Comprehensive rules, guidelines, and examples are provided for use by ERIC indexers and lexicographers in developing and maintaining the "Thesaurus of ERIC Descriptors." Evaluation and decision criteria, research procedures, and inputting details for adding new Descriptors are documented. Instructions for modifying existing Thesaurus terminology are provided, as are procedures for justifying these actions. Details are included on the present-day Vocabulary Development Program that involves all ERIC components and users in the ongoing activities of Thesaurus development. Definitions and functional descriptions are given for the general concepts of "thesaurus" and "descriptors" and for the individual elements included in a standard, structured thesaurus unit, i.e., Main Term, Descriptor Group, Scope Note, UF/USE References, Narrower Terms, Broader Terms, and Related Terms. The purpose and use are described for each of the four sections of the ERIC Thesaurus: Alphabetical Display, Rotated Display, Hierarchical Display, and Descriptor Group Display. Discussions are provided on the use and control of educational terminology, both generally and within the context of the decentralized ERIC Clearinghouse network. Section appendices include a history of the ERIC Thesaurus and some examples of microcomputer templates used for Thesaurus update transactions. (JH)
Processing Manual

Rules and Guidelines for the Acquisition, Selection, and Technical Processing of Documents and Journal Articles by the Various Components of the ERIC Network

Section VIII:
Vocabulary Development and Maintenance
(Part 1)—Descriptors

May 1992

Educational Resources Information Center (ERIC)
U.S. Department of Education
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1. ERIC's indexing vocabulary provides standard, controlled, subject-concept entries for use in printed indexes and computer-manipulatable files. Entries must represent concepts found in actual documents/articles processed by the system. Control is necessitated by variability found in the language of documents and the language of system users.

2. ERIC's indexing vocabulary consists of Descriptors and Identifiers. Descriptors are meaningful terms or short phrases that, for the most part, represent general classes of things found in the literature. Multiword Descriptors are used whenever single-word Descriptors cannot adequately describe concepts in the literature. Descriptors (singly, or two or more in coordination) will usually adequately represent the ideas and concepts found in a document/article. To identify specific entities (such as pieces of equipment, geographic areas, and other proper nouns and noun phrases), however, Identifiers must be used. Identifiers add a depth to indexing that is not always possible with Descriptors alone. Identifier indexing is intended to supplement Descriptor indexing and is, therefore, to be done in addition to (rather than in lieu of) Descriptor use. Descriptors are defined, interrelated by a system of cross-references, and alphabetically displayed in the Thesaurus of ERIC Descriptors. Identifiers are alphabetically displayed in the Identifier Authority List (IAL), which serves as a companion volume or supplement to the Thesaurus.

3. The Thesaurus of ERIC Descriptors is a list of several thousand formally controlled terms. Many terms in the Thesaurus refer from "non-preferred" forms to preferred terminology. Descriptors represent the preferred (i.e., indexable) entries. Non-preferred terms (i.e., USE references) are either: (1) synonyms and other variant word forms; or, (2) concepts that are seldom used in the literature covered by ERIC and that can be searched equally well under a broader entry.

4. The Thesaurus is displayed in four sequences: Alphabetical Display (primary arrangement); Rotated Display; Hierarchical Display; and Descriptor Group Display. Only the full entries in the Alphabetical Display should be used for direct indexing (or searching). The abbreviated entries in the three secondary displays serve as indexes, in effect, to the Alphabetical Display.

5. Not all Identifiers are proper nouns. Any term or phrase new to the literature will, as a rule, first be "tried out" as an Identifier before it gains Descriptor status. This practice allows a concept to be monitored while information about its usage and/or acceptance among various authors is accumulated. Frequency of indexing occurrence is an important consideration in deciding whether to add a new conceptual-type term to the Thesaurus.

6. Indexers have the responsibility of recommending changes to the Thesaurus when they find subject concepts in the literature that cannot be expressed or indexed adequately with the existing terminology. Each Clearinghouse must assume a proportional share of vocabulary activities, if a balance across subject areas represented in the vocabulary is to be maintained. As a general "rule of thumb," concepts should be considered candidate Descriptors after 5 usages as Identifiers, and should be included somewhere in the structured Thesaurus vocabulary (either as preferred or as non-preferred terms) after approximately 10 usages. Excluded from this rule are, of course, those Identifiers representing proper nouns that cannot qualify for Descriptor status.

7. The Vocabulary Development Form, whether the original pre-printed paper form or a microcomputer-prepared
substitute template, is the input form to be used for all Thesaurus transactions, whether adding a term, deleting a term, or modifying an existing term's display. The choice of paper form or computer template is left to the preparer's discretion. The form permits entry or change of all cross-references, including (non-preferred) terms (UF), Narrower Terms (NT), Broader Terms (BT), and Related Terms (RT). It also accommodates input or revisions of Scope Notes and Group Codes. Full justification must be provided on the Vocabulary Development Form for each Thesaurus transaction. Authorities must always be cited for new Descriptors, or for redefined or merged existing Descriptors. A minimum of three authorities must be cited for each definitional Scope Note prepared. Care should be taken to avoid parochial points of view. Compromise may be necessary when the terminology needs of separate areas of specialization are in conflict.

8. Assignment of a Group Code refers to the placement of a particular Descriptor in one, and only one, of 41 Descriptor Groups (broad subject categories that provide a Thesaurus overview). Scope Notes are brief statements of intended usage, for the purpose of either restriction or explanation; they should not be construed as formal definitions, but as indicators of how terms are (or should be) used in indexing. Instructional notations frequently are part of Scope Notes. These notations direct the Thesaurus user to other terms, indicate proper coordination, provide historical notes on changes in usage or cross-reference structure, or otherwise guide and explain preferred usage for both indexing and searching. Because of the inherent "softness" or imprecision of educational terminology, ERIC carries Scope Notes on all Descriptors whose meanings or intended usages are not self-evident.

9. A significant tenet of the ERIC vocabulary development process is the practice of keeping the authority files and the index (postings) files synchronous, i.e.,

- As a new term is added to the authority files, a special effort is made to locate uses of the term and its variants in the database and to update its postings accordingly.

- When an obsolete or ambiguous term is removed from the authority files, every effort is made to also delete the term from the postings files.

- Some changes require manual reindexing (i.e., individual examination and reindexing of original records). Ambiguous terms whose prior usages cannot be conveniently re-examined, may be made invalid.

10. Thesaurus cross-references are subject to the following basic rules:

- The NT-BT relationship is one of class membership. An NT must be entirely a member of the class defined by its BT. Called hierarchical, the NT-BT relationship provides the capability for fine-tuning indexing and searching processes to the most appropriate (i.e., specific) level of subject matter.

- Close conceptual relationships among Descriptors not in the same hierarchy are displayed via the RT cross-reference.

- All cross-references are reciprocal, i.e., for every entry, a corresponding complementary entry must appear elsewhere. That is, for every UF entry, there is a USE reference; for every NT, there is a BT; for every BT, there is an NT, for every RT, there is another RT. It is not necessary for the preparer of a Vocabulary Development Form to generate cross-reference reciprocals, as this is done automatically by the Thesaurus software.

11. The principal mechanics of Descriptor construction are as follows:

- Abbreviations and acronyms should generally be avoided as Descriptors; they may be treated as non-indexable USE references.
1. Maximum length of Descriptors and USE references is 50 characters, including blanks (i.e., spaces between words).

2. Noun forms are preferred to verb forms (e.g., PUBLICITY, not PUBLICIZE).

3. The plural form is used for "count nouns" (e.g., APTITUDE TESTS), about which one may ask "how many?"

4. The singular form is used for "mass nouns" (e.g., AUDIENCE PARTICIPATION), about which one may ask "how much?"

5. Descriptors and USE references judged to be homographs must have parenthetical qualifiers (e.g., CASE (GRAMMAR)).

6. Sex neutral Descriptors are preferred when a concept is intended to refer to both sexes (e.g., SEAFARERS, not SEAMEN). Sexist terminology that commonly appears in the literature may be entered as USE references.

7. Descriptors may consist of alphabetic characters, Arabic numerals, left and right parentheses, and blanks. Other characters are not acceptable.

8. Inverted entries (e.g., PLANNING (FACILITY)) should be avoided. The Rotated (i.e., permuted) Displays obviates the need for inverted entries.

12. The Vocabulary Development Program provides a system-wide participatory mechanism for coordinating and implementing changes to the ERIC Thesaurus. Through the Vocabulary Review Group, ERIC Clearinghouses and selected users are given the opportunity to review all proposed changes and additions prior to final review/implementation by the ERIC Facility.
VIII. VOCABULARY DEVELOPMENT AND MAINTENANCE (PART 1) - DESCRIPTORS

A. Introduction

A vocabulary for information retrieval provides standard, controlled, subject-concept entries for use in printed indexes and computer manipulatable files. Without vocabulary control, concepts become scattered under many variant entry forms, with a consequent loss in system utility.

The Thesaurus of ERIC Descriptors is the principal indexing vocabulary used in the ERIC system and is the basis for most of the subject entries in the ERIC database. The Thesaurus is a list of several thousand cross-referenced, single-word and multiword concepts representing the subjects found in the database. Many terms in the Thesaurus refer from "non-preferred" forms to preferred terminology. Preferred entries in the Thesaurus are labeled "Descriptors." Non-preferred terms are either (1) synonyms and other variant word forms, or (2) concepts that are seldom used in the literature covered by ERIC and that can be searched equally well under a broader entry.

Subject entries in ERIC's indexes and computer files that are not Descriptors are based on a companion volume to the Thesaurus, the Identifier Authority List (IAL). Identifiers are usually names of specific entities (i.e., proper names) and serve as indexing adjuncts to Descriptors; they may also represent subjects that have only recently been introduced to the ERIC database and, as yet, have not been accepted as Thesaurus terms.

The field of education covers most areas of knowledge. The list of conceivable subjects covered by writers in the field, and the variety of ways those writers use to express the same subject, would be troublesomely long and overlapping without some term-use restrictions. The Thesaurus and IAL specify such restrictions for ERIC.

Section VIII of the ERIC Processing Manual covers these two publications and the development and maintenance of their terminology, in separate discussions: Part 1 -- Descriptors; Part 2 -- Identifiers.

1. Thesaurus -- Definition and Function

The word "thesaurus" comes from the Greek word for treasure or treasury. Roget's famous thesaurus is a treasury of sorts. It gives a writer a choice of many alternative words with subtle shadings of meaning to express single concepts. On the other hand, a thesaurus developed for information retrieval purposes might be looked at more as a treasure map, leading a user to a treasury of stored information. A preferred term is selected among several possible terms, and users are directed, by means of references from alternative forms, to employ this one term.

An information retrieval thesaurus is, therefore, a term-association list structured to enable indexers and subject analysts to describe the subject content of a document to a desired level of specificity at input, and to permit searchers to describe in precise terms the information required at output. A thesaurus serves as an authority list of the filing labels that permit information to be stored by one person and retrieved by another. It is a device to bring into coincidence the language of the documents and the language of indexers and inquirers.
The thesaurus concept has been widely adopted for vocabulary control in modern post-coordinate information systems. It is similar in structure and organization to the conventional list of "subject headings." It lists Descriptors alphabetically, endeavors to control synonyms and homographs, and displays generic-specific and other relationships between terms.

