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ABSTRACT

To meet the needs of visually-impaired candidates, Educational Testing Service (ETS) has traditionally provided tests in three special formats: large-print, Braille, and cassette. Certain ETS programs permit the use of the candidate's reader or the use of amanuensis, that is, someone who records answers for the candidate. The primary goal of anyone who adapts an ETS Test for blind or visually-impaired candidates is to provide a test that presents a task equivalent to that presented to sighted candidates. This manual contains both an outline of existing procedures and a number of recommendations. Its purpose is to aid test development staff who have responsibility for preparing tests in large-print, Braille, and cassette editions. Program Direction staff has the responsibility for planning the production of special editions, arranging for printing and taping, deciding testing time, designating which test form will be the base test for special editions, and checking quality control. The roles of test development coordinator, assembler and adapter are discussed. Guidelines for item adaptation and narration include special considerations for quantitative item types. Test development tasks in adapting tests for the visually impaired, a checklist for test adapter, test adapter's control sheet, and additional information about testing the handicapped are included in the appendices. (Author/PN)

A Manual for Preparing Special Test Editions for the Handicapped

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INTRODUCTION

To meet the needs of visually-impaired candidates, ETS has traditionally provided tests in three special formats for visually impaired students: large-print, Braille, and cassette. Large-print editions are identical in content to the regular print editions, but candidates using a large-print edition are generally given additional time in which to complete the test. Braille editions are prepared for ETS by Volunteer Services for the Blind, a Braille printing house in Philadelphia. Braille retains most of the advantages of print; however, Braille print requires much more space than does regular print. The result is that the blind candidate has many more pages to contend with than does the sighted candidate. Additional time is permitted for candidates using Braille editions. Cassette editions of tests require the most adaptation and, in some cases, cannot adequately convey all of the material contained in the print edition. To supplement the cassette recording, large-print or raised-line plates are provided for materials such as figures or graphs. Certain programs offer other options for the visually handicapped. The candidate may be permitted to use his or her own reader. Some programs permit the use of an amanuensis, that is, someone who records answers for the candidate.

The primary goal of anyone who adapts an ETS test for blind or visually impaired candidates is to provide a test that presents a task equivalent to that presented to sighted candidates. The greatest possible number of the advantages available to sighted candidates must be preserved for blind or visually impaired candidates. These advantages are not just the immediately apparent ones. Consider, for example, the role that page layout plays in a reading comprehension set. The passage and the items based on it are normally printed on the same page or on facing pages. Such a layout ensures convenient access to the information needed to complete the task. The same reading set, translated into Braille, will occupy several Braille plates. For the sighted candidate, returning to a portion of the reading passage in order to key an item involves merely a glance. For a non-sighted candidate using a Braille edition of the same test, the task is more cumbersome. A non-sighted candidate using a tape-recorded version of the same test faces even greater problems.

There are a number of procedures and strategies available. Greater experience with testing handicapped candidates will allow us to make ever more informed choices about the services we provide. This manual contains both an outline of existing procedures and a number of recommendations. Its purpose is to aid test development staff who have responsibility for preparing tests in large-print, Braille, and cassette editions. These recommendations have evolved from a number of discussions with people who have prepared Braille and cassette editions of various tests.

I. THE ROLE OF PROGRAM DIRECTION

A. General Planning

Program staff has traditionally had responsibility for planning the production of special editions. The individual program determines what special editions of tests, if any, are to be provided, what kinds of facilities will be made available to visually impaired candidates, and what other special provisions should be made. The options offered by seven major testing programs are listed below:

	AP	ATP	GMAT	GRE	NTE	SSAT	TOEFL
Large-print	yes	yes	yes	yes	no	no	no
Cassette	no	yes	yes	yes	no	no	no
Braille	no	yes	yes	yes	no	no	no
Reader	yes	yes	yes	yes	yes	yes	yes
Amanuensis	yes	yes	yes	yes	yes	no	yes
Extra time on the test	yes	yes	yes	yes	yes	yes	yes

The availability of special testing arrangements is presented in the bulletins of information of the various programs, and handicapped candidates are advised how to make the necessary arrangements.

