DOCUMENT RESUME

ED 346 663 EC 301 275

AUTHOR Gentry, Cass; And Others
TITLE The Use of an Interactive Videodisc and Associated Instructional Materials To Teach Selected Routine and Emergency Phrases in Signed English to the Deaf and Their Hearing Associates. Final Report.
INSTITUTION Michigan State Univ., East Lansing. Coll. of Education.
SPONS AGENCY Special Education Programs (ED/OSERS), Washington, DC.
PUB DATE 30 Jun 90
NOTE 59p.
PUB TYPE Reports - Descriptive (141)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Communication Skills; *Computer Assisted Instruction; *Deafness; Grade 5; Grade 6; Instructional Effectiveness; *Interactive Video; Intermediate Grades; Interpersonal Communication; *Language Acquisition; Manual Communication; Safety Education; *Sign Language; Student Attitudes; *Videodisks; Videotape Recordings; Vocabulary Development
IDENTIFIERS Signed English

ABSTRACT

This final report documents a project which developed and investigated the use of interactive videodisc technology to assist in the instruction of signing with deaf children and their associates (such as parents, teachers, peers). The project first identified words and phrases considered essential for interpersonal communications. A videodisc instructional unit was produced that included a selected set of these phrases together with appropriate visual support (video, still frames, text, superimposed text and graphics). English and Signed English were the languages of instruction. The interactive computer program developed allows for repeated practice. The project also produced an orientation/training videotape and a user's manual. Other aspects of the project covered in this report are methodologies (project management, instructional development, and product validation); processes (staffing, coordination, and reporting); and summative evaluation. Validation of the instructional program with 32 deaf fifth and sixth graders indicated very positive student attitudes and that the program was very successful in teaching subjects both cognitive and skill objectives. Appendices (which make up the greater part of the document) provide details concerning the Delphi phrase identification phase of the study, the project management chart, a sample flowchart, a storyboard sample, and various agendas, assignments, and task reports. (DB)

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Final Report

THE USE OF AN INTERACTIVE VIDEODISC AND ASSOCIATED INSTRUCTIONAL MATERIALS TO TEACH SELECTED ROUTINE AND EMERGENCY PHRASES IN SIGNED ENGLISH TO THE DEAF AND THEIR HEARING ASSOCIATES

H 180 P80023

Michigan State University
College of Education

Co-Directors
Cass Gentry
Richard McLeod
David Stewart

Reported To
Doris Cargile, Education Program Specialist
Office of Research Development
U.S. Department of Education
84.18P Compensatory Technology Applications

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FINAL REPORT ABSTRACT

THE USE OF AN INTERACTIVE VIDEODISC AND ASSOCIATED INSTRUCTIONAL MATERIALS TO TEACH SELECTED ROUTINE AND EMERGENCY PHRASES IN SIGNED ENGLISH TO THE DEAF AND THEIR HEARING ASSOCIATES

The purpose of this project was to develop and investigate the use of interactive videodisc technology to assist in the instruction of signing to deaf children and their associates (including parents, teachers, peers, and colleagues) This project identified a number of words and phrases considered by experts to be essential for a range of interpersonal communications. A videodisc instructional unit was produced that included a selected set of these phrases together with appropriate visual support (video, still frames, text, superimposed text and graphics). It was tested in terms of its potential as an innovative teaching tool. English and Signed English were the languages of instruction. The videodisc was programmed for a level two interactive videodisc system. The videodisc component of this instructional product provides actual demonstrations of signing in full motion, color, and sound; the interactive computer program allows for repeated practice; this medium meets the needs for consistent instruction, visual modeling , and multiple practice opportunities. The other two deliverables for this project were: an orientation/training videotape, and a user's manual.

The three major methodologies used in completing this project were: project management, instructional development, and product validation. Three main processes were applied in management of the project: staffing, coordination, and reporting. Five major processes were used in the development of instruction: phrase identification, design, production, prototype testing, and revision. Summative evaluation was used to validate the completed instructional videodisc system.

The results of validating the instruction gave information on subject attitudes, cognitive knowledge, and skill levels attained. Five structured questions, designed to sample subject attitudes toward the instruction were administered to subjects after completing the instruction, resulting in very positive attitudes toward the instruction, with few exceptions. Data was also collected for subjects' responses to the 295 cognitive questions presented by the interactive videodisc instructional program. Finally, data was collected on subjects' responses to the production of the 83 signs and 30 sentences taught in the unit. The analysis of the data indicated that Sign Connection was very successful in teaching both cognitive and skill objectives to the representative subjects.

INTRODUCTION

This report culminates two years of effort on the part of Michigan State University personnel and graduate students, and summarizes the activities carried out to complete an interactive videodisc instructional prototype, the **Sign Connection**, designed to teach deaf children and their hearing and nonhearing associates selected situational (i.e., home, medical, and play) signs. The project was supported by resources from the United States Department of Education and Michigan State University. The deliverables for this project were: a videodisc program, an orientation/training videotape, and a user's Guide. This final report describes the management, instructional development, and validation methodologies used to complete the project.

METHODOLOGY

Project Management. Three major processes were applied in the management of this project: staffing, coordination, and reporting.

Staffing. As per the original proposal, the project has been guided by three faculty coordinators, Gentry, McLeod and Stewart, with Gentry responsible for general and day-to-day management, McLeod for directing authoring and graphics production, and Stewart as content expert. In addition, Michigan State's Instructional Television Service assigned Mr. Richard Brundle as director for the video motion segments of the program, and Mr. Ken Abrams was appointed by the Computer Center's Applied Programming Division to assist with the computer programming for the project.

All other staff were drawn from among our graduate students in the College of Education, particularly from our educational technology academic program. Where possible, this group was chosen for existing skills relevant to the project, but almost all of them required extensive training by the coordinators or others in order to perform the project tasks. The need for training was exacerbated by the normal turnover of staff graduate assistants, either graduating or going on to other work responsibilities, thus, necessitating finding, hiring, and training others to take their places. Generally, the project was staffed with 5-6 quarter time graduate

assistants at one time. Eleven graduate students filled these positions over the two year period. In addition, nine graduate students worked with us as part of a field experience requirement for their degrees. Beyond that, 13 part time students, paid hourly, were used at one time or another, during the project.

The coordinators' decision-making was supplemented and supported by a number of professional consultants (largely unpaid) from the field. Their cooperation and good advice was most valuable to the project.

Coordination. Because of the relative small size of the project staff, individuals were expected to overlap in terms of their competencies for carrying our the project tasks. Since the coordinators of the project saw the training of themselves and their graduate students as one of the major goals, every opportunity was provided for all staff to be familiar with, and, where possible, to work in all important aspects of the project. This required that both coordinators and staff have a clear understanding of what was going on at all times and how their particular tasks impacted on others' tasks. This need for high level communication was facilitated through weekly meetings and reports on the part of both the coordinators and staff. The process followed on the project included the following activities:

The general coordinator would meet with staff, discuss problems and answer questions, and assign tasks to staff for the coming week

Staff would provide a written report at the end of the week listing what they had accomplished, any problems encountered, and what they saw as the next steps for them.

The general coordinator would use data from the staff reports to set up an agenda for the coordinators, and to develop a preliminary agenda and task assignments for the next staff meeting.

The three coordinators would meet and make final determinations for next steps in the project, based on the preliminary agenda and task assignments.

The management technique used to schedule and keep track of project tasks was a task networking system called the Program Evaluation and Review Technique (PERT), whose major importance was to clarify the best sequence for the tasks so that the coordinators could plan ahead in such a way that staff were not slowed by waiting for resources or for others to finish predessor tasks. The technique also assisted in identifying which tasks could be done concurrently, so that groups could be working on different parts of the project at the same time, and thus speed up project completion time. In addition PERT served as a means of communicating to all project members how their respective tasks meshed with others, and the importance of meeting task timelines.

Reporting. As mentioned in the previous section, each staff member was required to provide a weekly task report to the general coordinator (see Appendix E). These weekly staff reports were used by the general coordinator to update the project PERT (Appendix B), and to generate an agenda for the three coordinators' weekly meetings (Appendix E). The coordinators then used this data to generate two other documents for the weekly staff meeting: a staff meeting agenda laying out issues, directions, and changes, and a Task Assignment Sheet specifying the specific tasks to be completed by each staff member during the coming week. Minutes were taken for both the coordinators' and staff members' meetings (Appendix E).

Instructional Development. The five major processes followed in the development of the instruction were: phrase identification, design, production, prototype testing, and revision.

Phrase Identification. The Delphi Technique was used to establish what a selected group of deaf educators, parents of the deaf and deaf children thought were the more important phrases for the hearing associates of the deaf to learn to sign (see Appendix A). From this list were chosen phrases that best fit into three common environments: home, doctor's office, and game parlor. From this list, 30 sentences were selected to be taught through the disc. However, it should be noted that by combining different words from the different sentences and by making use of the alphabet section provided in the HELP function, that a considerably larger number of phrases can be learned through this disc.

Design. The steps employed in designing the instructional prototype are as follows:

1. Write performance objectives for the instruction
2. Develop test items to determine whether and how well objectives are met
3. Select instructional strategies
4. Select instructional media
5. Select authoring mode
6. Write production specifications

The objectives for the instruction were:

Sign recognition: students will be able to recognize 83 signs either in isolation, or when they are embedded in sentences.

Sign production: students will be able to correctly produce 83 signs in isolation and in sentences.

Signed sentence comprehension: students will be able to correctly identify 30 signed sentences.

The test items were of two different formats:

Multiple choice items in text, pictorial and digitized graphic form, with some combined with video motion

.

Performance checklist in black and white, digitized graphic form.