A thesaurus of Descriptors, interrelated by cross-references, provides the basic rules of communication for an information system. As an information system grows, its thesaurus can be systematically built and refined to the point where it represents, in a sense, the vocabulary of the subject field involved. A functional thesaurus must be logical and accurate and have an internal integrity in relation to the guidelines upon which it has been built. The ultimate success or failure of a thesaurus depends, however, on the extent of its usefulness as a communication tool in an information system.

2. Descriptors — Definition and Function

Descriptors are meaningful terms or short phrases that are used to characterize a document and to provide index entries to it. Descriptors, for the most part, represent general classes of things discussed in the literature. Many will be found in the general authoritative dictionaries, while the remainder can usually be located in one or more specialized dictionaries. Descriptors are the basic building blocks that, when defined and interrelated by a system of cross-references, comprise an information retrieval thesaurus.

Descriptors perform a dual function: (1) they permit an indexer to describe the subject elements of a document so that it (or a surrogate record) may be stored in a system for future search and retrieval purposes; (2) they permit a searcher to construct a question using terms that are known to have been used in indexing. In both instances, the extreme variability of the language found in documents and the language used by inquirers is reduced by reliance on a standard vocabulary. In this sense, the Descriptors represent the communication link between the operators and users of the system and its content. Descriptors are closely related (but not identical) to both the "subject headings" that one finds in conventional library systems and the "keywords" that one finds in full-text or uncontrolled vocabulary situations.

Descriptors (singly, or two or more in coordination) will usually adequately represent the ideas and concepts found in a document. To identify specific entities (such as pieces of equipment or geographic areas), however, Identifiers must be used. Rules and guidelines for Identifiers are covered by Section VIII (Part 2).

3. Educational Terminology

Many of the problems encountered in the development of the ERIC Thesaurus directly reflect problems inherent in the relatively "soft" or imprecise language of education and the social sciences. The subject matter of the physical sciences and engineering, in contrast, lends itself much more readily to close definition and commonly accepted language and word usage.

In most indexing schemes, the basic objective is to break down common language or terminology into its simplest components while still retaining adequate definition. This objective is often reflected in a thesaurus or word list comprised mostly of single-word terms. In the ERIC Thesaurus, however, there is an abundance of compound (multiword) terms. This fact can be explained in terms of the educational process itself. This process basically involves students, teachers, and an educational environment. The events occurring during the educational process can often be applicable equally to any of the three components. In an
indexing system that relies on the coordinative use of several terms to represent complex topics, it is difficult to distinguish the source of an action and the recipient of an action without separately defining each. For example, if there is a document dealing with "the influence of the teacher on the attitudes of students," it is theoretically possible to index such a document by coordinating the concepts of "influences," "attitudes," "teachers," and "students." In retrieval, however, how are searchers to know whether they are retrieving documents that deal with "student attitudes" or "teacher attitudes," or, for that matter, with "student influences" or "teacher influences"? To avoid confusion, these concepts can be distinguished by indexing the document in question by the multiword terms "student attitudes" and "teacher influence." In an environment as complex as that of the educational process, this type of compounding, binding, or "precoordination" of terms is often unavoidable.

Beyond the considerations of logic and retrievability, however, there is also the question of how people actually think and express themselves in the language of a subject field. In the interest of clarity, unity, meaningfulness, and recognizability, a thesaurus must represent and preserve the natural language of its field. For better or worse, much of the language of education consists of compound terminology.

The ERIC Thesaurus is widely recognized in the United States as the most current, definitive vocabulary tool in the domestic education field. It is also recognized as an international authority. For example, its terms and Scope Notes (i.e., definitions) are used in such references as the UNESCO:IBE Education Thesaurus and the International Dictionary of Education. The ERIC vocabulary is seen throughout the world in a variety of indexing tools, e.g., the Japanese-English Educational-Use Keyword Equivalents published by the Center for Educational Technology, Aichi University of Education, Japan. The combined format, structure, and terminology of the ERIC Thesaurus repeatedly has served as a model for education thesauri of other nations, particularly the English-speaking countries. Recent new national thesauri based on the ERIC model include the Australian Thesaurus of Education Descriptors (1984), the British Education Thesaurus (1988), and the Canadian Education Thesaurus (1991, in English and French).

B. Lexicography as Practiced in the ERIC System

1. General

ERIC is a decentralized network, and the development and maintenance of the ERIC Thesaurus is a decentralized operation. The real "architects" of the Thesaurus are the Clearinghouse indexers engaged in the day-to-day processing of documents for input. Indexers have the responsibility of recommending changes to the Thesaurus when they find subject concepts in the literature that cannot be expressed or indexed adequately with the existing terminology.

ERIC indexers, like the network they support, are decentralized. As Clearinghouse staff members, their indexing is primarily confined to documents in the subject specialty area covered by their particular Clearinghouse, and represents the terminology of that specialty area and the viewpoints of its practitioners and users. Part of the strength of the ERIC Thesaurus is its reflection of the specialist's point of view. (Of course, each Clearinghouse must assume a proportional share of vocabulary activities if a balance across subject areas is to be maintained.)
The subject specialist's interpretation of terminology, however, must frequently be moderated. Education encompasses wide-ranging subject fields, and ERIC is responsible to a highly diversified user community. Frequently, one Clearinghouse's interpretation of subject matter will not coincide with that of another. ERIC avoids the trap of parochial points of view by providing centralized lexicographic analysis and control, an ongoing function of the ERIC Processing and Reference Facility.

2. Principal Lexicographic Functions

All ERIC vocabulary recommendations (whether new terms or modifications, Thesaurus-related or Identifier-related) are reviewed by the Facility lexicographic staff. Terms, definitions, and cross-reference structures are analyzed and evaluated to make sure they:

- Maintain Consistency
- Avoid Proliferation
- Clarify Ambiguities
- Conform to the Vocabulary Coordination Procedures Set Forth in the ERIC Processing Manual

Each of these functions is important enough to be explained with some examples.

a. Maintain Consistency

Clearinghouses working independently can generate inconsistent terminology. For example, the concepts "academic" and "scholastic," although varying slightly in meaning can be considered synonymous for purposes of retrieval. The use of both concepts in the Thesaurus would create a problem of inconsistency.

Example:

Clearinghouse A submits

SCHOLASTIC FAILURE
UF ACADEMIC FAILURE

Clearinghouse B submits

ACADEMIC APTITUDE
UF SCHOLASTIC POTENTIAL

Clearinghouse C submits

ACADEMIC ACHIEVEMENT
UF SCHOLASTIC ACHIEVEMENT

Clearinghouse D submits

SCHOLASTIC ABILITY
UF ACADEMIC ABILITY

(UF = "Used For..."—See item D.5 of this section.)

Problem: Even though the compound terms involved are not exact synonyms, if they all went into the Thesaurus as submitted, consistency would obviously be lacking and retrieval would be more difficult. Users
would be puzzled by what they would assume to be a distinction made by the system between "academic" and "scholastic." This problem cannot be solved at the level of the Clearinghouses, as one Clearinghouse is often not aware of another's term preferences and choices.

Solution: Central lexicography receives the recommendations from the A, B, C, and D Clearinghouses. Since all the information has been assembled at one point, the problem can be recognized. The four candidate terms are analyzed to see whether they can reasonably coexist in the same system. This analysis may be aided by consulting reference works. It obviously must first be determined whether the two terms "academic" and "scholastic" are synonyms and, if so, which is preferred. In this particular case, the conclusion was that the terms are synonymous for purposes of retrieval, and that "academic" is more widely used than "scholastic." Most often, such a decision establishes a precedent that will then apply to later decisions and that in the observance will lend consistency to the system's vocabulary.

b. Avoid Proliferation

Decentralized input can also lead to a proliferation of redundant and essentially duplicate concepts, with subsequent loss of retrieval effectiveness. To avoid such situations, synonymous or unnecessary variants must be stored under selected "preferred" terms.

Example: Clearinghouse A submits

BICULTURAL EDUCATION

Clearinghouse B submits

INTERCULTURAL EDUCATION

Clearinghouse C submits

MULTICULTURAL EDUCATION

Clearinghouse D submits

MULTIETHNIC EDUCATION

Problem: Without central control, all of the terms in the example might well enter the Thesaurus, leading to four terms where one would do. Searchers conducting inquiries in this topical area would then be burdened unnecessarily with the task of incorporating all four terms into their strategies because any other approach might fail to retrieve essential material.

Solution: Central lexicographic control can solve this problem via research, rational decision-making based on findings, and the recording of this process for use in later problem situations. In this case, MULTICULTURAL EDUCATION was selected as the preferred form and cross-references were made to it from the other three terms.
c. Clarify Ambiguities

Specialists in one field may be unaware that their terminology may have different meanings in other fields.

Example: Clearinghouse A submits LEARNING CENTERS

Clearinghouse A's field of specialization covers the education of young children, and the Clearinghouse understands LEARNING CENTERS to be an "open education" term meaning "areas inside classrooms (e.g., a table) in which instructional materials have been gathered for unstructured, self-directed learning." It can be assumed that this is a common term in Clearinghouse A's field and that they see no ambiguity in it. With the "blinders" of the specialist on, Clearinghouse A has unwittingly submitted a homograph.

Problem: LEARNING CENTERS may appear to present no problems to the indexers and searchers in Clearinghouse A's field of specialization. Imagine, however, the many uses and interpretations that could be applied to such a term across other areas of knowledge. The term could be misinterpreted to mean many different kinds of facilities and institutions, including schools, counseling centers, libraries, psychoeducational clinics, job training centers, etc. Before too long, the term might be used in so many different ways that it could no longer be searched specifically for the originally intended "classroom" context. Users, particularly in Clearinghouse A's field, would be faced with many "false drops," and wasted searches might be repeated in one way or another by hundreds of users.

Solution: Potential ambiguity of terminology can be readily detected from the broad, unrestricted point of view of central lexicography. Once the need for Scope Notes is discerned, contact can be made with initiating Clearinghouses to request that definitions be prepared. In this case, a parenthetical qualifier was also needed to assure correct usage. The resultant entry in the Thesaurus, LEARNING CENTERS (CLASSROOM) with its restrictive Scope Note, is unambiguous.

d. Conform to the Vocabulary Coordination Procedures Set Forth in the ERIC Processing Manual

With the assistance of a number of lexicographic consultants and terminological specialists over the years, a set of formal vocabulary rules has evolved for ERIC Descriptors and Identifiers. All rules for Descriptors are set forth in this section of the ERIC Processing Manual, Section VIII (Part 1), and all rules for Identifiers are documented in Section VIII (Part 2).
These rules cover the policies and the mechanics of both vocabulary generation and selection. For instance, an important policy is that "Descriptors should represent important concepts found in the literature of the database rather than concepts derived independently." Matters of Descriptor/Identifier mechanics covered are, for example: noun forms preferred over verb forms, inverted entries avoided, no punctuation other than parentheses, use of parentheses limited to qualifying homographs or indicating "life spans" of formerly indexable concepts.

The rules are designed to impose order and internal integrity on the ERIC vocabulary and are to be observed both by the personnel submitting candidate terminology and by the central lexicographic staff evaluating the submissions.

Not all situations can be covered, however, in any single set of rules. (The ERIC Processing Manual is analogous in this regard to a constitution rather than to a set of statutes.) Vocabulary and other processing rules must leave the way open for compromise action when requirements are in conflict. ERIC Lexicographers and Clearinghouse personnel work together in interpreting the rules in order to achieve the overall objectives of the system.

3. Vocabulary Development Program

The Vocabulary Development Program is a procedure for coordinating and implementing changes to the ERIC Thesaurus. The flow of the program is illustrated in Figure VIII-1-1.