B. Printing and Taping

Making arrangements for printing and taping has traditionally been another program responsibility. Program staff decides what kinds of materials are to be provided, such as raised-line figure supplements to accompany math sections in cassette tests or pull-out plates in Braille editions containing information to which the candidate must refer frequently to answer items.

The production of Braille and cassette editions is essentially independent of normal ETS test production procedures. ETS has used Volunteer Services for the Blind in Philadelphia to prepare Braille editions and the master tapes of cassette editions. This has proved to be a satisfactory arrangement for the most part. The staff of VSB has had considerable experience in the preparation of Braille and cassette editions of ETS tests, and they have added to our store of information on testing the handicapped. The only question that might be considered is one of cost-effectiveness in the preparation of the cassette editions. The master tapes have been produced in Philadelphia and then sent to ETS for proofing. The tapes are then sent back to Philadelphia for corrections. It may be more efficient to have the narration done at a local studio with ETS staff present at the recording. This would ensure error-free tapes in one session.

C. Timing

Program staff also decides how much extra testing time, if any, should be allowed. The question of timing has direct relevance to test development considerations. The cassette version of the GRE Aptitude Test, for instance, takes approximately three and one-half hours to play. Rewinding the tape to refer to an earlier section also uses up time. In past administrations, six hours, instead of the normal three and one-half, have been alloted. This may not be enough additional time. In interviews conducted for her report Handicapped Students and the SAT, Marjorie Ragosta found that handicapped students taking the SAT often feel considerable time pressure even with extended amounts of time. Ragosta points out that the time extension for handicapped students means "that less able-bodied students have to hold up longer under the physically exhausting conditions of the test situation." It is therefore important that sufficient rest time be interspersed with testing. As more data become available on testing handicapped students, questions of timing may need to be reconsidered.

D. Form Designation

The individual program also designates which test form will be the base test for special editions. Such forms are exempt from the New York State legislation disclosure and can be reused. In order to do the most effective job from the test development standpoint, this designation should be made as early as possible; it would be advantageous for the test developer to know before initial assembly that a test or section of a test is to be adapted later for Braille and cassette editions.

Program staff also needs to discuss as a policy issue the practice of allowing candidates to use the cassette version of a test along with a large-print or Braille edition. Descriptions of figures are added to the cassette version which do not appear printed in the large-print or Braille editions. Candidates using two forms of the test need to be advised that they will hear

descriptions of figures but will not find them printed or Brailled. Supervisor's copies will also lack the descriptions used on the cassette version of the test.

E. Quality Control

Finally, a quality control check is needed at the very end of the process to ensure that everything has been put together properly. It is necessary for a Braille reader to make the final check of a Braille edition; ETS test production should make the final check of a cassette edition.

II. THE ROLE OF TEST DEVELOPMENT

A. Area Director

It is highly recommended that a team of two test development staff members be designated as test adapters within each area for any special editions of tests within that area. The process of adaptation is a complex one and often involves decisions that may affect the integrity of items. Test development staff are most familiar with the content of tests and best equipped to prepare the test copy for special editions. For a test like GMAT or GRE Aptitude, approximately 125-150 hours should be allotted for the test adapter. An experienced adapter, of course, will acquire expertise and may be able to complete the task in less time. Since such adaptations occur infrequently, however, it may be necessary to assign the task to someone unfamiliar with the process.

It is also recommended that workfolders with a special control sheet (See Appendix C) be used for the copy of each special edition. This would be prepared by the test adapter when he or she receives the ready-for-print planograph copy.

B. Test Development Coordinator

1. Early Designation It is recommended that the form to be adapted for large-print, Braille or cassette editions be designated as such in the planning memorandum. If the test assembler is aware early in the process that a test will be so adapted, he or she can take a number of steps early in the assembly process that will minimize differences between the regular print test and the adapted editions.

2. Allow Sufficient Time The coordinator should allow additional time in the test development schedule for the development of special test editions. A four-week interval between the time the test assembler marks the planograph OK-to-print and the time the adapted copy is due to Volunteer Services for the Blind for production seems like a reasonable amount of time. A week and two days for editing the plates and tapes produced by VSB will also need to be included. The schedule is, of course, dependent upon the time VSB needs for production; that will need to be ascertained with the program staff. The assumption here is that the person charged with the adaptation will have on-going work that also requires attention. Preparing the adaptation is a painstaking task that requires close attention to detail. It cannot be done efficiently in a hurry.