Four main instructional strategies were used in the unit. The first strategy required overt participation of the learner with a high degree of **interactivity**, with the system response based on the learner's **response**, and vice versa. A second strategy required **reiteration** of instruction in several forms, including: digitized images accompanied by rules for signing, and the same information presented in video motion. The third strategy was to provide high **learner control** in terms of pacing, sequence of instruction, and to repeat any section as often as the learner wishes. The forth strategy required **practice** of the elements being taught, with **immediate feedback**.

The instructional media selected included **videodisc** for the Sign Connection program, **videotape** for orienting and training teachers to use the program, and **print** for the User's Guide. Text, graphics, and photographics were used to present the information in all three. Audio was also used with the videodisc and videotape.

Initial authoring of the videodiscs used in the first two formative evaluations was done in HyperCard on the Macintosh II, and operated as a level III system (i.e., using an external computer to control the videodisc player). The authoring done for later formative evaluations was done in a Beta version of special code, developed for the InkPad and compiled as Pioneer Level II machine code, interpretable by the built-in microprocessor in a Pioneer LD-V 6000 videodisc player. The same code was used for the summative evaluation disc, and for the interactive videodisc program master.

The specifications for producing the interactive videodisc and for the orientation/training videotape were presented through a storyboard (Appendix D). The specifications for authoring the instructional program were presented through a flowchart (Appendix C). All instructional design activities were carried out by project staff.

Production. Production was carried out for three deliverables: an authored interactive videodisc instructional program, a training/orientation videotape for the program, and a printed user's guide.

All motion video, with the exception of the animated sections, were shot with a 1/2 inch BetaCam system, and enlarged to 1 inch tape before computer editing to a master. Digitized, still, and animated graphics were all developed through computer software called the Director and then transferred electronically through special hardware (ColorSpace II) to one inch tape for computer editing to a master. Video motion segments were shot and directed at four different locations by campus ITV Service personnel. All graphics were produced by project staff members or by part-time student help. The authoring and videotape masters were sent to 3M for premastering and mastering to the videodisc. After editing, the orientation/training 1 inch videotape master was reduced and transferred to 1/2 inch VHS videotape cassette. Talent for the digitized and analog video were selected from among project staff and from deaf and hearing members of the local community.

Digitized and analog graphics for the user's guide were developed through the Director, also, and then shot off of the color monitor with a 35 mm camera. Text for the user's guide was generated through a word processing software called MicroSoft Word (version 4.0). The Master for the user's guide was copied through the new Xerox 5090 copier system.

Prototype Testing. The prototype was formatively tested four times during its development. Three of the times were done with deaf and hearing subjects representative of the population for which the instruction was designed. In each case several subjects were put through the instruction one at a time, using an oral protocol with hearing subjects and a signing protocol with deaf subjects. In both cases this is equivalent to having the subjects "talk" their way through the instruction, telling the evaluator what they are going to do, and why they are going to do it. This permits the evaluator to collect data about the elements of the instruction so that defective or inadequate elements can be corrected. The forth formative evaluation was carried out with 5 local professional instructional developers who were asked to determine how well the instruction used instructional principles and techniques, and by 5 local educators of the deaf, as an added check on content validity.

Revision. Considerable revision of the instruction was carried out after each of these formative evaluations. They included adding, deleting and revising instructional graphics, reshooting of some motion sequences, and of re-sequencing some program elements. In addition, considerable revision of the authoring was done after each formative evaluation.

Validation. The technique of summative evaluation was used to validate the instructional videodisc. The purpose was to establish how well different groupings of subjects did in meeting the objectives of the instruction, and what their attitudes were toward the instruction and its form. Subjects were drawn from fifth and sixth graders in public schools of Lansing and Holt, Michigan, and from the Michigan School for the Deaf in Flint, Michigan. Thirty-two subjects were put through the completed version of the interactive videodisc instructional program; Sign Connection. They were grouped as individuals, homogeneous pairs, and mixed pairs. Specifically, the groupings were: 1) six deaf and eight hearing children who went through the instruction, individually, 2) six deaf

subjects went through in pairs, 3) six hearing subjects went through in pairs, and 4) three deaf and three hearing subjects went through as mixed pairs (i.e., a deaf child paired with a hearing child). Evaluators were directed not to intervene during this evaluation unless there was a system breakdown that prevented the subjects from continuing (none occurred). Evaluators kept a record of the subjects responses to the cognitive and skill level questions. They were also directed to ask the participants, individually, five structured attitudinal questions, after they had completed the instruction, .

Results

Attitude Effect. Below are five structured questions designed to sample subject attitudes toward the instruction, and the percentage of subject responses falling under each question:

1. How well do you think you learned to interpret and to produce the signs taught during the instruction?
   a. Very well (87%)
   b. medium well (11%)
   c. poorly (2%)

2. Would you recommend this instruction to your friends as a good means for learning how to sign?
   a. definitely (93%)
   b. maybe (7%)
   c. definitely not (0%)

3. Would you, if given the opportunity, like to learn other signs by this same method?
   a. definitely (96%)
   b. maybe (4%)
   c. definitely not (0%)

4. How did you feel about this way of learning signs?
   a. liked it very much (87%)
   b. liked it alright (13%)
   c. Did not like it at all (0%)

Cognitive Effect. The percentage range for subjects' correct responses to the 295 cognitive questions presented by the

interactive videodisc instructional program, on first and second trials, are as follows:

Grouping	First trial	Second trial
Hearing Individuals	85% - 91%	93% - 97%
Deaf individuals	82% - 88%	92% - 98%
Deaf pairs	87% - 94%	94% - 98%
hearing pairs	87% - 96%	94% - 100%
mixed pairs	83% - 91%	96% - 100%

Skill Effect. The percentage range for subjects' correct responses to the performance checklist for producing the 83 signs and 30 sentences, on first and second trials, are as follows:

Grouping	First trial	Second trial
Hearing Individuals	78% - 90%	89% - 92%
Deaf individuals	84% - 96%	97% - 100%
Deaf pairs	87% - 100%	96% - 100%
hearing pairs	83% - 97%	94% - 98%
mixed pairs	78% - 96%	89% - 100%

Recommendations

1. This instructional unit needs to be followed by development of from 5-10 additional interactive videodisc instructional units, covering other important signed words and phrases, to get the hearing associates closer to a critical mass of knowledge and skill needed for satisfactory communication with deaf individuals.

2. The Sign Connection prototype was tested by us with very brief visits to school sites (3-4 hours with each of the students taught and tested) and with little choice by the student of when he or she worked, or for how long. Thus, some major advantages of a self-instructional system like this were not available to the subjects. As a self-instructional system, the prototype needs to be tested over time in the appropriate environments for which it was designed, in order to find out more precisely its impact on hearing associates.

3. Initially, it was thought that designing the instruction to operate on a Level II interactive videodisc system was preferable because a monitor and videodisc player at Level II (where the program function is controlled by a microprocessor built into the player) would be less expensive than a Level III system (which required the extra expense of an external computer). In retrospect, it might have been less expensive, to users, to go the Level III route, particularly in the schools, since most of the schools already have external computers, and since a Level III videodisc player is considerably less expensive than one for Level II.

Appendices

Appendix A

Enclosed are the cover letter to respondents, question one of the Delphi used to identify phrases important to the communication between hearing and deaf individuals, and some of the accumulated responses sent to the Delphi.

COVER LETTER

October , 1988

Dear ____ _____:

I am writing to ask you to take part in our Delphi Study to identify phrases that would be mutually important for the deaf and their hearing associates. The information gained from this study will be used in the development of an interactive videodisc unit to teach these phrases. Your participation in this study will of course be confidential. The results of the study will be made available to you when completed, if desired.

In this first round of this study you are asked to identify ten phrases that you think would be most useful for the deaf and their hearing associates. We are asking for 2 phrases in each of five categories: home, school, shopping, recreation/ sports, and medical/dental. The purpose of this delphi is to approach consensus among you and other knowledgeable professionals on the importance of a set of phrases in these five categories. Based on past experience, we anticipate a minimum of three rounds to accomplish this purpose.

The question for the first round is enclosed. We are attempting to complete the rounds in two week cycles, and would appreciate it if you could find time in your busy schedule to meet that timeline. If you are able to participate, please return your response and consent form in the enclosed envelope. Thanking you in advance for participating in our Delphi.

Sincerely,

David Stewart, Professor

Interactive Videodisc Signing Project

As a hearing-impaired student, you would probably find that there are certain phrases that you often use in social interactions with hearing individuals. We would like you to suggest what you think would be ten very important phrases that you and your hearing associates, including your parent(s), would find most useful when communicating with each other. The information gained from this study will be used in guiding the development of an interactive videodisc instructional unit on Signed English. Please identify two phrases for each of the catagories of: home, school, shopping, recreation/sports, and medical/dental. Write those phrases in the spaces provided below. You are not asked to sequence or rank the phrases.

I. Home

#1 _____

2 _____

II. School

3 _____

4 _____

III. Shopping

5 _____

6 _____

IV. Recreation/Sports

7 _____

8 _____

V. Medical/Dental

9 _____

10 _____

Please return this response form in the envelope provided, by December 22, 1988. Thank you!

Phrases Collected (from hearing-impaired students 12/28)

I. Home

1. Clean your room, do your homework.

2. Did you finish homework?

3. Do homework or finish homework.

4. go to bed (time for you to go to bed).

