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The design, implementation and evaluation of a visual communication program for deaf students.

Jill C. Dardig
University of Massachusetts Amherst

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THE DESIGN, IMPLEMENTATION AND EVALUATION
OF A VISUAL COMMUNICATIONS PROGRAM
FOR DEAF STUDENTS

A Dissertation Presented
By
JILL C. DARDIG

Submitted to the Graduate School of the
University of Massachusetts in partial
fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

June 1974

Educational Research
THE DESIGN, IMPLEMENTATION AND EVALUATION
OF A VISUAL COMMUNICATIONS PROGRAM
FOR DEAF STUDENTS

A Dissertation Presented

By

JILL C. DARDIG

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Points of view or opinions reflected by these materials do not necessarily represent those of the Bureau of Education for the Handicapped.
THE DESIGN, IMPLEMENTATION AND EVALUATION
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By

JILL C. DARDIG

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Above all, I am grateful to the teachers and students whose participation and cooperation during the field test phase of this project was invaluable.
ABSTRACT

This study concerns the design, implementation and evaluation of a Visual Communications Program for deaf students. This program, which is geared for use with ten to sixteen year olds, is designed to teach deaf students how to communicate specific information to their peers using visual media such as graphics, photography and videotape.

Receptive and expressive visual communication skills are shaped using a set of curricular objectives and activities described in a Teacher's Guide and supplemented by corresponding materials which include transparencies, photographs, slides, and assorted commercial materials.

In addition to teaching specific visual communication skills, the program was designed to facilitate high levels of student interaction and participation and to function as a set of stimulus materials for language development.

A one semester formative evaluation was conducted in thirteen classes in twelve schools for the deaf. Both objective and subjective data were collected during the field test phase and the program was examined according to five evaluation goals. All sites but one (which involved moderately-severely multiply handicapped deaf students) showed consistently high records of successful completion of objectives by students, and teacher reactions to the program were strongly positive. Data concerning
recommendations made by teachers for modifications in the program were collected and analyzed and will be used as the basis for revision of the prototype program.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>iii</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>iv</td>
</tr>
<tr>
<td>TABLE OF CONTENTS</td>
<td>vi</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>viii</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>ix</td>
</tr>
<tr>
<td>LIST OF APPENDICES</td>
<td>xi</td>
</tr>
<tr>
<td><strong>CHAPTER I:</strong> INTRODUCTION AND REVIEW OF THE LITERATURE</td>
<td></td>
</tr>
<tr>
<td>Introduction to Visual Literacy</td>
<td>1</td>
</tr>
<tr>
<td>Review of Visual Literacy Programs.</td>
<td>7</td>
</tr>
<tr>
<td>Visual Literacy Programs for Children with Special Needs.</td>
<td>11</td>
</tr>
<tr>
<td>Visual Literacy and Education of Deaf Students.</td>
<td>12</td>
</tr>
<tr>
<td>Purpose of the Study.</td>
<td>16</td>
</tr>
<tr>
<td>Limitations of the Study.</td>
<td>24</td>
</tr>
<tr>
<td><strong>CHAPTER II:</strong> PROCEDURE</td>
<td></td>
</tr>
<tr>
<td>Design of the Pilot Program</td>
<td>25</td>
</tr>
<tr>
<td>Design of the Prototype Program</td>
<td>27</td>
</tr>
<tr>
<td>Implementation of the Prototype Program</td>
<td>31</td>
</tr>
<tr>
<td>Evaluation of the Prototype Program.</td>
<td>43</td>
</tr>
</tbody>
</table>
# TABLE OF CONTENTS (cont.)

## CHAPTER III: RESULTS

<table>
<thead>
<tr>
<th>Evaluation Goal I</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>Evaluation Goals II &amp; III.</td>
<td>66</td>
</tr>
<tr>
<td>Evaluation Goal IV</td>
<td>71</td>
</tr>
<tr>
<td>Evaluation Goal V</td>
<td>74</td>
</tr>
<tr>
<td>Teacher Reactions to Program</td>
<td>76</td>
</tr>
<tr>
<td>Student Reactions to Program</td>
<td>80</td>
</tr>
</tbody>
</table>

## CHAPTER IV: DISCUSSION

<table>
<thead>
<tr>
<th>Program Development and Evaluation</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>84</td>
<td>84</td>
</tr>
<tr>
<td>Implications for Research.</td>
<td>89</td>
</tr>
<tr>
<td>Publicizing the Visual Communications Program.</td>
<td>96</td>
</tr>
</tbody>
</table>

## REFERENCES

<table>
<thead>
<tr>
<th>REFERENCES</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>98</td>
<td>98</td>
</tr>
</tbody>
</table>

## APPENDICES

<table>
<thead>
<tr>
<th>APPENDICES</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>105</td>
<td>105</td>
</tr>
</tbody>
</table>
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 1</td>
<td>Amoskeag School.</td>
<td>36</td>
</tr>
<tr>
<td>Table 2</td>
<td>Boston School for the Deaf</td>
<td>36</td>
</tr>
<tr>
<td>Table 3</td>
<td>Cleary School for the Deaf</td>
<td>37</td>
</tr>
<tr>
<td>Table 4</td>
<td>Cooperative School Rehabilitation Center</td>
<td>37</td>
</tr>
<tr>
<td>Table 5</td>
<td>Crotched Mountain School</td>
<td>38</td>
</tr>
<tr>
<td>Table 6</td>
<td>Marie H. Katzenbach School for the Deaf</td>
<td>38</td>
</tr>
<tr>
<td>Table 7</td>
<td>New York School for the Deaf</td>
<td>39</td>
</tr>
<tr>
<td>Table 8</td>
<td>Rochester School for the Deaf</td>
<td>39</td>
</tr>
<tr>
<td>Table 9</td>
<td>St. Francis de Sales School for the Deaf</td>
<td>40</td>
</tr>
<tr>
<td>Table 10</td>
<td>Summit Park School</td>
<td>40</td>
</tr>
<tr>
<td>Table 11</td>
<td>Virginia School for the Deaf and Blind</td>
<td>41</td>
</tr>
<tr>
<td>Table 12</td>
<td>Western Pennsylvania School for the Deaf</td>
<td>41</td>
</tr>
<tr>
<td>Table 13</td>
<td>Distribution of Suggestions for Modifications of Worksheets to Facilitate Individualization</td>
<td>70</td>
</tr>
<tr>
<td>Table 14</td>
<td>Content of Teacher Initiated Contacts with Program Developer.</td>
<td>73</td>
</tr>
<tr>
<td>Table 15</td>
<td>Sample Observation Sheet for Measuring Interaction.</td>
<td>93</td>
</tr>
</tbody>
</table>
## LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1</td>
<td>Visual Communication Field Test Sites.</td>
<td>33</td>
</tr>
<tr>
<td>Figure 2</td>
<td>Age of Participating Students.</td>
<td>34</td>
</tr>
<tr>
<td>Figure 3</td>
<td>Percent of Students Attempting Objective Who Successfully Completed Objective: Amoskeag School</td>
<td>49</td>
</tr>
<tr>
<td>Figure 4</td>
<td>Percent of Students Attempting Objective Who Successfully Completed Objective: Boston School for the Deaf.</td>
<td>50</td>
</tr>
<tr>
<td>Figure 5</td>
<td>Percent of Students Attempting Objective Who Successfully Completed Objective: Cleary School for the Deaf.</td>
<td>51</td>
</tr>
<tr>
<td>Figure 6</td>
<td>Percent of Students Attempting Objective Who Successfully Completed Objective: Cooperative School Rehabilitation Center</td>
<td>52</td>
</tr>
<tr>
<td>Figure 7</td>
<td>Percent of Students Attempting Objective Who Successfully Completed Objective: Crotched Mountain School.</td>
<td>53</td>
</tr>
<tr>
<td>Figure 8</td>
<td>Percent of Students Attempting Objective Who Successfully Completed Objective: Marie H. Katzenbach School for the Deaf</td>
<td>54</td>
</tr>
<tr>
<td>Figure 9</td>
<td>Percent of Students Attempting Objective Who Successfully Completed Objective: New York School for the Deaf.</td>
<td>55</td>
</tr>
<tr>
<td>Figure 10</td>
<td>Percent of Students Attempting Objective Who Successfully Completed Objective: Rochester School for the Deaf.</td>
<td>56</td>
</tr>
<tr>
<td>Figure 11</td>
<td>Percent of Students Attempting Objective Who Successfully Completed Objective: St. Francis de Sales School for the Deaf</td>
<td>57</td>
</tr>
<tr>
<td>Figure 12</td>
<td>Percent of Students Attempting Objective Who Successfully Completed Objective: Summit Park School.</td>
<td>58</td>
</tr>
<tr>
<td>Figure</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Percent of Students Attempting Objective Who Successfully Completed Objective: Virginia School for the Deaf and Blind.</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Percent of Students Attempting Objective Who Successfully Completed Objective: Western Pennsylvania School for the Deaf-1</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Percent of Students Attempting Objective Who Successfully Completed Objective: Western Pennsylvania School for the Deaf-2</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Average Percent of Students Attempting Objective Who Successfully Completed Objective by Site.</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Percent of Students Attempting Objective Who Successfully Completed Objective: Combined Total of All Students.</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Percent of Students Attempting Objective Who Successfully Completed Objective: Total Group Divided by Age.</td>
<td></td>
</tr>
</tbody>
</table>
### LIST OF APPENDICES

<table>
<thead>
<tr>
<th>Appendix</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix A</td>
<td>Module for Operationalizing NRMCD Task Area Goals.</td>
<td>105</td>
</tr>
<tr>
<td>Appendices B&amp;C</td>
<td>Sample Materials from Prototype Version of Visual Communications Teacher's Guide and Corresponding Transparencies.</td>
<td>123</td>
</tr>
<tr>
<td>Appendix D</td>
<td>Student Response Form</td>
<td>217</td>
</tr>
<tr>
<td>Appendix E</td>
<td>Preliminary Questionnaire</td>
<td>221</td>
</tr>
<tr>
<td>Appendix F</td>
<td>Sample Reinforcement Letter</td>
<td>224</td>
</tr>
<tr>
<td>Appendix G</td>
<td>Objective Completion Check Sheet</td>
<td>226</td>
</tr>
<tr>
<td>Appendix H</td>
<td>Objective and Materials Evaluation Sheets</td>
<td>230</td>
</tr>
<tr>
<td>Appendix I</td>
<td>Student Evaluation Questionnaire</td>
<td>232</td>
</tr>
<tr>
<td>Appendix J</td>
<td>Post-Course Questionnaire</td>
<td>234</td>
</tr>
<tr>
<td>Appendix K</td>
<td>Tables of Objective Check Sheet Data.</td>
<td>240</td>
</tr>
<tr>
<td>Appendix L</td>
<td>Unedited Samples of Student Evaluation Questionnaires.</td>
<td>249</td>
</tr>
<tr>
<td>Appendix M</td>
<td>Samples of Post-Course Questionnaire.</td>
<td>253</td>
</tr>
</tbody>
</table>
CHAPTER I
INTRODUCTION AND REVIEW OF THE LITERATURE

Introduction to Visual Literacy

The generation of students presently in our educational systems are growing up in a unique environment -- they have had continuous and overwhelming exposure to visual media and messages through the channels of television, film, photography, graphics and other manifestations of the current technology. Outside of school, these media have been ever-present influences in their lives, both by choice and chance. The fact that this exposure influences childrens' lives is widely agreed upon; numerous experts (including most notably the United States Surgeon General) have been engaging in both theorizing and research designed to determine exactly what specific effects are generated by the media in terms of influence on learning as well as negative by-products of exposure.

While children have daily contact with a wide variety of media outside of school, education has been slow to supplement the dominant medium of print with other forms of visual media which can facilitate the instructional process. In an attempt to reckon with this problem of education not keeping pace with societal and technical trends and advancements and to make use of the educational potential of non-print media, many schools have been investing in substantial
amounts of audiovisual equipment, supplies and personnel for the past ten to fifteen years (Brown, Lewis, and Harcleroad, 1969). As a result of the availability of these resources, many teachers have started to bridge the media/print gap that exists between the non-school and school settings by utilizing mediated classroom presentation methods.

But, for most students, their relationship to the media both in and out of school has remained a passive one. They customarily have been in the position of being the recipients in a one-way process; of watching but not participating. In recent years, the recognition of the one-sidedness of this situation has led many educators to express their concern that communication through the visual media should be a two-way process with students taking an active role.

The two abovementioned factors concerning the utilization of media to its fullest advantage in schools and the active involvement of students in the media communication process serve as the basic rationale for a growing educational movement which has led numerous educators to become interested in investigating the area of "visual literacy," or "communication through the use of visuals rather than through the use of words" ("Visual Literacy," 1972, p. 1).

The first National Conference on Visual Literacy occurred in 1969 and involved a group of teachers, media personnel, researchers, and representatives from related
commercial enterprises (such as the Eastman Kodak Co.) who were interested in exploring this relatively new concept. The main goal of this conference was to define the scope of the field and to suggest some possible directions for further experimentation, application, and research. The following general definition was formulated at the conference:

Visual Literacy refers to a group of vision-competencies a human being can develop by seeing, and at the same time, having and integrating other sensory experiences. The development of these competencies is fundamental to normal human learning. When developed, they enable a visually literate person to discriminate and interpret the visible actions, objects, and/or symbols natural or man-made that he encounters in the environment. Through creative use of these competencies he is able to communicate with others. Through appreciative uses of these competencies, he is able to comprehend and enjoy the masterworks of visual communication. (Proceedings of the First National Conference on Visual Literacy, 1969, p. 14.)

Since the above definition was written, much time has been spent in attempting to delineate more precisely the parameters of visual literacy. Some of the definitions have been expansive and theoretical in nature, like that of Barley (1971) who describes visual literacy as encompassing to some degree the various areas of semantics, philosophy, technology, art, graphic arts, developmental and perceptual psychology, linguistics, rhetoric, and programmed learning. Others with a more applied orientation have responded with
more operational delineations.

Lacy (in Tanzman, 1972, p. 41), in examining the implications of visual literacy for educational programs, describes the visually literate individual as one who is able to:

- read visuals with skill
- express himself effectively with visuals
- understand the grammar and syntax of visual language and apply them
- interpret visual and verbal metaphor
- understand the tools of visual literacy and their use
- appreciate the masterworks of visual literacy
- translate from visual language to verbal language and vice versa

This definition, of course, is far from being fully operational, but along with others like it, it has facilitated the development of more concrete models upon which functional visual literacy programs could be based. The Fransecky and Debes (1972, p. 12) definition simplifies and clarifies the above definition and puts it into a more workable frame of reference for classroom use. The visually literate person is able to:

- read visuals made for intentional communication
- plan visuals for intentional communication
- create visuals for intentional communication
- combine visuals and verbals for intentional communication
Along with the formulation of a definition of the field came the development of guidelines for the application of the visual literacy concept to classroom situations and the identification of curricular and problem areas where this approach could be especially useful. Tanzman (1972) stressed the "hands-on" approach of visual literacy programs with students actively responding to the environment and communicating with others using visual means. Visual literacy was also conceived of as being a learner-centered approach to education (Tanzman, 1972; Wright, 1971) based on the student as a generator and communicator of information rather than as a receptor of teacher initiated information. While traditional audiovisual communication put media in the hands of the teacher, the visual literacy approach put media in the hands of both the teachers and students, with the emphasis being placed on the student (Fransecky and Debes, 1972). Fransecky and Debes (1972) further suggested that the passive listening and watching experiences that children brought to school could be utilized to develop the interactive skills of communication.

Content as well as method is an important consideration in the design of a visual literacy program. Although visual literacy activities can integrate experiences in virtually any subject area, the so-called "affective domain" has been identified as an area where the visual literacy approach
could have particular educational value. McHale (1969, p. 114) pointed out that:

The problem, now, is that those areas of our formal education which deal with the symbolic and value content of our culture do so almost entirely in terms of the past. By and large, they avoid immediate relevance to the external cultural environs in which the person finds himself. Outside the school, university or other educational institution, these environs are those of the film, television, radio, the pictorial magazine, and massive "advertisement" of an enormously proliferated "mass" culture brought into being by our accelerated technology. It is largely within these media, now on a global scale, that the symbolic and value communication of our cultural situation is carried on.

The visual literacy approach, which brings the tools of the current technology into the classroom to be manipulated by the students themselves, can serve to afford a curricular reach into affective areas such as the expression and successful communication of feelings, values, opinions, etc. The activities and materials involved in this approach can also be essential for motivating students who, for various reasons, are "turned off" by traditional linear classroom procedures.

In the past five years since the first National Conference, descriptions of many visual literacy programs which have been implemented in a variety of different educational settings have been reported in assorted educational and commercial publications. These programs, which represent a
trend towards widening options in language, communication, and in sharing experiences with others (Fransecky and Debes, 1972), consist of "those multidisciplinary activities which provide the learner with direct opportunities to develop skills in becoming an interpretive, creative sender and intelligent receiver of his visual and verbal environment" (Purvis, 1973, p. 713). "The concept of visual literacy is such that it enables program developers to operationalize it in many forms. It is not a program that is implemented at a specific grade level for a specific period of time. There is no closure to visual literacy. Visual literacy is that growing awareness on the part of teachers and pupils of greater alternative responses to a constantly changing visual world" (Purvis, 1973, p. 715).

Review of Visual Literacy Programs

The specific options that are presented by a visual literacy approach have been put into practice with varying degrees of success. Programs in schools have varied with respect to goals, objectives, characteristics of students involved, materials, activities, methods of implementation and evaluation. Unfortunately, many programs have been designed and implemented in an unsystematic fashion. For the most part, program goals have not been stated in functional language nor have objectives been operationalized; teaching-
learning procedures have not been documented; evaluations have usually been either subjective and informal or non-existent. However, a few programs reported in the literature have one or more innovative or outstanding features and have included some degree of evaluation. These programs can serve in some part as models for persons involved in curriculum development for visual literacy programs.

Perhaps the best documented and most extensive of these programs is the Milford Visual Communications Project (Fransecky and Ferguson, 1973). The Milford Project, which involves the entire K-12 grade span in that school system, is structured by a sequence of interrelated goals, objectives, and specific mediated visual activities in which students of all grade levels can participate. This project also involves a series of teacher training workshops which are designed to help participating teachers make parallels, both theoretical and applied, between visual and verbal language and learning.

Although evaluation was a main component of the Milford program, inadequate procedures prevented clearcut results from emerging. However, the research did suggest a relationship between visual and verbal language skills. Several other shortcomings of the program were evident such as the lack of individual performance criteria in activities, unstated or imprecisely delineated teaching methods, and the
use of an extremely advanced vocabulary.

Various other visual literacy programs have involved pre and elementary school aged children as well as students in the junior high and high school age brackets. Weiss (1973) used visuals to develop receptive and expressive communication skills with three year olds and found numerous positive results in the informal evaluation she conducted. Participating childrens' skills increased in the areas of language and oral communication, visual discrimination, ability to sequence events, and ability to relate old and new and in and out of school experiences.

Knobler (1972) developed a project in which kindergarten children were given ten minutes of highly structured daily visual training which included describing a drawn figure, locating a similar figure in the environment, and then duplicating it. His reported results indicated that the students expanded their vocabularies, improved their attention spans, followed directions better, improved in their abilities to describe and articulate, and showed development in their eye-hand coordination.

In Case-Gant's (1973) visual literacy program which provided experiences for K-4th grade students in communication using visual means including body language, graphics, photography, etc., a major emphasis was placed on analyzing the linguistic structure and elements (subject, action,
objects, etc.) of photographs. Through a process of self-evaluation of their work, students showed progress in organizing and expressing ideas both visually and verbally.

Another study which showed improvement in language in terms of length and complexity of written responses as a result of a visual literacy approach was reported by LaPolt (1968). In this program, third graders completed structured assignments using inexpensive cameras and practiced sequencing using the Kodak Photo Discovery Series.

The visual literacy project at the Green Chimneys School in New York allowed elementary school children to create photographic essays and to participate in classroom discussions which used sequences of photographs, films, and closed circuit television programs as stimulus materials. These students developed improved communication skills, greater environmental awareness, and showed more interest in other academic subjects (Ross, 1972).