The Vocabulary Development Program provides the means for each component of the decentralized ERIC system to participate in thesaurus development and maintenance. Initiated in December 1980, the program grew out of ERIC's experience with the 1977-80 Vocabulary Improvement Project (VIP) and the Play Thesaurus (see Attachment #1 of this section, "History of the Thesaurus..."). As in the past, the emphasis continues to be on total network involvement in Thesaurus development, with a streamlined approach.

a. One basic procedure and one form are used for the submission and review of all proposed changes to the ERIC Thesaurus.

The characteristics and uses of the "Vocabulary Development Form" are covered in item "E" of this section.

b. ERIC Clearinghouses and selected users are given the opportunity to review all proposed changes and additions prior to final review/implementation by the Facility lexicographic staff.

c. A Vocabulary Review Group (VRG) of 29 members serves as the review/advisory group for the Vocabulary Development Program. In addition to reviewing specific recommendations for changes and new terms, the VRG is responsible for evaluating vocabulary-related policy matters and for recommending viable alternatives for long-range Thesaurus development. The VRG membership includes:
16 - ERIC Clearinghouse Coordinators

1 - Facility Lexicographer (also, the Facility Identifier Coordinator is an "ex officio" member)

1 - ACCESS ERIC Representative

1 - CUE/Thesaurus Publisher

1 - Central ERIC Monitor

5 - User Representatives:
   A university librarian; a school librarian (manual search facility); staff member of an online search facility; staff member of an information/documentation center related to education; and an educational practitioner.

3 - "International ERIC" Representatives:
   Representatives of the Australian Education Index, British Education Index, and Canadian Education Index. International ERIC (informally, InterEd) is a long-term initiative for international cooperation among the major English-language education-related databases.

d. VRG members are appointed by Central ERIC. Members serve as long as they want, at the discretion of Central ERIC. Clearinghouse directors are responsible for nominating the Clearinghouse representatives.

e. The VRG Executive Committee is composed of the VRG Chair, the Facility Lexicographer, and the Central ERIC Monitor. The purpose of this committee is to resolve any problems/conflicts identified by the larger review group.

f. The VRG is chaired by a Clearinghouse Coordinator appointed by Central ERIC. The Chair of the VRG assumes the following responsibilities:

   Coordinate activities of the VRG and act as liaison among Facility, Clearinghouses, users, and Central ERIC.

   Receive from the VRG members all negative comments pertaining to proposed Thesaurus changes.

   Collate and summarize those negative responses.

   Arrange coordination sessions with the VRG Executive Committee as needed to assess negative responses, calling for the assistance of other Clearinghouse Coordinators on an "ad hoc" basis.

   Prepare final recommendations for Facility Lexicographer.

g. Facility Lexicography prepares a 1- to 6-month Vocabulary Status Report (at least two per year) summarizing all recommended Thesaurus changes received from Clearinghouses and external users during the respective time period.
annnotations, e.g., Scope Notes for new terms, accompany each change listed on the
status report form (see example in Figure VIII-1-2). The status report serves as the
mechanism for alerting the VRG to proposed changes and for soliciting the
membership's comments and recommendations. Reviewers may comment directly
on the form and/or attach more extensive comments. Return of copies from the
VRG is scheduled within one or two months of a particular report's distribution. Two
copies are returned, one to the Facility for the ERIC lexicographic archives and the
other to the VRG Chair for final review and summation of voting. The final
disposition of each recommended change is included in an updated status report
that is redistributed to the VRG (see example in Figure VIII-1-3). Additional VRG review
may occasionally be necessary if there are contested dispositions.

h. The review cycle for the Vocabulary Development Program, from receipt to
disposition, varies from 2 to 9 months. Turnaround time usually depends on the
volume of Thesaurus changes received, which affects in turn how often Vocabulary
Status Reports are issued.

i. The membership of the VRG is announced periodically in the Interchange newsletter
(published by ACCESS ERIC) in order to encourage ERIC users interested in
accomplishing additions of new Thesaurus terminology, or those encountering other
situations in subject searching, to interact with the VRG.

j. Facility Lexicography is responsible for implementing all approved recommendations
to the Thesaurus file, and making any necessary postings updates to the index
(inverted) files to ensure their compatibility with the updated Thesaurus. (See
"Synchronization of Lexicography and Indexing," item B.5 of this section.)
Additionally, the lexicographic staff prepares a "final report" of each 1- to 6-month
Thesaurus update entitled Thesaurus Changes and Statistical Data (not shown in the
flow of the Vocabulary Development Program, Figure VIII-1-1). This report contains
three standard attachments, as follows:

- Attachment 1 provides a listing of the major Thesaurus transactions in the file
update. It serves as a supplement to working editions of the Thesaurus, and
is used by the CJJE/Thesaurus Publisher to update the Thesaurus Additions
and Changes sections of RIE and CJJE. (Thesaurus Additions and Changes
serves as a supplement to users of the commercial, published Thesaurus.)

- Attachment 2 gives total Thesaurus input and disposition statistics for the
current update.

- Attachment 3 gives the cumulative total terms in the Thesaurus file as of the
current update.

4. Participation by External Users

ERIC encourages direct participation by external users in its vocabulary development
activities. Users have been involved in the development of the ERIC Thesaurus since its
beginning, i.e., reviewing terminology and serving in advisory roles when major changes in
Thesaurus coverage and format were being considered.

Users are kept abreast of current vocabulary activities through Clearinghouse
<table>
<thead>
<tr>
<th>ENTRY NUMBER</th>
<th>DESCRIPTOR AND DESCRIPTION OF RECOMMENDED ACTION</th>
<th>New Term</th>
<th>Change</th>
<th>Purge</th>
<th>Originator</th>
<th>Date Received</th>
<th>VRG*</th>
<th>Agree</th>
<th>Do Not Agree</th>
<th>Implemented</th>
<th>Not Implemented</th>
<th>Date of Disposition</th>
<th>REVIEWER'S REMARKS</th>
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</thead>
<tbody>
<tr>
<td>1657</td>
<td>AIR TRAFFIC CONTROLLERS</td>
<td>X</td>
<td>CE</td>
<td>8/84</td>
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<td>8/84</td>
<td>33 relevant hits, incl. Iden postings of &quot;Air Traffic Control&quot; &amp; &quot;Air Traffic Controllers.&quot; (CE)</td>
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<tr>
<td>1658</td>
<td>FREEHAND DRAWING</td>
<td>X</td>
<td>CE</td>
<td>8/84</td>
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<td>8/84</td>
<td>FREEHAND DRAWING can be found through the Rotated Display, but in the Alphabetical Display alone, it does not leap readily to mind as the preferred term for &quot;drawing.&quot; (CE)</td>
</tr>
<tr>
<td>1659</td>
<td>HOME HEALTH AIDES</td>
<td>X</td>
<td>CE</td>
<td>7/84</td>
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<tr>
<td>ENTRY NUMBER</td>
<td>DESCRIPTOR AND DESCRIPTION OF RECOMMENDED ACTION</td>
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<td>Change</td>
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<td>Originator</td>
<td>Date Received</td>
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<td>1657</td>
<td>AIR TRAFFIC CONTROL</td>
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<td>CE</td>
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<td>16</td>
<td>10/84</td>
<td>33 relevant hits, incl. Iden postings of &quot;Air Traffic Control&quot; &amp; &quot;Air Traffic Controllers.&quot; (CE)</td>
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<td>SN: Scheduling and monitoring the flow of air traffic at airports, during approaches, and en route</td>
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<td>BT: Traffic Control</td>
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<td>Changed from AIR TRAFFIC CONTROLLERS. Since the VIP, ERIC has favored &quot;occupation&quot; terms over &quot;personnel&quot; terms, especially in areas on the periphery of education. Change is in line with other social science thesauri such as Psyc Abs &amp; Mgmt Contents. SN modified per remarks of CG/PS/SP/TM/UD. (VRG)</td>
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<td>1658</td>
<td>FREEHAND DRAWING</td>
<td>X</td>
<td>CE</td>
<td>8/84</td>
<td>18</td>
<td>10/84</td>
<td>FREEHAND DRAWING can be found through the Rotated Display, but in the Alphabetic Display alone, it does not leap readily to mind as the preferred term for &quot;drawing.&quot; (CE)</td>
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<td>Add UF: Drawing (Freehand)</td>
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<td>MODIFIED PER AA. &quot;Drawing&quot; should not be restricted to one access point. (VRG)</td>
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<td>COMPUTER GRAPHICS</td>
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<td>Add UF: Drawing (Computerized)</td>
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<td>DRAFTING</td>
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<td>Add UF: Drawing (Precision Draft)</td>
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<td>1659</td>
<td>HOME HEALTH AIDES</td>
<td>X</td>
<td>CE</td>
<td>7/84</td>
<td>17</td>
<td>10/84</td>
<td>SN simplified per CG/SP. Subject added per JC/PS/TM/UD/Lake/Wise. (VRG)</td>
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<td>Add SN: Workers who, under professional supervision, provide routine health/personal care and housekeeping services in homes of disabled, ill, or elderly clients</td>
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</table>

* Return copies by: ************

To: Anita Colby, ERIC/JC
Jim Houston, ERIC Facility (AA)

Reviewer/Organization ** Term may be used for indexing as of this date.
newsletters and the *Interchange* newsletter. They frequently interact directly with vocabulary coordinators at the Clearinghouses. Another common occurrence is for users to submit vocabulary recommendations directly to the Facility Lexicographer and to interact with the lexicographic staff over the phone.

Volunteers from the user community also serve as members of the ERIC Vocabulary Review Group, as described in the preceding section B.3.

5. **Synchronization of Lexicography and Indexing**

A significant philosophical tenet of the ERIC vocabulary development process is the practice of keeping the authority files and the index (postings) files synchronous. (See the "Vocabulary Development Form" and its emphasis on postings, Figures VIII-1-7 and VIII-1-8 in item "E.") As a new term is added to the authority files, a special effort is taken to locate uses of the term and its variants in the database and to update its postings accordingly. When an obsolete or ambiguous term is removed from the authority files, every effort is made to delete also the term from the postings files. Some such changes require manual reindexing (i.e., individual examination and reindexing of original records), but most can be accomplished using ERIC's "Transfer-and-Delete" software (in which one transaction suffices to locate all records containing one to several terms, to delete the term or terms, and to replace them with one or more terms, while retaining the original major or minor status of the terms intact).

6. **Lexicographic Authorities**

The ERIC Facility maintains an extensive collection of lexicographic tools (dictionaries, glossaries, thesauri, encyclopedias, etc.) used to verify, structure, and define terms used in the ERIC vocabulary. Over 300 key references are included in the collection. A list of the principal thesauri and subject-heading lists in this collection appears in item C.1.e.(3) of this section.

Citations of the documents in the lexicographic collection are compiled into a "Thesaurus Bibliography." This bibliography is maintained by, and may be obtained from, the Facility. It has appeared in past editions of the published *Thesaurus* and may be made available in future editions, if warranted by user interest.

Additional reference works in Washington metropolitan area libraries are consulted when complex lexicographic problems arise that cannot be researched adequately using the reference materials at hand.