5. Wash the dishes!

6. Clean your room?

7. I have to clean up my room.

8. I have to wash the dish.

9. What time will you get home?

10. Tell me what your plan for this weekend is.

11. Don't bother me! Stop picking on me (to my brother).

12. Don't fight any more.

13. Don't bother me. Stop kicking my door. Go away (to my brother).

14. My mom says, "One more time and you will go to bed at 7:00." I say, "I am sorry and I won't do it again."

15. Time for _____ (lunch, dinner, breakfast, bed).

16. Please give me _____ (a book, the milk).

17. Mama loves, Dad loves.

18. I love you.

20. Help me _____.

II. School

1. Finish your homework. Read.

2. Book. Write letter.

3. Must finish work.

4. Go get my book. I hate that.

5. Finish your work.

6. Get me the stapler.

7. I have to finish my math.

8. I have to do my hardwork (means homework?).

9. Any questions?

10. Need any help?

11. Don't push me into the mud. I will get dirty (playground).

12. If you say hate hate hate to me, that is not nice. You must be nice to have friends (?).

13. Don't tell and Don't insult me.

14. We must be friends and have a good attitude or you will go to the office.

15. Time for _____ (math program, lunch, recess) and time to go home.

16. Can you play with me? or Can you help me?

III. Shopping

1. Get pop for me.

2. Thing.

3. Look at this. Will you buy it?

4. Buy for me.

5. Check this out.

6. May I help you?

7. I have to shop with my mom.

8. I need to help my mom.

9. Do you need any help?

10. Do you want it?

11. Where are the purrtenders (?) (you know cat becomes rabbit, dog ....).

12. I want chicken tenders, pop, hamburger at BurgerKing.

13. I want to know where pants like this are.

14. I want pop, cheeseburger, french fries, and icecream at McDonald's.

15. Can I help you?

16. Hi.

IV. Recreation/Sports

1. Do your best try again. Listen.

2. Listen to coach.

3. I know what to do.

4. Get dressed for gym.

5. Play volleyball.

6. I am doing hard work in swimming team.

7. I try to listen to the coach.

8. Did you finish your workout (laps in swim)?

9. Any question?

10. I play with Sara.

11. Sleeping bag? and I play basketball.

12. Judy Clark is my ballet teacher.

13. I play baseball with _____.

14. I need a ticket.

15. I won.

V. Medical/Dental

1. Clean your teeth. What happened?

2. Let me check your ears.

3. Let me see how much you weigh.

4. I have to get a pill from doctors.

5. I have to clean my teeth.

6. Do you have any problems?

7. How do you feel?

8. The doctor checks my body.

9. I don't want to take off my clothes.

10. Where does it hurt?

11. I want _____ (juice, ice, medicine, the bathroom).

Interactive Videodisc Signing Project

As a hearing parent of a hearing-impaired child, you would always wish to communicate well with him or her. Would you please indicate below what you think would be ten very important phrases that you and your child would find most useful when communicating with each other? Please identify two phrases for each of the catagories of: home, school, shopping, recreation/sports, and medical/dental. Write those phrases in the spaces provided below. You are not asked to sequence or rank the phrases. Your child is asked to fill out a similar form, please do not discuss this task with him or her until you have sent your response form to us.

I. Home

#1 _____

2 _____

II. School

3 _____

4 _____

III. Shopping

5 _____

6 _____

IV. Recreation/Sports

7 _____

8 _____

V. Medical/Dental

9 _____

10 _____

Please return this response form in the envelope provided, by December 7, 1988. Please sign the consent form below, which permits us to use the phrases generated by you and your child. Your child will be receiving a separate form like this one to indicate phrases they think most important. All information received will be treated confidentially. Thank you.

Parental Consent

I give my permission for use of the phrases generated by myself and my child in the interactive videodisc project directed by Drs. Stewart, McLeod and Gentry at MSU. They may compare these phrases with other phrases in their study.

Name _____
(please print)

Signature _____

Date _____

Phrases Collected (from hearing parents)

I. Home

1. You must pay attention when cooking.

2. What channel is Bill Cosby on?

3. What do you want to do now?

4. The rule is "no hitting your sister".

5. Are the dishes finished?

6. Can I do your ironing?

II. School

1. Did you have a good day or bad day?

2. Did you pass your science test?

3. Don't forget your homework.

4. What happened in school today?

5. The school bus is here.

6. Is your homework finished?

III. Shopping

1. How much money do you have? or Do you have enough money to buy that?

2. What store do you want to go to?

3. The "item" costs "5 dollars".

4. We are paying for this with a check.

5. Would you like to go shopping?

6. Do you know which store you like to go to?

IV. Recreation/Sports

1. We need to watch your brothers play (name of sport) tonight.

2. Why don't you call Nina and see if she needs a ride to 4-H tomorrow?

3. Finish your work quickly and we can do some exercises.

4. Do you want to read a book together?

5. What did you do in 4-H?

6. You did good in Jazz today?

V. Medical/Dental

1. Why are you going to the doctor? or Where does it hurt? or Do you have a headache or temperature?

2. What did doctor or dentist say?

3. It is important to listen to the dentist.

4. Do not be afraid, the doctor wants to help you.

5. I think we should go to see the doctors.

6. Time to take you medicine.

Fai

Phrases Collected (from Experts)

I. Home

1. I want to talk to you about _____ and let's go to the den.

2. What did you do at _____ (school, church, etc.) today?

3. What would you like to drink?

4. It is time for dinner.

5. I would like some _____.

6. Please help me. Thank you

7. Keep your room clean.

8. Don't stay out late.

9. Where you from?

10. We need bathroom.

II. School

1. I am waiting for my interpreter, thank you.

2. My name is _____, and this is my interpreter, _____.

3. Please be ON time.

4. Have you done your homework?

5. I don't know how to _____.

6. Where is _____?

7. Do your homework first

8. Pay attention to the teacher.

9. What time now?

10. Who your teacher(s)?

III. Shopping

1. Can I help you find something?

2. Please tell me where I can find _____ (name of merchandise).

3. What is the price on this item?

4. May I help you?

5. How much is this?

6. I need _____.

7. Think twice before buying.

8. Buy things you really need.

9. Me need go buy milk.

10. O-K me borrow $5, please?

IV. Recreation/Sports

1. What days and time do I have to be here for practice?

2. What are swim/track meet dates?

3. What position do you play?

4. You need tc rest and cool off.

5. I would like to play _____.

6. What time is the game? of Will you play with me?

7. Winning or losing isn't important!

8. Keep your body in sync with your mind.

9. Really F-U-N playing.

10. Who won?

V. Medical/Dental

1. I'm calling to make an appointment.

2. What kind of checkup do you need?

3. Do you have any problems with your teeth?

4. Are you allergic to any medicine?

5. It hurts here.

6. How often do I take the medicine?

7. Regular check-ups prevent a bigger problem.

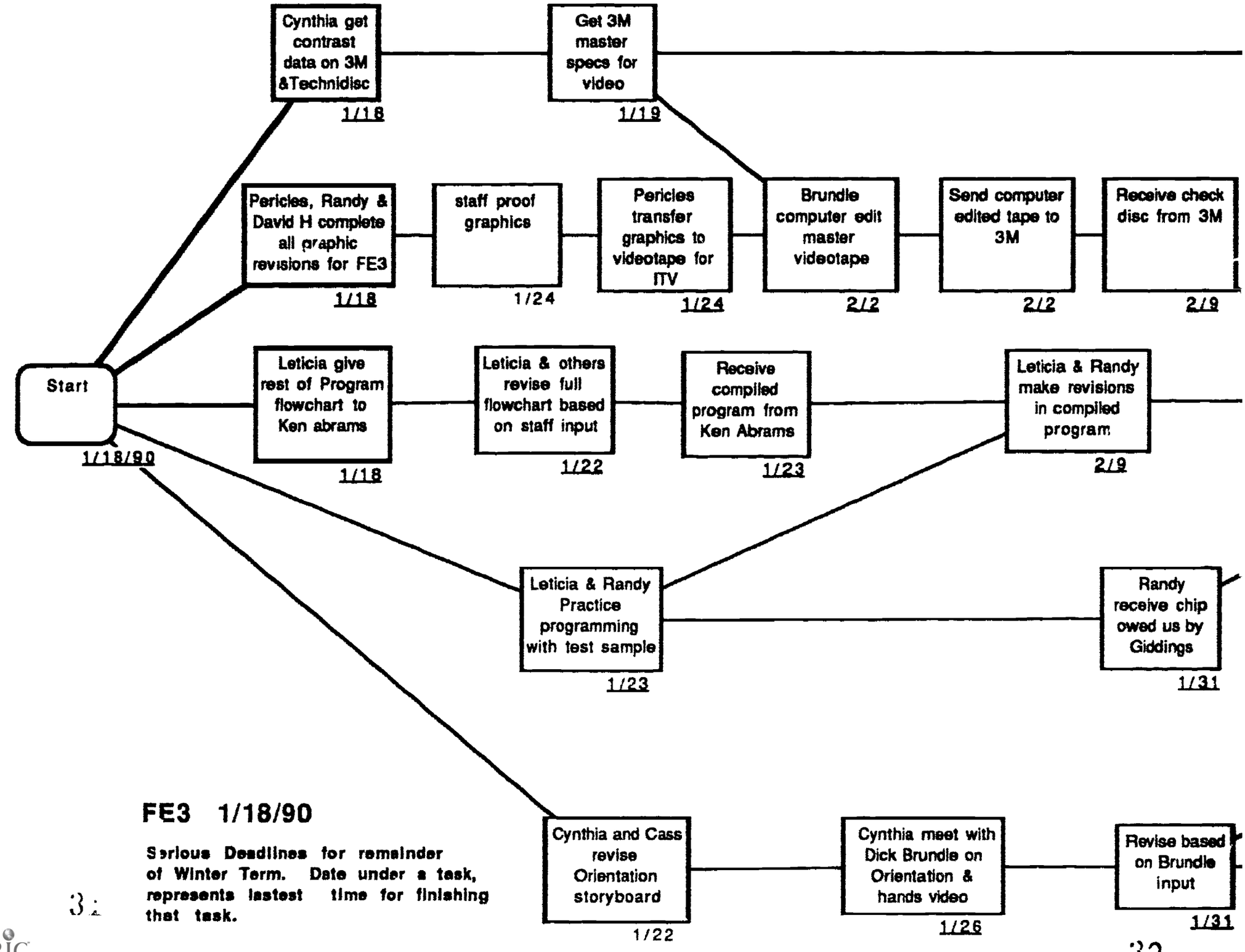
8. If you don't feel well, please see your doctor.