Project Media Now reports also stated that students who participated in a program of activities involving production and interpretation of mediated messages showed greater interest in and more positive attitudes towards media, their teachers, and their classes (Curtis, 1972).

Along with some of the individual positive results concerning improved language development and communicative skills reported above, most of the programs observed
increased motivation and participation on the part of the students involved in visual literacy activities. Griffith and Strandberg's (1969, p. 253) research showed that "a great deal more verbal articulation occurs if a child has opportunities to talk about a picture he has made himself than can usually be evoked with any other kind of stimulus." Van Holt (1972, p. 130) further stated that "the camera (has) worked as a motivational tool in every area where language is a binding ingredient for learning." Hayes (1967) and Ruark (1971) agreed that an interactive visual approach can help to break the "boredom barrier" which interferes with learning in many classroom situations.

Visual Literacy Programs for Children with Special Needs

Although the majority of visual literacy programs have been designed to be used with an average school population, several programs have been geared to meet the special needs of children who have poorly developed written language, reading and oral communication skills. One such program involved "disadvantaged" minority adolescent boys and focused on shaping their organizational skills and ability to discern and communicate both visually and orally to each other. In addition, participating students who before the program showed little environmental awareness or interest in school subjects made positive gains in both of these areas.
Students involved in a project affiliated with a Head Start program which allowed them to use cameras for both structured and unstructured assignments showed significantly higher scores on standard achievement tests in reading vocabulary and comprehension than did a similar group of students who did not have the benefit of the course (Van Holt, 1972). Projects developed by Fransecky (1969), Knudson (1969), and McAndrew (1969) for "culturally different" or "disadvantaged" children report similar findings to those described above.

A visual literacy approach has also been used to aid in the teaching of English as a second language to Spanish speaking migrant children (Heffernan-Cabrera, 1970) and Mexican-American children (Gardner and Ingram, 1970) with positive results in terms of increased interaction and improvement in written language and comprehension.

Visual Literacy and Education of Deaf Students

Deaf students are particularly dependent on their visual communication skills for learning about their environment and for sharing their responses with their teachers, parents, and peers. Because of this dependency, one might guess that deaf children, with their loss of auditory input, would have better developed visual skills which they could put to use in order to compensate for their handicap. Unfortunately, this equilization does not occur. In fact,
studies have shown that deaf children are only sometimes equal and more often inferior to hearing children in various measures of visual perceptual skills (Keogh, Vernon, and Smith, 1970; Project LIFE Report, 1971).

Educators of the deaf are acutely aware that "visual cues offer the deaf child his main approach to the experience of communication," (Hallowell and Davis, 1970, p. 364) and that the deaf child needs continuous visual stimulation and training in order to develop his visual perceptual skills (O'Neill and Oyer, 1961). Teachers, media specialists and others have long sought to improve the quality and effectiveness of education of the deaf by using mediated visual means. The four Regional Media Centers for the Deaf, Media Services and Captioned Films for the Deaf, local Special Educational Instructional Materials Centers, resource centers, and commercial enterprises as well as individual schools for the deaf have all contributed to this effort by producing and distributing teacher and child use instructional materials.

Despite the fact that mediated as well as non-mediated language instruction forms the dominant segment of a deaf child's classroom activity, deaf children have an extremely difficult time acquiring both receptive and expressive functional language and communication skills. On the average, they lag three to five years behind their hearing peers in these areas (Watson, 1967). These problem areas show up
early in the education of the deaf. "As a deaf child brings news to the classroom which he has no language to explain, his teacher begins a guessing procedure that hopefully will unlock the message -- possibly a very risky procedure. The child has seen something about which he has a visual image. This image may be quite exact or somewhat vague, but usually the child has inappropriate words or no words at all to convey his news meaningfully or quickly" (Anderson and Laird, 1972, p. 19).

These problems of a lack of appropriate language and an inability to communicate desired information lead to communication patterns in classes for the deaf which are dominated by the teacher and in which there are very low levels of student interaction and student initiated communication (Craig and Collins, 1970).

A visual literacy approach is one way of starting to deal with some of the abovementioned problems. It can help the deaf child to express and reveal what he cannot verbalize and thereby serve as an additional channel of communication (Silver and Simon, 1965). It may be possible to open up "a whole new world of exclusively visual language in which deafness would not prevent communication and comprehension of delicately nuanced meanings" (Fuller in Dreyfuss, 1972, p. 15). Just as visual literacy programs have facilitated language development and improved communication skills with other groups of "special" children who display problems in
these areas, so can visual literacy programs designed especially for deaf youngsters, several of which are reported below.

Wallace (1971), who used Polaroid camera snapshots as stimulus materials to teach language to deaf pre-schoolers, found that the children showed more interest and participation in the language lesson when Polaroid photos were used. Bodner (1973) also conducted a study (of only two weeks duration) which used student-centered photography activities with deaf five to seven year olds. Although there was no significant difference in terms of verbal learning between participating children and children who were taught using commercial materials, students involved in the experimental project appeared more involved and interested in the classroom activities.

In a purposely loosely structured program at St. Mary's School for the Deaf which used cameras to help deaf children "communicate their perceptions of their environment and gain new language skills," Piccolino ("Teaching the Deaf with Photography," 1969) observed an increase in the use, completeness, and variety of written and oral language, improved sequencing and memory skills, and high levels of motivation on the part of his students. Altschuler (1970) emphasized the advantages of involving deaf students in expressing themselves through the medium of videotape in
terms of facilitating their attainment of a variety of organizational and production skills.

At this point, the potential benefits of using a visual literacy approach to enhance the learning of deaf children remain largely unexplored.

Purpose of the Study

The development of functional language, communication, and interaction skills stand out as major problem areas for deaf students. Both formal and informal assessments of a variety of visual literacy programs for hearing, disadvantaged, and deaf children have indicated that improvement in the above areas is facilitated by a visual literacy approach. However, despite the fact that media has long been an integral part of education for the deaf and that the visual literacy approach could be of great potential value to deaf children, there has been a noticeable lack of visual literacy programs and materials geared especially for deaf students.

The purpose of this study is to design, implement, and evaluate a well-delineated, fully functional visual literacy program which includes both visual instructional materials and teaching methods designed to shape receptive and expressive visual communication skills in middle school aged deaf students. This program will be designed to build in the following ten special features:
1. **Objective-based:** Perhaps the most significant difference between this visual literacy program and others is that this program will be objective-based. Barley (1969), in reviewing various visual literacy programs, indicated a need for behavioral objectives to structure classroom visual literacy experiences. That is, the entire curriculum will be guided by a set of behavioral objectives keyed to sets of activities, teaching procedures, and materials which are designed to facilitate the attainment of each corresponding objective. Many other programs, although similar in content, are structured solely by a series of activities without specific, identifiable objectives. In this program, the objectives will serve to operationalize the general goal of improving the students' visual, or mediated, communication skills and allow the teacher to determine precisely how and when this goal can be reached. These objectives function to answer the question posed by Fransecky and Debes (1972, p. 7), "In what ways is the visually literate child's behavior different (from the verbally literate child)?" In addition, in some of the objectives the behavior will be stated but the performance criterion will be omitted so that the teacher can select appropriate standards in order to individualize the materials for a particular class or student achievement level.

2. "**Successful communication:**" In examining a sampling of visual literacy programs with unstructured formats,
Bennett (1969, p. 45) has asked, "How will we know if (visual) communication is successful?," and this question will be a concern of this program. In order to determine to what extent each student project, no matter how simple, has met the stated objective by successfully communicating the student's intended message to his/her peers, a "successful communication" test will be used. For the purpose of this program, "successful communication" is operationally defined as "the information presented is correctly identified by at least one half of the class." After completion of the projects suggested by each objective, each student will present his/her work to the class, and, with the teacher as leader and recorder (using the overhead projector or chalkboard), the class will try to identify the intended message. A general discussion may follow and such questions as "Why did this visual communicate so well?" and "How could this visual be improved?" can be considered.

The application of this test will be critical for the success of the program because through this vehicle students will be able to immediately evaluate their own efforts and will obtain useful information on how to make improvements. Because the program will be so structured, students will be likely to succeed in completing the majority of the objectives. Myklebust (1950) stresses the importance of providing deaf children with opportunities to engage in successful
experiences. Even when students do not achieve the criterion for success for a particular objective, they should be praised and encouraged for participation and willingness to accept constructive criticism as well as for high quality work.

3. **Focus on environment**: Most of the activities will require children to become involved with their in and out of school environments both as observers and as communicators of information. This focus on the child's environment will serve to stimulate active student responses in a variety of situations. Watson (1967) suggests that "environmental studies" can be used effectively as a basis for teaching language, both written and oral, to deaf children.

4. **Flexibility**: This program will rely on the individual teacher to adapt the material used, both in presentation of and response to the materials, to the level of each particular class. For this reason, the lower portions of all transparencies included in the program will be left blank. In the case of transparencies which present definitions of new terms, this space will allow the teacher to clarify or extend the concepts presented whenever necessary. In transparencies which contain illustrations, the teacher may use the spaces to jot down questions or important points made in the classroom discussions.

Although the objectives will be numbered and presented in a general sequence, the teacher will be encouraged to
re-order, omit, or add objectives of his/her own choosing whenever desirable. Extra blank worksheets will be included for this purpose.

For these reasons, the ages and achievement levels of participating students can cover a wider range than if the program did not encourage this kind of flexibility.

5. **Use of worksheet format:** The curriculum will be organized by a set of worksheets, each of which will include an objective, suggested procedure, description of materials, and other related information. The suggested procedure outlined is a process that the teacher can follow to achieve each objective, however, he/she can devise additional steps to supplement or replace those stated. Variations of this particular worksheet format were observed by the writer in the course of numerous in-service training programs to be very effective as organizational tools.

6. **Progressive skill and media organization:** Objectives in this program will be sequenced so that the complexity and level of difficulty of the visual communication skills are increased gradually, and successful completion of each task is contingent on the successful completion of the previous one. The skills and media utilized in the initial phases of the program will be fairly simple and familiar (e.g. graphic methods and materials) and build towards the use of more "sophisticated" skills and media (e.g. photography, film,
and videotape). In addition, as the expressive activities required of the students become more complex, more emphasis will be placed on developing skills that are instrumental for the planning process.

7. Varied group size: The group size for participation in activities will be intentionally varied to allow students to work and interact in a variety of different situations. Some activities will require an individual effort, while others will suggest that students work in pairs, small teams of 3-4 students, or that they participate in a cooperative venture with the entire group.

8. Active student response: Each activity will be designed to promote active response on the part of the students. Channels will continuously be provided for active student response in a variety of modes including writing, oral/total communication, and mediated visual communication. This particular feature of the program will be built in for the following reasons:

a. Through these channels, the teacher can continuously monitor student progress towards the completion of objectives.

b. Because they are always actively participating in classroom activities, students' interest can be more easily maintained.

c. Students, who have long been passive recipients of mediated messages via print ads, television, and film,
are taught to take an active role in the media communication process.

9. **Immediate feedback**: In this program, students will participate in many expressive activities which yield tangible results. Because of this feature and the fact that all student-created materials will be presented to the entire class for the "successful communication" test, students will receive immediate feedback from their teacher(s) and peers on the success of their efforts (in terms of communicative effectiveness) as well as suggestions for improvement.

10. **Peer interaction**: Since this curriculum will be concerned with shaping new and useful communication skills, peer interaction will be an important component of this program. Classroom activities will be structured so that there are constant opportunities for students to exchange ideas in discussions, cooperative group activities and projects, and in using the "successful communication" test procedure. In fact, this program will be called the NRMCD "Visual Communications Program" rather than "Visual Literacy Program" in order to emphasize the importance of the communicative aspects of the media process.

This study, which will involve the design (including pilot testing) of the model program, its field testing at twelve schools for the deaf, and its formative evaluation,
will adhere to the following time schedule:

1.0 Design:
   1.1 Fall, 1972 - Development of pilot program
   1.2 Spring, 1972 - Implementation of pilot program
   1.3 Spring, 1972 - Evaluation of pilot program
   1.4 Fall, 1972 - Summer, 1973 - Design and production of prototype program
   1.5 Fall, 1973 - Design of evaluation procedures and selection of field test sites

2.0 Implementation:
   2.1 Spring, 1974 - Field testing of prototype program and data collection

3.0 Evaluation:
   3.1 Spring, 1974 - Final evaluation

Revision: (NOT IN SCOPE of dissertation)
   Summer, 1974 - Revision of program based on evaluation

In addition, on the basis of the evaluation, this study will suggest areas for future investigation, programming and research in the general area of visual literacy programs for the deaf, as well as suggest particular ways in which they could be applied to the NRMCD Program.
Limitations of the Study

1. Because this study is being supported by funds from the Northeast Regional Media Center for the Deaf (Media Services and Captioned Films for the Deaf, Bureau of Education of the Handicapped, U. S. Office of Education), it will adhere to any constraints (concerning research, teacher training, etc.) imposed on it by its funding agencies.

2. Although the discussion section will suggest needed revisions in the prototype model based on the outcome of the evaluation, the actual revisions are not in the work scope of this dissertation.

3. The program will be evaluated by means of a product evaluation. (Further discussion of the evaluation component appears in the Procedure Chapter II).

4. It is the intention of this study to point out relevant areas of research which might be investigated at a later date. The basic goal of this study is to design a fully functional model of a visual literacy program for the deaf which can be submitted to the National Center for Educational Media and Materials for the Handicapped (or other delivery systems) for consideration for national distribution.
CHAPTER II
PROCEDURE
Design of the Pilot Program

The first step in the design of the pilot program was a careful review of the literature (including an intensive ERIC search), the results of which are reported in detail in Chapter I. This review provided an overview of the field of visual literacy as well as specific examples of the structure and implementation of ongoing programs in a variety of settings. It served to identify several areas in which a visual literacy approach could be of potential benefit, particularly in relation to the special educational needs of deaf children. In addition, this review pointed out various pitfalls and weaknesses of existing programs.

A sampling of goals, objectives, activities and materials were synthesized and organized into lesson plan format for a ten session pilot program. A target population of middle school aged deaf students was selected on the basis of the probability of their having the basic vocabulary, communication skills, and fine motor coordination to enable them to successfully handle the activities included in the program. It was also determined that this particular age group (10-15 years of age) could best benefit from a visual literacy approach because of the emphasis on oral/total, written, and mediated language activities which are critical
to the development of efficient and effective communication skills.

A written and oral summary of the design and projected implementation was presented by the writer and another NRMCD graduate assistant who planned to team-teach the class to the board of administrators of the Clarke School for the Deaf in Northampton, Massachusetts. This school was selected on the basis of its proximity to the NRMCD and past evidence of the school's interest in serving as a site for new and experimental studies and programs. After much discussion, the Visual Communications Program proposal was accepted by the Clarke School for a trial run of ten 2½-3 hour evening classes in the spring of 1972. With the assistance of the Clarke School staff, a group of eight 12-13 year old profoundly deaf students was chosen to participate. Arrangements were made for their language teacher to attend all the class sessions to serve as an aide to the team-teachers (who were not trained as teachers of the deaf) in the planning and implementation of the program.

The class met for ten weeks as planned. Following each class period the team-teachers informally evaluated the class and, along with the cooperating language teacher, made suggestions for improvement and enrichment. Many of the activities were judged to be very successful on the basis of the high degree of participation, oral communication, and
interest that were continuously demonstrated by the students. A final informal evaluation was submitted to the Clarke School upon completion of the course.

Design of the Prototype Program

Further development of the Visual Communications Program took place by utilizing the procedure called the "operationalization of fuzzy concepts" (Hutchinson and Benedict, 1970). This module, which was adapted to the special needs of the NRMCD by a staff associate (Alen, 1972, see Appendix A) was used to identify and prioritize specific behavioral goals and objectives of the Visual Communications project. The "fuzzy concepts" process is useful in transforming vague and general goal statements into functional language and procedures which are necessary prerequisites in the planning and structuring of an operational program. Through this process, a comprehensive list of eight goals and 151 sub-dimensions was assembled through the efforts of a task force composed of various NRMCD staff members including graduate research assistants, a staff associate, graphic artists, and students in the Media Specialists for the Deaf Program. From this inclusive outline, the following major goal statements were culled and sequenced:

I. To operationally define visual communications and to identify those skills which are functional to deaf students
II. To design a program to teach deaf children the visual communications skills identified in Goal I

III. To develop and assemble the curriculum and materials for a prototype visual communications program for the deaf

IV. To implement this program on a trial basis at schools for the deaf in the northeast region

V. To develop a procedure to evaluate the implementation of this program

VI. To revise the program based on the results of the evaluation

VII. To arrange for national access to the program.

Each of these seven goals had a corresponding series of substeps which were selected to facilitate its attainment.

Concurrently with the operationalization of visual communications as designated in Goal I, a letter was sent to the media director of each of the forty-five schools for the deaf and twenty-five schools with one or more day classes for the deaf in the northeast region. This letter stated the NRMCD's intention to design and field test a visual communications project and briefly described the goals of the program. It asked each recipient to give pertinent information concerning any visual literacy/visual communications course that was currently operational in their school and to respond if they were interested in providing feedback on the
proposed program and/or investigating the possibility of becoming field test sites. Approximately 25 schools responded to this letter requesting further information. Of these schools, only two, the Boston School for the Deaf and the Rochester School for the Deaf, had visual literacy type courses included in their curricula. These two course curricula were obtained and reviewed. Several more replies were received in response to an article describing the NRMCD program which appeared in the fall, 1972 issue of the RMC (Regional Media Center) Newsletter which is distributed to numerous schools for the deaf and SEIMC's (Special Education Instructional Materials Centers) across the country.

In accordance with Goal II, forty-two behavioral objectives were selected and sequenced to form the basic structure of the Visual Communications Program. The following ten special features (described in detail in Chapter I) were identified to be used as guidelines for the development of the program: objective-based, "successful communication," focus on environment, flexibility, worksheet format, skill and media organization, group size, active student response, immediate feedback, interaction. These guidelines were chosen both to correct weaknesses in existing programs noted in the review of the literature and to make optimal use of learning theory.

At this point, a survey of commercially available visual literacy products was conducted to insure that the
NRMCD project would not duplicate existing materials and to locate commercial materials which could be used to supplement the program.

Over the following six-eight month period the process of selecting and matching activities, teaching procedures, and visual materials to each of the forty-two program objectives was completed. During this time, 30-40 copies of the preliminary rough draft of the project were sent to the respondents to the introductory letters for their perusal and evaluation. Only activities and materials which were directly related to the accomplishment of the objectives were included in the Visual Communications curriculum. Sixty-eight transparencies were designed and executed (samples of which may be found in Appendix C), numerous photos and slides were planned and taken from which thirty-one were selected for inclusion, a student response form was designed (see Appendix D), commercial materials were procured, and a Teacher's Guide (see sample material in Appendix B) to the utilization of the materials was written.

By the early fall of 1973, fifteen copies of the field test version of the prototype program were duplicated and assembled. Each Visual Communications kit included the following items:

1. **Teacher's Guide** with forty-two worksheets
2. Additional blank worksheet forms
3. Sixty-eight prepared transparencies
Implementation of the Prototype Program

Initially it was decided to select three-five schools (or classes) for the deaf in the northeast region to serve as sites to field test and evaluate the NRMCD Visual Communications Program. In order to locate potential sites, advance publicity was given about the program. In addition to the introductory letters sent to the media directors of all the schools for the deaf in the northeast region and the article in the RMC Newsletter, a number of supplementary strategies were used. A prospectus describing the program was given to the NRMCD field services staff who included it in the numerous workshops they conducted in the region. A similar briefing was given to the INTERACT* coordinator who referred interested persons to the writer. Formal and informal presentations concerning the project were given by the writer

*INTERACT is an NRMCD-based clearing house/information service which locates resources for teachers of the handicapped.
and graphic artist/designer at various workshops at the Clarke School for the Deaf, the NRMCD Media Directors Conference, the Governor Baxter School for the Deaf, etc. Word of mouth also served to stimulate interest on the part of additional parties.