7. **Structure of the Thesaurus of ERIC Descriptors**

To assist the user (indexer or searcher) of the Thesaurus, the terminology is arranged in four different sequences, each providing a different approach. The principal or primary arrangement is an alphabetical display of Descriptors (includes a complete, individual display of each Descriptor), with the other three displays acting, in effect, as indexes to the primary display:

<table>
<thead>
<tr>
<th>PRIMARY ARRANGEMENT</th>
<th>SECONDARY ARRANGEMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alphabetical Display</td>
<td>Rotated Display</td>
</tr>
<tr>
<td></td>
<td>Hierarchical Display</td>
</tr>
<tr>
<td></td>
<td>Descriptor Group Display</td>
</tr>
</tbody>
</table>
VOCABULARY – DESCRIPTORS

SPECIAL NOTE: None of the three secondary arrangements show Descriptors in their complete context. Full meanings and intended usages for Descriptors cannot be determined without consulting the Alphabetical Display, the only one of the four arrangements containing Scope Notes and complete cross-reference structures. NEVER use any one of the three secondary arrangements for direct indexing or searching! ALWAYS check the Alphabetical Display before using any Descriptor! Indexers must remember that the integrity of the Thesaurus, and the equivalence between a particular Descriptor and its postings, are fundamental to effective retrieval. NEVER use a Descriptor in a sense that violates its intended meaning! ALWAYS check RIE and CUE to see how a Descriptor has been used, if (for whatever reason) the intended meaning of a term cannot be determined by consulting the Alphabetical Display. Let the central lexicographic staff at the Facility know when Descriptor misuse is discovered; the Lexicographers will coordinate whatever action is necessary to correct the problem.

a. Alphabetical Display

This is the only Thesaurus display that should be used for direct indexing and searching. All valid Descriptors (main terms), invalid Descriptors (“dead” terms), and USE references appear in this display interfiled alphabetically word-by-word at one location. Descriptors are “preferred” (indexable) Thesaurus terms, while invalid Descriptors and USE references are “non-preferred.” Each type of term is displayed with its complete record, as follows:

- Descriptors (main terms)
  Scope Note (SN), Group Code, Add Date, Postings Count, Used For (UF) references, Narrower Terms (NT), Broader Terms (BT), and Related Terms (RT).

- Invalid Descriptors (“dead” terms)
  Scope Note (SN), Group Code, Add Date, and Postings Count.

- USE References
  (reciprocals of UF references; therefore, no subfields are carried in these records).

Other items of this section fully describe these displays. Please refer to the following:

Descriptor Format ........................................... item D.2.d
Invalid “Dead” Descriptors .......................... item D.2.e.(2)
USE References ................................. item D.5

b. Secondary Arrangements

The following three Thesaurus display "arrangements" are secondary to the main Alphabetical Display. Each serves as a useful tool in achieving full Thesaurus utilization. Their purpose is to provide access to the Alphabetical Display; they should not be used for indexing or searching without consulting the Alphabetical Display.

(1) Rotated Display

The Rotated Display is a permuted alphabetical index of all words that form Thesaurus terms. Words in all Descriptors (main terms), invalid
Descriptors ("dead" terms), and USE references are included. Since each separate word is considered as a filing unit, a term appears in as many locations in this display as it contains separate words, i.e., single-word terms file in one location, two-word terms file in two locations, and so on. Subfiling under any one file point is performed first on the basis of the words to the right of the file point and second, on the basis of the words to the left of the file point. The word order within the term itself is not altered.

Example: PRIVATE SCHOOL AID

STUDENT FINANCIAL AID OFFICERS
PRIVATE SCHOOL AID
LEGAL AID PROJECTS (1966 1980) Use LEGAL AID
PROVINCIAL AID Use STATE AID
SCHOOL AID Use EDUCATIONAL FINANCE
STATE AID

PRIVATE JUNIOR COLLEGES Use PRIVATE COLLEGES and TWO YEAR COLLEGES
PRIVATE SCHOOL AID
PRIVATE SCHOOLS
PRIVATE SECTOR
PRIVATE UNIVERSITIES Use PRIVATE COLLEGES

PRIVATIZATION

SCHOOL AGE DAY CARE
SCHOOL AID Use EDUCATIONAL FINANCE
NONPUBLIC SCHOOL AID (1972 1980) Use PRIVATE SCHOOL AID
PAROCHIAL SCHOOL AID (1972 1980) Use PAROCHIAL SCHOOLS and PRIVATE SCHOOL AID

PRIVATE SCHOOL AID
SCHOOL AID

USE references are clearly distinguished from Descriptors in this display. Invalid Descriptors can be identified by accompanying "life span" notations, e.g., (1966 1980), and by having no USE reference.

The Rotated Display is useful in determining all usages of a particular word in the Thesaurus, without respect to its position in a multiword term. The Display tends to group related terms where they may often be separated in the main Alphabetical Display, thus aiding indexers in finding more precise terminology, search analysts in translating their inquiries into the language of the system, and subject analysts in structuring new terms.

(2) Hierarchical Display

The Hierarchical Display depicts families of Descriptors (generic trees) related by the taxonomic concept of "class membership." Complete, two-way visibility is provided for all broader-narrower relationships of every Thesaurus Descriptor. Each generic tree is carried to its farthest extreme in both directions. The display files the Descriptors in letter-by-letter order, ignoring spaces between words (this differs from the word-by-word filing used for the Thesaurus' main Alphabetical Display).
Two sample generic trees are shown below, one for the term DRAFTING and the other for the term LIBRARY SERVICES. Broader terms (i.e., BTs) are identified by preceding colons and appear above each file point (main entry). Narrower terms (i.e., NTs) are identified by preceding periods and are listed below each file point. Multiple colons or periods indicate successively broader or narrower levels of terms.

**BT**

- LIBERAL ARTS
- HUMANITIES
- FINE ARTS
- VISUAL ARTS
- DRAFTING
  - ARCHITECTURAL DRAFTING
  - ENGINEERING DRAWING
- TECHNICAL ILLUSTRATION

**NT**

- SERVICES
  - INFORMATION SERVICES
  - LIBRARY CIRCULATION
  - INTERLIBRARY LOANS
  - LIBRARY EXTENSION
  - LIBRARY TECHNICAL PROCESSES
  - LIBRARY ACQUISITION
- LIBRARY MATERIAL SELECTION

Descriptors having neither BTs nor NTs appear in the display as isolates. Included among these isolates are the "invalid" Descriptors, identified by accompanying "life span" notations, e.g., "(1966 1974)," "(1969 1980)." Invalid Descriptors are the only terms appearing in this display that are not currently used in indexing.

The Hierarchical Display serves as a valuable tool for indexers in their attempts to index documents to the most appropriate level of specificity, and for searchers in their attempts at developing comprehensive search strategies.

See item D.6.e.(2), under "Hierarchical Visibility," for a discussion on the importance of using the Hierarchical Display.

(3) Descriptor Group Display

The Descriptor Group Display places each term in the Thesaurus, excluding UFIs, into one (and only one) of 41 broad subject categories. Together, these categories or "Descriptor Groups" provide a "table of contents" to the Thesaurus and an overview of ERIC's subject coverage. Descriptors are alphabetized word-by-word under each group. The display is provided for browsing and for narrowing down the number of terms to be looked at in given situations. It is meant to provide suggestions and be of general assistance to users, whether indexers, searchers, or lexicographers; but it is not a formal classification scheme and should not be construed as such.
Each Descriptor Group is defined by a Scope Note. The set of 41 Scope Notes is necessary for comparing coverage among the groups and always accompanies (precedes) any distribution of the display. Also, each group is represented in the system by a 3-digit "Group Code."

See item D.3 for the complete Descriptor Group structure, a listing of the Group Codes, further information on the groups' functional applications, and details on how individual Descriptors are assigned to the groups.

c. Frequency of Distribution

Working Copies of the Alphabetical, Rotated, and Hierarchical Displays are produced at least annually for internal use by ERIC staff. Working Copies of the Descriptor Group Display, while not regularly scheduled, are produced as needed. The published or commercial Thesaurus includes all four displays and is updated and published at least quadrennially.

C. Descriptor Development

1. Evaluation and Decision Criteria for a New Descriptor

During the course of indexing, indexers become aware of concepts that are not adequately represented in the existing Thesaurus. Concepts that are found in documents and journal articles being added to RIE or CUE, but that are not covered by the Thesaurus, are considered "candidate Descriptors."

The following guidelines are provided to aid indexers in determining whether a candidate Descriptor should be added to the Thesaurus.

a. Does It Actually Appear in Documents Being Indexed?

*Important Principle: To be considered for the ERIC Thesaurus, a concept must actually appear in the literature being indexed. It cannot be added, for example, merely to complete the links in a hierarchical chain.

For instance, the Thesaurus contains COLLEGE ENTRANCE EXAMINATIONS as a Narrower Term of TESTS, skipping the potential intermediate term ENTRANCE EXAMINATIONS; nevertheless, ENTRANCE EXAMINATIONS cannot be added as long as all usages of the term either pertain to college-level examinations or overlap considerably with other closely related conceptual areas (e.g., OCCUPATIONAL TESTS) already suitably covered in the Thesaurus. The reason for this rule or constraint is that the existence of unused Descriptors in the Thesaurus would misrepresent the content of the database, would result in searches yielding zero hits, and would lead to dissatisfaction among users.

b. Does It Qualify for Descriptor Status or Is It an Identifier?

Highly specific entities, including most proper nouns/noun phrases, are
sometimes the subjects of documents. These include:

- Geographic Locations
- Legislative Titles
- Literary/Artistic Titles
- Organization Names
- Persons
- Projects
- Test Titles
- Trade Names

Called "Identifiers," these entities are allowable index terms, and a special field is provided for them. Identifier indexing is intended to supplement Descriptor indexing, and Identifier use must always be in addition to (rather than in lieu of) Descriptor use.

The almost infinite number of specific entities generally makes them undesirable for inclusion in the tightly controlled vocabulary of the Thesaurus. Some, because of "staying power" in the literature, have graduated over time to Descriptor status (e.g., AFRICAN CULTURE, AMERICAN INDIANS, BAYESIAN STATISTICS, CHRISTIANITY, FRENCH, MEXICANS, RUSSIAN), but this phenomenon is the exception to the rule. Thesaurus precedence is the indexer's best guide in determining whether a proper noun/noun phrase should be considered as a candidate Descriptor. For instance, terms in the eight categories listed above never qualify for Descriptor status. (See Section VIII (Part 2) for a complete discussion of Identifiers.)

Of course, not all entries in the Identifier field are proper nouns. Any concept working its way into the literature of the field must, as a rule, first be "tried out" as an Identifier. This practice allows a concept to be observed while accumulating usage and/or acceptance among various authors. Frequency of indexing occurrence is always an important consideration in deciding whether to add a new conceptual-type term to the Thesaurus.

ERIC uses a "Heavily Posted Identifiers" list to highlight candidate Descriptors and encourage their Thesaurus consideration. Appearance in this list serves notice to ERIC Clearinghouse vocabulary coordinators that the terms be given some priority or special attention in vocabulary development work by attempting to elevate them to Thesaurus status, either as main term Descriptors or as USE references. Fully titled Heavily Posted Identifiers that Should Be Considered for the ERIC Thesaurus, this list came on the scene in 1981 with the advent of the printed Identifier Authority List (IAL) and has been updated and released subsequent to each IAL edition since that time. The list is prepared as a total alphabetical list and, again, alphabetically by ERIC Clearinghouse. See Figure VIII-1-4 for a sample page from each. All terms in this example have 30 or more postings. Carry-overs from earlier lists are flagged with stars, some including an additional diamond symbol indicating only light postings recently.