9. What's wrong?

10. You have A-S-P-I-R-I-N?

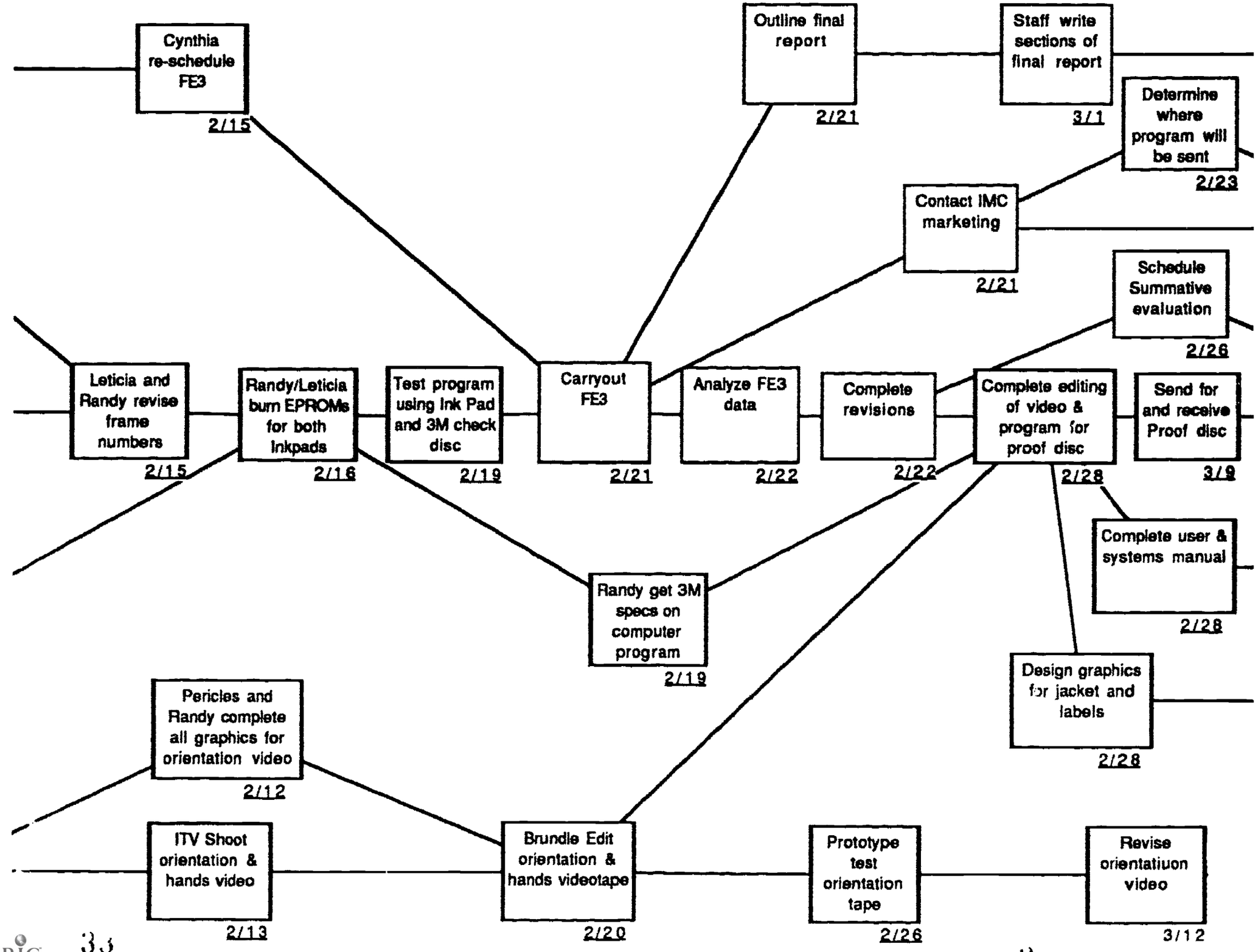
Appendix B

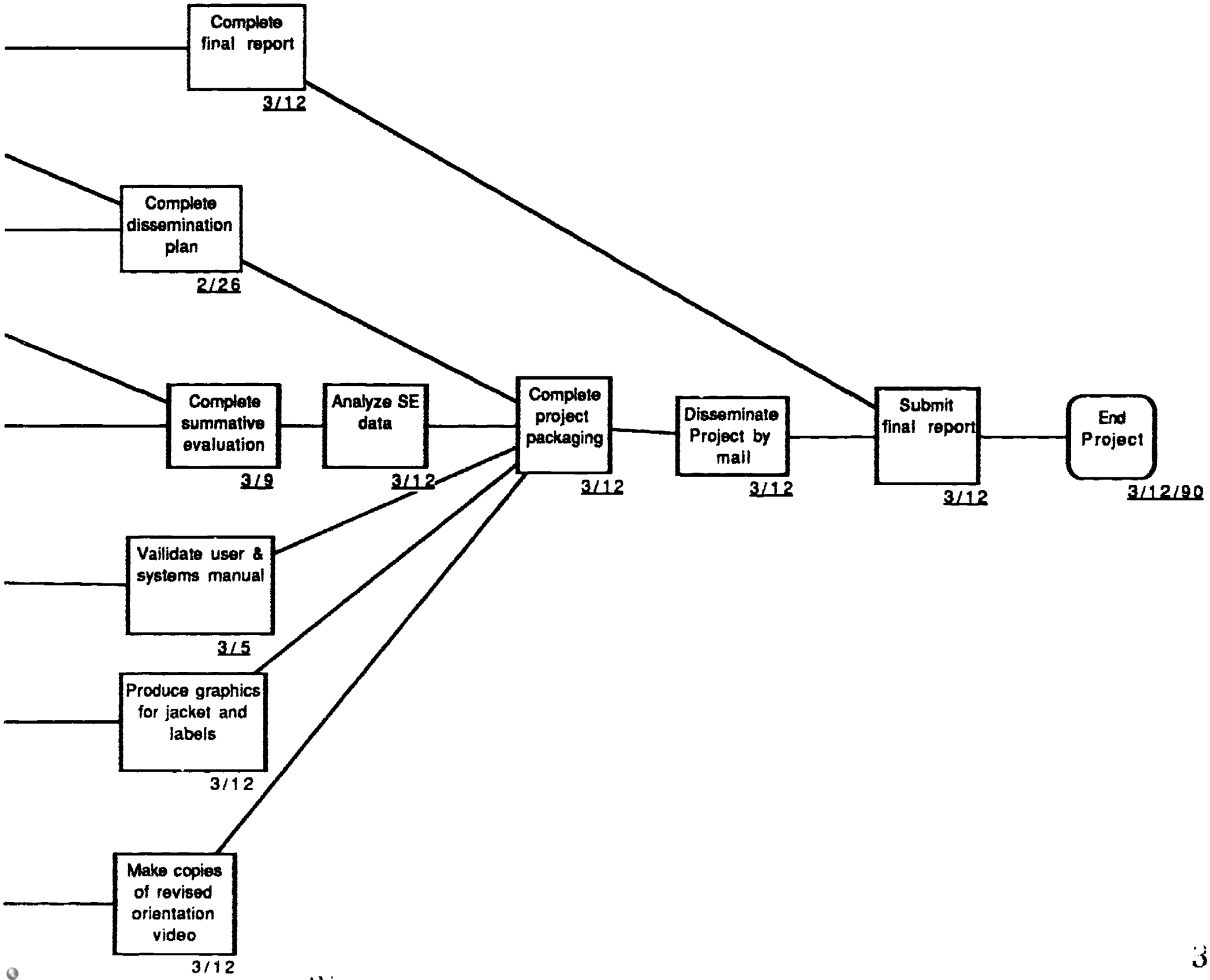
On the next pages is a PERT network presenting tasks that were carried out at one period of the project. This technique shows the sequencing of the tasks that must be completed and their times for completion. It is an important tool for organizing project tasks and alloting resources, and as a means of staff communication about the tasks and their relationships.



FE3 1/18/90

Serious Deadlines for remainder of Winter Term. Date under a task, represents lastest time for finishing that task.