Initially more than thirty-five schools expressed interest in field testing the project. Through a process of elimination on the basis of administrative and scheduling constraints, students who did not fall into the flexible target population age bracket, and various other limitations, approximately twenty schools were eliminated as possibilities. Through a finer screening process during which the entire prototype kit was sent to each prospective site and discussed with the writer, twelve schools were selected as field test sites (see Fig. 1). Ten initial contacts (most of them media directors), ninety-six students, and eighteen teachers would be actively involved in the test. This sample was considerably larger than originally planned because of the expressed desire of these twelve schools to participate and the reluctance of the writer to exclude additional schools when enough field test kits were available to accommodate them. The prescribed eleven-fifteen year age range as a criterion for selection was relaxed and a wider variety of students (aged 8-20 years) was included in the field test population (Fig. 2).
VISUAL COMMUNICATION FIELD TEST SITES

Figure 1.

Minnesota
Cooperative School Rehabilitation Center, Minnetonka

Pennsylvania
Western Pennsylvania School for the Deaf, Pittsburgh

Virginia
Virginia School for the Deaf, Staunton

New Hampshire
Amoskeag School Manchester
Crotched Mountain School Greenfield

Massachusetts
Boston School for the Deaf Randolph

New York
N.Y. State School for the Deaf Rome
Rochester School for the Deaf Rochester
Cleary School for the Deaf Lake Ronkonkoma
Summit Park School New City
St. Francis De Sales School for the Deaf, Brooklyn

New Jersey
Marie H. Katzenbach School for the Deaf, West Trenton
Total Number = 96 students
Mean = 12.6 years
Median = 13 years
Mode = 14 years
Range = 8 to 20 yrs.
All of the participating teachers agreed to implement the course for the spring semester of 1974 and to give detailed feedback on the materials in the form of questionnaires and assorted evaluation materials.

Prior to the implementation of the course, teachers at each site completed a preliminary questionnaire (see Appendix E) which provided an overview of the site. Field test site profiles appear in Tables 1-12.

Some salient summarizing statistics are reported as follows:

| Total number of students: | 96 |
| Age range:               | 8-20 years |
| Sex:                     | 52 boys, 44 girls |
| Hearing losses:          | profound-65%, severe-7%, moderate-20%, mild-2%, unknown-2% |
| Communication method:    | total-9 schools, oral-2 schools, Rochester-1 school |

As a final step in the implementation component of the project, a program of teacher reinforcement was planned. Because it was important to maintain the active and continuous cooperation of participating teachers during the course of the field test and because teachers would have to spend much additional time and effort in terms of planning, teaching, and extensive written evaluation of the Visual Communications
**TABLE 1:**

**SCHOOL:** Amoskeag School  
Manchester, New Hampshire

**TEACHER PROFILE(S):** first year teacher of the deaf, photographic experience

**NUMBER OF STUDENTS IN COURSE:** 6

**AGES:** 9,9,9,11,11,12

**HEARING LOSSES:** all profound

**CLASS MEETINGS:** 5 times weekly, 30-40 minutes each

**STARTING DATE:** January 7, 1974

**COMMUNICATION METHOD:** total

**COMMENTS:** open classroom

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**TABLE 2:**

**SCHOOL:** Boston School for the Deaf  
Randolph, Massachusetts

**TEACHER PROFILE(S):** intern from Univ. of Mass. Media Specialists for the Deaf Program

**NUMBER OF STUDENTS IN COURSE:** 5

**AGES:** 14,14,14,15,15

**HEARING LOSSES:** 3 moderate, 2 profound

**CLASS MEETINGS:** once a week, 2 hours (flexible)

**STARTING DATE:** January 31, 1974

**COMMUNICATION METHOD:** oral

**COMMENTS:** students classified as aphasic, learning-disabled
### TABLE 3:

**SCHOOL:** Cleary School for the Deaf  
Lake Ronkonkoma, Long Island  

**TEACHER PROFILE(S):** fifth year teaching the deaf, training in educational media  

**NUMBER OF STUDENTS IN COURSE:** 7  
**AGES:** 12, 12, 13, 13, 13, 14, 14  
**HEARING LOSSES:** all profound  
**CLASS MEETINGS:** twice weekly, 1 hour each  
**STARTING DATE:** February 5, 1974  
**COMMUNICATION METHOD:** total  
**COMMENTS:**

### TABLE 4:

**SCHOOL:** Cooperative School Rehabilitation Center  
Minnetonka, Minnesota  

**TEACHER PROFILE(S):** both interpreters, small group experience  

**NUMBER OF STUDENTS IN COURSE:** 6  
**AGES:** 14, 16, 17, 17, 17, 20  
**HEARING LOSSES:** 2 severe, 4 profound  
**CLASS MEETINGS:** 5 times weekly, 1 hour each  
**STARTING DATE:** January 14, 1974  
**COMMUNICATION METHOD:** total  
**COMMENTS:** all students are multiply handicapped; some cerebral palsy, retardation, behavior problems
### Table 5:

| SCHOOL: | Crotched Mountain School  
| Greenfield, New Hampshire |
|---|---|
| TEACHER PROFILE(S): | assistant media director, trained in Univ. of Mass. Media Specialists for the Deaf Program |
| NUMBER OF STUDENTS IN COURSE: | 6 |
| AGES: | 12, 12, 13, 15, 15, 15 |
| HEARING LOSSES: | 3 moderate, 3 profound |
| CLASS MEETINGS: | 3 times weekly, 45 minutes each |
| STARTING DATE: | February 11, 1974 |
| COMMUNICATION METHOD: | total |
| COMMENTS: |  |

### Table 6:

| SCHOOL: | Marie H. Katzenbach School for the Deaf  
| West Trenton, New Jersey |
|---|---|
| TEACHER PROFILE(S): | reading and language teacher with five years experience |
| NUMBER OF STUDENTS IN COURSE: | 9 |
| AGES: | all 14 |
| HEARING LOSSES: | 1 mild, 2 moderate, 6 profound |
| CLASS MEETINGS: | once a week, 1½ hours |
| STARTING DATE: | March 21, 1974 |
| COMMUNICATION METHOD: | total |
| COMMENTS: |  |
### TABLE 7:

**SCHOOL:** New York School for the Deaf  
Rome, New York

**TEACHER PROFILE(S):** first year teacher

**NUMBER OF STUDENTS IN COURSE:** 8

**AGES:** 8, 9, 9, 10, 10, 10, 11, 12

**HEARING LOSSES:** all profound

**CLASS MEETINGS:** four times weekly, minimum ½ hour but time variable

**STARTING DATE:** March 27, 1974

**COMMUNICATION METHOD:** total

**COMMENTS:**

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### TABLE 8:

**SCHOOL:** Rochester School for the Deaf  
Rochester, New York

**TEACHER PROFILE(S):** one graphic artist with experience in schools for the deaf, three media assistants and residential counselors with many years of combined experience

**NUMBER OF STUDENTS IN COURSE:** 9  
(two deaf)

**AGES:** 10, 10, 11, 11, 11, 11, 11, 11, 11

**HEARING LOSSES:** 2 moderate, 5 severe, 2 profound

**CLASS MEETINGS:** twice weekly, 40 minutes each

**STARTING DATE:** January 29, 1974

**COMMUNICATION METHOD:** Rochester

**COMMENTS:** class integrated as part of student-centered media program
### TABLE 9:

**SCHOOL:** Saint Francis de Sales School for the Deaf
Brooklyn, New York

**TEACHER PROFILE(S):** science teacher with 3 years experience, media specialist

**NUMBER OF STUDENTS IN COURSE:** 7

**AGES:** all 9

**HEARING LOSSES:** all profound

**CLASS MEETINGS:** once weekly, 45 minutes

**STARTING DATE:** January 17, 1974

**COMMUNICATION METHOD:** total

**COMMENTS:**

### TABLE 10:

**SCHOOL:** Summit Park School
New City, New York

**TEACHER PROFILE(S):** teacher of the deaf with two years experience, (BOCES teacher)

**NUMBER OF STUDENTS IN COURSE:** 8

**AGES:** 10, 10, 10, 10, 11, 12, 13, 13

**HEARING LOSSES:**

**CLASS MEETINGS:** 3-4 times weekly, 40 minutes each

**STARTING DATE:** January 7, 1974

**COMMUNICATION METHOD:** oral

**COMMENTS:** group will be split into two sessions by ability
### TABLE 11:

**School:** Virginia School for the Deaf and Blind  
Staunton, Virginia

**Teacher Profile(s):** Teacher of the deaf with 12 years experience, teacher is deaf

**Number of Students in Course:** 7

**Ages:** 12, 13, 13, 14, 15, 15, 15

**Hearing Losses:** 1 unknown, 3 moderate, 1 severe, 2 profound

**Class Meetings:** Twice weekly, 55 minutes each

**Starting Date:** January 29, 1974

**Communication Method:** Total

**Comments:**

### TABLE 12:

**School:** Western Pennsylvania School for the Deaf  
Pittsburgh, Pennsylvania

**Teacher Profile(s):** Both language teachers, one with one and the other with eight years experience

**Number of Students in Course:** 18

**Ages:** 13, 14, 14, 14, 14, 14, 14, 14, 15, 15, 15, 15, 15, 16, 16, 13, 13, 14, 14

**Hearing Losses:** 1 unknown, 17 profound

**Class Meetings:** 3 times weekly, 66 minutes each

**Starting Date:** February 11, 1974

**Communication Method:** Total

**Comments:** Will be divided into two groups
Program, this reinforcement effort was seen as very critical to the success of the program.

Some of the reinforcers to be utilized were allowing the teachers to keep the materials at the end of the test, frequent enclosures of colored overhead marking pens and other inexpensive software with requests for various task behaviors from the teachers, supplying teachers with film to take photographs of the class as well as processing the film and supplying them with duplicate copies of prints and slides, and the offering of other NRMCD support services (e.g. the writer helped a few teachers set up contingency contracting systems and made many referrals to INTERACT and other NRMCD staff members). Whenever possible, teachers will be encouraged to present their activities to other teachers in their schools, at workshops, etc., and will be given assistance to do so. All teachers will be invited to participate in the writer’s Council for Exceptional Children Conference presentation and be offered a $25.00 honorarium for doing so (seven teachers accepted this offer). Praise for appropriate teacher behavior will be delivered continuously by phone and in letters; the writer and director of the NRMCD will write a joint letter of appreciation to the superintendent or principal of each school commending participating teachers individually (with carbon copies sent to teachers, sample in Appendix F); as many site visits as time allows will be
made so that praise may be delivered in person to participating teachers.

The total cost of the reinforcement program will be minimal especially when compared to the considerable amount of task behavior on the part of the teachers.

Evaluation of the Prototype Program

Since it is anticipated that the Visual Communications kit will be available nationally, it is important that the field test serve to provide sufficient feedback on the materials to insure that the program be a smoothly functioning model which is appropriate for use in classrooms for the deaf. The main concern in the evaluation design was that it obtain useful and functional data and to avoid the situation of designing an evaluation which has only remote connection with actual classroom practice.

For this reason, a formative evaluation design was selected. This particular method is used to evaluate educational programs while they are still in some stage of development for the purpose of serving to facilitate decision-making (Baker and Alkin, 1973) which results in an improved instructional program (Schutz, 1972). Data collected with this evaluative focus pertain not only to the level of learning achieved by students but also to the degree to which the program functions as anticipated and receives
approval by teachers and significant others.

In addition, various side effects engendered by the program can be identified for further study (Baker and Alkin, 1973).

A product type of formative evaluation which assesses stated instructional outcomes (Belland and Rothenberg, 1973) was chosen as the major area of formal data collection. Information regarding process effects of the implementation of the program including classroom interaction, student participation, and language development will be collected informally and primarily for the purpose of delineating further areas of investigation.

In the planning stages of this evaluation several sources were utilized as primary developmental tools. Perhaps the most useful were the NCEMMH developer's guide for preparing instructional materials for the handicapped (Belland and Rothenberg, 1973) and the unpublished field test component of the upcoming Council for Exceptional Children developer's guide (Anderson, 1973). The latter document was particularly useful in designing a comprehensive evaluation component for the Visual Communications Program. Another factor influencing the choice of these two references as guidelines was that they are sponsored by agencies which may be likely to distribute the Visual Communications materials nationally and therefore it was important to be consistent with their standards.
In order to obtain adequate and appropriate information which will enable the writer to determine to what extent the Visual Communications Program was successful and to plan a revised program on that basis, an evaluation composed of the following five major goals will be conducted. Each of these goals will be briefly described along with the various formal and informal data collection instruments for achieving each goal:

I. To measure student performance on the forty-two curricular objectives: An objective completion check sheet for the teachers to maintain during the course of the program has been designed (see Appendix E) for this purpose. Analysis of the check sheets from all the sites will enable non-functional objectives to be altered, replaced, or eliminated.

II. To identify weak or inappropriate objectives and materials and elicit suggestions for their revision: In addition to the abovementioned check sheet, each teacher will be required to complete evaluation sheets (see Appendix H) which allow him/her to give structured feedback on all objectives, methods, and materials including suggestions for improvement. Also, evaluation questionnaires will be completed by the participating students (see Appendix I) themselves to elicit
their perceptions of the strengths and weaknesses of the course.

III. To identify methods by which the Visual Communications kit can be individualized for use with groups of children with particular characteristics: A preliminary information questionnaire to be filled out by the teacher designed to give specific information about the participating students and teachers will be administered prior to the start of the course (see Appendix F). Also, teacher-created objectives and supplementary materials (on blank worksheets and other formats) will be collected and analyzed. Teaching strategies used for the purpose of individualization will also be recorded on the post course questionnaire (see Appendix J).

IV. To determine if the kit functions independently: Records will be kept of questions asked by teachers by phone (including by toll-free WATS service), letter, and in person concerning the kit. In this way, areas which the Teacher's Guide fails to explain clearly will be isolated for revision.

V. To suggest further areas of research which might be investigated in relation to the Visual Communications Program: Along with the post course
questionnaire detailing the strengths and weaknesses of the program, the on-site observations made (of as many schools as time permits) will provide information leading to this goal.

The evaluation of this kit will take place over a period of 10-20 weeks (terminating on May 1, 1974), depending on the particular school's scheduling of the course, in the twelve field test sites.
CHAPTER III
RESULTS

A formative evaluation of the prototype program occurred at the twelve field test sites from January to May, 1974, during which time data were collected which would serve to facilitate the revision of the Visual Communications materials. Data were collected to meet the five evaluation goals using the procedures and instruments described in Chapter II and found in Appendices E, G, H, I and J. Salient information recorded will be described and analyzed according to each evaluation goal in this section.

Evaluation Goal I

To measure student performance on the forty-two curricular objectives: The data collected from the objective completion check sheets (individually tabulated in Appendix K and found in graphic form in Figs. 3-15) indicated that the average percent of students successfully completing objectives ranged from 57-100% at the various sites (see Fig. 16 for comparison). Excluding the Cooperative School Rehabilitation Center site data which included records of the performances of the only severely multiply handicapped deaf students in the sample narrows the range of success to 86-100% average completion. Approximately 80% of the sites excluded one or more objectives generally to avoid duplication
Figure 3: PERCENT OF STUDENTS ATTEMPTING OBJECTIVE WHO SUCCESSFULLY COMPLETED OBJECTIVE

Site: Amoskeag School, Manchester, N.H.
Total no. of students: 6
Figure 4: PERCENT OF STUDENTS ATTEMPTING OBJECTIVE WHO SUCCESSFULLY COMPLETED OBJECTIVE

Site: Boston School for the Deaf, Randolph, Mass.
Total no. of students: 5
(X objective omitted X)
Figure 5: PERCENT OF STUDENTS ATTEMPTING OBJECTIVE WHO SUCCESSFULLY COMPLETED OBJECTIVE

Site: Cleary School for the Deaf, Lake Ronkonkoma, L.I., N.Y.
Total no. of students: 7
Figure 6: PERCENT OF STUDENTS ATTEMPTING OBJECTIVE WHO SUCCESSFULLY COMPLETED OBJECTIVE

Site: Crotched Mountain School, Greenfield, N.H.
Total no. of students: 6

(X objective omitted X)
Figure 7: PERCENT OF STUDENTS ATTEMPTING OBJECTIVE WHO SUCCESSFULLY COMPLETED OBJECTIVE

Site: Cooperative School Rehabilitation Center, Minnetonka, Minn.
Total no. of students: 6

(X objective omitted X)
Figure 9: PERCENT OF STUDENTS ATTEMPTING OBJECTIVE WHO SUCCESSFULLY COMPLETED OBJECTIVE

Site: New York School for the Deaf, Rome, N.Y.
Total no. of students: 8
PERCENT OF STUDENTS ATTEMPTING OBJECTIVE
WHO SUCCESSFULLY COMPLETED OBJECTIVE

Site: Rochester School for the Deaf, Rochester, N.Y.
Total no. of students: 9

(X objective omitted X)
Figure II: PERCENT OF STUDENTS ATTEMPTING OBJECTIVE WHO SUCCESSFULLY COMPLETED OBJECTIVE

Site: St. Francis de Sales School for the Deaf, Brooklyn, N.Y.
Total no. of students: 7

(X objective omitted X)
Figure 12: PERCENT OF STUDENTS ATTEMPTING OBJECTIVE WHO SUCCESSFULLY COMPLETED OBJECTIVE

Site: Summit Park School, New City, N.Y.
Total no. of students: 8
(X objective omitted X)
Figure 13: PERCENT OF STUDENTS ATTEMPTING OBJECTIVE WHO SUCCESSFULLY COMPLETED OBJECTIVE

Site: Virginia School for the Deaf, Staunton, Va.
Total no. of students: 7

(X objective omitted X)

% of Students Completing Objective

0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100

Objectives 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42
Figure 14:

PERCENT OF STUDENTS ATTEMPTING OBJECTIVE WHO SUCCESSFULLY COMPLETED OBJECTIVE

Site: Western Pennsylvania School for the Deaf, Pittsburg, Pa. - I
Total no. of students: 8 (X objective omitted X)
Figure 15: PERCENT OF STUDENTS ATTEMPTING OBJECTIVE WHO SUCCESSFULLY COMPLETED OBJECTIVE

Total no. of students: 10

(X objective omitted X)
Figure 16: Average percent of students attempting objective who successfully completed objective by site.
of subjects or activities covered in other classes.

Performances remained at a fairly constant and high level at all sites with the exception of the Cooperative School Rehabilitation Center which sharply fluctuated, with the percent of successful completion dropping abruptly when objectives involved verbal and manual dexterity skills. Each site generally had several objectives for which the performance was lower than the others, but comparative examination of records did not uncover any apparent trends which would help to cull out inappropriate objectives. The slight fluctuations in the records seemed to represent individual differences in ability and preference of participating students.

In informal interviews, many teachers reported that the student success rate for completion of objectives in the Visual Communications class was far superior than in other classes which were less structured, used fewer visual materials, and provided fewer opportunities for active response.

A useful suggestion by a teacher which will be incorporated into the final version is to include the objective completion check sheets as part of the program itself so that teachers can conveniently record student progress on objectives and can recognize more easily when extra assistance and/or alternative strategies are necessary for one or more students who repeatedly do not meet the criteria for success.
One further change in the program pointed out by the evaluation was that at least two semesters are needed for completion of the course. Since the course was originally planned to be implemented for one semester, the sites completed only between eight and twenty-seven objectives during the field test due to lack of sufficient time. Rather than pare down the program to adhere to a one semester format, the times for completion of activities will be expanded to allow the entire course to be implemented over a two semester period. Of course, teachers are free to choose to select a sampling of objectives from the kit and to teach the course for any time span which meets their particular needs.

In examining the total group data measuring the percent of students attempting each objective who successfully completed the objective (Fig. 17), the range was from 68-99%. The majority of completions fell in the 85-99% correct range. The range remained fairly constant in the first ten objectives and widened in later objectives because progressively fewer schools completed all the objectives represented in the graph and thus could not be used as data sources. The Cooperative School Rehabilitation Center, where students performed significantly less proficiently due to multiple handicaps, completed more objectives than all the other schools and therefore had more influence in the total analysis as more and more schools dropped out as data
Figure 17: PERCENT OF STUDENTS ATTEMPTING EACH OBJECTIVE WHO SUCCESSFULLY COMPLETED OBJECTIVE (Through Objective no.18)

Site: Combined Total of All Students

100 95 90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0
sources. The added weight of the Minnesota site data caused the downward fluctuation of the graph in later objectives.