The list by Clearinghouse is provided as a guide to help focus Clearinghouse decision-making on what terms to work on and which, if any, other Clearinghouses might need to be consulted in developing justifications. No restrictions are implied, however. Anyone can work on any term at any time, providing that others in the network are notified via E-mail, etc., in order to avoid duplication of effort. Submitted terms on the list are redlined, with the submitter noted (checked), by the Facility lexicographic staff, thus providing a convenient status report in between completely revised editions of the list. The AA on the list means submitted by the
HEAVILY POSTED IDENTIFIERS THAT SHOULD BE CONSIDERED FOR THE ERIC THESAURUS

Alphabetical List

<table>
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<th>POSTINGS</th>
<th>IDENTIFIER</th>
<th>POSTINGS</th>
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<td>Balance</td>
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<td>Bankruptcy</td>
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<td>Accuracy *</td>
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<td>Beginning Writing</td>
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<td>Behavior Analysis</td>
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<td>(30)</td>
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<td>Blooms Taxonomy *</td>
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<tr>
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<td>Brain Research **</td>
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<td>Bylaws *</td>
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<td>Asians *</td>
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<td>Athletic Trainers</td>
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<td>Choctaw (Tribe) *</td>
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</tr>
</tbody>
</table>

* Carry-overs from Sep87 list.
♦ Carry-overs with fewer than 15 postings since Sep87.
### VOCABULARY -- DESCRIPTORS

**SEPTEMBER 1991 -- HEAVILY POSTED IDENTIFIERS**  
BY CLEARINGHOUSE  

Listings are based on:  
(1) responsibility for highest postings:  
and/or  
(2) scope area.

Parenthetical notations following identifiers, e.g., (EA/CE/IR), indicate secondary responsibility.

### CE  

<table>
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<td>Competency Tests (EA/CS/TM)</td>
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<td>Criminal Justice System (SO/UD)</td>
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<td>Educational Awareness (CS/RC)</td>
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<td>Emergency Medical Services</td>
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<td>Employee Participation</td>
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<td>Exoncersors (CE)</td>
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<td>Fact Sheets (SO/TM/IR)</td>
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<td>Formal Education (PS/RC/SO)</td>
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<td>Goal Setting (CE/EA/RC)</td>
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<td>Health Delivery Systems (RC/SP)</td>
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<td>Learner Centered Instruction (FL/IR)</td>
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<td>Life Planning (CG/RC)</td>
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<td>National Longitudinal Surveys (TM/UD)</td>
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<td>Recession (SO)</td>
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<td>Social Security (CG/SO)</td>
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<td>Stress (Biological) (RC)</td>
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<tr>
<td>Support Services (RC/PS/IR)</td>
<td>(43)</td>
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</table>

Temporary Employment (HE) | (38) |
Transcription | (39) |
Workplace Literacy | (148) |

### CG  

<table>
<thead>
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<th>Identifiers</th>
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<td>Adolescent Suicide (EA)</td>
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<tr>
<td>Age Bias (CS/PS/UD)</td>
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<td>Avoidance Behavior</td>
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<td>Bereavement</td>
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<td>Blame</td>
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<td>Cognitive Complexity (CS)</td>
<td>(38)</td>
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<td>Commitment</td>
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<td>Community Mental Health Centers (RC)</td>
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<tr>
<td>Computer Assisted Guidance (CE)</td>
<td>(53)</td>
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<tr>
<td>Confrontation</td>
<td>(30)</td>
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</table>

Counseling Psychology (CG) | (155) |
Cross Cultural Counseling | (50) |
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Dominant Behavior (PS) | (30) |
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Euthanasia (EC) | (43) |
Faking (Testing) (TM) | (33) |
Family Systems Theory | (57) |
Family Therapy (PS) | (36) |
Gestalt Psychology (CS/SO) | (41) |
Halo Effect (TM) | (30) |
Happiness (PS) | (54) |
Hollands Theory of Occupational Choice | (67) |
Homophobia | (30) |
Honesty (CS/EA/PS) | (37) |
Housework (CE/PS) | (39) |
Identity Formation | (88) |
Individuation (PS) | (34) |
Information Analysis (CE/IR) | (49) |
Informed Consent (HE) | (57) |
Job Stress (EA/CE) | (49) |
Life Cycles (CE) | (68) |
Life Expectancy (SO) | (33) |
Life Transitions | (40) |
Loss | (41) |
Machiavellianism (CS) | (35) |
Maslows Hierarchy of Needs (CE/EA/RC) | (50) |
Meaningfulness (PS) | (34) |

* Carry-overs from Sep87 list.  
♦ Carry-overs with fewer than 15 postings since Sep87.

![Figure VIII-1-4b](image-url)
ERIC Facility; the \textit{CG} means submitted by the ERIC Clearinghouse on Counseling and Personnel Services.

See item D.6.e.(4) of this section, "Rule of Specificity," for more discussion on concept-type Identifiers and when they should be added to the \textit{Thesaurus}.

c. \textbf{Is It Useful?}

Candidate Descriptors should be evaluated on the basis of their usefulness in communication, indexing, and retrieval. In general, the utility of terms can be estimated by considering the relative frequency of their occurrence in the literature; the relative frequency of their previous indexing use as Identifiers; their proximity in meaning to existing Descriptors; their technical precision and acceptability in the field; their transience, stability, and "staying power." These factors are interdependent and must often be considered together.

d. \textbf{Is It a Synonym?}

An especially important consideration in recommending a candidate Descriptor is its closeness in meaning to terms already in the \textit{Thesaurus}. To prevent unwarranted scattering of similar information, terms having certain close relationships should be considered synonyms, i.e., synonymous from the practical point of view of retrieval.

This guideline encompasses many near- or quasi-synonymous terms that would not be considered as synonyms in ordinary contexts. Fine distinctions based on dictionary definitions are not important if they do not hold up from the point of view of searching. The following examples illustrate groups of terms that may be considered synonyms for the purposes of retrieval.

- \textit{CITY SCHOOLS} \quad \textit{URBAN SCHOOLS} \quad (Pairs of "pure" synonyms.)
  - \textit{CLASSIFICATION} \quad \textit{CATEGORIZATION}
  - \textit{SIGHT} \quad \textit{VISION}

- \textit{ACADEMIC ACHIEVEMENT} \quad \textit{ACADEMIC PERFORMANCE} \quad (Usage is indistinguishable in the literature.)
  - \textit{ADMINISTRATION} \quad \textit{MANAGEMENT}

- \textit{COLLEGE FACULTY} \quad \textit{COLLEGE TEACHERS} \quad ("Faculty" is technically broader than "teachers"; yet, "faculty" is the accepted term used in the literature, as well as in "real life," for postsecondary instructional staff.)
VOCABULARY -- DESCRIPTORS

- DROPOUTS
  - SCHOOL DROPOUTS
  - EARLY SCHOOL LEAVERS

  (For purposes of efficient retrieval, "dropouts" and "school dropouts" are considered synonymous; "early school leavers" is the British equivalent of the U.S. "school dropouts.")

- CAREER CHANGE
  - EMPLOYMENT CHANGE
  - JOB CHANGE
  - OCCUPATIONAL CHANGE
  - VOCATIONAL CHANGE
  - WORK CHANGE

  (Subtle distinctions among these terms might be made, but it is difficult to imagine a search query that should not use all of them. USE references in the Rotated Display are helpful in discovering synonymous relationships; for instance, see the word "job(s)" in the Rotated Display and how it leads to each of the other near-synonyms shown at left.)

- PHYSICAL DISABILITIES
  - PHYSICALLY DISABLED

  TYPEWRITING
  - TYPISTS

  (Distinctions between "person" terms and corresponding "condition" or "function" terms often cannot be realistically teased apart in indexing.)

- MATURITY
  - IMMATURITY

  NUTRITION
  - MALNUTRITION

  (Terms at opposite ends of conceptual continuums should be treated as synonyms when it is unrealistic to consider dealing with one without the other.)

- WELDING
  - ARC WELDING
  - GAS WELDING

  (The example shows a broad term followed by two narrower terms in an area peripheral to the educational disciplines and to the interests of the ERIC system. These terms may be treated as synonyms because of their low usage level.)

Once it has been decided to consider two or more terms as synonyms for purposes of indexing and retrieval, one term must be chosen as the preferred term and entered as a Descriptor. The alternative "non-preferred" term(s) are entered as USE references (see item D.5).

Some nearly synonymous pairs or groups of terms in the ERIC Thesaurus are not treated as synonyms (i.e., preferred and non-preferred) because of a real need to retrieve the concepts separately. These are terms in core areas of immediate interest to the educational community and include such pairs as:

- ADVANTAGED and DISADVANTAGED;
- COLLEGES and UNIVERSITIES;
- GUIDANCE and COUNSELING.

When this situation occurs, the two terms must be cross-referenced, and Scope Notes must generally be written that will permit indexers and searchers to distinguish the terms and use them consistently.
e. How Should It Be Structured as a Candidate Descriptor?

All subject concepts not adequately covered by existing Descriptors and not "true," proper-noun type Identifiers should be evaluated as "potential" Thesaurus terms. Potential terms that are evaluated as synonyms to existing Descriptors should be added as UF's to those Descriptors (see item D.5 of this section). If synonymity is ruled out, potential terms are considered as "candidate Descriptors" and must be "scoped" (defined) then "fitted" into the structure of the Thesaurus. The mechanism for submitting candidate Descriptors (and all Thesaurus changes) is the "Vocabulary Development Form," discussed fully in item "E" below. As an indexer completes the form (either manually or via a computer template), a number of significant points should be kept in mind:

(1) Ambiguity

Ambiguity in terminology, created by such factors as near synonyms, homographs, differences in spelling, word forms, and hierarchical treatment, is a barrier to effective communication. In preparing a new term for the Thesaurus, the avoidance of ambiguity should be a first consideration. Ambiguous terminology leads to inconsistent indexing and irrelevant search output.

Ambiguity can usually be avoided by preparing clear, precise Scope Notes indicating how terms should be used. Parenthetical qualifiers, e.g., INEQUALITY (MATHEMATICS), SECURITY (PSYCHOLOGY), are particularly helpful in preventing term misuse.

(2) Specialization

Each area of educational technology usually develops its own specialized vocabulary or jargon to express the concepts peculiar to its own interests. Analysis of these specialized vocabularies reveals that many of the terms through by a particular specialty perhaps to be unique are actually identical to (or closely related to) terms used in other areas of technology. Moreover, it is quite common for technologists in one area to borrow terms from another and to use them for their own purposes. As an example, the term "Transformation Theory" is used in both the fields of linguistics and mathematics to refer to highly different concepts. Indexers must be aware of the fact that a candidate Descriptor within their Clearinghouse's scope of interest may have other meanings in other fields. The acceptability of a term can be researched by consulting dictionaries, encyclopedias, handbooks, and other authoritative reference materials. (See item C.2 in this section.)

If a term is suspected of having multiple meanings, the Clearinghouses whose "scopes" cover the various meanings should be consulted. Each Clearinghouse has a Vocabulary Coordinator to whom questions on vocabulary matters may be directed. Throughout the Descriptor appraisal and generation process, these Vocabulary Coordinators, as well as the central lexicographic staff at the ERIC Facility, should be considered resource persons that the indexer can contact whenever necessary for advice and information.
Appearance in Other Thesauri

Terminological consistency among thesauri is a desirable goal, and the vocabulary precedents established by other thesauri and subject heading lists are followed by ERIC whenever practicable. If a candidate Descriptor is included in reputable existing thesauri as a main, indexable term (i.e., not as a USE reference), then the chances are that the concept is an acceptable one. Nevertheless, it must be carefully ascertained that the structure, parenthetical qualifier, and Scope Note for the term being used as a precedent do not conflict with the intended use within ERIC.