3. Directions File Sets of test directions for each of the special editions of the test should be kept on file in the coordinator's office.

C. Test Assembler

1. Item Format There are several things that a test assembler can do to ensure that a minimum number of adaptations to items will need to be made later. It should be noted that pretest sections are not included in special editions and require no special attention.

In so far as it is possible within the other constraints of the test development process, the assembler should attempt to avoid items that are heavily dependent upon page layout or visual format. An item dependent upon working out spatial relationships may prove very difficult for a blind candidate. An item that depends upon a very complicated geometric figure or graph should be avoided unless psychometric considerations make it absolutely necessary to include such an item. If items depending on figures are necessary, it is desirable to choose examples whose figures are relatively uncluttered. Figures and graphs are depicted in raised-line images in the Braille and cassette editions, and descriptions of the figures are provided in both Braille and cassette editions, but these have their limitations. It is certainly not desirable to burden the blind candidate with an excessive amount of descriptive material to wade through before he or she can even begin to work a problem. If an item with complicated figures or graphs must be included, placing it at the end of the section is desirable. The test assembler can play an important role in minimizing these difficulties through judicious selection of items.

2. Labeling of Figures A related issue concerns the labeling of figures when it is necessary to use them. Pairs of letters that sound very much alike--B and D or M and N, for instance, should not both be used. Similarly, O and Q may be difficult to distinguish for a visually impaired candidate using a large-print edition of a test. If the test assembler, rather than the test adapter, makes these small changes as the test is being assembled, the chances of introducing inconsistencies among the three special versions will be minimized, and the special editions of the test will be that much more consistent with the regular print edition.

3. Open-Stem Items Another consideration for the test assembler is the use of open-stem items (e.g. The principal reason for the long range of shortwave radio is the _____ (A) reflection of the sky wave). For a candidate using a cassette edition of a test, it is simply easier to process a closed-stem item. It is immediately apparent what he or she is being asked. Open-stemmed items pose certain difficulties in narration (see Section III) that closed-stem items do not. It probably will not be possible to avoid all open-stemmed items, but if a choice exists, it would be desirable for the test assembler to choose an item with a closed stem rather than one with an open stem.

4. Sensitivity The fourth consideration for the test assembler concerns issues of sensitivity. An item which assumes that everyone has normal vision is clearly not desirable. An item which depends heavily on perception of color, for instance, may not be suitable.

If the test assembler works with these considerations in mind, a great deal of adaptation will already have been done. The test assembler can and should consult with the person designated as test adapter whenever a question arises. To the extent that later adaptations are unnecessary, the test assembler retains greater control over the quality of the final product.

D. Test Adapter

The test developer responsible for adapting a test for special editions will have the final responsibility for preparing the test copy for all sections of the special editions of the final form. The test adapter will work with the assemblers of the individual sections, but only the test adapter reviews the entire test. Thus, the responsibility for internal consistency rests with the test adapter. The test adapter has six basic areas of responsibility. These are outlined below and followed by a detailed checklist of the components of each task (See Appendix B).

1. Item Adaptation The first of these responsibilities involves the adaptation of individual items. If the test assembler has been successful, such adaptations should be relatively minor. In Section III, individual item types are discussed, and some common problems are pointed out. If additional adaptations are necessary, the test adapter should meet with the section assembler to clear any changes. So far as is possible, the actual items in the special forms should be consistent with those in the regular print edition.

2. Supplemental Material The second responsibility of the test adapter is to oversee the preparation of any supplemental material (material that does not appear in the regular-print edition). Quantitative sections of aptitude tests, for instance, require considerable supplemental material. For the Braille editions, a brief description of any figures or graphs that are used in items precedes the item. For the cassette version, longer descriptions are required.

The test adapter should ask the test assembler for the section that requires supplemental material to prepare these materials. The test assembler should have these descriptions reviewed just as other test materials are reviewed. It is the responsibility of the test adapter to incorporate these materials into the test copy.