Since the completion rate was uniformly high and none of the objectives stood out across sites as being markedly less appropriate than others, all objectives will be retained in the final version.

Completion of the first ten objectives was also examined by age of students to see if the materials were more or less suitable for a particular age group (Fig. 18). No significant differences were found in analyzing the data in this way as the average completion figures were 95% for both the 8-10 and 11-12 groups, 93% for the 13-14 year group, and 82% for the 15-20 group. The last category figure is lower because of the lower performance by the multiply handicapped students in Minnesota (all of whom fell into this category); the figure for the 15-20 age group without including data from the Cooperative School Rehabilitation Center site is an average of 98% correct per objective.

Evaluation Goals II and III*

To identify weak or inappropriate objectives and materials and elicit suggestions for their revision. To identify methods by which the Visual Communications Kit can

*The results of the evaluations for these two goals will be combined to avoid repetition of data.
Figure 18: PERCENT OF STUDENTS ATTEMPTING FIRST TEN OBJECTIVES WHO SUCCESSFULLY COMPLETED OBJECTIVE

TOTAL GROUP
Divided by age

- 8 - 10
- 11 - 12
- 13 - 14
- 15 - 20

% of Students Completing Objectives

Objectives

100 90 80 70 60 50 40 30 20 10 0

1 2 3 4 5 6 7 8 9 10
be individualized for use with groups of children with particular characteristics: The population of students participating as subjects in the field test of the Visual Communications materials were intentionally chosen to represent a wide range of ages, handicaps, and achievement levels.

Unlike many instructional materials (such as reading texts and math workbooks) which are geared for use with students with a very specific set of entry behaviors and/or handicapping conditions, the Visual Communications Kit was designed as a more general package of materials to be individualized for use by a teacher familiar with the special learning characteristics of his/her own group of deaf students. In this regard, many objectives, activities, and materials in the program were designed to be flexible enough to be tailored by the teacher to meet the needs of individual children. In addition, the relative rather than standard criteria made possible by the "successful communication test" allowed completion of expressive objectives at a level suited to each class.

Various evaluation instruments were used to record teacher feedback on each objective, corresponding materials and procedures and to elicit specific strategies that participating teachers used for the purpose of individualization.

Worksheets, study sheets, and other materials which were originated by the teachers were collected and analyzed.
These supplementary materials totaled five objective worksheets, twelve study sheets, and six descriptions of study sheets and review quizzes which will be integrated in some form into the final version. Numerous suggestions for individualization of existing objectives were made and totals are listed for each objective in Table 13. These suggestions for individualization will be included in a new section entitled "Individualization Strategies" which will be added to each worksheet just above the "Comments" section.

Table 13 shows that the total number of alternative strategies elicited decreased during the course of the program. This situation occurred because all schools did not complete all the objectives listed and later objectives represent the input of progressively fewer sites.

The suggestions concerning alternative activities, teaching procedures, and materials will be noted on each corresponding worksheet as will alternative criteria which generally involve changes either in language or mode of response. The greatest problem noted by respondents was that the language used in definitions was frequently too complex for most deaf children in terms of vocabulary, sentence structure, and concept and that verbal responses called for by students were also too demanding. Corresponding changes will be made in transparencies containing definitions as well as suggestions included in the Teacher's Guide for choosing appropriate criteria for verbal responses.
TABLE 13
DISTRIBUTION OF SUGGESTIONS FOR MODIFICATIONS OF WORKSHEETS TO FACILITATE INDIVIDUALIZATION

<table>
<thead>
<tr>
<th>Objective #</th>
<th>Alternative Activity</th>
<th>Alternative Teaching Procedure</th>
<th>Alternative Criteria</th>
<th>Alternative Materials</th>
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<td>3</td>
<td>2</td>
<td>7</td>
<td>3</td>
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Along this line, many of the alternative activities outlined ways to enrich the language experience of children participating in the Visual Communications Program. In terms of alternative modes of response, some teachers felt that a visual mode of response such as a drawing or photogram was more appropriate than a verbal response for their students in some of the objectives.

Most of the comments in the evaluation packet were favorable and the remainder made clear suggestions for improvement of the program. Although most teachers skipped at least one objective, none of them requested that that particular objective be deleted since they felt that it was valid but not applicable to their particular situation. However, some of the feedback on certain objectives was contradictory with some teachers labelling the same objective "too simple" and others "too complex." In these cases, appropriate notes regarding age and achievement levels of students will be made in the "Comments" section of the worksheets.

Evaluation Goal IV

To determine if the kit functions independently: A main objective of the field test evaluation was to insure that the final version of the Visual Communications Kit could be used completely independently by a teacher with only the Teacher's Guide functioning to provide structure and direction to the program. Since, in the field test phase, teachers
had easy and direct access to the writer/program developer via the NRMCD toll-free WATS line, records of questions asked through this channel as well as information sought by letter and in person were kept and analyzed. During the course of the field test, fifty-two contacts were initiated by participating teachers. A breakdown of these contacts is found in Table 14.

Of these contacts, nine (17%) were to report that the spiritmaster of the Student Response Form was missing from the kit. Actually, Xeroxed copies of the SRF were included in place of the spiritmaster and the contents section of the Guide will be amended accordingly. Seven (14%) of the contacts concerned evaluation procedures, twelve (23%) were requests for additional materials not necessary for the implementation of the kit such as 35mm film to take pictures of the class in action, three (6%) reported changes in scheduling, and twelve (23%) dealt with other topics not directly relating to the implementation of the Visual Communications Program such as requests for behavior modification references, information about site visits, etc. In total, 83% of the contacts concerned issues not directly relating to the independent functioning of the program.

Only nine (17%) of the fifty-two contacts concerned the actual implementation of the program. Since the projected amount of time for activities was usually underestimated on the worksheets, all of the sites proceeded through
TABLE 14
CONTENT OF TEACHER INITIATED CONTACTS
WITH PROGRAM DEVELOPER

Categories:
E - Questions about evaluation procedures
W - Where is spiritmaster?
S - Class going slower than planned
C - Changes in class schedule, students, etc.
R - Requests for additional materials not in kit
P - Problems relating to implementation
O - Other topics not directly relating to program

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<th>E</th>
<th>W</th>
<th>S</th>
<th>C</th>
<th>R</th>
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</table>

Total of all categories 52
the program more slowly than was originally planned, and seven teachers called to report this situation. This situation will be remedied by reestimation of the times of activities as per teacher feedback on individual objectives. The only other problems reported involved the use of the S.E.E. cameras by the students. One site reported that indoor lighting was not adequate to produce acceptable pictures and another stated that their children (many of whom have cerebral palsy) were having a difficult time developing the film because of their poor manual dexterity and coordination. Notations about these limitations will be added to the Teacher's Guide.

For all practical purposes, the program functioned independently, even in the field test. With the few modifications stated above, any teacher should be able to use the final version of the Visual Communications Program without assistance of any kind.

Evaluation Goal V

To suggest further areas of research which might be investigated in relation to the Visual Communications Program: The data collection phase of this program yielded information which identified several areas in which further research might prove valuable. These areas were suggested by teachers as well as by observations made by the writer.
In the final questionnaire, teachers were asked to list the strengths and to respond to some intended benefits of the program. Certain answers appeared repeatedly in the questionnaires of many participants and bear further investigation. The five general strengths most frequently listed were:

1. Students were highly motivated to actively participate in the course.

2. Language development was facilitated.

3. High levels of positive student interaction occurred.

4. Deaf students could utilize these new skills in other areas where visual learning is important (e.g. lip-reading).

5. This program could be used equally successfully with hearing children.

A more complete discussion including possible strategies for conducting research in the abovementioned areas will be detailed in Chapter IV.

Since programs and materials that are not liked by teachers and students (for whatever reasons) are not likely to be used in the classroom, it is important to survey teacher and student satisfaction with and acceptance of any program which is planned for wide distribution.

In the field test evaluation phase of the Visual Communications Program, subjective data were collected for
the purpose of determining to what extent participants were pleased with the program and for eliciting suggestions as to how the kit could be improved. The results of these informal measures are reported in the following two categories of teacher and student reactions.

Teacher Reactions to Program

A post-course evaluation questionnaire was administered to the teachers to elicit both general and specific reactions to the program and to suggest areas where the program was of particular benefit so that areas of possible future research could be identified. (Sample teacher responses are found in Appendix L.)

The first two questions calling for lists of the strengths and weaknesses of the program confirmed both the positive and negative responses collected on the other evaluation instruments and were similar in content to many evaluations of programs listed in the review of the literature.

Strengths mentioned included statements to the effect that the program provided outlets for students' creative talents, generated a great amount of useful language and positive student interaction, helped to shape better environmental awareness including sharper observation skills, actively involved students in the learning process, helped students approach the communication process logically and
systematically, used materials which most students found highly interesting, taught students to follow directions, improved the quality of students' written and oral language especially in terms of variety, sequence, and fluency of response, was helpful in teaching the total communication approach and other skills which involved the use of sight, allowed students to be successful, and provided structure and direction to formerly haphazard media activities.

Although the above statements are not easily quantifiable, they serve to suggest areas of teacher-perceived educational benefit such as motivation, language development and interaction which might be the focus of future research.

The weaknesses suggested by this questionnaire 90% of the time pinpointed the complexity of the language used in definitions. Suggestions for alternative definitions have been collected from the teachers and this problem will be remedied in the final revised version of the prototype kit.

All of the respondents agreed that there was a need and use for the Visual Communications Program in schools for the deaf. Their rationales included deaf students' needs for expressing themselves through more channels of communication, especially through visual means, and their needs for more varied and stimulating approaches to learning language. One teacher stated that the program served as a logical extension of the unified curriculum approach. Similarly, many
teachers pointed out ways in which the program either was or could be integrated with other subject areas such as language, reading, and career education, and some of these ideas will be included in Section 11, "How to Extend Visual Communications Skills," in the Teacher's Guide. It was also pointed out by almost all teachers that not enough time was allowed in the Guide for completion of the activities and reestimated times will be included in the final version as well.

In responding to Question 5, 100% of the respondents said that they considered the program innovative and many added that they had not seen materials of a comparable nature elsewhere. Some teachers made specific positive comments about the originality of the structure, materials, and activities of the program. One teacher pointed out that it is unfortunate that more programs do not utilize some of the same "innovative" approaches to the teaching/learning process.

Most of the responses to Question 7 regarding learner characteristics which might limit the usefulness of the materials concerned concerned the high language level of some of the definitions. Definitions which were used in the program will be changed in accordance with suggestions made in the evaluation packet and teachers will be encouraged in the Guide to individualize language requirements to overcome this limitation. One site noted that children with moderate-severe cerebral palsy would have trouble completing
some of the photographic activities and this limitation will also be noted in the Guide.

All but one of the teachers stated that the kit allowed adequate opportunities for student interaction. All felt that students interacted at least as much in the Visual Communications class as in other classes, and 50% stated that more interaction took place in the experimental course. According to participating teachers and the observations of the writer, this area bears further formal investigation.

In answer to Question 10, 100% of the teachers responded that the materials served as stimuli for language development and cited supportive examples which will provide information for adding alternative activities to the program as well pointing out several areas which might be identified for future research.

All of the teachers felt that the materials had high interest value for the students, although one had reservations about some of the artwork. Many teachers cited examples of instances where students showed unusual amounts of motivation as evidenced by the quantity and quality of their participation.

In answer to Question 14 concerning the appropriateness of media in the program, 100% agreed that suitable media were used for meeting curricular objectives. Many pointed out that this was because the mediated materials could be individualized; for example, all of the teachers used the
blank bottom portions of the transparencies all or most of the time for this purpose.

One hundred percent of the responding teachers wrote that they enjoyed teaching the course. Perhaps the last item was the best test of the teachers' acceptance of the program; although no further support was offered to participating sites, all of them stated* that they will be using the program with or without modifications in one or more classes next semester.

**Student Reactions to Program**

A five item evaluation questionnaire was administered to participating students after completion of the course. This questionnaire was designed to elicit student perceptions about the strengths and weaknesses of the course. Sample responses are found in Appendix M.

The first question which asked students to list some things they liked about the program elicited a wide variety of comments about different activities and topics including learning about communication, symbols, the senses, the environment, photography, etc. The second question which called for students to list what they did not like about the course generally referred to specific activities as

*Except for one temporary intern who did not know about plans for future use at her school.*
well but approximately 40% either left this space blank or stated that they liked everything in the course. Apparently, many children (approximately 20%) interpreted this question to refer to specific activities rather than the class as a whole and stated, for example, that they did not like unclear or bad visuals, or that they did not like to taste some of the bitter foods in the sensory awareness exercises. Question 3 referring to favorite activities produced a similar range of answers as did Question 1.

In response to Question 4, students suggested various alternative activities that they would enjoy such as making books and book reports about visual communications, reading books about communication, seeing and talking about movies and filmstrips, and taking field trips of which they could take pictures. Some of these suggestions will be incorporated into the Teacher's Guide.

The last question dealing with how the students could use what they learned in Visual Communications in other classes elicited only 50% appropriate responses, presumably because the language and concept used in the question were inappropriate. Most responding children wrote that they had learned about some of the same things (e.g. the senses, symbols, etc.) in other classes, that the Visual Communications class helped them to write reports, or that they could teach their other classmates to use cameras and other means of visual communication.
Although the language used in the questionnaire was apparently too difficult in many cases as evidenced by some student responses which clearly did not fit the question asked, the student responses were strongly positive both as recorded on the questionnaire and as reported by their teachers. Arranging and reviewing the questionnaires by age and school did not uncover any patterns for any of the questions, and responses seemed to express individual personal preferences rather than being indicative of any apparent trends. However, several good suggestions concerning alternative activities made by students will be added to the final version of the kit.

Although a question such as "Would you tell your friends to take the Visual Communications class?" would probably have produced more conclusive results about student attitudes towards the course, the nature and extent of the positive student comments in addition to teacher reports about high interest and motivation as well as on-site observations made by the writer lead to the conclusion that students did enjoy participating in this class.

In conclusion, the results of the evaluation suggest that by incorporating some of the recommendations concerning alternative strategies made by teachers into the materials, the Visual Communications Program will become a fully functional program which provides positive media-communication experiences for deaf students with a wide range of ages and
abilities. The revision of the materials and subsequent arrangements for national distribution will take place during the summer of 1974. In addition, the results indicate that further study of several process effects such as language development and interaction may be of potential instructional value.
CHAPTER IV
DISCUSSION
Program Development and Evaluation

The initial review of the literature highlighted several weaknesses of visual literacy programs which are currently operational in a variety of settings which this study sought to correct.

Most reported visual literacy programs have consisted of a set of seemingly unrelated activities without specific objectives involving cameras, film, and other media. Developers of many of these programs advocate a totally unstructured format and intentionally omit guidelines, specific strategies, and materials, using the rationale that their approach will naturally foster freedom of expression in students. Evidence of the success of this approach has rarely, if ever, been presented in objective form. In contrast, the core of the NRMCD Visual Communications Program is a set of forty-two curricular objectives in general sequence keyed to carefully delineated activities and visual stimulus materials designed to allow deaf children to express and communicate their ideas and feelings in a visual form that is understandable to their peers. The results of this study showed not only that high student achievement is possible with this approach but also that both teachers and students are receptive to this kind of programmatic framework.
The structured, though flexible, format allows for an operational, goal-directed program which makes general direction as well as specific objectives apparent to both teachers and students. It also allows for application of the program to a variety of settings with some degree of standardization so that replication of the positive results achieved in the field test is facilitated. Another benefit of the built-in specificity of the program is that offshoot studies involving measurement of related variables is made possible with a greater chance of reliability than is usually achieved in product evaluations conducted in the classroom setting.

Another identified weakness of existing visual literacy programs concerns internal standards of student success. Rather than using inflexible standards of success set by teachers or other arbitrary sources, the Visual Communications Program uses the relative standard of peer response in any given class as the criterion for success. This factor, in addition to the "Individualization Strategies" section of the worksheets, immeasurably stretches the capability of the program to reach a variety of students.

The ability of a visual literacy (or any other) program or set of materials to function without support services is a necessity if that program is intended for wide distribution. Many reported visual literacy programs are not independent in that they have involved varying degrees of teacher training by an expert in the field as a requisite
component. The results of the NRMCD Visual Communications Program evaluation showed that with this program no pre-course teacher training other than exposure to the Teacher's Guide and materials is necessary for high levels of student performance.

Along with overcoming several major weaknesses in existing visual literacy programs, this study reconfirmed the informally reported positive benefits of programs of this type. In addition, the project went a step further by providing the basic foundation which can pave the way for future research concerning positive process effects.

The developmental process utilized with this program departed from traditional procedures in two basic ways.

Frequently, the shape and function of programs are dictated by instructional materials which are already available to a teacher or program developer. In contrast, the Visual Communications Program was developed by starting with the general goals of the program, operationalizing those goals into objectives, and then designing visual materials which would aid in the attainment of each objective. In this way, only materials which directly contributed to the function of the program could be designed or selected for inclusion.

Many instructional programs are developed by involving teachers in the initial developmental process. Although teacher input was crucial to the development of the Visual
Communications Program, this input was collected and processed during a later stage of the program's development. The basic prototype program was synthesized mainly through the efforts of a core of subject matter specialists. Teacher involvement came at the field test evaluation phase of the program. In this way, many teachers could have intensive and extended contact with the day-to-day implementation of the program in their classrooms and observe exactly how their students responded to various components of the program. Because they did not develop the initial materials, teachers could comment and criticize the program more freely and objectively than if they were evaluating their own efforts.

In the development and implementation phases of the Visual Communications Program, actions taken at several decision-making points merit further discussion.

The decision to develop a behaviorally based program was made for a number of reasons. Most importantly, behavioral objectives were used to provide structure and direction to the program and to allow all users to have similar but nevertheless individual experiences rather than participating in a non-standard, haphazard array of activities without any specified purposes. Since observable behaviors formed the basis of Visual Communications activities, monitoring and measuring of progress towards completion of objectives by both teachers and students was made possible. In addition, the evaluation methodology utilized could
be straightforward and relatively simple because quantification of program components was built into the basic design of the program.

A general package of materials was designed which could be used with a variety of ages and achievement levels of students because of the program's emphasis on individualization of objectives and activities. The results showed that age was not a limiting factor for success in the program and that teachers could individualize the program for use with children with a variety of entry behaviors. Quite probably, the materials are more likely to be accepted by a national distribution center if they are geared for a wider target audience.

The decision to suggest specific teaching procedures was made for two major reasons. Not only were teaching procedures helpful to teachers for facilitating achievement of objectives, but many positive teaching practices (like giving immediate feedback on student behavior, keeping continuous records of student progress, etc.) could be taught through the use of the Visual Communications Program. It may be that teaching new methods through the manipulation of tangible classroom materials can be a viable way of teaching methods to teachers which may not be accepted when taught in a more traditional manner.

In addition to creating a new program for deaf children, a goal of the writer was to provide a positive learning
experience for participating teachers during the field test. Besides being exposed to some new teaching tools and materials, teachers were active evaluators of the program (many were in this role for the first time in their careers) and functioned as invaluable data sources for the revision process. Teachers were encouraged to give their colleagues exposure to the program and were given assistance for doing so. They were given tangible and social reinforcement whenever possible for the high rates of cooperative behavior they displayed and are responsible in large part for the successful operation and outcome of the Visual Communications Program.

Implications for Research

The data collection phase of this program yielded information which suggested several related areas in which further research might prove valuable. The five major areas which were identified are described as follows:

1. Students were highly motivated to actively participate in the course: As was the case in visual literacy courses reported in the literature, many participating teachers listed high motivation in terms of interest and self-confidence on the part of the students as one of the strengths of the program. Several teachers suggested that the program was structured so as to give each student repeated opportunities and ample assistance for successfully
completing objectives and, therefore, students were motivated
to participate continuously and enthusiastically.

From a behavioral perspective, students were frequently
reinforced by success and positive class attention in various
visual communications activities and exhibited high rates of
behavior ("motivation") to achieve those successes.

The reports obtained in regard to motivation were
subjective and informally recorded. To conduct further re-
search on the effects of a visual literacy program on this
variable, one would have to determine in what ways "motiva-
tion" could be measured. A logical first step might be to
operationalize "high level of motivation and interest" using
the Hutchinson and Benedict model (1970) and devise an in-
strument to record behaviors included in this category. A
measure which would facilitate comparison with rates of
students in other classes who were exposed to other teaching
procedures and materials would probably be most useful.