The following list includes the principal thesauri and subject heading lists used in ERIC lexicographic analysis. The first three thesauri (items #1-3) and their respective databases (Australian Education Index, British Education Index, and Canadian Education Index) are intertwined with ERIC in a long-term cooperative initiative called International ERIC (informally, InterEd).


3. Canadian Education Thesaurus (bilingual French & English). Micromedia Limited, Toronto, ON.


9. INSPEC Thesaurus. Institution of Electrical Engineers. INSPEC/IEEE Service Center, Piscataway, NJ.


11. Medical Subject Headings (MeSH). 3 vols. National Library of Medicine, Bethesda, MD.
12. NASA Thesaurus. National Aeronautics and Space Administration, Washington, DC.


14. Nursing & Allied Health (CINAHL) Subject Heading List. CINAHL Corporation, Glendale, CA.


17. SPORT Thesaurus. Sport Information Resource Centre, Gloucester, ON.


19. Thesaurus of Engineering and Scientific Terms (TEST). Office of Naval Research (Project LEX), Washington, DC.

20. Thesaurus of Psychological Index Terms. American Psychological Association, PsycINFO User Services, Arlington, VA.


(4) Previous Indexing

Some new Thesaurus terms require historical references to previous indexing practices in their Scope Notes. This occurs in two specific situations:

- When a new term was previously a UF.

In this case, the following kind of note is added to the Scope Note field, after the definition, or alone if no definition appears:

(NOTE: PRIOR to Month & Year, e.g., Mar80, THE INSTRUCTION "New Term USE old USE reference" WAS CARRIED IN THE THESAURUS)
When a new term was not a UF, but was previously represented by some other term(s) not obvious from the new term's display. Examples are:

(NOTE PRIOR to Month & Year, e.g., May81, "term xyz" WAS FREQUENTLY USED TO INDEX THIS CONCEPT)

(NOTE PRIOR to Month & Year, e.g., Dec89, THIS CONCEPT WAS INDEXED UNDER "term xyz")

Such notes are usually not necessary when a new term has a BT (broader term), i.e., has an "obvious" place to go to gather previous postings.

Also, these notes would not be needed if the previous postings were light enough to permit reindexing or if there were Identifier postings that could be transferred. (See the emphasis ERIC places on reposting under item "E," "Vocabulary Development Form."

Rules

The indexer generating a candidate Descriptor recommendation should be thoroughly familiar with the Rules and Conventions for Descriptors (item "D" of this section) before attempting to complete the Vocabulary Development Form. These rules contain detailed information on the characteristics of ERIC Descriptors and on the cross-references, Scope Notes, and other data that make up Descriptor displays. The rules should be applied equally by both the generator of the Thesaurus recommendation and the lexicographer acting on it.

2. The Research Process

Indexers or users wanting to add or change something in the ERIC Thesaurus often ask "Where do I start?" and "What do I do when I get there?" This section will attempt to answer these basic questions.

a. Identifiers

(1) Using Them

Subject index terms evolve in ERIC from Identifier status to Descriptor (Thesaurus) status as they are posted to document and journal article citations to describe subject content. They will not evolve and will languish, however, if they are not posted when they should be. Clearinghouses need to appreciate and understand Identifier functions and applications and not be reluctant to use these terms. Certain categories of Identifiers should always be indexed if they represent document subject matter; these are listed under "Identifiers," in the Indexing Reminders section of the ERIC Indexing Handbook (Clearinghouse Indexing Practices), Appendix C of the EPM. Indexers should familiarize themselves with these reminders and try to apply them consistently.
(2) Keeping a Clearinghouse List

Each Clearinghouse needs to maintain a list of new Identifiers, not yet in the IAL but used in indexing, for all indexers in the Clearinghouse to share. Each Clearinghouse Vocabulary Coordinator should keep a term file of definitions, synonyms, etc., found in incoming/inprocess documents for use in future Descriptor consideration and justification.

b. "Heavily Posted Identifiers" List

If the question is which term to work on, the best place to look first is the "Heavily Posted Identifiers" list discussed in item C.1.b of this section and illustrated in Figure VIII-1-4. Terms appearing on this list have been "prioritized" by the Facility lexicographic staff as needing in some way to be represented in the Thesaurus vocabulary, either as main terms or as USE references. A new list is created with each new edition of the Identifier Authority List (IAL). The particular list shown in Figure VIII-1-4 was restricted to terms with 30 or more postings. "Heavily Posted Identifiers" are displayed in two ways: one permutation lists all of the terms alphabetically, while the other sorts the terms Clearinghouse-by-Clearinghouse based on scope area and/or responsibility for highest postings. Although arranged by Clearinghouse, anyone in the ERIC network can work on any of the terms at any time. The only preliminary activity that is needed is to notify the rest of the network of one's intentions; this can be done by transmitting the list of terms being worked on to the ERIC Vocabulary Review Group (use of E-mail for this purpose is recommended). The Facility lexicographic staff periodically updates the Heavily Posted Identifiers list by redlining terms received and acted upon, and indicating responsible Clearinghouses; this serves as an activity/status report for the network.

c. Vocabulary Tools

Before indexers begin Descriptor (Thesaurus) development activity, it is helpful to have available a basic collection of dictionaries and thesauri with which to consult. The minimum, general collection recommended by the Facility lexicographic staff is listed in Figure VIII-1-5. (A variety of dictionaries is necessary in order to have at one's disposal all possible meanings of a term, and the available multiplicity of interpretations given those meanings by diverse lexicographers.)

d. VDF Form – Templates

ERIC Thesaurus additions and changes have various lexicographic criteria and format characteristics that the ERIC computer system will accept. These elements have been built into the ERIC Vocabulary Development Form (VDF) (see item E of this section), and indexers preparing for vocabulary development work should either have a stack of paper VDFs on hand or the form on a template that can be copied and used again and again on their microcomputers. See Figure VIII-1-8 for a paper VDF (filled-in example). See Figure VIII-1-9a for a VDF microcomputer template and Figure VII-1-9b for an example of what that template might look like when completed. Paper VDFs are obtained from the ERIC Facility lexicographic staff. For anyone needing a blank VDF template, the one illustrated in Figure VIII-1-9a is available in WordPerfect 5.1 format from the ERIC Facility. Two additional
LEXICOGRAPHIC AUTHORITIRES

Dictionaries
An unabridged dictionary.

Thesauri
Thesaurus of Psychological Index Terms (6th ed). Washington: American Psychological
Association, 1991. $65 ($49 for members of the APA).
APA, Order Department, P.O. Box 2710, Hyattsville, MD 20784. (800) 336-4980.
SocAbs, P.O. Box 22206, San Diego, CA 92122.
Loo, Shirley, ed. CRS Thesaurus/Legislative Indexing Vocabulary (19th ed). Washington:
Library Services Div., CRS, Library of Congress, Washington, DC 20540. (Free, but hard to
obtain directly; CRS advises requesting via your Congressperson.) (CRS/Educator
Microthesaurus available also.)

price [1989 ed was $25 (U.S.)].
National Institute of Justice/NCJRS, Department F, P.O. Box 6000, Rockville, MD 20850.
(301) 251-5500.
$2 shipping.
Harper & Row, Publishers, Inc., Mail Order Dept., P.O. Box 350, Hagerstown, MD 21741.
(check newspaper for USD). (2d ed due out in Oct91.)
Leeds University Press, Univ. of Leeds, Leeds LS2 9JT, UNITED KINGDOM.

Available from: National Technical Information Service, Dept. of Commerce, 5285 Port Royal
Road, Springfield, VA 22161.

Subject Headings-$31 (PB92-100056).
Available from: National Technical Information Service (address above); prices are for U.S.,
Canada, and Mexico.

Over 11,000 science and technology terms with multilingual cross-references (SPINES is an
acronym for "Science and Technology Policy Information Exchange System"). $57 for two
volumes: Vol. 1, Alphabetic List; Vol. 2, List of Int'l Organizations & Projects, Thematic List,
Permuted List, French/Spanish/Portuguese to English Lists.
Available from: UNIPUB, 4611-F Assembly Drive, Lanham, MD 20706-4391. (301) 459-7666.

FIGURE VIII-1-5: LEXICOGRAPHIC AUTHORITIES (MINIMUM COLLECTION)
examples of what completed VDF templates might look like are shown in Attachment #2 of this section.

e. Precedence

It is accepted practice that indexers and lexicographers should look for and generally follow the precedents laid down by those who came before them. For example, the ERIC Thesaurus and IAL favor PROGRAMING over PROGRAMMING, CATALOGING over CATALOGUING, DIALOG over DIALOGUE.

f. Expedience (or "Two for the Price of One")

When working on one term, references to others will be seen or will come to mind. Often it is beneficial in terms of time and effort to work on several at the same time.

<table>
<thead>
<tr>
<th>RECENTLY COMPLETED THESaurus RECOMMENDATIONS</th>
<th>OTHER TERM(S) COMPLETED AT THE SAME TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAREER INFORMATION SYSTEMS</td>
<td>RT JOB BANKS</td>
</tr>
<tr>
<td>RESISTANCE (PSYCHOLOGY)</td>
<td>NTs RESISTANCE TO CHANGE</td>
</tr>
<tr>
<td></td>
<td>RESISTANCE TO TEMPTATION</td>
</tr>
<tr>
<td>UF Accents (Vocal Stress)</td>
<td>UF Accents (Dialects)</td>
</tr>
<tr>
<td>TROUBLESHOOTING</td>
<td>NT DEBUGGING (COMPUTERS)</td>
</tr>
</tbody>
</table>

Thus, for instance, in researching TROUBLESHOOTING above, the indexer/lexicographer encountered sufficient documents and other information on DEBUGGING, to make defining and structuring two terms no more demanding than doing one.

g. Five Easy Steps for Thesaurus Recommendations

The steps numbered 1-5 below are the tasks needed to complete most Descriptor additions and changes.

(1) Scope Notes

The first thing a Descriptor or Thesaurus term usually needs is a definition so that indexers and users will understand how the term is used or will be used. Other database thesauri (see Figure VIII-1-5 and item B.6 of this section) should be checked to see how they define and use a term; definitions can be borrowed "as is," without attribution. Care should be taken to ensure that plural Scope Notes are used for plural terms and singular Scope Notes for singular terms.

Dictionaries and glossaries should also be checked if they are relevant to the context of the term being researched (i.e., likely to have the term). The ERIC database itself should be searched, titles examined from
the printouts, and appropriate documents selected for detailed examination usually via microfiche. Definitions selected or culled from the actual ERIC literature are usually more meaningful and comprehensive than those found in dictionaries. Much of this work will have already been done, however, if one has remembered to document the term as it was indexed on new accessions (see item C.2.a.(2), "Keeping a Clearinghouse List," above).

Definitions found should be keyed or written out one by one (with authority titles noted before or after each). Three definitions from three authorities (ERIC documents are accepted as authorities) should be the minimum number considered. But one should not get carried away! Definition data beyond what normally would fit on a page of 12-point type is probably excessive. The idea is to get several definitions from different authorities that can be examined as one package, and from which a final definition or Scope Note can be synthesized. All syntheses, from the first attempt to the final version, may be accumulated, providing a record of the processes one goes through in defining a term. Such documentation is useful to the final term-recommendation package submitted to the Facility lexicographic staff.