3. Adaptation of Directions The third area of responsibility involves the adaptation of directions. References to timing are eliminated and section and end directions are adapted. References such as " the example shown above" must be deleted. In cases involving fixed-format directions (e.g. quantitative comparisons), a separate pull-out plate of summary directions is made available for the Braille edition, and a large-print or Braille supplement containing the directions accompanies the cassette version. Ideally, copies of directions for each of the special editions will be on file, and the test adapter will be able to rely on these.

When the three tasks above are completed, we recommend that an ETS editor give the copy a final review, not to change items, but to check for internal consistency.

4. Test Production The fourth area involves the actual production of the special editions. The Office of Publications sends the prepared copy to Volunteer Services for the Blind, but the test adapter should discuss with Volunteer Services for the Blind the layout of the Braille plates. This can be done either by attachments to the test copy or by phone. He or she should also discuss the narration of the test with the person who is to narrate the cassette edition. Fortunately, an accumulated cache of experience exists; VSB has provided experienced Braille editors and narrators whose advice has been invaluable. Recommendations for narration follow in Section III. The test adapter should decide how the various item types should be read and should give the narrator clear guidelines to follow. The test adapter also indicates where tone indexing should be placed (See Section III).

5. Proofing The fifth area involves proofing the material prepared by Volunteer Services. It is probably most efficient for the test adapter to travel to the VSB facility in Philadelphia to proof the Braille plates. The Braille editor reads the material aloud while the test adapter follows in the adapted test copy. The tapes for the cassette edition can be proofed at ETS, or the recording could be done in Princeton with the test adapter present at the taping. The test adapter checks the tapes against the copy. If the recording is done at Princeton, this becomes a one-session process. If the recording is done elsewhere, the test adapter must submit the necessary changes to the narrator, and check the corrections.

6. Final Check The sixth area involves a final check of the materials--equivalent to a test development coordinator's brown line check--to make sure that each special edition has all of the necessary sections in the proper order. It may be necessary to hire a Braille reader at this point to check the Braille edition. This final check should probably be done in production as part of whatever normal sequences such materials usually undergo.

III. GUIDELINES FOR ITEM ADAPTATION AND NARRATION

A. General Item Adaptation

1. Whenever possible, items with closed stems should be used.

2. Whenever possible, items that are heavily dependent upon complicated figures and graphs should be avoided; when it is necessary to use such items, the test assembler should place them at the end of the test section in which they appear.

3. Whenever letters are used for the purposes of labeling, pairs that are difficult to distinguish aurally (B and D, M and N) should be avoided. Also, the pair O and Q should be avoided.

4. Whenever possible, items with a Roman numeral format should be avoided. Non-sighted candidates do not have a visual display to immediately inform them that the Roman numerals are really a list of options from which they must choose the correct answer. They must work through the entire item before the task becomes apparent.

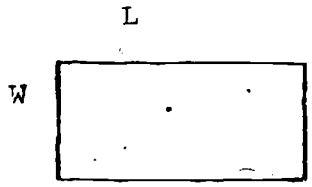
5. Items that assume that everyone has vision should be avoided. Avoid items that deal with the various metaphoric connotations of blindness, many of which may prove disturbing to non-sighted candidates, and items that deal with blindness as a subject.

B. Special Considerations for Quantitative Item Types

Descriptions of figures or graphs used in certain kinds of quantitative items should be written and reviewed by the test development staff responsible for the item type. The examples below are representative of the kind of descriptions that are required.

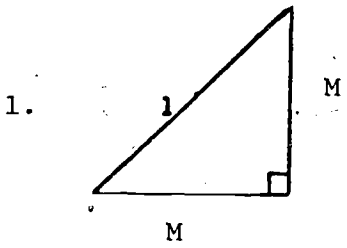
In quantitative comparison items, it is important that the integrity of the columns marked A and B be preserved. A note to this effect should be included on the test copy for the Braille edition. Pull-out pages containing directions for this item type are included in the Braille edition; a large-print or Braille supplement containing fixed-format directions is provided to candidates using the cassette edition. Examples of such items can be found in the quantitative sections of the SAT and in the GRE Aptitude Tests.

a) The figure presents a rectangle with width W and length L.