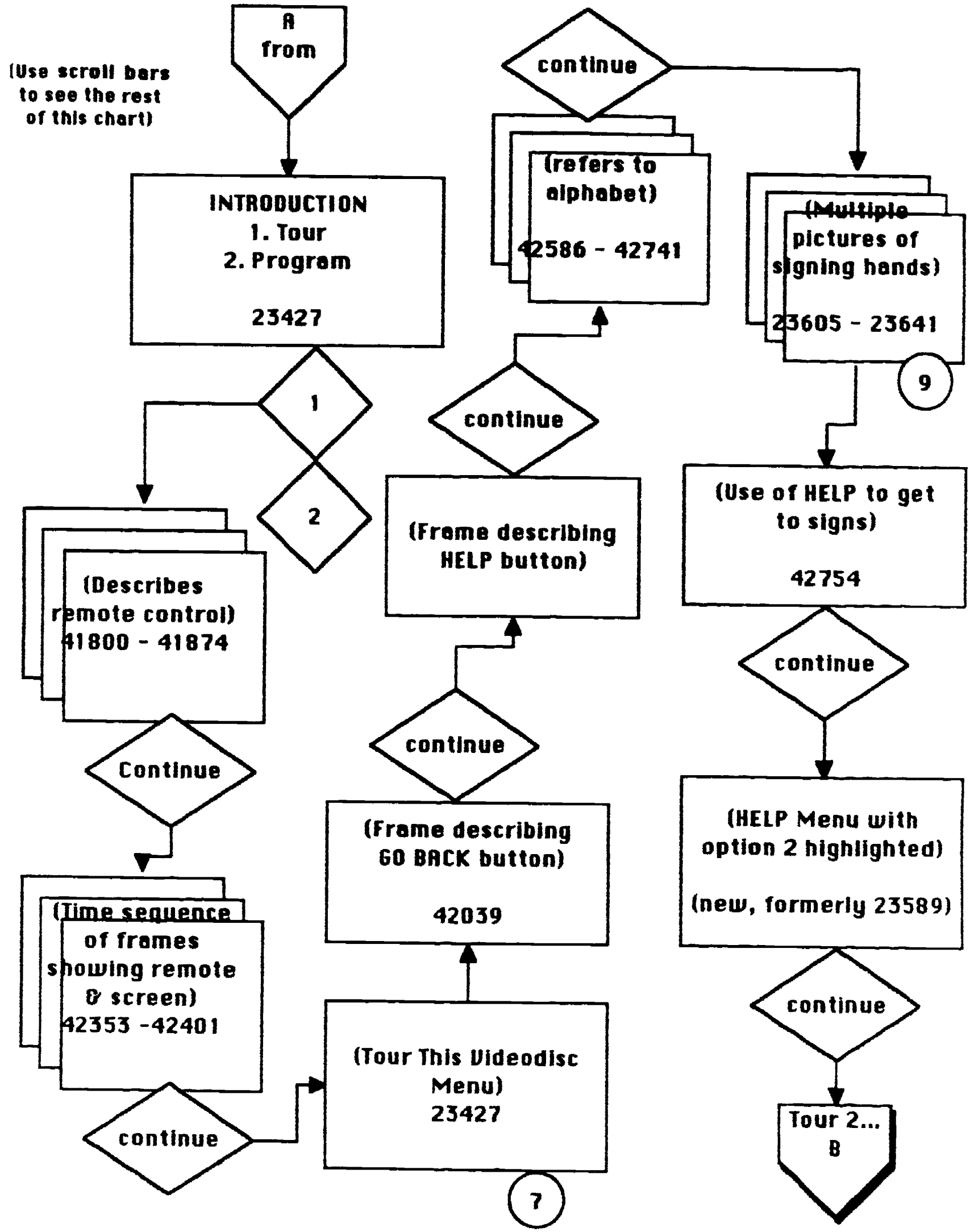

Cynthia re-schedule FE3
2/15
Outline final report
2/21
Staff write sections of final report
3/1
Determine where program will be sent
2/23
Contact IMC marketing
2/21
Schedule Summative evaluation
2/26
Leticia and Randy revise frame numbers
2/15
Randy/Leticia burn EPROMs for both Inkpads
2/16
Test program using Ink Pad and 3M check disc
2/19
Carryout FE3
2/21
Analyze FE3 data
2/22
Complete revisions
2/22
Complete editing of video & program for proof disc
2/28
Send for and receive Proof disc
3/9
Complete user & systems manual
2/28
Randy get 3M specs on computer program
2/19
Design graphics for jacket and labels
2/28
Pericles and Randy complete all graphics for orientation video
2/12
ITV Shoot orientation & hands video
2/13
Brundle Edit orientation & hands videotape
2/20
Prototype test orientation tape
2/26
Revise orientatiuon video
3/12

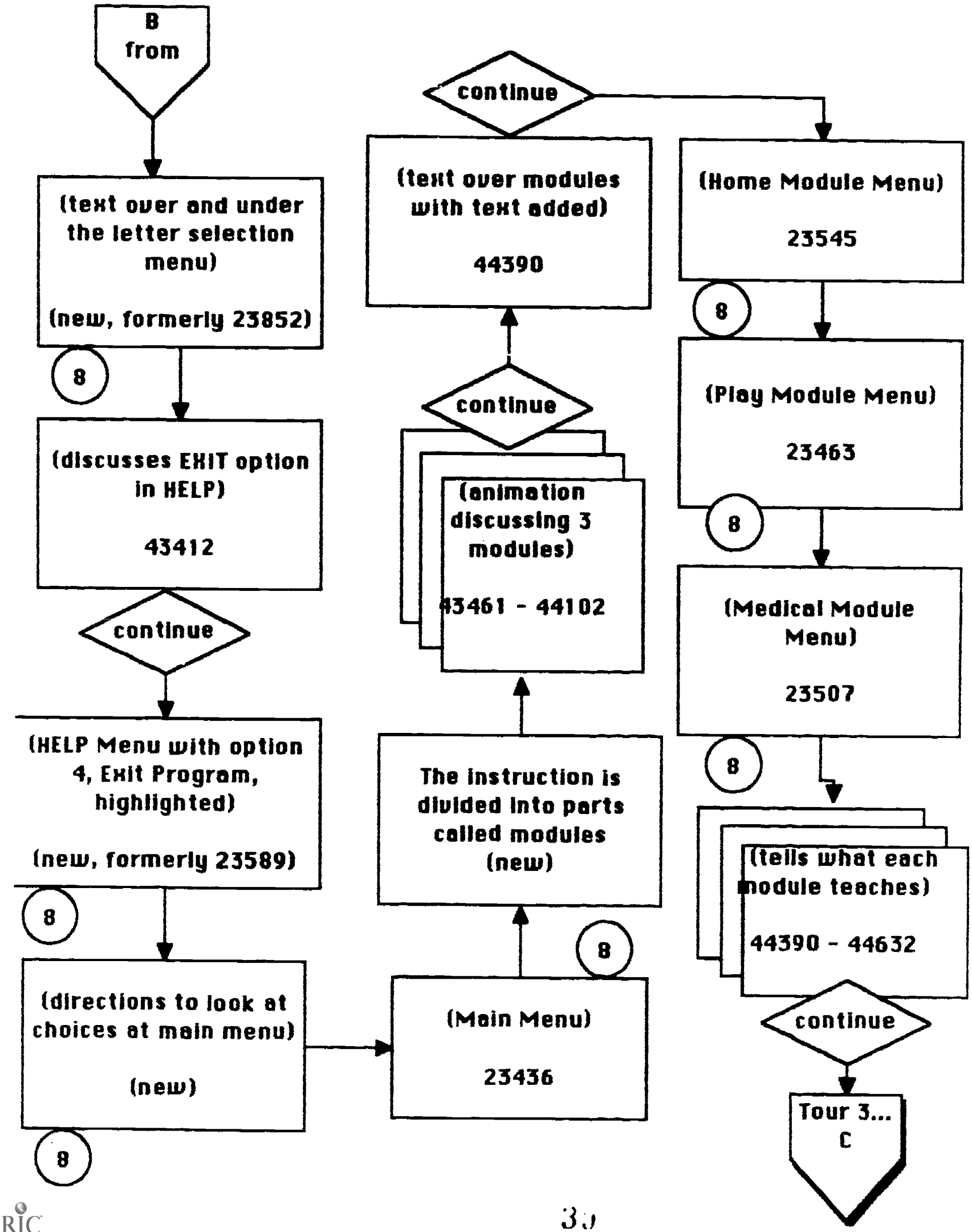

Complete final report
3/12
Complete dissemination plan
2/26
Complete summative evaluation
3/9
Analyze SE data
3/12
Complete project packaging
3/12
Disseminate Project by mail
3/12
Submit final report
3/12
End Project
3/12/90
Vailidate user & systems manual
3/5
Produce graphics for jacket and labels
3/12
Make copies of revised orientation video
3/12

