Comment: ________

__________________________

__________________________

* * * * * * * * * * * * * * * * * * * * * * * *

GENERAL OBSERVATIONS AND COMMENTS:
Appendix 0

The regular members of the Advisory Panel were:

Robert Collinson
R. C. Fisher
George Lipscomb
Reeve Love
Walter Rambo
Lucille Savage
Wanda Stedman
Ben Teague
Marvin Veselka

The following attended one or more of the sessions and completed checklist critiques, but the main portion of the cited input came from the regular panel members:

Dorothy A. Fruchter
Gary Haseloff
George Higginson
Margaret Lindsey
Martha Westbrook