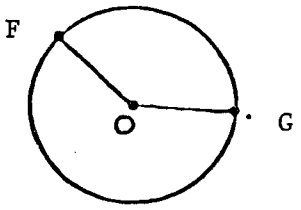


The perimeter of the rectangle is 10.

b) The figure presents an isosceles right triangle that has legs of length M and hypotenuse of length 1.



c) The figure presents a circle with center O. Points F and G are on the circle and segments F and G are drawn. Points F, G, and O are not on the same line.



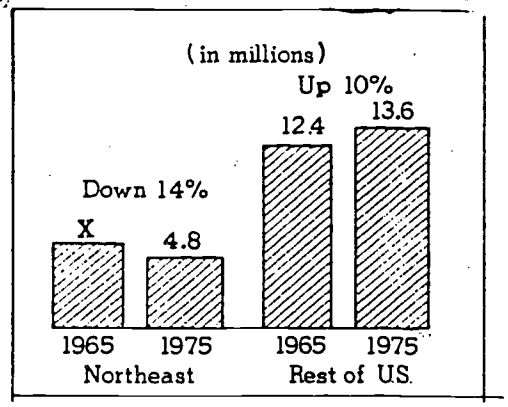
Length of minor arc FG FO + GO

Descriptions of figures for cassette editions need to be more complex than those used in Braille editions. The following descriptions describe the same graph.

Braille Edition:

Questions 21-25 refer to a vertical bar graph titled "Factory Jobs in the Northeastern United States."

Factory Jobs in the Northeastern United States



Cassette Edition:

Questions 21-25 refer to the graph titled "Factory Jobs in the Northeastern United States."

There are four vertical bars for 1965 and 1975 for the Northeast and for the same years in the Rest of U.S. The values given for the Northeast are X and 4.8 for 1965 and 1975, respectively, and the values given for the Rest of U.S. are 12.4 and 13.6 for 1965 and 1975, respectively.

Above the bars it is indicated that factory jobs were down 14% in the Northeast from 1965 to 1975 and up 10% in the Rest of U.S. from 1965 to 1975.

C. Guidelines for Narration

Narration presents some of the most challenging work for the test adapter. The cassettes of former recorded tests are available in test files. The most recent GRE Aptitude Test can be used as a guide for narrating items. The following methods were used in that test.

1. Tone Indexing Tone indexing is a device that has been used in previous ETS tests. A tone index is a distinctive beep sound when the cassette player is in rewind or fast forward, but at regular play speed, it is a barely audible low frequency sound. Each question number is followed by two short beeps. Passages on which questions will subsequently be asked are preceded by a single beep. Portions of the test which are preceded by new directions are introduced by a single short beep. These procedures should be discussed with the narrator and the technical people assisting with the recording. It is useful to indicate where a tone index should be placed on the cassette script, using asterisks as indicators. Tone indexing is the only tool available to the non-sighted candidate for referring back to needed information.

2. The Narration of Verbal Items

a) Sentence Completions It is recommended that sentence completions be read in the following manner: the narrator should read the sentence to be completed, reading "blank" where the blanks occur. The narrator should then read each of the options by repeating the entire sentence with the options inserted into the blanks. Simply reading the options as written requires the non-sighted candidate to remember the stem for an inordinate amount of time.

b) Analogies Analogies can be read as "A is to B as (A) X is to Y."

c) Reading Comprehension Open-stem reading comprehension items should be read as if they were sentence completion items with the blank occurring at the end of the sentence. For each option, the stem should be repeated complete with the option.