Care should be taken to parenthetically qualify a term that is ambiguous, e.g., SYMPTOMS without qualification is too broad. It is also helpful for terms that are defined restrictively to give the Thesaurus user somewhere else to go, e.g.:

<table>
<thead>
<tr>
<th>RESTRICTIVE SCOPE NOTE DEFINITIONS</th>
<th>ALTERNATIVES GIVEN IN PARENTHEtical INDEXING NOTE (OF SCOPE NOTE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEFENSE MECHANISMS -- Intrapyschic strategies used by individuals to avoid or confront unreasonable or undesirable impulses, feelings, or ideas</td>
<td>(Note: For physiological or zoological defense mechanisms, use &quot;Defense Reactions (Physiology)&quot; or &quot;Animal Defenses&quot; as Identifiers)</td>
</tr>
<tr>
<td>PAIN -- Distress and suffering caused by injury or disease of the body</td>
<td>(Note: Do not use for emotional pain, for which see the Identifier &quot;Emotional Distress&quot;)</td>
</tr>
<tr>
<td>DEPENDENCY (PERSONALITY) -- Reliance on other persons or things for comfort and support</td>
<td>(Note: Do not use for drug or economic dependence, for which see DRUG ADDICTION or the Identifier &quot;Dependency (Economics)&quot;)</td>
</tr>
</tbody>
</table>

Additionally, the Scope Note may need to advise indexers and users of indexable Identifiers in addition to available Descriptors. For example, the Scope Note for PAIN advises "see also Identifiers "Low Back Pain," "Pain Control," and "Pain Tolerance" -- this reminds indexers of Identifiers in addition to the most specific available Descriptor and searchers of additional available retrieval terms.

(See rules and conventions for Scope Notes, item D.4 of this section.)
(2) UF/USE Terms

These become more apparent as a term is analyzed and scrutinized in the course of the vocabulary development process. UF terms should be documented when encountered in the literature and, when readied for Thesaurus input, should each be searched free-text in ERIC to reveal additional variations. Scattered or inconstant Identifier forms provide many clues. Providing that the ERIC criteria are met, the most commonly used form would normally be picked as the main Thesaurus term.

(See rules and conventions for UF/USE References, item D.5 of this section.)

(3) BTs/NTs (Hierarchical / Generic Structuring)

Properly placing a term in its proper Thesaurus hierarchy is not especially complicated if one remembers to compare similar or parallel terms’ hierarchies (e.g., HOMICIDE/SUICIDE generic trees) and to find the best fit therein. Indexers should evaluate potential hierarchical placements all the way up the hierarchy. For example, PRIVATE SECTOR might look suitable initially as an NT in the display of ECONOMICS, but ECONOMICS is an NT of LIBERAL ARTS, and it is obvious from looking at the total LIBERAL ARTS hierarchy (in the Thesaurus Hierarchical Display) that PRIVATE SECTOR does not belong there.

(See rules and conventions for Narrower Terms/Broader Terms, item D.6 of this section.)

(4) RTs (Related Terms) / Group Code

Related Terms (RTs) can be collected in the database search part of the vocabulary development exercise, described in item C.2.g.(5) immediately below (as opposed to the authority search (Scope Note) part described in item C.2.g.(1) above). The Descriptors indexed on the accessions retrieved in the search of a given term should be looked at accession-by-accession and the ones recorded that appear to be closely related to the term in question. The recorded terms should be alphabetized, then evaluated in the context of each of their reciprocal displays. Frequency of concurrent occurrences is a possible relatedness gauge. NTs of a single BT are often RTs of each other (e.g., MOODS/ANXIETY/MORALE are NTs of the BT PSYCHOLOGICAL PATTERNS and RTs of each other). Proliferation of RTs can usually be avoided if one avoids the redundancy of carrying both general/broader and specific/narrower terms (e.g., not carrying FAIR USE (COPYRIGHTS) in the displays of FILMS, PUBLICATIONS, and PLAGIARISM when the general term COPYRIGHTS is already there).

By noting the Group Codes of the various terms considered as possible cross-references, one will arrive at a reasonably good idea of the appropriate Descriptor Group for a term by the time cross-referencing has been completed.

(See rules and conventions for Related Terms and Descriptor
(5) Backfile

The back of the Vocabulary Development Form asks for two impact statements regarding each Thesaurus transaction, i.e., (1) Impact on the Thesaurus, and (2) Impact on the Database. The "Impact on Thesaurus" block is intended as a reminder to always consider the "terminology terrain" encompassing a given concept. Preparers use the space provided to include information that will support or justify their recommendation. The Facility lexicographic staff generally copies data word-for-word from this block for use in the Vocabulary Status Report, disseminated to the ERIC Vocabulary Review Group. The block can be left blank. Contrived, "pat" phrases such as "this term is a rapidly growing concept, important to the field supported by this Clearinghouse," which carry no substantive information, should be excluded.

Indexers and other preparers of the Vocabulary Development Form frequently approach the "Impact on Database" block with more trepidation than any other element on the form. This is because the decision on how much to search is often subjective, based on a conception of what "typical" users might want or need. Preparers must put themselves in the place of the users, searching as comprehensively (as far back in time) as judged to be reasonable and practical for the user group members. Searches should consider Identifier hits first, followed by searches of titles, full-text (abstract, etc.)/latest years, and full-text/other years, in that order. Also, vocabulary searching is usually more cost-effective if done using a CD-ROM system. The complete full set of citations found can first be winnowed down considerably by removing those having one or more of the Identifiers selected for transfer (and listed on the VDF form). Upon achieving the set of citations after "noting out" the Identifiers, a CD-ROM system can be used to page down through the full records one-by-one. The preparer should mark on the computer or on paper those to be posted major or minor while "x-ing out" any that are not relevant. As the exercise progresses, additional Identifiers for transfer will be identified. A list of potential RTs should be made from the index terms in each record (see item on "RTs/Group Code" above).

(Note: Because most proposed Descriptors worked on by Clearinghouse staff are within that particular Clearinghouse's scope area, vocabulary development searching usually replicates existing, inhouse searching done as part of user services. Any new searches that are required should ordinarily still be appropriate for inclusion in the Clearinghouses' collections of convenient "search saves.")

Thesaurus changes, like new terms, are recommended and entered using the Vocabulary Development Form. Preparers should input only the part of a term display that needs to be changed. It is helpful to avoid minor format changes like DOWNS SYNDROME --> DOWN SYNDROME, LIMITED ENGLISH SPEAKING --> LIMITED ENGLISH PROFICIENT, where alternatives and originals are alphabetically adjacent, until such time
as the entire ERIC file can be made consistent via a reload.

h. Other Reminders

Proposed new or modified Descriptor displays are always documented on the Vocabulary Development Form. In addition to the basic recommendation itself, each form submitted to the ERIC Facility for Thesaurus consideration generally should include the following:

(a) Back of Form
   i) 3+ authorities (definitions or Thesaurus displays);
   ii) Identifier list (terms to be transferred to Descriptors);
   iii) Accession number list with major/minor distinctions (excludes accessions posted by Identifiers in above list).

(b) Computer search
   i) Search strategy;
   ii) Typed/Printed Records -- may be marked up with the preparer's major/minor designations, explanatory notations, etc.; may be submitted on floppy disks (3½- or 5¼-inch); printouts of unedited records, particularly of those using previously listed Identifiers (from "Identifier List," item ii above), normally should not be sent to the Facility.

(c) Copies of pages from ERIC documents and specialized dictionaries, containing definitions or other explanatory materials (copying of standard dictionary pages is unnecessary).

D. Rules and Conventions for Descriptors

1. General

The rules and conventions that follow have been designed to help ERIC indexers and lexicographers make consistent decisions relating to the addition and modification of terms in the Thesaurus of ERIC Descriptors. They are based on two earlier ERIC publications:


* For more discussion, see the Attachment #1 to this section, History of the Thesaurus of ERIC Descriptors.
Rules for Descriptor selection and construction are covered below under "Main Terms." This is followed by detailed discussions of each of the parts of main term displays, including 'Descriptor Group' codes, "Scope Notes" or term definitions, and cross-references. Cross-references include Used For/USE References, Broader/Narrower Terms, and Related Terms.

These rules must be adhered to in the completion of the Vocabulary Development Form (see item "E" of this section). The rules follow the standards of practice advocated by the American National Standard Guidelines for the Construction, Format, and Maintenance of Monolingual Thesauri (ANSI/NISO Z39.19-199x).**

2. Main Terms
   
   a. General

   The concepts "main term" and 'Descriptor' are equivalent when used in the sense of controlled thesaurus vocabularies. Main terms are the preferred, postable terms in a thesaurus; they are used to index and search (i.e., describe and retrieve), in a consistent manner, the subject content of documents entered in an information system.

   Any information retrieval Thesaurus will also contain "non-preferred* synonyms or quasi-synonyms, included to provide alternative pathways to the main terms or Descriptors. In ERIC, these are referred to as "USE references."

   The following discussion focuses on the selection and construction of ERIC "Descriptors." See item D.5 of this section for details on "USE references.*

   b. Descriptor Selection

   A Descriptor is any single or multiword term that appears in the Thesaurus and that may be used for indexing a document or journal article. Rules for selecting Descriptors are as follows:

   (1) Appearance in Literature

   *Descriptors should represent important concepts actually found in the literature of the database (as contrasted with concepts arrived at theoretically, independent of the literature). They should also reflect the actual language used in the literature to express such concepts.

   (2) Acceptability to ERIC Users

   Descriptors selected should have an agreed-upon meaning and should be acceptable terminology for relevant user groups. The judgment of acceptability will involve decisions as to obsolescence, negative connotations, colloquialness, and other factors.

   Acceptability must be considered in terms of the wide-ranging scope of

   **Proposed 1990 revision of ANSI Z39.19-1980. Developed by the National Information Standards Organization (NISO); circulated 1/10/90 among NISO voting members for comment.
education and its highly diversified user community. Care should be taken to avoid parochial points of view. Compromise may be necessary when the terminology needs of separate areas of specialization are in conflict. (See also rule "(6)" under "Descriptor Construction" below.)

(3) Usage Frequency

Frequency of occurrence is a factor in establishing Descriptors. Records should therefore be kept of the number of times candidate terms have been used in indexing and/or searching.

NOTE: As a general rule of thumb, concepts should be considered candidate Descriptors after 5 usages as Identifiers and should be included somewhere in the structured Thesaurus vocabulary (either as Main or USE terms) after approximately 10 usages. Excluded from this rule are, of course, those Identifiers representing very specific entities that cannot qualify for Descriptor status (e.g., names of organizations, projects, people, specific equipment, geographic locations, etc.).

(4) Multiword Descriptors

Multiword Descriptors (bound terms, precoordinated terms, and others) should be used whenever single-word Descriptors cannot describe concepts adequately. Many problems of this type can be solved by the careful application of rule "(1)" above. The following points should be considered:

- Use of a multiword Descriptor is justified if any of the individual words in the multiword Descriptor could combine with other Descriptors so as to produce frequent false coordinations.

  Example:  
  STUDENTS  
  TEACHERS  
  ATTITUDES  
  STUDENT ATTITUDES  
  TEACHER ATTITUDES

- Use of a multiword Descriptor is justified if the individual words of that multiword term are also unique Descriptors that, when coordinated with each other, would retrieve concepts different from that retrieved by the multiword term.

  Example:  
  STUDENTS  
  TEACHERS  
  STUDENT TEACHERS

- If a single-word term is so general as to be virtually useless in manual searching (e.g., SCHOOLS), consider linking that term with another term (e.g., SECONDARY SCHOOLS).