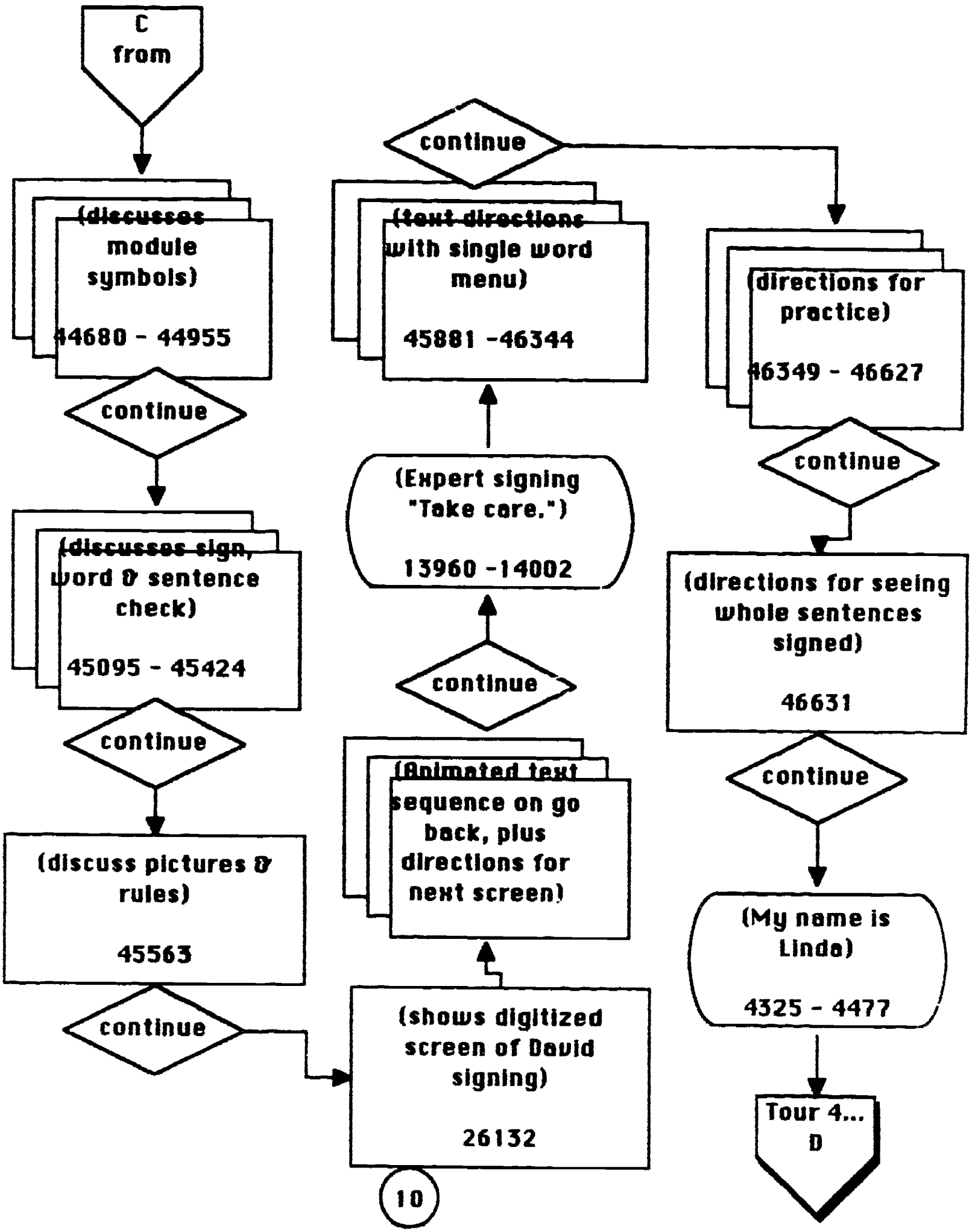
36

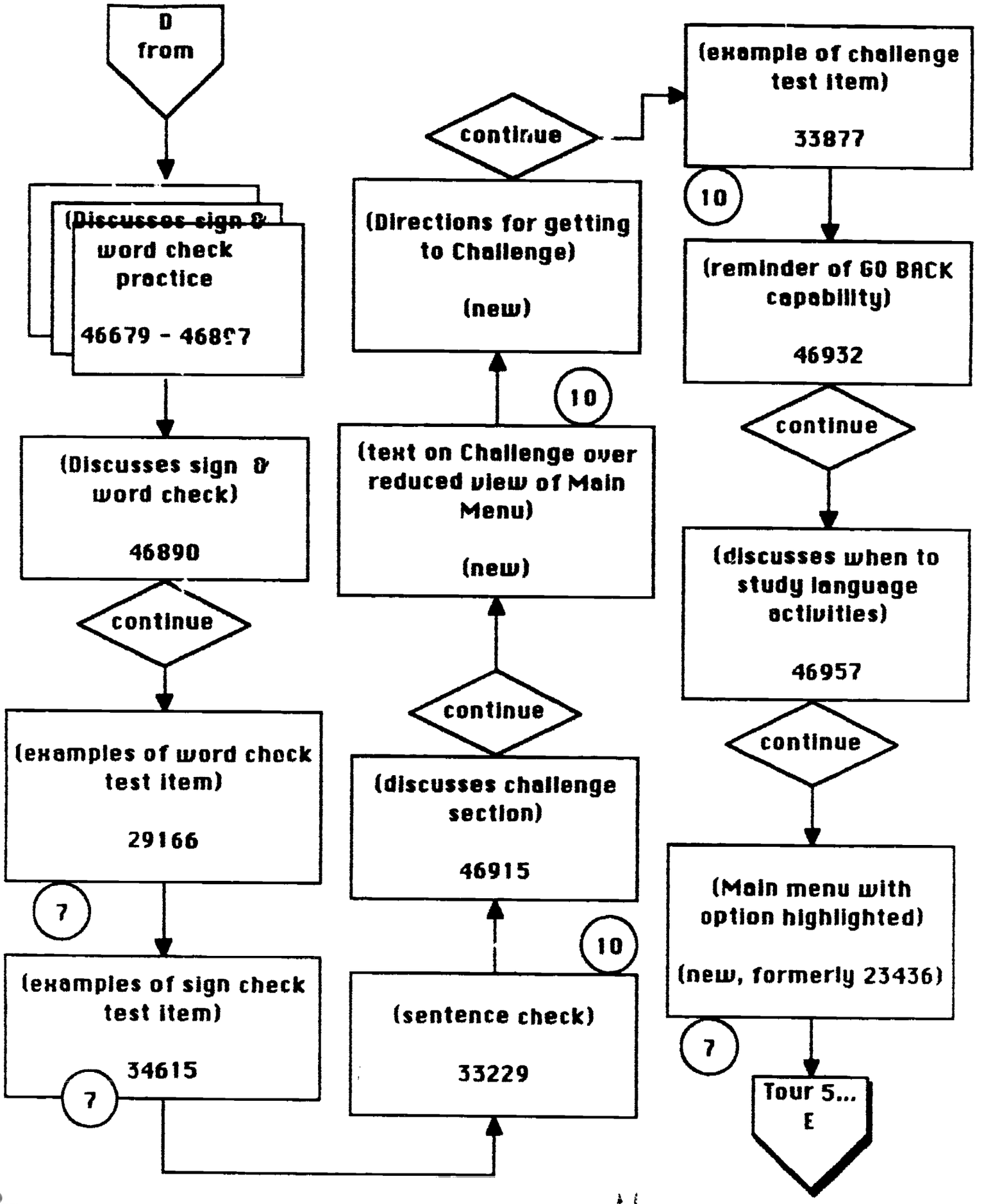
Appendix C

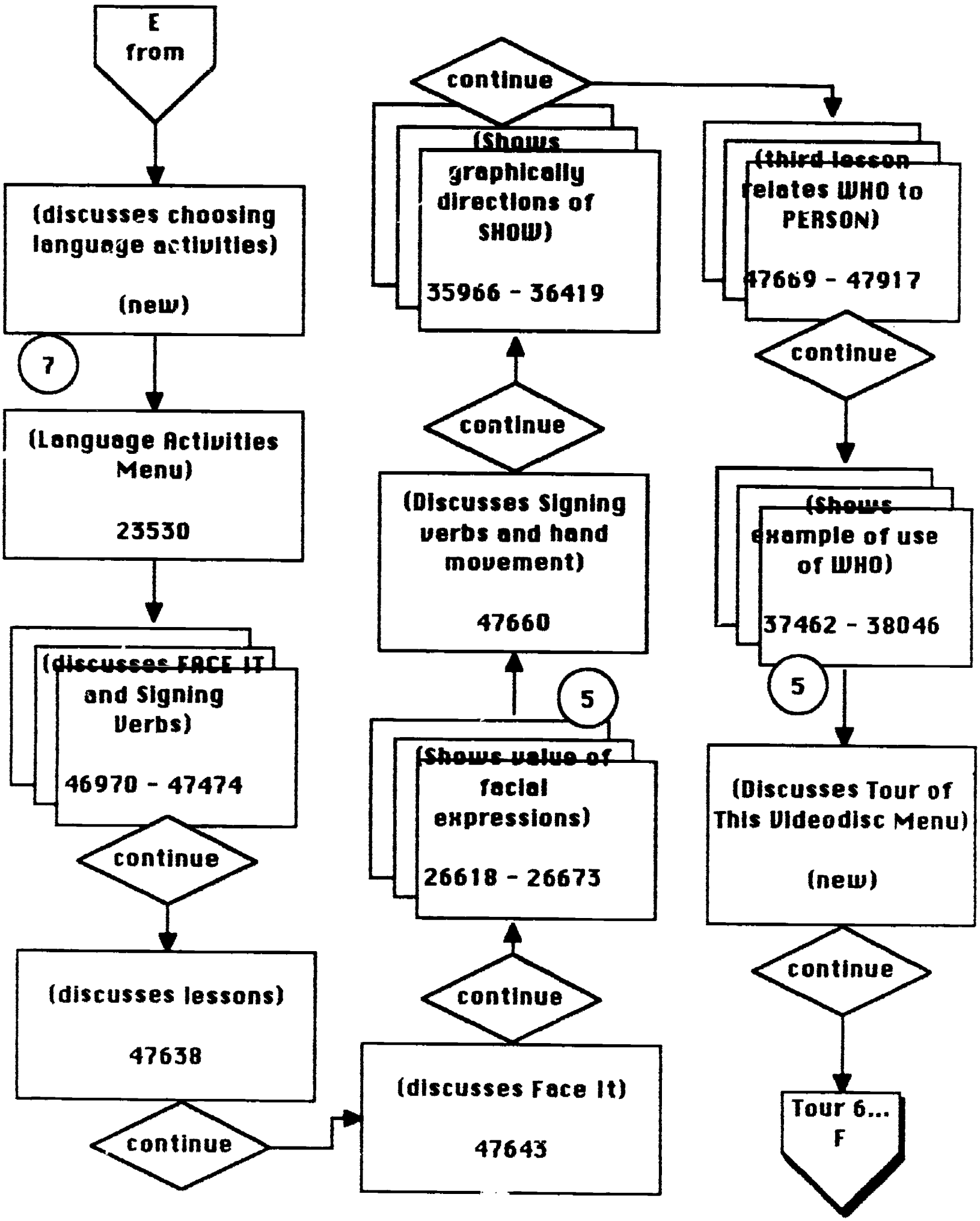
In this section is presented a sample of one of the flowcharts that was used to lay out the structure of the IVD program, and used as a guide to programmers in authoring the program.