3. Quantitative Item Types

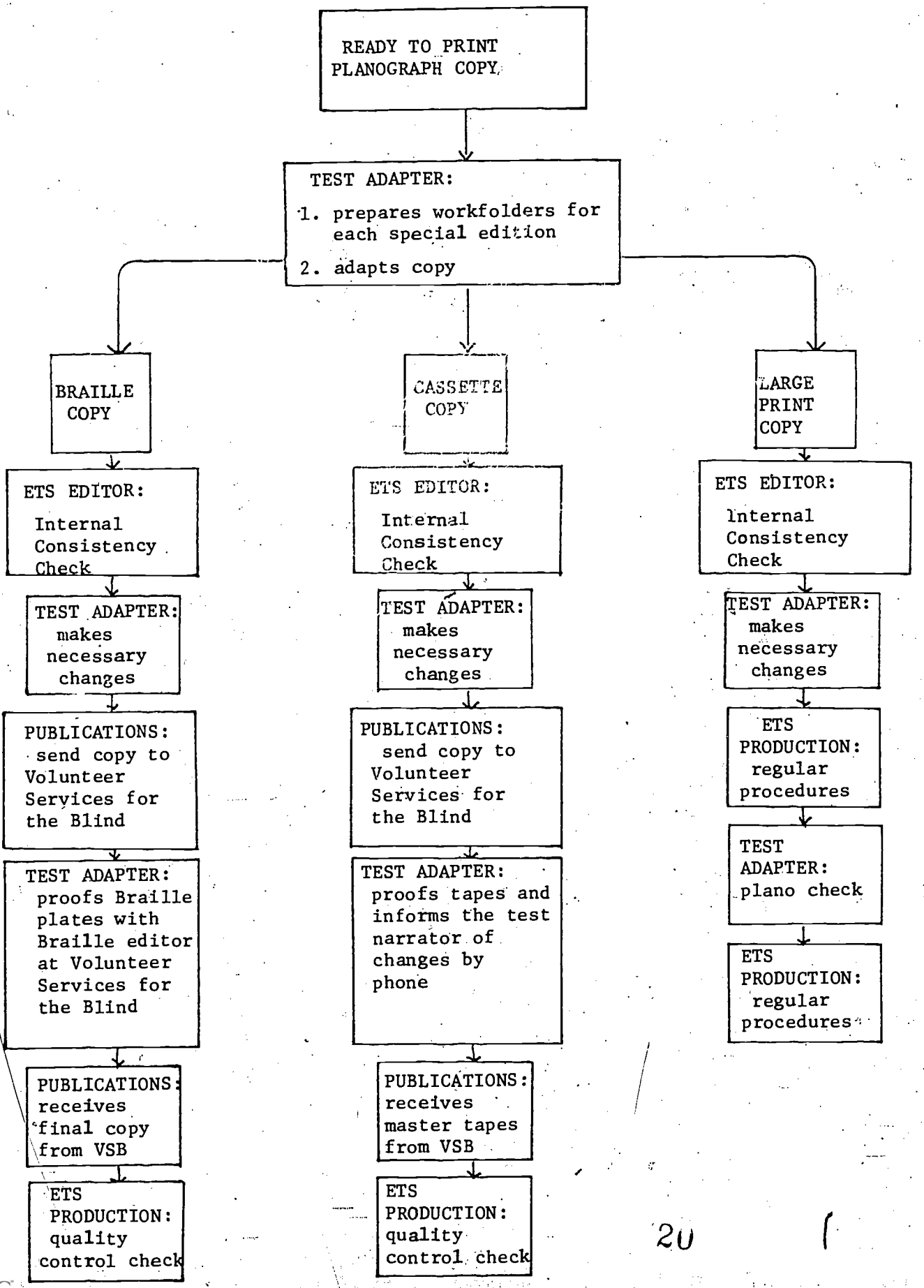
a) Generally, quantitative items are the most difficult to narrate. It is recommended that the test adapter read each item aloud as a way of estimating where difficulties might occur. He or she should then discuss with the test assembler ways to read the item aloud (including such matters as verbal equivalents for mathematical symbols). The test adapter should also consult with the narrator either by phone or at the recording session itself on items that seem to present difficulty.

b) Test adapters need to develop an awareness of visual format and the role it plays in order to recommend strategies for narration. The role of visual format, of course, varies from item to item, and it is impossible to predict in what manner such difficulties may arise. When in doubt, the test adapter should ask that an item be read aloud to people who have not seen the item. The difficulties often become apparent immediately. If the narrator

is experienced in reading for the blind, he or she will often be able to recommend solutions. It is also important that earlier cassette versions of tapes be consulted. As ETS acquires more expertise in the area of testing the handicapped, it may be possible to standardize the narrations of our tests. As more handicapped students use ETS tests, we may begin to make decisions about which strategies are most successful.