2. Language development was facilitated: All respond-
ing teachers observed several aspects of oral/signed and
written language where students in the Visual Communications
class appeared to make positive gains. Both quantitative
(higher frequencies) and qualitative aspects of language such
as variety, sequence and fluency of response were cited as
areas where improvement occurred. Many teachers felt that
expressive and receptive activities concerning the environ-
ment were especially stimulating to the students and were
conducive to facilitating language improvement.

Formal research concerning language development relative to the Visual Communications course could focus on two major areas. The first, that of quantity of written or oral/signed response, could compare the frequency of response in terms of number of sentences, phrases, etc., emitted by students in response to Visual Communications materials and activities with responses to other language arts materials and activities designed to elicit language from deaf students. A second area which could be investigated concerns the quality of verbal responses made in the Visual Communications class. Either traditional or specially developed instruments could be used to measure various linguistic components such as complexity, word order, concept, sequence, fluency, variety, and vocabulary and show changes in language usage during participation in the Visual Communications course, as well as comparing results with the above elements measured in other classes.

Because teachers of the deaf are constantly seeking new ways to help deaf students acquire superior language skills, this area of research should be of high priority.

3. High levels of positive student interaction occurred: Typically, verbal interaction in classrooms or schools for the deaf is relatively low as compared with comparable hearing classes. The interaction that does occur generally involves the teacher. The Visual Communications
materials were structured to allow a high degree of classroom interaction, especially interaction involving individual student contact with their peers, and the results of the informal assessments by teachers suggest that these high levels did occur.

All but one agreed that the program provided adequate opportunities for student interaction; while 33% judged the interaction level to be about the same as in other classes, 67% estimated that more interaction took place in the Visual Communications class.

A study which would document this positive process effect could involve the intensive study of one class participating in the Visual Communications Program. The evaluation method could have three major components:

a. Frequency and type of interaction in the Visual Communications class: Five categories of interaction (defined as any discrete (uninterrupted) verbal response of any length) could be measured in the class: teacher to student, student to teacher, teacher to class, student to class, and student to student, and the resulting data could be analyzed to determine the nature of the interaction facilitated by the use of the tested activities and materials. A sample evaluation instrument can be found in Table 15.

b. Comparison of interaction between the Visual Communications class and other subject area classes: The frequency and type (as categorized in a. above) of interactions
TABLE 15
SAMPLE OBSERVATION SHEET FOR MEASURING INTERACTION

Interaction: Any discrete (uninterrupted) oral/signed verbal response

T-S: Teacher to student
S-T: Student to teacher
T-C: Teacher to class
S-C: Student to class
S-S: Student to student

<table>
<thead>
<tr>
<th>Date and Length of Class</th>
<th>Objective Number</th>
<th>T-S</th>
<th>S-T</th>
<th>T-C</th>
<th>S-C</th>
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<td>Add'l Objs.</td>
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</tbody>
</table>

Reliability computed per objective per class of interaction.

Reliability: \( \frac{A}{A+D} \) (Agreements) \( \frac{D}{A+D} \) (Disagreements)

NOTE: A similar sheet could be used for interaction observation in other classes with modifications - no Obj. Nbr. section, blank for name of subject class.
could be measured in three to six other subject area classes attended by the students participating in the Visual Communications class. Data could be analyzed by comparing the frequency and type of interaction in the Visual Communications class with that of other classes.

c. Generalization: If the rate of interaction in the Visual Communications class is measured to be higher or lower than in other classes, any recorded acceleration or deceleration in rates of interaction in the other classes could be analyzed to determine if generalization may have occurred. The same type of analysis could be done to determine if generalization as to type of interaction had occurred. Tight experimental control would probably be difficult to achieve in this kind of study.

4. Deaf students could utilize these new skills in other areas where visual learning is important (e.g. lip-reading): The question of generalization of skills learned in the Visual Communications class to other settings is one which was informally and subjectively assessed during the field test evaluation. Anecdotal accounts by teachers indicate that they saw evidence that a number of students related visual communications vocabulary, concepts, and skills to experiences in other classes or out of school situations. Some examples include a student checking out books about communication from the library (without prompting), students indicating an interest in some aspect of
visual communications work as a profession at a career planning night, students reporting to their teachers similar vocabulary and concepts used in other classes, and a student doing a visual presentation instead of a written report for a science class. Teachers have also reported that they have used skills learned by students in Visual Communications class as a tool for teaching total communication and speech-reading.

Visual Communications activities can be integrated in some way into virtually any subject area; the problem of discovering how visual communications skills can be used to aid improvement in other areas where visual learning is important could be addressed in future research concerned with identifying ways in which generalization of visual skills could be made possible.

5. This program could be used equally effectively with hearing children: If possible, this program will be made available on some basis to teachers of hearing children (as well as children with other handicaps) since much interest has been shown in this direction. An offshoot of satisfying this demand might be the initiation of research comparing performances of various populations of users of the program. Some past research (cited in Chapter I) has focused on making comparisons between deaf and hearing children in terms of various kinds of academic achievement, visual perceptual skills, and other areas of functioning
and similar kinds of studies would be possible using the Visual Communications kit as the set of stimulus materials used to evoke a variety of responses which could be analyzed and compared. Research of this type could serve to uncover specific differences and commonalities between deaf and hearing children and lead to the development of approaches which could potentially function to improve instruction for either or both groups.

Publicizing the Visual Communications Program

Various channels have been utilized by both the writer and cooperating teachers for the purpose of exposing the Visual Communications Program to a number of different audiences to obtain critical feedback as well as support for this venture.

Strategies undertaken by teachers for use within schools have ranged from participating classes displaying their work on classroom or public bulletin boards to presentations to other groups of students and teachers within the school to adapting segments of the program for use in a career planning night to implementation of an evening open house for parents to observe the class in action.*

On a wider scale, one teacher has made a presentation

*Many teachers have reported significant interest in and positive reaction to the program by other staff members and administrators in their schools.
about the class to a state-wide teachers conference, and two others are planning to submit a proposal for a presentation to an upcoming national conference. Seven teachers participated with the writer in a presentation at the 1974 Council for Exceptional Children Conference; a similar presentation was made by the writer to the Sixth National Conference on Visual Literacy (1974) with much positive response. In addition, an article is currently being prepared for submission to an educational publication.

The final step in the project (which is not in the scope of this dissertation) is the revision of the materials during the summer of 1974 and the subsequent arrangement for dissemination on a national basis in the fall. The possibilities for further research on this project are varied and could be undertaken under the auspices of either a commercial* or non-profit educational sponsor. Certainly, many of the participating teachers are willing and anxious to pursue some further investigation concerning the implications that a program of this nature has for improving the education of the deaf.

*The Director of Research at Eastman Kodak Co. has expressed some interest in exploring possible research topics along this line.
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APPENDIX A

MODULE FOR OPERATIONALIZING NRMCD TASK AREA GOALS
MODULE FOR OPERATIONALIZING NRMCD

TASK AREA GOALS

Joseph S. Alen
Northeast Regional Media Center for the Deaf
Amherst, Massachusetts
March, 1972
PREFACE

This module is designed for use by NRMCD Task Group members. Its language and structure are based upon these particular people, the Center's internal style of operation and previous information dissemination. Therefore, it presupposes commitment, consensus and an understanding of certain fundamental precepts upon which this process is based. In view of this, caution should be exercised before attempting to use this module for other decision-makers.
The process which you are about to undertake is based in part upon a procedure known as, "The Operationalization of Fuzzy Concepts," invented by Dr. Thomas E. Hutchinson (Hutchinson & Benedict, 1970; Coffing et al, 1971) at the Center for Educational Research, School of Education, University of Massachusetts. Variations of this procedure have been used successfully with numerous decision-makers, including some at high levels of authority; therefore, experientially you'll be in good company. However, there are bound to be problems and objections, since no process really approaches perfection. The following comments are an attempt to short-circuit some of those problems, to raise issues before they arise so that by anticipation we may be able to prevent their occurrence or at least minimize their negative impact.

Relevancy. The approach to project planning, teaching, and education in general, characterized by the development of behavioral objectives is often criticized for its irrelevance to anything the project or the teacher does. Workshops or conferences which purport to teach people how to write behavioral objectives do exactly that and little more. The teacher or educator becomes expert at writing behavioral objectives. Upon return to the project or the classroom, the techniques which were learned at the workshop are set aside and the teacher or educator proceeds as before. When asked, why do they not use behavioral objectives in their everyday affairs, the responses generally elicited are: "Because I want to do more than just accomplish the behavioral objectives which I have written." "Because it would take too much time, and I couldn't possibly write behavioral objectives for everything I want to do." Thus, despite the fact that people are able to learn a high degree of proficiency in writing behavioral objectives, there has been little effort devoted to the actual implementation of those skills. The problem, then, is one of assuring
the relevancy of behavioral objectives to the broad goals and intents [both conscious and unconscious] which people have with respect to their projects, classrooms, etc. Therefore, any approach which simply teaches the technique of writing behavioral objectives cannot guarantee a successful implementation of those skills at the working level. The procedures which we will be utilizing will begin with the broad goals and intents which individuals have for their task area and will seek to systematically elicit behavioral and operationalized objectives from those broad goals and intents, thereby insuring relevancy to whatever it is that they wish to accomplish. The process of deriving operationalized objectives is the critical distinction between operationalized objectives and behavioral objectives. One of the pages of this module contains definitions and tests of completeness for operationalized objectives.

**Time.** A frequent objection to the process which we will be utilizing is that it takes too much time in order to arrive at operationalized objectives. Yes, it does take time. However, in a matter of a few weeks, we will be attempting to accomplish approximately 80% of the planning which a project normally does in a course of a full year of functioning. The remaining 20% will be an ongoing revision process as we obtain data on the success of the operation. Placed in this context, we will in fact be saving time.

**Thought.** Another objection which frequently arises, though it is not often verbalized, is that this process requires a good deal of hard thought. Again, that's true. However, if we do not refine our plans down to the operationalized level, we will not be effectively communicating with ourselves; we will not specifically know where it is that we are going; we will not know when we have gotten wherever it is we choose to be; and we will not be complying with the demand from Washington for evaluation.
Despite the fact that there will be significant and major problems with the procedures to be utilized, I ask that you keep an open mind and make an honest attempt to help the process work. For what it's worth, I have full faith in these procedures--I have seen them achieve remarkable results.
INSTRUCTIONS

Please do not read ahead of any given step in this module. Finish each step completely and then please follow the continuation instructions in parentheses at the lower portion of each page. Some of the steps are completed individually, while others are accomplished as a group process.

NAME OF THIS TASK GROUP: ___________________________________________

MEMBER'S NAME: _________________________________________________

DATE: ____________________________
Without attempting to be too precise or specific, individually, please list all your major goals for this task area. What is sought is a finite list of your intents for this area. Don't bother trying to specify these goals in behavioral terms; we are looking for broad, overall goals that you have for this task area. It is likely that your list will range between 5 and 20 broad goals.

(After completing this step, please stop until the entire group has completed Step 1. While waiting for others to finish, please review your major goals for clarity, completeness, etc. When everyone has completed this step, proceed to Step 2.)
As a group, you should discuss everyone's list of goals in order to arrive at a consensus for one list which will represent the group's major goals for the task area. Most groups generally produce between 5 and 12 major goals. Once a set of goals have been discussed and selected, the group should prioritize that list. The precise mechanics of how you do any of the above are left up to the group, so long as a workable consensus is achieved.

**TASK GROUP'S MAJOR GOALS IN PRIORITY ORDER**

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8. 
9. 
10. 
11. 
12. 

(After this group has completed a prioritized list, proceed to Step 3.)
Again working individually, on the form provided on page 8, please write the number one priority goal for this task group. Think about that goal and what it **really** means to you. I now ask that for a brief period of time, you become a magician, a genie, a seer. By virtue of your magic wand, snapping fingers, and crystal ball (or CRT if you prefer more realism), you are able to conjure up a scene. This scene is a very **detailed** and **realistic** one, with people, action, furniture, relationships, buildings, etc., etc. Real people are interacting in a real environment and producing real results. The scene takes place in the misty future. It is a scene in which the goal stated on your paper has been **accomplished** in the best possible manner. You have achieved everything necessary in order to bring about completion of this goal. Please immerse yourself in this scene and examine it in fine detail; look at everything that is happening that tells you that this goal has been fully accomplished.

In order to test the scene you have conjured up, examine whether or not there are handicapped children in the scene. That is what NRMCD is all about. We have no stake in merely promoting the use of media; rather we want to help the handicapped. Therefore, the ultimate accomplishment of our goals should focus on handicapped children. **I'm not telling you to change your scene**, just clarify your own thoughts as to what kind of meaning you **really** ascribe to this particular goal. If you still have difficulty in getting handicapped kids into your scene, then go ahead anyway because you are going to produce important and relevant dimensions regardless.

Now, in a **list** of short phrases (not paragraph style), describe that scene on paper with as much detail and realism as possible; tell me what is in that scene, what is happening that **sures** you that this goal has been fully
accomplished. What is not sought is a listing of things which must be done in order to achieve that goal - rather what we want is a scene in which all the necessary things have been done and the goal has already been achieved.

(When you have exhausted this hypothetical scene, proceed to Step 4 individually.)
MAJOR GOAL: .................................................................

.................................................................

.................................................................

DIMENSIONS

a. .............................................................................

b. .............................................................................

c. .............................................................................

d. .............................................................................

e. .............................................................................

f. .............................................................................

g. .............................................................................

h. .............................................................................

i. .............................................................................

j. .............................................................................

k. .............................................................................

l. .............................................................................

m. .............................................................................

n. .............................................................................

o. .............................................................................

p. .............................................................................

q. .............................................................................

r. .............................................................................

s. .............................................................................

t. .............................................................................
u. .............................................................................

(If you need more space, please continue on the back of this page.)
I now ask that you create another hypothetical situation in the same manner as you did in Step 3. In this scene, however, your task group has failed miserably; in all probability you will all be fired. You have not even come close to achieving this goal, and have in fact achieved negative results. Again, this should be a very real and detailed scene. Please describe by a list of short statements what it is in this scene that tells you that your task group didn't achieve this goal. Please do not bother to restate negatives of the positive dimensions you cited in Step 3.

NEGATIVE DIMENSIONS

a. 

b. 

c. 

d. 

e. 

f. 

g. 

h. 

i. 

j. 

k. 

(If you need more space, please continue on the back of this page.)

(Stop. Please wait until the entire group has finished this step. When the entire group has finished, proceed as a group to Step 5.)
If you now examine what you have written, it should be clear that the negative dimensions can be rewritten so that they are simply additional positive dimensions, providing your individual meaning for the major goal with which you are working. However, people's ideas and meanings change as time progresses, and we are examining meanings for one point in time. Therefore, it is essential that as many stimuli to thought be used as possible for one point in time. You are now going to act as stimuli for each other. Each of you should read his/her list to the others. As a list is being read, you, as listener, should see if any of the dimensions being read are ones which you would like to add to your list...or do they make you think of another dimension which you don't have...or are they not relevant to your list. The reader is simply providing you with additional input, which you may accept or reject as you please. Again, the purpose of this step is not to convince anyone of the virtue of anyone else's dimensions. It is your individual meanings, perceptions and dimensions of the major goal that count; and each of us perceives a different meaning for any given goal. Therefore, if you wish to add any of the reader's dimensions to your list, please do so, or if you think of any new dimensions, please add them to your list. However, if you reject a dimension which has been read as irrelevant or can think of no new ones, then simply do nothing.

(After the group has completed this step, proceed individually to Step 6.)
The ultimate goal of this process is to obtain operationalized objectives from our major goal or intent for the task area. You should now examine all your listed dimensions and star the ones which are not yet operationally defined. Definitions plus tests of completeness for operationalization are listed below.

1. "A definition of a word (or objective) by describing the operations or activities of the referent--what it does in contrast to what it is--or by describing the operations which may be performed with it or by the purposes for which it may be used. Particulars are operationally defined when the uses made of particular things or the activities of a particular person are enumerated, in contrast to defining universals operationally by enumerating the uses of a class of things or of a distinct class of persons." (Borsodi, 1967).


3. Test of completeness for operationalization: Examine each component and ask:

   "Can I observe it directly? Anything which cannot be observed directly is still considered not operationalized and needs to be broken down further.

   Observable things: Things which can be some way quantified, e.g. counting, numbering, timing, clocking.

   Non-observable: Things which two different observers will record differently, e.g. 'understanding', 'satisfied', 'learning', all of these are non-observable or measurable directly." (Benedict, et al, 1970.)

The distinction between an operationalized objective or statement and a behavioral objective is the manner in which it is derived. If one were to take an operational objective and compare it to a behavioral objective and to discount any procedure for arriving at that objective they would both look alike. We will be focusing upon operationalized objectives as opposed to behavioral objectives because the question of derivation is a crucial one and strikes at the heart of the quality and validity of the objectives themselves.

(Proceed individually to Step 7).
(READ THROUGH THIS STEP COMPLETELY BEFORE PROCEEDING WITH ANY TASK.)

It is likely that many of your dimensions are still relatively vague and "fuzzy." For each dimension that is still not operationally stated, you will have to proceed with Steps 3, 4, & 5 again. And it is usually at this point that the screaming and objections begin. First of all, if you think that there are too many dimensions and too much work, please remember that this is your goal; if it has many dimensions and is complex, that is because you have chosen a complex goal to accomplish! The more complex a goal is, the more vital it is to fully explain to everyone (including yourself) exactly and precisely what you mean by it. Secondly, each of the dimensions is smaller than the broad major goal with which you have been working. Therefore, when you go through Steps 3 and 4 with each "fuzzy" dimension, they will not generate as many sub-dimensions as your first round which the major goal did, nor will the process be as time consuming. In addition, at this time it is possible to begin a weeding-out process. It is likely that your dimensions fall into three general levels of importance to this goal (as you see it), namely: not important, maybe, and important. Please place an "X" next to the unimportant dimensions, and place an "O" next to the maybe dimensions. The remaining important dimensions should be ranked numerically in their order of priority to you, individually. Once you have completed this, do not start to operationalize your "fuzzy" dimensions yet. Proceed to Step 8.

(Proceed individually to Step 8.)
You have now completed one iteration in the operationalization process. It is rare at this point to find anyone wildly enthusiastic about what has happened. The reasons for this are not hard to see:

(1) the prospect of a lot of hard work and thought looms ahead,
(2) you are tired from having gone through Steps 1-7, and
(3) the results are not readily apparent.

In response to these likely objections, I suggest again that:

(1) you will have accomplished in a few weeks over 80% of the planning which a project normally does in the course of a full year of functioning - the rest of the year should be a breeze;
(2) I'm sorry you're tired, but I can't help that; and
(3) look at the statements you have already produced - they should have so much more meaning to you and to others than the fairly general job descriptions and proposals under which we have been functioning. (If this is not true, then we have failed; let's find out where and remedy it.)

As a group you must now decide how to proceed. I see two alternatives:

(1) complete the operationalization procedure as discussed in Step 7 for this goal #1 and go through all the other major goals in this way, or
(2) begin now with the second major goal, get it down to present level of specificity of goal #1, and so on with the other major goals, after which we would begin the final operationalization breakdown (as per Step 7) with goal #1 and so on. With either procedure, much of the work can be done individually up to the point of the stimulus step (Step 5). However, your group should set up a schedule for accomplishing this, with definite meeting times so that we can proceed to flesh out responsibilities, times and dollars as quickly as possible.
REFERENCES


APPENDICES B & C

SAMPLE MATERIALS FROM PROTOTYPE VERSION OF VISUAL COMMUNICATIONS TEACHER'S GUIDE AND CORRESPONDING TRANSPARENCIES
VISUAL COMMUNICATIONS KIT

DEVELOPED AND DESIGNED BY:

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Points of view or opinions reflected by these materials do not necessarily represent those of the Bureau of Education for the Handicapped.