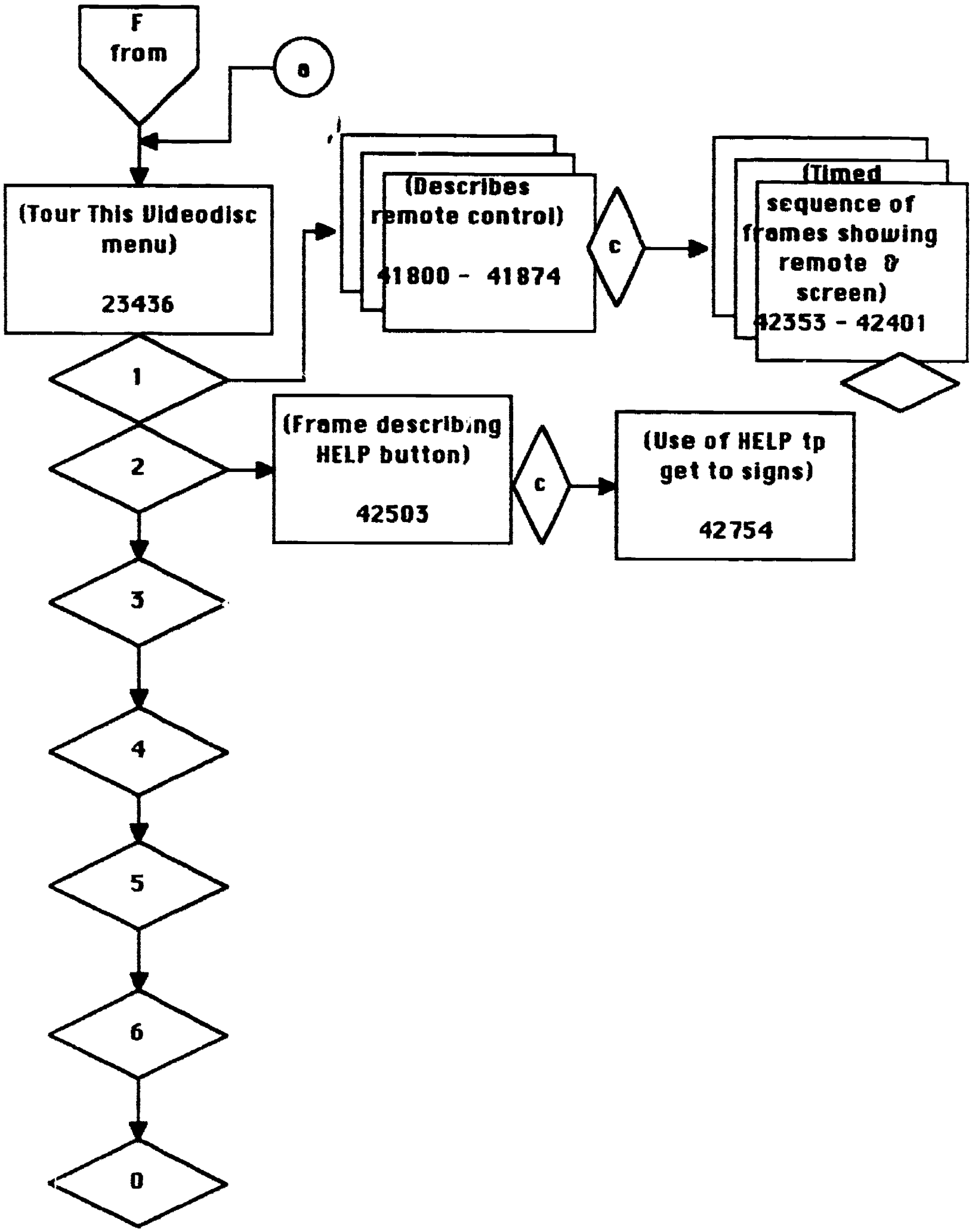

(Use scroll bars to see the rest of this chart)
A from
INTRODUCTION
1. Tour
2. Program
23427
1
2
(Describes remote control)
41800 - 41874
Continue
(Time sequence of frames showing remote & screen)
42353 -42401
continue
(Tour This Videodisc Menu)
23427
7
continue
(Frame describing GO BACK button)
42039
continue
(Frame describing HELP button)
continue
(refers to alphabet)
42586 - 42741
continue
(Multiple pictures of signing hands)
23605 - 23641
9
(Use of HELP to get to signs)
42754
continue
(HELP Menu with option 2 highlighted)
(new, formerly 23589)
continue
Tour 2...
B


B from
(text over and under the letter selection menu)
(new, formerly 23852)
8
(discusses EXIT option in HELP)
43412
continue
(HELP Menu with option 4, Exit Program, highlighted)
(new, formerly 23589)
8
(directions to look at choices at main menu)
(new)
8
(Main Menu)
23436
8
The instruction is divided into parts called modules (new)
continue
(animation discussing 3 modules)
43461 - 44102
continue
(text over modules with text added)
44390
(Home Module Menu)
23545
8
(Play Module Menu)
23463
8
(Medical Module Menu)
23507
8
(tells what each module teaches)
44390 - 44632
continue
Tour 3... C


C
from
(discusses module symbols)
44680 - 44955
continue
(discusses sign, word & sentence check)
45095 - 45424
continue
(discuss pictures & rules)
45563
continue
(shows digitized screen of David signing)
26132
10
(Animated text sequence on go back, plus directions for next screen)
continue
(Expert signing "Take care.")
13960 -14002
continue
(text directions with single word menu)
45881 -46344
continue
(directions for practice)
46349 - 46627
continue
(directions for seeing whole sentences signed)
46631
continue
(My name is Linda)
4325 - 4477
Tour 4...
D


D
from
(Discusses sign & word check practice
46679 - 46897
(Discusses sign & word check)
46890
continue
(examples of word check test item)
29166
7
(examples of sign check test item)
34615
7
continue
(Directions for getting to Challenge)
(new)
10
(text on Challenge over reduced view of Main Menu)
(new)
continue
(discusses challenge section)
46915
10
(sentence check)
33229
continue
(example of challenge test item)
33877
10
(reminder of GO BACK capability)
46932
continue
(discusses when to study language activities)
46957
continue
(Main menu with option highlighted)
(new, formerly 23436)
7
Tour 5...
E


E
from
(discusses choosing language activities)
(new)
7
(Language Activities Menu)
23530
(discusses FACE IT and Signing Verbs)
46970 - 47474
continue
(discusses lessons)
47638
continue
(discusses Face It)
47643
continue
(Shows value of facial expressions)
26618 - 26673
5
continue
(Discusses Signing verbs and hand movement)
47660
continue
(Shows graphically directions of SHOW)
35966 - 36419
continue
(third lesson relates WHO to PERSON)
47669 - 47917
continue
(Shows example of use of WHO)
37462 - 38046
5
(Discusses Tour of This Videodisc Menu)
(new)
continue
Tour 6...
F


F
from
a
(Tour This Videodisc menu)
23436
(Describes remote control)
41800 - 41874
c
(Timed sequence of frames showing remote & screen)
42353 - 42401
1
2
3
4
5
6
0
(Frame describing HELP button)
42503
c
(Use of HELP tp get to signs)
42754

Appendix D

In this section is presented a sample of one of the storyboards used to guide the production of the IVD program.

STORYBOARD TEMPLATE FOR CEP882, FALL, 89

2/6/90

From ____ To ____ Sequence # 1 __ Team Number ____ Sort Find

Scene	Audio Text
*CAPTIONS THROUGHOUT VIDEO. MSU AND USOE PRESENTS video of hands signing into color burst of digitized hands animation	

Production Notes: music
hands sign titles, fade to black, color hand animation begins

From ____ To ____ Sequence # 2 __ Team Number ____ Sort Find

Scene	Audio Text
* * SIGN CONNECTION *	Sign Connection

Production Notes: music with "pings" hitting on the stars
voice over

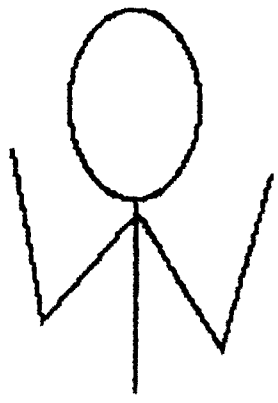
STORYBOARD TEMPLATE FOR CEP882, FALL, 89

From ____ To ____ Sequence # 3 ___ Team Number ___ Sort Find

Scene	Audio Text
video of two hands (DAVID'S HANDS) signing on black "an interactive videodisc made possible through grants and funding from USOE & MSU"	An interactive videodisc make possible through grants and funding from USOE and MSU

Production Notes: music
captions

From ____ To ____ Sequence # 4 ___ Team Number ___ Sort Find

Scene	Audio Text
DAVID  As a	As a teacher, you know the difficulties of facilitating communication between hearing children and deaf children.

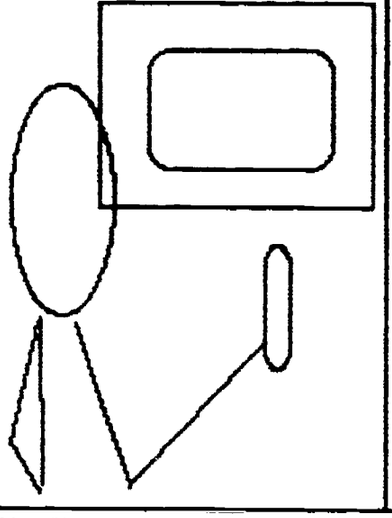
Production Notes: pull back from hands to show narrator
captions

From ___ To ___ Sequence #5 ___ Team Number ___ Sort Find

Scene	Audio Text
Photo of two children signing-taken from video footage of children outside school. (Lisa and Earl or the Dickson boys) Obviously	Obviously communication would be facilitated if everyone was able to sign.

Production Notes: caption

From ___ To ___ Sequence #6 ___ Team Number ___ Sort Find

Scene	Audio Text
DAVID 	This interactive videosystem is designed to teach children and adults how to sign some key phrases.