APPENDICES

APPENDIX A--TEST DEVELOPMENT TASKS IN ADAPTING TESTS FOR THE VISUALLY IMPAIRED



APPENDIX B--CHECKLIST FOR TEST ADAPTER

1. Check schedules and deadlines for production with the Publications Division. Determine from program what materials will be produced.

2. Make workfolder for each special edition (See Section IV control sheet).

3. Replace or adapt any items which raise sensitivity issues.

4. Check labeling of all figures or graphs for possible sources of confusion (e.g. B and D in the same figure, or O and Q). These should be consistent with the regular print version.

5. Make changes required for individual special editions:

	Large Print	Braille	Cassette
Directions	1. Delete references to timing for each section.	1. Same as Large Print	1. Same as Large Print
	2. Delete any references to blackening spaces on answer sheets.	2. Same as Large Print	2. Same as Large Print
	3. Not Applicable	3. Delete or adapt any references to "shown above"; "presented" is an acceptable substitute.	3. Same as Braille
	4. Not Applicable	4. Delete GO ON TO NEXT PAGE directions	4. Same as Braille
	5. Replace end of section (but not end of book) directions with: STOP This is the end of Section (appropriate section). Check your work on this section before proceding to Section (next section). Once you begin Section ___, you may not return to Section ___. You may move on to Section ___ when you are ready.	5. Replace end of section (but not end of book) directions with: STOP This is the end of Section (appropriate section). Check your work on this section before proceding to Section (next section). Once you begin Section ___, you may not return to Section ___. You may move on to Section ___ when you are ready.	5. Replace end of section directions with: This is the end of Section ___. You may check your work on this section before proceding to Section ___, but once you begin Section ___ you may not return to Section ___. Move on to Section ___ on reel ___, track ___ when you are ready.

	Large Print	Braille	Cassette
Directions	6. Replace end of section and end of book directions with: STOP This is the end of Section (appropriate section). Check your work on this section before proceding to Section (next section). Once you begin Section ___, you may not return to Section ___. Ask your supervisor for the book containing Section(s) ___ (and ___) when you are ready.	6. Replace end of section and end of book directions with: STOP This is the end of Section (appropriate section). Check your work on this section before proceding to Section (next section). Once you begin Section ___, you may not return to Section ___. Ask your supervisor for the book containing Section(s) ___ (and ___) when you are ready.	6. Not Applicable
	7. Replace end of test directions with: This is the end of Section ___, the last section of the test. Check your work on this section. When you have finished your work, inform the supervisor.	7. Replace end of test directions with: This is the end of Section ___, the last section of the test. Check your work on this section. When you have finished your work, inform the supervisor.	7. Same as Braille
	8. Not Applicable	8. Not Applicable	8. On quantitative sections, include a reference to the figure supplements: "The figures described in this section of the test are included in the figure supplement."

	Large Print	Braille	Cassette
Items	Items should not require further adaptation.	1. Descriptions of figures or graphs should be inserted before the figure in the test copy.	1. Descriptions of figures or graphs should be inserted into the script.
		2. Make note to production to verify any line references contained in items.	2. Delete any line references contained in items.
		3. Delete any references such as "shown above."	3. Same as Braille
		4. Note on the copy any special considerations of format (e.g. preserving columns of print).	4. Note on the script any special considerations for the reading of a particular item or a particular item type (e.g. the reading of analogies).
		5. Not Applicable	5. Note homonyms or unfamiliar words. Indicate that these should be spelled out.
		6. Not Applicable	6. Note places where tone indexing should be inserted.
Production	Send to production; regular procedures can now be followed.	1. Send to edit for internal consistency check.	1. Same as Braille
		2. Make necessary changes.	2. Make necessary changes.
		3. Indicate what special supplements should be prepared.	3. Indicate what special supplements should be prepared.
		4. Send copy to Publications Office for delivery to VSB.	4. Same as Braille
		5. When Braille plates are ready, proof plates with a Braille editor (this requires a trip to the VSB facility in Philadelphia).	5. When tapes are ready, proof against script.

	Large Print	Braille	Cassette
Production		6. VSB makes necessary changes; test adapter can make final check with Braille editor by phone.	6. Report changes to VSB, (best done by phone); return tapes to VSB. When tapes are returned, make final check of changes made on tape. If recording is done in Princeton with test adapter present, items can be checked immediately.