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# TABLE OF CONTENTS

1. General Introduction to Visual Literacy .................................. 1

2. Introduction to the NRMCD Visual Communications Program .... 3

3. Topical Timeline ................................................................. 5

4. Contents of Kit ................................................................. 7

5. Who, What, and When? ......................................................... 8

6. Special Features of the Program ........................................... 10

7. Special Features Review Quiz .............................................. 14

8. Worksheet Format Description ............................................ 17

9. How to Start ..................................................................... 20

10. Worksheets (1-42, followed by extra blank forms) .................... 21

11. How to Extend Visual Communication Skills ............................ 96

12. References ........................................................................... 98
1. General Introduction to Visual Literacy

The generation of students currently in our educational systems are growing up in a unique environment— they have had continuous and overwhelming exposure to visual media and messages through the channels of television, film, photography, graphics, and other manifestations of the "technological age." Outside of school, these media have been ever-present influences in their lives, both by choice ("Please, Dad, let's go to the movies") and chance ("I'm watching TV 'cause I have nothing else to do"). In addition, many schools have invested in substantial amounts of audio-visual equipment, supplies, and personnel and, by utilizing mediated classroom presentation methods, many teachers are starting to bridge the media/print gap that exists between the non-school and school settings.

But, for most students, their relationship to the media process has been a passive one. They customarily have been in the position of being the recipients in a one-way process; of watching but not participating. In recent years, the recognition of the one-sidedness of this situation has led many educators to express their concern that communication through the visual media should be a two-way process with students taking an active role. To begin to remedy this deficiency, numerous educators have become interested in investigating the area of "Visual Literacy", or "communication through the use of visuals rather than through the use of words," (Audiovisual Instruction, January, 1972), and have designed and implemented Visual Literacy or Visual Communications courses at many schools across the nation.
Some general student goals of these programs have been summarized in *Visual Literacy: A Way to Learn - A Way to Teach* by R. Fransecky and J. Debes:

1. To be able to read visuals made for intentional communication
2. To be able to plan visuals for intentional communication
3. To be able to create visuals for intentional communication
4. To be able to combine visuals and verbals for intentional communication

Many programs have achieved these goals (with varying degrees of success) through the use of a variety of media and activities which provide students with opportunities to communicate with teachers and peers in innovative ways. NRMCD has designed this Visual Communications Kit to meet similar goals in a program designed especially for deaf students.
2. Introduction to the NRMCD Visual Communications Program

Deaf students are especially dependent on their visual communications skills for learning about their environment and for sharing their responses with teachers, parents, and peers. In response to deaf students' needs for adequate and accurate tools for participating in the process of visual communication, the NRMCD has designed a Visual Communications Kit to be used with middle school-aged deaf students. The kit contains the curriculum and materials for a basic course in which students can learn specific competences for analyzing and expressing themselves and their environments through visual channels including photography, graphics, film, and videotape.

Students who participate in the course potentially have the advantage of being able to utilize their newly-learned competences as useful tools for communication in other educational situations.

In designing this kit, the NRMCD had the following general goals in mind:

1. Students will demonstrate effective receptive and expressive visual communications skills: These skills are operationally defined by the 42 curricular objectives and concern specific competences for analyzing and designing mediated materials for the purpose of communication with the students' peers. The NRMCD has chosen to call this kit Visual Communications rather than Visual Literacy to emphasize the importance of the communicative aspects of the media process.
2. Students will demonstrate planning and organizational skills: Students will get practice in planning and carrying out a variety of projects using visual means.

3. Students will continuously interact with each other in a variety of modes: The objectives, activities, and projects are designed to promote active inter-student communication through presentations of student work, student task group activities, and frequent classroom discussions.

4. Students' verbal language development will be facilitated: It is hypothesized that there may be strong parallels between visual and verbal language and that training in one area will enhance a student's capabilities in the other. If this is so, and many educators and researchers are involved in promising research to demonstrate this link, deaf students have much to gain by training of their visual abilities. We do know that students who participate in the Visual Communications course will learn new vocabulary and related skills and will get repeated practice in spoken/signed and written language. We do not know what other beneficial effects concerning language development will result. Therefore, any implications beyond those stated above need to be supported by further research and study.

*Please note that this program can be used with equal effectiveness in classrooms which use both oral and total methods of communication.
3. **Topical Timeline**

A general outline of the topics covered in the curriculum is represented by the following timeline:
4. **Contents of Kit**

This Kit includes:

1. A Teacher's Guide with 42 Worksheets
2. Additional Blank Worksheet forms
3. 67 Prepared Transparencies
4. Assorted Blank and Lined Transparencies
5. A Student Response Form (SRF) Dittomaster
6. 21 5" x 7" Black and White Photographs
7. 10 35mm Color Slides
8. Assorted Spiritmasters
9. Commercially-Produced Materials:
   a. Kodak Photo Discovery Series: PTS I & II
   b. S.E.E. Basic Camera Kit and Teacher's Guide

*Note: Other materials to be obtained by the teacher are described on appropriate worksheets.

This Kit is a prototype model and subject to ongoing evaluation and revision.
5. Who, What, and When?

a. Who should be involved in teaching the Visual Communications course?

Any teacher (or teachers, if the class is to be team-taught), regardless of subject area expertise, can teach the course — no background in art or media is necessary. The main criterion is that he/she has an interest in trying a new program, is willing to follow some basic guidelines, and is committed to spending the necessary time and energy required to successfully implement the curriculum.

b. What class of students should participate?

The individual teacher decides on the criteria for selection of participating students. The only limitations are that the students be approximately 11-15 years old and that the class should be no larger than eight students. The ideal class size is 6-8 students.

Some teachers will want to select students who know each other and have similar backgrounds and language levels. Some teachers will prefer to use exactly the opposite criteria and select a cross-section of students. Some teachers may want to let students volunteer for the class, or will ask other teachers for recommendations of possible candidates. Many teachers will be limited by various scheduling constraints.

Again, the teacher is the key decision-maker in the implementation of this program and he/she should select a group with which he/she feels most comfortable.
c. When should the course be taught?

Approximately 15-20 one and a half to two hour class periods are necessary for full implementation of the program. Classes can meet once or twice a week, depending on the preference of the teacher and scheduling constraints. The class can probably best be handled as an extracurricular activity which meets after school, in the evening, or during daytime free or elective periods.
6. Special Features of the Program

a. Objective-based: Perhaps the most significant difference between this Visual Communications program and others is that this program is objective-based. That is, the entire curriculum is guided by a set of 42 behavioral objectives keyed to sets of activities and materials which are designed to facilitate the attainment of each corresponding objective. Many other programs, although similar in content, are structured solely by a series of activities without specific, identifiable objectives. In this program, the objectives serve to operationalize the general goal of improving the students' visual, or mediated, communication skills and allow the teacher to determine precisely how and when this goal can be reached.

b. "Successful Communication": In order to determine to what extent each student project, no matter how simple, has met the stated objective by successfully communicating the student's intended message to his/her peers, a "successful communication" test is used. For the purposes of this program, "successful communication" is operationally defined as "the information presented is correctly identified by at least one half of the class". After completion of the projects suggested by each objective, each student presents his/her work to the class, and, with the teacher as leader and recorder (using the overhead projector or chalkboard), the class tries to identify the intended message. A general discussion may follow and such questions as "Why did this visual communicate so well?" and "How could this visual be improved?" can be considered.
The application of this test is critical for the success of the program because through this vehicle students will be able to immediately evaluate their own efforts and will obtain useful information on how to make improvements. During the individual evaluations, the classroom atmosphere should be friendly and supportive rather than judgemental. Students should be praised and encouraged for participation and willingness to accept constructive criticism as well as for high-quality work.

c. **Flexibility:** This program relies on the individual teacher to adapt the language used, both in presentation of and response to materials, to the level of each particular class. For this reason, the lower portions of all transparencies have been left blank. In the case of transparencies which present definitions of new terms, this space allows the teacher to clarify or extend the concepts presented whenever necessary. In transparencies which contain illustrations, the teacher may use the spaces to jot down questions or important points made in the classroom discussion.

Although the 42 objectives are presented in a general sequence, the teacher is encouraged to re-order, omit or add objectives of his/her own choosing whenever desirable. Extra blank worksheet forms are included for this purpose.

For these reasons, the ages and achievement levels of participating students can cover a wider range than if the program did not encourage this kind of flexibility and individualization.
d. **Worksheet Format:** The curriculum is organized by a set of 42 worksheets, each of which includes an objective, suggested procedure, description of materials and other related information. The suggested procedure outlined is a process that the teacher can follow to achieve each objective, however, he/she can devise additional steps to supplement or replace those stated. The worksheet format will be described in more detail in Section 5.

e. **Skill and Media Organization:** Objectives in this program are sequenced so that the complexity and level of difficulty of the visual communication skills are increased gradually, and successful completion of each task is contingent on the successful completion of the previous one. The skills and media utilized in the initial phases of the program are fairly simple and familiar (e.g. graphic methods and materials) and build towards the use of more "sophisticated" skills and media (e.g. photography, film, and videotape). In addition, as the expressive activities required of the students become more complex, more emphasis is placed on the planning process.

f. **Group Size:** The group size for participation in activities is intentionally varied to allow students to work and interact in a variety of different situations. Some activities require an individual effort, while others suggest that students work in pairs, small teams (3-4 students), or that they participate in a cooperative venture with the entire group.
g. **Active Student Response:** Each activity is designed to promote active response on the part of the students. Channels are continuously provided for active student response in a variety of modes including writing, oral/total communication, and mediated visual communication. This particular feature of the program is built in for the following reasons: 1. Through these channels, the teacher can continuously monitor student progress towards the completion of objectives. 2. Because they are always actively participating in classroom activities, student interest can be more easily maintained. 3. Students, who have long been passive recipients of mediated messages via print ads, television and film, are taught to take an active role in the media communication process.

h. **Immediate Feedback:** In this program, students participate in many expressive activities which yield tangible results. Because of this feature and the fact that all student-created materials are presented to the entire class for the "successful communication" test, it is desirable that whenever possible, students receive immediate feedback from their teachers and peers on the success of their efforts (in terms of communicative effectiveness) as well as suggestions for improvement.

i. **Interaction:** Since this curriculum is concerned with shaping new and useful communication skills, peer interaction is an important component of the program. Classroom activities are structured so that there are constant opportunities for students to exchange ideas in discussions, cooperative group activities and projects, and in using the "successful communication" test procedure.
7. **Special Features Review Quiz**

1. In this curriculum, students are constantly provided with channels for active ____________.

2. The Visual Communications program is organized by a set of ____________.

3. In order to allow the students to interact in a number of different classroom situations, the ________ of groups for participation in activities is varied.

4. As a means of determining how effectively a particular student project communicated the student's intended message to his/her peers, the ____________ ________ test is used.

5. The skills and media utilized are sequenced so that they gradually become more ____________.

6. Unlike similar programs which are defined only by a set of activities, the Visual Communications kit is guided by a set of ____________ ________.

7. Through the process of class discussion and the "successful communication" test, students get ________ ________ on the results of their projects.

8. This program is not intended to dictate procedures which must be followed in all cases; rather, the teacher is encouraged to utilize it in as ____________ a manner as possible to suit his/her class.

9. Classroom activities are structured to facilitate ongoing student ____________ through discussions, group projects, and the "successful communication" procedure.
10. "Successful Communication" is operationally defined as...
Answers to Review Quiz:

1. response
2. worksheets
3. size
4. "successful communication"
5. complex
6. behavioral objectives
7. immediate feedback
8. flexible
9. interaction
10. the information presented is correctly identified by at least one half of the class.
8. Worksheet Format

The 42 worksheets, which comprise the basic component of this kit, are designed to guide the teacher in his/her use of the visual communications materials. Each worksheet contains five sections: General Information, Objective, Suggested Procedure, Media and Materials, and Comments, each of which is described as follows:

1. General Information Section: This section briefly describes the general topic of the objective, whether it is a receptive (students respond to stimulus materials) or expressive (students select or design mediated messages) visual communications activity, classwork or homework, a group or individual activity, and the projected time for completion of that particular objective.

Example:

<table>
<thead>
<tr>
<th>#20</th>
<th>Subject: Emotions Projected Time: 20 mins</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Receptive: ___ Classwork: X Group: ___</td>
</tr>
<tr>
<td></td>
<td>Expressive: X Homework: ___ Individual: X</td>
</tr>
</tbody>
</table>

2. Objective Section: This section contains a behavioral objective (including corresponding criterion test) for the stated topic.

Example:

Objective #20 Given appropriate materials, student will successfully communicate 4 of the following emotions using a single line drawing: anger, fear, loneliness, nervousness, confusion, joy, sorrow, surprise.**
3. **Suggested Procedure Section:** The step-by-step process for the facilitation of teacher and student responses is outlined in this section. Media and materials which are to be utilized in conjunction with each particular objective are briefly described.

**Example:**

**Suggested Procedure:** (for #20)

1. Teacher distributes materials and explains assignment according to objective.
2. Students complete the 4 drawings and label the intended emotion on the back of each.
3. Students show final products to class for standard criterion (Successful Communication) test.

4. **Media and Materials Section:** Two types of media and materials are listed:

   a. **Included in Kit:** Transparencies, slides, still photos, student response form ditto masters (SRF), graphics, and other provided materials are listed.

   b. **Teacher Supplied:** This category includes teacher-made or selected materials, raw materials to be obtained, equipment to be utilized, and commercially available materials to be obtained.

**Example:**

**Media & Materials:** (for $20)

*Teacher Supplied:*
Either:

1. crayons or magic markers and paper
or 2. photographic developer, brushes and photographic printing paper.

5. Comments Section: Additional information relating to any of the above sections is stated here.

Example:

Comments: (for #20)

** Teacher or students may want to suggest other choices of emotions.
9. **How to Start...**

1. Read the introductory material (Sections 1-9) in the *Teacher's Guide*.
2. Take the review quiz following the Special Features section.
3. Read through the worksheets (Section 10) and examine corresponding materials as indicated.
4. In reading the worksheets, please make special note of equipment and/or materials which must be obtained by the teacher prior to a particular session.
5. Read follow-up material (Sections 11 and 12).
6. Arrange with the appropriate personnel at your school for a designated weekly or semi-weekly time slot of 1 1/2 - 2 hours to hold the Visual Communications class.
7. Arrange with the appropriate personnel for a suitable meeting place. Any well-lit, spacious room with desks and room for an overhead projector will be adequate. If at all possible, you should obtain a room with a sink, as this facility will be very helpful when students work on the photography objectives of the curriculum.
8. Select 6-8 students to participate in the class. The procedure used for selection of students is decided upon by the individual teacher.
9. Be prepared to enjoy the course along with your class. Students and teachers who were involved in the pilot program not only learned some new and useful skills, but also had a lot of fun in the process.
10. Worksheets...
Subject: Communication-definition

VISUAL COMMUNICATIONS

Receptive: X  Classwork: X  Group: X
Expressive: ____  Homework: ____  Individual: ____

Objective: Each student writes an acceptable definition* of "communication" on his/her student response form (SRF).

Suggested Procedure: 1. Class discussion: sample questions:
How is the word "communication" defined?
How do people communicate with each other?
What kinds of things do people communicate daily to each other?

2. Teacher shows prepared definition on transparency.

3. If necessary, teacher clarifies vocabulary/concept (on blank portion of the transparency) according to the language level (See next page)

Media & Materials:
Included in kit: 1. Student response form (SRF) master
2. Transparency #1 with definition of "communication" as "the process of sharing information with others."

Teacher supplied: 1. Copies of response form for each student
2. Manilla envelopes or folders (12"x15" minimum) for each student
3. Overhead projector

Comments: *The specific language used in the definition will be judged appropriate for the particular class and student by the teacher.
Subject: ____________________________

VISUAL COMMUNICATIONS

Receptive: _______  Classwork: _______  Group: _______
Expressive: _______  Homework: _______  Individual: _______

Objective:

Suggested Procedure: of students.

4. Students write definition on student response form (SRF), and place this form in an individual student folder. (see #5)

5. Teacher distributes individual student folders, and explains that all classwork and homework is to be placed in these folders after each class. Teacher collects folders after each class.

Media & Materials:

Comments:
COMMUNICATION:

The process of sharing information with others

Northeast Regional Media Center for the Deaf, University of Massachusetts, Amherst, Mass.
Projected Time: 10-15 mins.

Subject: Visual Communication-definition

VISUAL COMMUNICATIONS

Receptive: x Classwork: x Group: x
Expressive: ___ Homework: ___ Individual: ___

Objective: Each student writes an acceptable definition* of "visual communication" on his/her student response form and lists** at least 5 ways that visual communication takes place.

Suggested Procedure: 1. Class discussion: Sample questions:
   How is the term "visual communication" defined?
   Name some ways in which people communicate visually to each other.

   2. Teacher shows prepared transparency with definition.

   3. Students write definition on SRF.

   4. Teacher shows transparencies which illustrate many visual (See next page)

Media & Materials: Included in kit: 1. SRF master
   2. Transparency #2 with definition of "visual communication" as "the process of sharing information through the use of sight."
   3. Transparencies #3-8 illustrating many visual modes:
   3. Use of Graphic materials to communicate information visually, 4. Use of paint/use of photography, 5. Use of labels on food products/use of billboards for advertisements, 6. Use of line (See next page)

Comments: *The specific vocabulary and phrasing will be judged appropriate for the particular class and student by the teacher. **and/or illustrates (optional)
Subject: Visual Communications

Receptive: _____  Classwork: _____  Group: _____
Expressive: _____  Homework: _____  Individual: _____

Objective:

Suggested Procedure: modes.

5. Students list 5 ways to communicate visually on SRF.

6. Teacher explains that this course will teach students how to communicate with each other using different visual means.


Teacher supplied: 1. Overhead projector
2. Copies of SRF for each student

Comments:
VISUAL COMMUNICATION:

The process of sharing information through the use of sight

Northeast Regional Media Center for the Deaf, University of Massachusetts, Amherst, Mass.
Northeast Regional Media Center for the Deaf, University of Massachusetts, Amherst, Mass.
Projected Time: 10-15 mins.

Subject: "Successful Communication"-definition

VISUAL COMMUNICATIONS

| Receptive: X | Classwork: X | Group: X |
| Expressive: | Homework: | Individual: |

Objective: Students write the functional definition of "Successful Communication" on their SRF's.

Suggested Procedure:
1. Teacher shows and explains the transparency which defines "successful communication."
2. Teacher shows and explains transparency #10 illustrating example of successful communication test.
3. Teacher shows sample illustrations on transparencies and allows the class to identify the story or mood.
4. Teacher records student responses and shows if success (See next page)

Media & Materials:

<table>
<thead>
<tr>
<th>Included in kit:</th>
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<tbody>
<tr>
<td>1. SRF master</td>
</tr>
<tr>
<td>2. Transparency #9 with definition of &quot;successful communication&quot; as &quot;the information presented is successfully identified by at least 1/2 of the class.&quot;</td>
</tr>
<tr>
<td>3. Transparency #10 with example of successful communication test: Teacher unmasks one section at a time and records voting on transparency.</td>
</tr>
<tr>
<td>4. Transparencies #11-14 illustrating a mood or simple (See next page)</td>
</tr>
</tbody>
</table>

Comments:
Subject: ________________________________

VISUAL COMMUNICATIONS

Receptive: _____
Expressive: _____
Classwork: _____
Homework: _____
Group: _____
Individual: _____

Objective:

Suggested Procedure: criterion has been met.

5. Students write definition on SRFs.

Media & Materials:


Teacher supplied: 1. Overhead projector 2. Copies of SRF

Comments:
SUCCESSFUL COMMUNICATION:

The information presented is correctly identified by at least \( \frac{1}{2} \) of the class.
example: what emotion is being expressed by this face?

our class has ____ students.

____ students say __________________

____ students say __________________

____ students say __________________

the person who drew the face wanted it to express happiness.

if 50% or more of our class identified it correctly, then the emotion was __________________________.
Projected Time: 5-15 mins.

Subject: Environment-definition

VISUAL COMMUNICATIONS

Receptive: x  Classwork: x  Group: x
Expressive:  Homework:  Individual:

Objective: Each student writes an acceptable definition of "environment" on his/her SRF and lists 5 environments.

Suggested Procedure: 1. Class discussion: Sample questions:
   What is meant by the word "environment"?
   Describe your classroom environment.
   Name some other environments.