Production Notes:

CAPTIONED

Appendix E

In this section are presented samples of coordinator and staff Agendi, Minutes and Tasking and Reporting Sheets used in managing and communicating among coordinators and staff.

2/26/90

IVDS STAFF MEETING MINUTES

Present: Dr. Gentry, Patti, Leticia, Cynthia, Pericles, and Enyonam

Decisions:

1) Randy and Lauren are meeting with Ken Abrams, while this meeting is being held, to go over the language activities and devise a plan to compact that section of the programming. There is still hope that the entire disk can be done on one 7-K dump. It is estimated that it will take to the end of this week to get the programming done. If true, it will not be possible to get the project completed by the end of this term.

2) Dr. Gentry has a call in to Washington to inquire about the possibility of an extension for the project. If the FE3 goes over into finals week Dr. Stewart will oversee the effort during the time Dr. Gentry is scheduled to do his workshop in Georgia.

3) Dr. Gentry is conferring with Janice about the amount of money left in the project budget. The computer center has been billing for K. Abrams time and Dr. Gentry is attempting to get this resolved.

4) Lauren and Pericles are working on completing the criterion checklists for the Guide, While Patti completes her part of the Guide.

5) Leticia will cross-check the two lists of changes and let Pericles know of any differences in graphics revisions. Cynthia needs the required graphics for the orientation tape.

6) The orientation video is set except the on-line editing which is scheduled for March 5 and the credits. The computer dump for the disk is still scheduled for the same day. This will probably need to be re-scheduled to coincide with the completion of the in-house evaluation.

7) We are currently checking for another Pioneer 6000 to test the programming. But if necessary, we can use the inkpad to simulate a Level II videodisc player in necessary.

8) Enyonam is continuing the hypercard storyboarding task on Wednesday.

9) It is estimated that the summative evaluation will take about 4 days to complete; probably during the first two weeks of Spring term. Three systems will be utilized to test 50 individuals in 35 sessions to gather the data required. Some of the evaluation can take place at M.S.U. and the other half will be split between Flint and Grand Rapids. We will go to Detroit only if we have to. The research design will look at pairs of hearing, hearing-impaired, hearing and hearing, and hearing-impaired with hearing-impaired.

10) The current plan for the remainder of the term is for us to:
   a. do a thorough job of the Professional FE3,
   b. to analyse the data,
   c. to make the necessary revisions, and
   d. to send for the 3 new check discs to be used in the Summative Evaluation.

The summative evaluation will have to be done at the beginning of Spring term.

11) The next meeting will be Monday , March 5, from 4-5 p.m., in Rm. 452 E. H.

Cass

To IVDS Coordinators
From: Cass
Date: 2/19/90
Re: Agenda for the IVDS Coordinator's Meeting, in 451 EH, 10:30 am, Monday, February 26, 1990

Agenda

1. Budget revision for Washington

2. Computer center bills

3. Cynthia's request to leave 3/9/90

3. Status of Orientation video edit

4. Status of FE3 schedule
   a. Programming problem
   b. Identification of evaluators
   c. Evaluation packet

3. Orientation & Disc video credit graphics?

3. Summative evaluation
   a. Two check discs, two systems

4. Revised Project schedule

IVDS Staff Meeting

452 EH, Monday, February 26, 1990, 4:00-5:30 pm.

Agenda

1. Pericles
   - b. Report progress on completing orientation graphics
   - c. Report on any other graphics yet to be done
2. Cynthia
   - b. Report on status of orientation video edit
   - c. Report on plan for peer evaluation of signing
3. Leticia
   - a. Report on status of revised flowchart
   - b. Report on revision of compiled program to match revised flowchart
4. Lauren
   - a. Report progress on development of performance checklist
   - b. Report on arrangements for FE3
5. Patti
   - a. Report on status of revised flowchart
   - c. Report on state of User Guide
6. Randy
   - a. Report on revision of compiled program to match revised flowchart
   - b. Report on procedure to globally search and change numbers on compiled program
   - c. Report on schedule for burning EPROM chip
7. Enyonam Norgbey
   - a. Report on flowchart revisions
   - b. Report on storyboarding

Task Assignment

1. Lauren
   - a. Complete schedule for professional FE3
   - b. Complete performance checklist
   - c. Assess assigned section of disc program

2. Randy
   a. Complete revision of compiled program to match revised flowchart
   b. Globally search and change frame numbers on compiled program
   c. Test compiled program with check disc
3. Leticia
   a. Complete revision of compiled program to match revised flowchart
   b. Globally search and change frame numbers on compiled program
   c. Test compiled program with check disc
4. Cynthia
   b. Edit orientation videotape
   c. Assess assigned section of disc program
5. Pericles
   a. Transfer graphics for Orientation to 1" tape
   b. Revise graphics based on professional FE3
   c. Design graphics for User's Guide
6. Patti
   a. Generate hard copy of User Guide sections needed for Orientation shoot
   b. Assess assigned section of disc program

7. Enyonam Norgbey
   a. Continue HyperCard storyboarding of videodisc program

Cynthia Young
February 16, 1990

IVD TASK REPORT

RESULTS SINCE LAST REPORT:

Orientation storyboard is completed, including changes by Dr. Stewart, Dr. Gentry, and Dick Brundle. Dialogue for Narrator has been sent over to ITV to be put on teleprompter.

IN PROGRESS:

Preparing for ITV studio taping for Orientation tape.

PROBLEMS

Since we are not ready with the program, we are not ready to use the ITV time we have booked for changes to the 1" tape on Feb 22. This will have to be rescheduled.

PROPOSED NEXT STEPS:

Tape and edit the orientation piece Prepare for corrections to the 1" master

IVDS PROJECT
WEEKLY REPORT

Name: Lauren Pfeiffer
Date: February 16, 1990

Description of tasks currently working on:

*REVIEW FLOWCHARTS FOR PROGRAMMING
*ORIENTATION TAPE
*PREPARATION OF USER'S GUIDE
*PREPARATION FOR SUMMATIVE EVALUATION

Results since last report:

*Assisted Pericles with the graphics for the orientation videotape. Not sure when graphics need to be ready for dump-to-tape for editing.

*Met with Leticia to clarify and review the flowcharts.

*Completed mock-up of pages in the manual that include the Performance Checklist and Testing items

*Discussed, with Cass and Patti and Pericles, the photos for the job aids on setting up the system.

*Assisted Pericles with the graphics REVISIONS for final disc.

Proposed next steps
??????????????

Cynthia Young
February 23, 1990

IVD TASK REPORT

RESULTS SINCE LAST REPORT

The studio taping for the orientation is completed.

IN PROGRESS

Selections for examples to be used (from previous footage) need to be selected and logged for the ITV computer edit.

PROBLEMS

PROPOSED NEXT STEPS

Edit orientation tape. Schedule time to add computer graphic changes to the 1" master. Edit new master for 3M.

IVDS Project
WEEKLY REPORT

Name: Patricia Bean
Date: February 21, 1990

Description of tasks currently working on:

* Project historian
* Technical and user guide
* Project management assistant

Results since last report:

- Fulfilled duties as project historian.
- Generated hardcopies of manual items for orientation shoot.
- Helped Leticia revise remaining flow charts.

Proposed next steps:

- Continue as project historian.
- Edit and revise 5th draft of user manual.
- Participate in the in-house evaluation.

RESULTS OF 4/4/89 MEETING

To: IVDS Coordinators & Historian
From: Cass
Date: 4/3/89
Re: Agenda for the IVDS Coordinator s Meeting

Our meeting is in 451 EH, on Monday, April 3, 11:00 am.

Agenda

1. State of MDE proposal for Lucian Parshall

Result: David will meet with Ed Burch to encourage him to support us Monday 4/3/89

2. Status of editing

Result: Dick will direct Jaime and Don in getting Color Space II Operative quickly inorder to put graphics on VHS tape by Wednesday

3. Preparation for formative evaluation

Result: David and Lauren will identify and schedule test subjects for the formative evaluation. Cass will work with David in evaluating the hearing impaired subjects.

4. Preparation for ITV production at Michigan School for the Deaf
   a. talent/rehearsal
   b. graphics
   c. location(s)
   d. production roles (cameraperson, director, etc.)
   e. date(s)
   f. editing
   g. programming
   h. Interpretor
   i. Other

Result: David and Lauren will make arrangements

5. Equipment update

Result: Jaime will continue to be keeper of the keys and organizer of all IVDS software original disks and their manuals. Don will keep a running tab on what software and hardware we have and what we will be ordering.

6. Use of interns

Result: Continue to have Leticia work with Don on HyperTalk and Video Toolkit, but must soon begin to have her become familiar and skilled at taking over Fai's tasks for the Summer.

7. Assess Weekly Staff Reports

Result: Made necessary modifications

8. Review proposed Staff task assignments

Result: Made necessary modifications

9. React to current draft of psychomotor Self-Evaluation Model Proposal.

Result: Lauren has not yet sent a copy to us. Cass will have her send a copy to each coordinator.

10. Plan for completing Presentation/article
    a. Fai and Cass's principles

Result: Cass will work up first draft by April 10, Dick will do second draft, David third

11. David's letter regarding our obligation to GA's from other programs

Result: Coordinators agreed with spirit of letter which is concerned that we be up front with intents having students of our program high priority for GA ships. But will discuss with students currently with us on individual basis. Will use letter with new hirees for future projects. If projects go through we will need all of our current staff and more.

12. Other

Result: Need to get Color Space II running as soon as possible. Dick will manage.

Result: Need to meet this week to see next step on dealing with no-drop frame addressing. If David gets extra money, can use some to pay. If not alternatives are: hope MSU gets their system up to speed. use TNT's system. or go thru John Childs. None of these alternatives or sure or necessarily timely. Dick and Cass will pursue.