APPENDIX C--TEST ADAPTER'S CONTROL SHEET

PROGRAM _____ FORM _____ T _____ P ___ J ___

LARGE PRINT

NA	DONE	
☐	☐	Change Directions
☐	☐	Items Adapted
☐	☐	Item Content Consistent with Regular Print
	☐	Sent to Production ___ ___ (init date)
	☐	Ok to Print

BRAILLE

NA	DONE	
☐	☐	Change Directions
☐	☐	Descriptions of Figures and Graphs Inserted
	☐	Items Adapted
	☐	Item Content Consistent with Regular Print Edition
	☐	Sent to Edit ___ ___ (init date)
	☐	Editing Resolved ___ ___ (init date)
	☐	Format Directions to VSB Inserted ___ (date)
	☐	Copy for VSB sent to Publications Office ___ (date)
	☐	Plates Proofed ___ ___ (init date)
	☐	Corrections Made ___ ___ (init date)

CASSETTE

NA	DONE	
☐	☐	Change Directions
☐	☐	Descriptions of Figures and Graphs Inserted
☐	☐	Items Adapted
	☐	Item Content Consistent with Regular Print Edition
	☐	Sent to Edit ___ ___ (init date)
	☐	Editing Resolved ___ ___ (init date)
	☐	Narration Directions to VSB Inserted ___ (date)
	☐	Copy for VSB sent to Publications Office ___ (date)
	☐	Tapes Proofed ___ ___ (init date)
	☐	Corrections Made ___ ___ (init date)
	☐	Ok to Use ___ ___ (init date)

APPENDIX D--BIBLIOGRAPHICAL NOTE

A most useful document for anyone interested in testing the handicapped has been compiled by Puff Rice of the ETS Office of Research Program Planning and Development. The document is entitled Research on Handicapped Persons: A Notebook for ETS Projects, 1982. It contains a list of ETS resource persons, current ETS projects, ETS guidelines for testing the handicapped, and extensive bibliographies. A most useful source of information on candidate response to special editions and administrations is Marjorie Ragosta's, Handicapped Students and the SAT, 1980.

APPENDIX E--ADDITIONAL INFORMATION ABOUT TESTING PROGRAM SERVICES FOR HANDICAPPED CANDIDATES

In 1981 the Office of Corporate Quality Assurance conducted a survey of ETS Program Services for Handicapped Candidates. A total of 62 Testing Programs participated in the survey with the following distribution across divisions:

Division	Number of Programs
College Board	7
Graduate Management Programs (GMAT)	1
Higher Education Programs	10
Elementary & Secondary School Programs	10
Center for Occupational Assessment	26
Regional and International Programs	8
Total	62

The term Handicapped in the survey refered to four groups: persons who are physically handicapped; persons who have learning disabilities; persons who are deaf; and persons who are visually impaired and blind.

Although this manual focuses on the development of special test editions for the blind or visually impaired, a number of testing programs at ETS offer other kinds of special testing services, which are listed below.

Special Services

Special testing rooms
Extra testing time
Rest periods
Front room seating
Wheel chair access to bathrooms
Readers and recorders
Bedside testing
Mechanical aides
Translator for the deaf
Special instructions in candidate bulletins

Although the candidate volume in a testing program may be small, and the cost of developing a special test edition may be prohibitive, it is nevertheless possible to provide a number of special testing services for handicapped persons without incurring significant costs.

Resource Staff within ETS

The ETS Committee for the Testing of Persons who are Handicapped was formed in 1981. The members of the committee are available to provide general help and assistance on issues and topics related to the testing of the handicapped. The members are:

John Winterbottom, Chairman

Randy Bennett

Jerry Murphy

Catherine Nelson

Sandy Polk

Marge Ragosta

Pat Taylor

Several ETS staff have developed special test editions in braille, cassette, and large print. These individuals are available and interested in helping other ETS staff develop special test editions.

Trudy Conlan for AP

Katherine Denby for ATP

Lee Frankel for Elementary and Secondary Programs and GMAT

Elizabeth McGrail for GRE

Sandy Polk for GRE

Charlotte Solomon for GRE