   2. Teacher shows prepared transparency with definition.
   3. Teacher shows transparencies of several environments.
   4. Students write definition on SRFs and list 5 environments.

Media & Materials:
   Included in kit: 1. SRF
                   2. Transparency #15 with definition of "environment" as "everything that is around us."
                   3. Transparencies #16-20: of different environments:

   Teacher supplied: 1. Copies of SRF
                      2. Overhead projector
                         (See next page)

Comments:
Subject: VISUAL COMMUNICATIONS

<table>
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<tr>
<th>Receptive:</th>
<th>Classwork:</th>
<th>Group:</th>
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<th>Expressive:</th>
<th>Homework:</th>
<th>Individual:</th>
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Objective:

Suggested Procedure:

Media & Materials:

| 3. Optional: Teacher may select magazine photos and illustrations of environments to supplement those included in kit. |

Comments:
ENVIRONMENT:

Everything that is around us
Subject: Environments

Projected Time: 30-40 mins.

VISUAL COMMUNICATIONS

Receptive: 
Expressive: X

Classwork: X
Homework: 

Group: 
Individual: X

Objective: Given pencils, crayons, magazines, and paper, each student creates an environment which will be successfully communicated according to definition in objective #3.

Suggested Procedure: 1. Students are given materials and instructions to create an environment of their choice and to write the name of the environment on the back of their finished work.

2. Each student shows his/her finished collage or illustration to the class and they try to correctly identify it.

3. Teacher records responses for each student and indicates if success criterion is met in each case.

Media & Materials:

Teacher supplied: 1. Pencils, crayons, magazines, glue, paper

Comments:
Subject: Environments-senses

Projected Time: 10-20 mins.

VISUAL COMMUNICATIONS

Receptive: X  Classwork: X  Group: X
Expressive:  Homework:  Individual:  

Objective: Given a dittoed illustration of a person, each student correctly labels the 5 senses in the appropriate blank spaces.

Suggested Procedure: 1. Teacher projects transparency of a person, and asks students to come to the overhead and write in the names of the 5 senses in the appropriate blanks on the transparency.

2. Class discussion: How do we learn about the environment? Give some everyday examples of learning about the environment through the use of the 5 senses.*

3. Sensory exercises:
   3.1. Feeling box – students identify 5-10 common objects (See next page)

Media & Materials:

Included in kit: 1. Transparency #21 of a person with labeling blanks.

Teacher supplied: 1. Copies of SRF
2. Overhead projector
3. Materials for 3.1 and 3.2

Comments: *Answers might include identifying dinner menu by cooking odors, reaching under the bed to find slippers, reading road signs, etc.
Subject: VISUAL COMMUNICATIONS

Receptive: ____  Classwork: ____  Group: ____
Expressive: ____  Homework: ____  Individual: ____

Objective:

Suggested Procedure: (such as a light bulb, hair brush, screw driver, etc.) which are passed around concealed in a cloth sack or box by their sense of touch.

3.2. Smelling bottles - students identify 5-10 common foods (such as mustard, lemon, onions, spices, etc.) which are passed around concealed in opaque bottles or covered paper cups by their sense of smell.

4. Students label the 5 senses on their own SRFs.

Media & Materials:

Comments:
Northeast Regional Media Center for the Deaf, University of Massachusetts, Amherst, Mass.
Subject: Visuals

**VISUAL COMMUNICATIONS**

<table>
<thead>
<tr>
<th>Receptive: X</th>
<th>Classwork: X</th>
<th>Group: X</th>
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</thead>
<tbody>
<tr>
<td>Expressive:</td>
<td>Homework:</td>
<td>Individual:</td>
</tr>
</tbody>
</table>

Objective: Students list 5 reasons (as per 1.1-1.5 below) on the SRF that visuals can fail to successfully communicate an idea.

Suggested Procedure: 1. Teacher projects transparencies which illustrate 5 ways that visuals can be failures. Teacher writes the appropriate reason in the blank space on each transparency. Students participate in the following activities:

1.1 Unclear: Students try to identify out-of-focus slides of common objects (trees, groceries, etc.) as the teacher slowly focuses them.

1.2 Incongruous: Students view transparencies where some objects are unrelated to the others and do not belong in the picture. (See next page)

Media & Materials:

Included in kit: 1. SRF form master  
2. 10 slides for 1.1  

Comments:
Subject: VISUAL COMMUNICATIONS

Receptive: _____

Classwork: _____

Expressive: _____

Group: _____

Homework: _____

Individual: _____

Objective:

Suggested Procedure:

1.3 Too much information: Students view transparencies with a confusing jumble of objects, people, etc. Discussion: What is going on? Why is this visual confusing?

1.4 Not enough information: Students view transparencies with only one or two objects in a setting and state why a particular idea is not successfully communicated and what could be added to "successfully communicate" that idea. Also, progressive disclosure of transparencies (by teacher) and photos from magazines (selected by teacher) as students try to guess what is going on in the visual. (See next page)

Media & Materials:

5. Transparencies #29-32 for 1.4: 29. Bucket of water on chair. (Discussion: What is going on here? Why is this visual confusing?), 30. Overlay for #29. Water dripping into bucket with hand mopping it up, 31. Boy angry because wheel has rolled off his wagon and groceries will spill. (Note: Uncover transparency slowly form left to right. Discussion: What do you think is going on here?), 32. Man sick in bed with a cold. (See note for #1.)

6. Optical illusion transparencies #33-36 for 1.5

Comments:

33. Which broken line is longer? (Both are the same length), 34. Is this a perfect square? (Yes), 35. Are the four horizontal lines parallel? (Yes), 36. Does this object have 2 or 3 parts? (No answer. Show transparency with hand masking the middle of the figure.)
Subject: VISUAL COMMUNICATIONS

Receptive: _____ Classwork: _____ Group: _____
Expressive: _____ Homework: _____ Individual: _____

Objective:

Suggested Procedure:

1.5 Optical illusion: Students try to respond to transparencies of optical illusions. Discussion: Did your eyes ever "play tricks" on you?

2. Students list 5 reasons on SRFs.

Media & Materials:

Teacher supplied: 1. 35 mm slide projector
2. Overhead projector
3. Copies of SRF
4. Photos from magazines

Comments:
Subject: Symbols - definition and examples

Objective: Students write the definition of the word "Symbol" and list four functions of symbols on his/her SRF.

Suggested Procedure: 1. Teacher shows and discusses transparency defining "Symbol".
2. Teacher shows and discusses transparencies which illustrate students identify symbols. Teacher discusses the four functions of symbols - to give warnings, directions, information, and identification - in relation to the examples.
3. Students suggest other examples and draw them.
4. Students write definition and four functions on SRF.

Media & Materials:
1. SRF master
2. Transparency with definition of "Symbol" as "something chosen to stand for something else." (#40)
3. Transparencies #41-45 for 2: 41. (Note: Unmask each transparency #41-44 one symbol at a time).
   (Note: Not all possible meanings have been listed for each symbol) Female (woman) / royalty (king, queen) / police (law, sheriff) / male (man),
   42. Peace / division / prescription (drug) / time,
   43. Money (dollars) / and / per cent / railroad

(See next page)
Subject: 

VISUAL COMMUNICATIONS

Receptive: _____ Classwork: _____ Group: _____
Expressive: _____ Homework: _____ Individual: _____

Objective:

Suggested Procedure:

Media & Materials: crossing, 44. Peace / USA / good luck / good luck, 45. Thank you (be happy, "A" grade) / poison (danger) / sun (warmth, summer) / savings (thrift, bank).

Teacher supplied: 1. Overhead projector
2. Copies of SRF

Comments:
Subject: Symbols

VISUAL COMMUNICATIONS

<table>
<thead>
<tr>
<th>Receptive:</th>
<th>Classwork:</th>
<th>Group:</th>
<th>Expressive:</th>
<th>Homework:</th>
<th>Individual:</th>
</tr>
</thead>
</table>

Objective: Student designs a symbol which successfully communicates its meaning for an assigned school room or area.

Suggested Procedure:

1. Teacher shows transparencies of common symbols.

2. Teacher randomly distributes pieces of paper which have the name of a school room written on each (e.g. rest room, library, cafeteria, teachers room, gym, fire exits, fountain, science lab, auditorium, nurse, yard, parking lot, phone, etc.) and describes the following situation: A group of foreign visitors who do not speak English are coming to visit the school and the class has been assigned to design symbols to direct the visitors around the building. Each student will design one. (See next page)

Media & Materials:

Included in kit: 1. Transparency #46 for 1: Fishing area / drinking water / docking for boats / sailing / tunnel / post office (mail box)

Teacher supplied: 1. Cut out pieces of paper with names of school rooms written on them

2. Crayons and paper

3. Overhead projector

Comments:
Subject: Visual Communications

Receptive:_____ Classwork:_____ Group:_____
Expressive:_____ Homework:_____ Individual:_____ 

Objective:

Suggested Procedure: symbol using crayons and paper.

3. Teacher will post finished symbols around room and students try to identify the rooms which they represent.

Media & Materials:

Comments:
Subject: Visual-Verbal

VISUAL COMMUNICATIONS

Receptive: X
Expressive: 

Classwork: X
or
Homework:  

Group:______
Individual: X

Objective: Given an illustration each student writes a one paragraph description of it.*

Suggested Procedure:
1. Teacher shows 2 sample transparencies with illustrations and, with class input, writes a description of each.
2. Teacher distributes a magazine, photo, or illustration to each student and gives appropriate directions (classwork or homework) to the class.
3. Each student presents his/her completed assignment to the class.

Media & Materials:
Included in kit: 1. Transparencies #47 and #48 for 1: 47. Picnic scene, 48. Undersea diver scene
                2. Blank lined transparencies for student use

Teacher supplied: 1. Overhead projector
                2. Transparency markers for each student
                3. Cut out magazine photos and illustrations for each student

Comments: *Language used will be judged appropriate for each individual student by the teacher.
Subject: Emotions

VISUAL COMMUNICATIONS

Receptive:____  Classwork: X  Group:____
Expressive: X  Homework:____  Individual: X

Objective: Given appropriate materials,* the student will successfully communicate 4 of the following emotions using a single line drawing: anger, fear, loneliness, nervousness, confusion, joy, sorrow, surprise.**

Suggested Procedure: 1. Teacher distributes materials and explains assignment according to objective.
   2. Students complete the 4 drawings and label the intended emotion on the back of each.
   3. Students show final product to class for successful communication test.

Media & Materials:
   *Teacher supplied: Either:
      1. Crayons or marking pens and paper
      Or
      2. Photographic developer, brushes, and photographic printing paper

Comments: **Teacher or students may want to suggest other choices of emotions.
Subject: Story Theme-captioning

VISUAL COMMUNICATIONS

Receptive: _____
Expressive: X

Classwork: X
Homework: _____

Group: _____
Individual: X

Objective: Given a cartoon strip showing 4 frames of action with blank caption bubbles, students fill in words to tell a story.

Suggested Procedure: 1. Discussion format: Teacher demonstrates how visuals can tell a story by showing 2 sample cartoon strips and (with class input) filling in the captions.

2. Teacher distributes strips to students who fill them out and present them to the class.

Media & Materials:

Included in kit: 1. Transparencies #51 and #52 for: 51. 4 frame story of girl and butterfly, 52. 5 frame story of boy and girl and goldfish

Teacher supplied: 1. Crayons or marking pens for students
2. Overhead projector
3. 4 frame cartoon strips (constructed from commercial materials, comics, etc.) with words cut out of caption bubbles

Comments:
Subject: Translation-verbal-visual

VISUAL COMMUNICATIONS

Receptive:  
Expressive:  X

Classwork:  X  
or
Homework:  X

Group:  
Individual:  X

Objective:  Given a transparency of a poem,* the student illustrates it using a series of at least 3-5 illustrations (drawn or cut from magazines).

Suggested Procedure:  
1. Teacher presents sample of above.
2. Teacher distributes stimulus poems and materials and students complete assignment.
3. Students present finished products to class.

Media & Materials:

Included in kit:  

Teacher supplied:  
1. Magazines, crayons, and related materials
2. Stimulus poems for 2
3. 1 overhead projector (two would be preferable so that the poem and illustrations can be projected simultaneously).

Comments:  *Teacher (or students) supply own poems / stories and may want to consult English/Language Arts teacher for suggestions of materials relating to the student's work in that class.
Subject: Visual Essay-storyboarding

VISUAL COMMUNICATIONS

Receptive: ______ Classwork: X Group: ______
Expressive: X Homework: ______ Individual: X

Objective: Student writes a story of 1-3 sentences and creates a 3-5 frame storyboard to express and successfully communicate that story. Student executes the storyboard using magazine photos or drawn illustrations.

Suggested Procedure: 1. Teacher shows transparency of storyboard and explains its purpose—that planning is made easier and the final product is well organized.

2. Teacher writes sample story* and, with class input, sketches 3-5 frames of the storyboard to convey the story.

3. Each student writes a 1-3 sentence story and develops a transparency storyboard (3-5 frames) to convey the story.

(See next page)

Media & Materials:
Included in kit: 1. Transparency #61 with definition of storyboard as "a form used for planning the visuals in a story."
2. Storyboarding form transparency #62

Teacher supplied: 1. Overhead projector
2. Appropriate materials

Comments: *Sample stories: Dog saves drowning child; presenting and opening present at a birthday party; playing and winning a basketball game, etc.
Subject: VISUAL COMMUNICATIONS

Receptive:_____ Classwork:_____ Group:_____
Expressive:_____ Homework:_____ Individual:_____

Objective:

Suggested Procedure: 4. Student presents storyboard to class for successful communication test.
5. Student executes storyboard using appropriate materials.
6. Student presents finished product to class.

Media & Materials:

Comments:
A girl throws stick; dog is ready to fetch it.

Dog fetches stick; girl is watching.

Close up of girl hugging dog.
Projected Time: 2 class periods

Subject: Photography

VISUAL COMMUNICATIONS

Receptive: __________
Classwork: X

and
Expressive: X
Homework: X

Group: X
Individual: X

Objective: Given appropriate equipment, students working in groups of two use storyboarding form to choose a subject and plan a photographic series illustrating the numbers 1-3. Students carry out assignment by shooting and printing appropriate photos.

Suggested Procedure: 1. Teacher fills in sample transparency of storyboarding form and shows corresponding photo series.

2. Students are given forms to complete during class period. Equipment will be distributed so that student pairs can complete assignment as homework.

3. If possible, teacher should arrange to have students develop and print photos before the start of the next class, or to have the film commercially processed.

Media & Materials:

Included in kit: 1. Photographic materials
2. Three sample photos for 1: Subject: railroad
   One car, two crossing lights, three sections of track.
3. Storyboarding

Teacher supplied: 1. Teacher drawn in storyboard on transparency
2. Overhead projector
3. Copies of storyboarding

Comments:
Subject: Photography

VISUAL COMMUNICATIONS

Receptive:____  Classwork:  X  Group:____
Expressive: X  and  Homework:  X  Individual: X

Objective: Given appropriate materials and an assigned* theme (e.g. "my favorite place" or "being different"), the student will plan, implement, and successfully communicate the theme taking a series of 3-5 photographs.

Suggested Procedure: 1. Teacher draws and discusses transparencies of storyboards for 2 series of sample photos.
2. Teacher distributes themes, storyboarding forms, and appropriate equipment.
3. Each student fills out the storyboarding form in class.
4. Students shoot corresponding photo series for homework.

(See next page)

Media & Materials:

Included in kit: 1. Photographic materials
2. Seven photos for 1: Obj. 31 --
   1. Theme: My favorite place -- 3 boat yard pi
   2. Theme: Fire hydrants -- 4 different views

(See next page)

Comments: *Teacher may decide to allow each student to select a theme of his/her choice.
Projected Time: 

Subject: ____________________________

VISUAL COMMUNICATIONS

Receptive: ______ Classwork: ______ Group: ______
Expressive: ______ Homework: ______ Individual: ______

Objective: __________________________

Suggested Procedure: 5. If possible, teacher should arrange to have students develop and print film before the start of the next class, or to have the film commercially developed.

Media & Materials:

Included in kit: 3. Storyboarding master form

Teacher Supplied: 1. Teacher draws in storyboarding on transparency.
2. Overhead projector
3. Copies of storyboarding form
4. List of themes

Comments: __________________________
Objective: Student defines the word "animation" on SRF and demonstrates 5 ways to animate figures in a film.

Suggested Procedure: 1. Teacher shows and discusses transparency with definition of "animation".

2. Using the overhead projector and included materials, teacher demonstrates the following 5 animation techniques:
   2.1 Object jointed by strings
   2.2 Object jointed by fasteners
   2.3 Simple progressive motion of single and groups of objects
   2.4 Illusion of increasing and decreasing in size (e.g. billowing pipe smoke) (See next page)

Media & Materials:

Included in kit: 1. Transparency for 1  
2. Materials for 2  
3. SRF masters

Teacher supplied: 1. Overhead projector  
2. Copies of SRF  
3. Optional -- Film for 4

Comments: *Objectives 32-37 are optional depending on availability of 8mm film equipment.
Subject: Visual Communications

Objective:

Suggested Procedure:
2.5 Relative motion (e.g. rock going through a window)
3. Students write definition on SRF and individually demonstrate animation techniques to the teacher.
4. Optional -- Teacher shows sample animated film, if possible, one which is student-produced.

Media & Materials:

Teacher supplied: 1. Overhead projector
2. Copies of SRF
3. Optional -- Film for 4

Comments: *Objectives 32-37 are optional depending on availability of 8mm film equipment.
For OBJECTIVE #32

Animation Demonstration: cut out the following forms and use on the stage of an overhead projector to demonstrate ways to animate figures for a film. Figures should be moved very slowly.

(1.) To make an object appear to increase or decrease in size, e.g. billowing smoke from a pipe.

- Start with smoke puff #1 and then overlay larger puff #2, #3.

(2.) To show movement of a single object, e.g. airplane flying over mountain peaks:

Plane can also be shown flying behind peaks and reappearing.
3.) To show movement of part of one object, e.g. cat's tail moving, person walking

Attach tail to body with paper fastener.

Attach feet to body with 2 strands of tape and thread. Place tops of legs on body to eliminate gap.
4.) To show motion of two objects, e.g., waves in sea.

Place one strip on top of other and slowly move one or both side to side and up and down.

(5.) To show motion of many objects, e.g., letters in a word.

Letters can scramble all over the stage of the projector and finally form words.
Subject: Film-animation

VISUAL COMMUNICATIONS

Receptive: ____
Expressive: X

Classwork: X
Homework: ___

Group: X
Individual: ___

Objective: As a class, students choose and list a subject or story, environment, title, characters, storyboard a sequence of events for an animated film. The finished product will be shown to another class of comparable age and level and must successfully communicate the story.

Suggested Procedure: 1. Teacher leads discussion and writes on a transparency outline of elements of film (as stated above) as determined by majority vote of class.

Media & Materials:
Included in kit: 1. Blank transparencies
Teacher supplied: 2. Overhead projector
Subject: Film-animation

VISUAL COMMUNICATIONS

Receptive: ____ Classwork: X Group: ____
Expressive: X Homework: ____ Individual: X

Objective: Given an 8 mm/super 8 mm movie camera, tripod and poster, the student will be able to set up the equipment to frame the poster and will respond appropriately to the following directions: focus, zoom, pan, tilt, close-up shot, medium shot, long shot.

Suggested Procedure: 1. Teacher shows and discusses each of the above terms on a transparency and demonstrates each using the overhead projector (to demonstrate "focus") and camera (for all terms).

2. Each student demonstrates to the teacher his/her ability to respond appropriately to these terms.

Media & Materials: Included in kit: 1. Transparencies 64-66 illustrating terms: 64. Definition of "animation," 65. Long shot/medium shot/close up, 66. Pan (slowly move camera horizontally either to the right or left).

Teacher supplied: 1. 8 mm/super 8 mm movie camera and tripod
   2. Sample poster(s)

Comments:
Subject: Film-animation

Projected Time: 1-2 hours
(including #37)

VISUAL COMMUNICATIONS

Receptive: _____  
Expressive: X

Classwork: X  
Homework: _____

Group: X  
and Individual: X

Objective: Each student* chooses an event, plans it using a storyboarding form and executes it by manipulating the figures and directing the cameraperson for a 15-second filmed sequence.

Suggested Procedure:  
1. Students complete storyboarding forms which will be checked by teacher.
2. Students execute objective for filming (See #37)

Media & Materials:

Included in kit: 1. Storyboarding form master

Teacher supplied: 1. Copies of storyboarding form
2. Camera, tripod and film

Comments: *If the class is large, students may work in pairs.
Subject: Television

VISUAL COMMUNICATIONS

Receptive: _____
Expressive: X

Classwork: X
Homework: _____

Group: X and _____
Individual: X

Projected Time: 1-2 class periods

Given appropriate videotape equipment and working in two groups, each group plans* in writing (on storyboarding form) and then executes a 3-5 minute skit to express a chosen story. The group which is not producing/acting serves as camera crew and responds appropriately to camera directions given. The skits must successfully communicate the story to another class of similar age and level.

Suggested Procedure:
1. Students divide into two groups and prepare their skits on the storyboarding form.
2. The two groups take turns as production and camera crews.**
3. Close teacher supervision may be necessary for this activity in order to prevent damage to equipment.
4. Completed tapes will be shown to the class and then to another class for the successful communication test.

Media & Materials:
Included in kit: 1. Storyboarding form master
Teacher supplied: 1. Appropriate videotaping and viewing equipment
2. Copies of storyboarding form

Comments:
*Planning includes determination of story, sequence of events, individual job assignments, special camera shots, etc.
**If time permits, students may be allowed to re-take scenes or the entire skit on the basis of needs determined by the groups during the initial playback.
11. How to Extend Visual Communications Skills

The teacher can help students to utilize their newly-acquired skills in other educational situations.

Some Suggested Strategies:

1. Encourage other teachers who have contact with participating students to become interested in the Visual Communications program by...
   - talking with them and describing projects that the students have been involved in
   - encouraging the students to talk with other teachers and students about the program
   - arranging to show some products - graphics, photos, film, videotapes, etc. - to other classes as a special event
   - setting up a bulletin board (preferably in a public hall) documenting what the class has done

2. Hold an informal discussion session with your students and get specific suggestions from them on how they can further use visual communications skills in other classes. Present these suggestions to the appropriate teachers.

3. Suggest to other teachers specific ways in which you think students might be allowed to fulfill regular class assignments or complete extracurricular projects using newly-acquired skills. Some examples:
   - For a science class: Student takes a series of photos on flowers, rocks, etc.
- For an English class-Student illustrates a poem or story and presents it to the class.
- For a math class-Student(s) make an animated film on a particular number concept.
- For a social studies class-Student makes a collage to illustrate events in the life of a famous person.
APPENDIX D

STUDENT RESPONSE FORM
I. Communication:

2. Visual Communication:
   a. List five ways to communicate visually:
      ________________________________
      ________________________________
      ________________________________
      ________________________________
      ________________________________

3. Environment:
   a. List five examples of environments:
      ________________________________
      ________________________________
      ________________________________
      ________________________________
      ________________________________
4. What are the five senses?

5. Successful Communication:

6. List five reasons that visuals can fail to successfully communicate information:

7. Realistic:

Abstract:

8. Symbol:
   A. Functions of Symbols:
      1. ____________________
      2. ____________________
      3. ____________________
      4. ____________________
3. Emotion or mood:

10. Story:

11. Storyboard:

12. Animation:
APPENDIX E

PRELIMINARY QUESTIONNAIRE
1. Who will be teaching the Visual Communications Course? Please list names, positions, and general background including # of years teaching:

2. How many students will be participating in the Course? 

Please list first names, ages, grade, hearing loss (mild, moderate, or profound), other handicaps, and other relevant information.

3. How were these students selected for the course?
4. How many times per week will the course meet? 

Please state on which days, times, and the length of each class:

5. What is the starting date?

PLEASE RETURN AS SOON AS POSSIBLE TO JILL DARDIG, NRMCD IN ATTACHED ENVELOPE.
APPENDIX F

SAMPLE REINFORCEMENT LETTER
Dear (Principal or Sup't):

During the current semester, your school has been participating as a site in the field testing of the NRMCD Visual Communications Program. As you may already know, this is an experimental program designed to improve deaf students' receptive and expressive communication skills using visual means of interaction in a language stimulating environment. We are writing to you to express our appreciation for the cooperation and efforts of your staff members who are involved in this endeavor.

When the Visual Communications Program was still in the planning stages, (Contact(s)) became interested in the project. At this point, he/she gave important input to us regarding the development and use of the field test materials and later made all the special arrangements for the program to be implemented at the (school). We are especially grateful to (teacher(s)) who was willing and eager not only to try out a new program that could be of potential benefit to his/her students, but also to do the extra and often time-consuming work in terms of planning, teaching, and evaluation that goes along with trying out any experimental venture. Their expertise has been extremely valuable to us in the critical field test and evaluation phase of this program.

Again, our thanks to you and your staff and students for joining us in our efforts to provide new and useful materials for classroom use.

Sincerely,

Jill Dardig
Research Assistant

Raymond Wyman
Director

JD:RW:sh
APPENDIX G

OBJECTIVE COMPLETION CHECK SHEET
<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
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<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
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</thead>
</table>

- **Student successfully completed objective**
- **Student did not successfully complete objective**
- **Student absent or objective not attempted**
<table>
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<th>Student's Name</th>
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<th>16</th>
<th>17</th>
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<th>24</th>
<th>25</th>
<th>26</th>
<th>27</th>
<th>28</th>
</tr>
</thead>
</table>

- **Student successfully completed objective**
- **Student did not successfully complete objective**
- **Student absent or objective not attempted**
<table>
<thead>
<tr>
<th>Students First Names</th>
<th>29</th>
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<th>38</th>
<th>39</th>
<th>40</th>
<th>41</th>
<th>42</th>
</tr>
</thead>
</table>

- **V** = Student successfully completed objective
- **X** = Student did not successfully complete objective
- **?** = Student absent or objective was not attempted
APPENDIX H

OBJECTIVE AND MATERIALS EVALUATION SHEETS
1. Objective # ____ (one for each of 42 objectives).
2. Date ____________________.
3. Number of students attempting objective ______.
4. Number of students successfully completing objective ____.
5. Did you follow the suggested procedure? ______.
6. If not, please indicate any changes, additions, or deletions that you made:

7. Do you recommend any changes in the objective?

8. Do you recommend any changes in the material?

9. Comments:

10. How did you define "acceptable definition" in this objective? (#10 included when appropriate)
APPENDIX I

STUDENT EVALUATION QUESTIONNAIRE
STUDENT EVALUATION

1. List some things that you liked about the Visual Communications class:

2. List some things that you didn't like about the Visual Communications class:

3. Which were your favorite activities?

4. What other things would you have liked to do in the class?

5. Can you use what you learned in the Visual Communications class in other classes?

   In what ways?
APPENDIX J

POST-COURSE QUESTIONNAIRE
FINAL EVALUATION QUESTIONNAIRE FOR NRMCD VISUAL COMMUNICATIONS PROGRAM

1. Please list and briefly describe the strengths of the Visual Communications Program (be as specific as possible):

2. Please list and briefly describe the weaknesses of the program (be as specific as possible):

3. Did you call the class "Visual Communications"? Yes_______ No_______
   If no, what did you call it?________________________________________

4. Do you feel that there is a need and use for this program in schools for the deaf? Yes_______ No_______
   Please explain:

5. Do you consider this program innovative or practically the same as other programs? Why?
6. For what specific conditions do you feel the materials are most useful?

7. Are there any learner characteristics that might limit the usefulness of the materials?

8. Does the program provide adequate opportunities for student interaction and communication? Yes______ No______
   If yes, please cite specific examples:

9. In your estimation, do the students interact more, less, or the same as in other classes? More _______ Less _______ Same _______
   If you checked more or less, please list possible reasons for above:

10. Do the materials and/or activities serve as stimuli for language development on the part of the students? Yes______ No______
    If yes, please cite specific examples:
11. Do the materials appear to have high interest value for the students?

12. Please describe any incidents of students relating what they were learning in the class to experiences outside of class:

13. Please list suggestions you have for improvement of the Teacher's Guide:

14. Does the program use the appropriate media for meeting its objectives?

15. How often did you use the blank bottom portions of the transparencies?
   All the time_______ Most of the time_______ About 1/2 of the time_______
   Occasionally_______ Never_________
16. Please note your observations of any reactions to the class by other teachers, administrators, or other educational personnel:

17. Please note your observations of any reactions to the class by other students in other classes:

18. Did you follow any suggestions outlined in Section 11 (How to Extend Visual Communications Skills) of the Teacher's Guide?
   Yes_____ No_______ If yes, which ones:

19. Describe any other strategies that you used for this purpose:

20. Describe the results of the above procedures (questions 18 & 19).
21. Will you or other teachers use these materials again? Yes______ No______
   If yes, please describe particulars if available:

   If yes, how would your use of the materials be different from this past field test?

22. If you filled in any blank worksheets (included in the Teacher's Guide) or used supplementary materials, please attach them to this questionnaire if I do not already have copies.

23. Did you enjoy teaching the Visual Communications class?
   Yes______ No______

24. Other comments:

Please return as soon as possible to Jill Dardig, Northeast Regional Media Center for the Deaf, School of Education, University of Massachusetts, Amherst, MA 01002.
APPENDIX K

TABLES OF OBJECTIVE CHECK SHEET DATA
### STUDENTS' OBJECTIVE COMPLETION DATA

Format:  
# not attempting objective/# attempting objective/# successfully completing objective  
% of students attempting objective who successfully completed objective  

(-- = objective omitted)

<table>
<thead>
<tr>
<th>Sites</th>
<th>(# of Students)</th>
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<th>2</th>
<th>3</th>
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</thead>
<tbody>
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### Table of Objective Completion Data

**By Age for Figure 16**

**Format:**
- \( \frac{\text{# of students attempting objective}}{\text{# of students successfully completing objective}} \)
- Percent of students attempting objective who successfully completed objective

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APPENDIX L

UNEDITED SAMPLES OF STUDENT EVALUATION QUESTIONNAIRES
UNEDITED SAMPLES FROM STUDENT EVALUATION QUESTIONNAIRE

(Ages of responding students follow each comment)

1. List some things that you liked about the Visual Communications class:

I liked everythings in Visual Communication (12)
I like all world the Visual Communications. (14)
I like to understand about vision and watch pictures on the overhead. (12)
I like the Communication class Because communication make me smart or try to think hard. (14)
I liked learning New Ideas and Writing Storys, Opical Incusin and also helping out a company (13)
I liked Making Stories. I liked Making Poems and drawing pictures. I liked taking pictures (10)
I like to picture for camera (9)
I like realistic I like good communication (9)
I like learning about environment and symbols (13)
I liked the symbols and stories, Emotion, and Environment (12)
I like to learn about Camera in Visual Communication. also Movie Camera, talk about symbols, Draw pictures, Real actives. (14)
I liked to write papers about the story (15)
I really enjoyed making and developing the film, and writing the poems, and learning many different new words. (15)

2. List some things that you didn't like about the Visual Communications class:

I really hate making picture on the paper in the little box because it makes my hands feel dry and unnatural. (15)
only I don't like is Confuse information (14)
I did not like to write about communications. (13)
I was confused in Visual Communication but sometimes I was right (13)
I didn't like the work. because it was two hard (13)
I didn't like the crazy mix up pictures. Because I don't like to see sloppy pictures. (14)
I didn't like being absent so that I fell behind. I also didn't want to do it at first but than I enjoyed it after all (13)
I didn't like Bad Visual Communications (9)
I like all about in the Visual Communications. (14)
I don't like to watch (teacher's name) talking too much, It is very boring and make me fell asleep. (12)

3. Which were your favorite activities?

I loved Optical Illusion fooling my eyes. I enjoyed learning all of the new things. Some of the things I didn't even know before (13)
I like activities about real pictures I learn many thing when I see pictures of real things. (14)
I like environment. I like learn about clear and not clear. I like learn about the five senses. (9)
Storyboard (12)
The activities with the camera (10)
I liked a good ideas for the five sense, successfully communicate, information and all-things. (13)
I like to develope the pictures. (15)
I liked to make symbols about our environment. (14)
Seeing the picture with parts missing, Confused, not tell us enough, or playing tricks my brain and eyes on us. (12)
My favorite is the activity about Environment because it was very interesting. We taught about all different kinds of Environments contest to see who could name the most Environments. The 3 groups were water, outer space and air, land. My group thought of 20. (12)

Ha! I enjoyed talking to my friends in my class. Talking is really fun. (15)

4. What other things would you have liked to do in the class?

I would like to take some field trips and pictures. (14)
I would like to watch more movies like The Excorist, Babe Ruth and The Tall Boy. (15)
I would like to learn more about different kinds of communication. (14)
I like to talk with my friends more.
I would like to read more books about Communication. (14)
I help a teacher I do not know communication but I try (14)
I liked to teach a good ideas. (13)
Making book reports about V.C. (11)
Making Books that you see in your life (10)
Making symbols for the street sign (13)
I like to be artist (14)
5. Can you use what you learned in the Visual Communications class in other classes? In what ways?

Yes, because teacher try to explain and clear. (14)
Yes, How to write Stories and Learn New words to Use in the Stories (13)
language helped me sometimes about Visual Communication (13)
Yes, To improve making Poems, Stories, and Posters (10)
My eyes are very good and I use Visual Communicatinons to help me learn about real and Language I use my eyes better now and see more this. (14)
Yes, It helps me in Reading and Laungue. (14)
I use it in the reading class. I would read the newspaper, magazine (15)
Yes! It help to learn by Reading. It helps me to learn different things. (14)
I learn about symbols in S.S. and senses in Science. (13)
When class dose not know I help us (14)
Yes, because, I learned to teach a visual communication about environment. (13)
Yes. To write better reports. (10)
Yes. By sharing and helping and teaching them how to use the camera. (10)
Yes I can write stories with pictures and writing and colors. (10)
Yes understanding communication (11)
Yes Sight, talk and signs (14)
Yes I learned Many New things about environment, drawing, How to write Storyes. Well I like learning new thing and I think other children should learn the things I learned from this class (13)
APPENDIX M

SAMPLES OF POST-COURSE QUESTIONNAIRE
1. Please list and briefly describe the strengths of the Visual Communications Program:

Besides using creative techniques to bring a logical structure to the students' experiential world, it provides an excellent outlet for their creative talents. I found that it generated a great deal of useful language as well as being a positive interaction activity.

It involves students in the learning process.

It places media in the hands of the students and teaches correct use and design of media.

It forces the student (adult or child) to systematically and logically approach and think through the communication process and message design.

The program offered a well planned guide for the teacher to follow. The transparencies provided a good basis for discussion. It taught the students to be more aware of the various means of communication. They became more observant of their environment and practiced making keener use of their senses.

It was very conducive to our total communication program -- we were able to introduce new words and concepts and reinforce them with lipreading, auditory training, sign language, etc.

Improved group interaction; improved skills in understanding the language of directions; improved the quality of oral and written language including completeness of sentence structure, use of adjectives, better sequence, fluency of ideas, growth of vocabulary; improved self-confidence in terms of expressing themselves through writing.

Objectives are excellent -- the deaf population is in great need of knowledge concerning how they can further use visual stimuli/supplements in education.
2. Please list and briefly describe the weaknesses of the program:

We did not give ourselves enough time. It must be accepted as a full subject and given school time accordingly. As for the materials themselves, the greatest weakness was the high level of the language, which we constantly had to simplify.

It is very difficult for this age group to write definitions -- particularly of concepts that are new to them. Some of the concepts such as unclear, incongruous and abstract were difficult for them to grasp.

We have found that some of the activities are not cumulative or sequential and that there should be more carry-over from one objective to the other.

The language used to convey the ideas and concepts needs to be brought down to a more basic level.

4. Do you feel that there is a need and use for this program in schools for the deaf? Explain:

Photography provides language stimulation and a way to communicate with parents and friends; program allows self-expression of ideas, feelings, interests, teaches responsibility of care and operation of camera which will hopefully carry over into other areas, and gives tools to plan how they will communicate an idea to one another and follow their plan.

It is good for these students to become aware of how much information is and can be gathered through the use of sight. I think they should learn to use their vision more for themselves.

The need is great in schools for the deaf not only for the students but for the instructors also. I think the students are in need of knowing different channels available to them for expressing themselves and instructors are in need of the variety of means available to them for assisting them in their instructional endeavors.

We are definitely trying to put it into our curriculum -- I think it adds great structure and direction to any communication or language program.
Deaf students need to be more aware of the different ways in which we communicate and the different ways in which we can learn.

Definitely, it is philosophically a logical extension of the unified curriculum approach. Practically, it generates so much language and creativity that I regard it as more valuable than the more structured curricula the State syllabus calls for.

Media in general has given many of our students the opportunity for success, involvement and expression lacking in previous schoolwork.

This Visual Communications Program is a fresh and total approach to learning about the visuals around them. Deaf and hearing impaired children are tired of the limited materials that are available for them. Some of the children in my class were reluctant to go through with this course but as the lessons went on, they became totally involved with it. It has been one of the most rewarding experiences in my teaching career.

5. Do you consider this program innovative or practically the same as other programs?

As far as I know, this program is innovative. I have never come across anything like this before -- something very special for children with limited hearing.

Innovative in that students become teachers as well as learners, students were totally involved, and people found that there was a lot more to successful communication than they thought.

I found this program innovative as many teaching aids such as transparencies, photos, sequence pictures, slides, etc., were included in the kit, and many suggestions were given for additional materials.

Innovative to the extent that it is mediated but teaching of these concepts is nothing new.

I thought it was original because of the topic and because of the variety of information used and obtained. The activities varied enough that you did not get bored with one topic.
It is innovative in that it is a systematic approach to teaching about our environment and helps to give clues to the children as to how they can use their environment's resources to communicate to one another.

9. In your estimation, do the students interact more, less or the same as in other classes?

This is the one area that is the strongest in the program. Through creative techniques, students who are academically not as successful as others are at parity on an interaction level with higher achievers; thus, a positive social situation develops. The group interaction in the program is positively socially rewarding; the fact that there is no single correct response criterion minimizes the fear of failure.

More; students had numerous opportunities to compare, present, and defend their work and thinking in a relaxed environment.

This was one of the big successes in my class: the tremendous improvement of group interaction. They share ideas with each other, help others, show others, argue over things in terms of an opinion, etc.

10. Do the materials and/or activities serve as stimuli for language development?

The picture/story sequencing stimulated correct sentence structure and the use of adjectives, articles and prepositions for our students.

The key vocabulary words they have learned are carrying over into daily language.

With an imaginative class, the experience level is given a creative vent into language. My class was never content with minimum performance as per the objective's expectations, but rather in all activities exceeded them (e.g. instead of 5 environments, each student came up with 20 at least).

The whole idea of basing the beginning lessons on the environment has opened up new language bases for the children to work on.
11. Do the materials appear to have high interest value for the students?

Yes, students are interested in learning about their environment and the different means of communication available to them. The materials create communication that everyone can understand just with their eyes.

Yes, the areas of photography and video have not been used before and the children are anxious to use them.

13. Please list suggestions that you have for improvement of the Teacher's Guide:

Correlate to other materials put out through Captioned Films (e.g. NRMCD Language Arts Series).

Give options for language on different levels.

Topical Timeline should run from general to specific rather than be randomized.

Should include objective checksheets for record keeping.

A newspaper unit could be included in the section on types of communication. Also, one on television.

16. Please note your observations of any reactions to the class by other teachers, administrators, or other educational personnel:

Our Superintendent viewed a lesson and was very positive in her reaction, especially to amount, quality, and creativity of the language and activities. Other teachers, administrators and aides have had a favorable reaction.

Favorable reaction from all.

Media specialist was impressed.

My supervising principal was interested in the environmental collages and suggested that they be put in a display case. Our fine arts coordinator was pleased to see that we were correlating our program with the art classes and she hopes to incorporate this into the art program next year.
Other teachers liked the projects we did on the environments. They also took some ideas from the section on symbols.

On the basis of all those who have observed my Visual Communications class, they have made wonderful comments on this new and fresh approach. Parents have told me how much their children tell them about the course and how much their children are excited to be a part of it. I have planned an Open House, inviting parents and personnel to see us in action.