  (See also rule "(7)" under "Descriptor Construction" below.)
c. Descriptor Construction

(1) Word Form

Descriptors are limited to nouns and noun phrases; however, these include nouns derived from verbs and adjectives.

DISADVANTAGED (from adjective)
DROPOUTS (from verb + adverb)
PROBLEM SOLVING (from verb + object)

STUDENT EVALUATION OF TEACHER PERFORMANCE (noun phrase)

(2) Singular vs. Plural

In choosing between singular and plural noun forms, the precedents of the ERIC Thesaurus (based on long-established rules of major indexing and subject cataloging operations) should be followed:

- The plural form should be used for "count nouns"—things or entities about which one asks "how many?", e.g.,

  COMPUTERS
  OCCUPATIONS
  PROGRAMS
  VISUAL IMPAIRMENTS

- The singular form should be used for "mass nouns"—nouns about which one asks "how much?" This includes those nouns derived from verbs and adjectives that represent processes, attributes or properties, and conditions, e.g.,

  ABILITY
  ACHIEVEMENT
  BACKGROUND
  DELINQUENCY
  EVALUATION
  LEADERSHIP
  REGIONAL PLANNING
  TIME

- Common usage should be followed for term types not covered by these general rules, e.g.,

  DEMOCRACY not DEMOCRACIES

(3) Length

Descriptors are limited to 50 characters, including blanks.

(4) Character Limitations

Allowable characters are limited to the letters A-Z, the Arabic numerals 0-9, and parentheses ( ).
One of the reasons for restricting the use of parenthetical qualifiers to homographs and invalid Descriptors is to preclude the use of inverted entries. All words in the Thesaurus, whatever their position in the Descriptor, are accessible through the Rotated Display, thereby making inverted entries unnecessary. (See item B.7.b.(1).)

(8) Abbreviations and Acronyms

Abbreviations and acronyms are inherently ambiguous and should generally be avoided as Descriptors. Exceptions to this rule are acronyms that have replaced their spelled-out versions in common discourse, either nearly (e.g., FLES) or totally (e.g., LASERS). Most acronyms that appear in the Thesaurus are non-indexable USE references (e.g., ETV, Use EDUCATIONAL TELEVISION).

(9) Sex Neutral Terminology

Sex neutral Descriptors are preferred when a concept is intended to refer to both sexes, e.g.,

CRAFT WORKERS not CRAFTSMEN
ENLISTED PERSONNEL not ENLISTED MEN
HOMEMAKERS not HOUSEWIVES
LAY PEOPLE not LAYMEN
LABOR NEEDS not MANPOWER NEEDS
SEAFARERS not SEAMEN
NEEDLEWORKERS not SEAMSTRESSES

Preference of sex neutral language does not preclude the creation of legitimate population terms such as EMPLOYED WOMEN, FATHERS, WOMEN FACULTY, etc. Terminology of this nature is necessary when such specific population groups are the frequent subjects of documents.

d. Descriptor Format

(1) Structure (Alphabetical Display)

The structure of a typical Descriptor in the main Alphabetical Display (Working Copy) is illustrated in Figure VIII-1-6.

(2) Capitalization

Although Figure VIII-1-6 shows upper and lower case letters, the Thesaurus file is actually in all upper case, and the Thesaurus Working Copy used by ERIC indexers appears in all upper case. Indexers are required to transcribe terms in their Working Copies to the upper/lower case format of RIE/CLIE records—initial capital letters for all words, excluding prepositions, articles, and conjuncions when they are not the first word (e.g., Reduction in Force, In State Students).

The published Thesaurus editions appear in upper/lower case; these are programmatic conversions (done by the publisher) of the all upper case
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The published Thesaurus editions appear in upper/lower case; these are programmatic conversions (done by the publisher) of the all upper case
VOCABULARY – DESCRIPTORS

DESCRIPTOR
(Main Term)
COMMUNICATIONS

GROUP CODE
710

POSTINGS COUNT
(2,781)

ADD DATE
JUL66

SN Science and technology of the transmission and reception of information (Note: prior to Mar80, the Thesaurus carried the instructions, "Communication Networks, Services, or Systems, USE Telecommunication")

SCOPE NOTE

USED FOR
UF Communications Networks
Communications Services
Communications Systems
Mass Media Technology #
Media Technology (1968 1980)

BROADER TERM
BT Technology

RELATED TERM
RT Cybernetics
Delivery Systems
Distributive Education
Hypermedia
Information Networks
Information Processing
Information Technology
Information Theory
Information Transfer
Interactive Video
Mass Media
Network Analysis
Networks
Nonprint Media
Propaganda
Publications
Publicity
Social Networks

Three USE Reference reciprocals of the five USED FOR terms listed above
Communications Systems
Use COMMUNICATIONS
Mass Media Technology
Use COMMUNICATIONS and MASS MEDIA
Media Technology (1968 1980)
Use COMMUNICATIONS

FIGURE VIII-1-6: SAMPLE THESAURUS ENTRY

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VOCABULARY – DESCRIPTORS

Thesaurus master file.

(3) Alphabetization

Alphabetization of the main Alphabetical Display is word-by-word according to the following sequence:

Left Parenthesis;
Letters in Usual Order;
Numerals in Usual Order.

Word-by-word ordering (corresponding to the subject indexes of RIE and CIE) began in 1980, as a conversion from letter-by-letter alphabetization.

(4) Group Codes

The 3-digit Group Code is used to place a particular Descriptor in one of 41 Descriptor Groups. These groups are broad subject categories that provide an overview of the Thesaurus vocabulary. They can be used for general browsing or for searching. For more information, see item D3 of this section.

(5) Add Dates

An Add (entry) Date, e.g., APR90, accompanies each Descriptor in the main Alphabetical Display. Add Dates are assigned programmatically at the time a term enters the Thesaurus file. The earliest "real" Add Date is AUG68. Month and year of entry are given for each Descriptor added from AUG68 to the present. All Descriptors entered earlier than AUG68 have been given an arbitrary Add Date of JUL66, the approximate point in time at which ERIC indexing began.

Add Dates are intended to help users in the preparation of search strategies. They represent calendar dates, not RIE or CIE issue dates. Rigid interpretation of Add Dates should be avoided. A given addition may not show up in RIE or CIE for up to 6 months after its Add Date. Also, because of backfile corrections, Descriptors may sometimes be seen on accessions that are earlier than the Add Dates of these same Descriptors. Additionally, postings of Descriptors carrying JUL66 may not actually go back that far in time, or may be earlier if applied to one of the original, pre-RIE historical collections (Disadvantaged, OE Research Reports 1956-65, etc.).

(6) Postings Counts

As an additional aid to users, the Alphabetical Display provides a Postings Count for each Descriptor. This notation indicates the number of times the term has been used as either a major or minor Descriptor in ERIC indexing. It appears on the second line of the Descriptor display and above the Scope Note. In the Working Copy, it is to the right of the Add Date and within parentheses, and shows total ERIC postings for the term at the time the particular issue was produced. In the published Thesaurus, separate
VOCABULARY – DESCRIPTORS

Examination of the postings for a Descriptor may lead the user to check the term's cross-references. For example, a term with 3,000 postings cannot be searched easily manually, but one or more of its Narrower Terms (NTs) might well be. On the other hand, a term with only 15 postings might suggest that the searcher also consider including the term's Related Terms (RTs) or even its Broader Terms (BTs) in the search strategy.

All terms in the Thesaurus have actually been used in indexing. Any terms showing zero postings were in the process of being re-posted as that particular Thesaurus edition went to press, and will show their true postings in subsequent issues.

(7) Scope Notes

Descriptor Scope Notes (SNs) give definitions and/or usage restrictions, and often provide special instructions for indexers and searchers. For a complete discussion of Scope Notes (their roles, how they are developed, how to interpret them, etc.), see item D.4 of this section.

(8) Cross-References

At least one of the following types of cross-references accompanies every Descriptor in the Thesaurus' Alphabetical Display. See items as indicated (in this section) for complete details about each type.

- UF (Used For)/USE References—item D.5.
- Narrower Terms/Broader Terms—item D.6.
- Related Terms—item D.7.

(9) Thesaurus Displays

In addition to the main Alphabetical Display, three additional displays of the Thesaurus are provided to assist in indexing and searching. These are the Rotated Display, Hierarchical Display, and Descriptor Group Display. See this section’s item B.7 for a discussion of each.

e. Former Main Terms

Former indexable Descriptors are identified in the Thesaurus by parenthetical "life span" notations, e.g., "(1982 1990)." These notations show the period of time in which the terms were used in indexing.

These terms fall into categories "(1)" and "(2)" below. A third category "(3)" no longer appears in the Thesaurus.

(1) "Transferred" Descriptors

These are former main terms that have been downgraded to the status of USE references, e.g.,
VOCABULARY – DESCRIPTORS

Personal Relationship (1966 1974)
Use INTERPERSONAL RELATIONSHIP

Physics Teachers (1967 1980)
Use PHYSICS
and SCIENCE TEACHERS

These notations indicate that the postings of the first term in each set were "transferred" to the other term(s), i.e., the terms were merged in order to facilitate retrieval. The reason for merging the first set was to consolidate the postings of two synonyms under a single preferred form. The reason for merging the second set was to eliminate a term that had been used infrequently (and somewhat inconsistently).

Reasons for transferring or merging Descriptors, other than the need to collapse synonyms (or near-synonyms) and low-posted terms, include replacement of obsolete, ambiguous, or incorrect terminology. All transactions of this nature are made only to facilitate retrieval, a fact that must be demonstrated before such changes are approved.

Parenthetical life span notations inform users of older manual indexes and computer files that they must use these former terms to achieve complete retrieval. The major database vendors at times have updated their ERIC files to reflect postings "transfers," and users of these services in most instances need only to search currently active Descriptors to obtain records posted originally by the transferred terms. Postings transfers of approximately 840 Descriptors before December 1980 (when the last complete reload of ERIC by all major vendors occurred) are reflected in the ERIC database, and these Descriptors no longer need to be considered in online or other computer searching. Transfers after December 1980, however, have not been fully implemented in the ERIC vendor files, and both old and new versions of a term must be used in retrospective searching. All "transferred" ERIC Descriptors that are still searchable are listed in commercially published editions of the ERIC Thesaurus (see "Transferred Descriptors" in the Table of Contents).

(See also "Transferred Descriptors" discussion under "UF (Used For)/USE References," item D.5 of this section.)

Invalid "Dead" Descriptors

Occasionally, Descriptors have appeared in the Thesaurus file that, because of inherent ambiguity or subsequent indexing practices, are used so inconsistently that their utility in retrieval is seriously diminished. Such Descriptors, when discovered, are converted to invalid or "dead" terms.

Invalid Descriptors have the same display format as active Descriptors except for having no cross-references (no UFs, NTs, BTs, RTs). More important, however, are two additional identifying characteristics: a "life span" notation indicating the span of time the term was actually in use, and a Scope Note indicating how the term was used and leading indexers and searchers to more precise or meaningful terminology.

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Invalid Descriptors have the same main-entry form as Descriptors that have been downgraded to UF status; however, there is a significant difference between the two. Former Descriptors shown in the Thesaurus as UF s have been, or are in the process of being, deleted from the ERIC computer files, i.e., their postings have been (or will be) "transferred" to the preferred USE term(s). (For the present status of these terms, see the "Transferred Descriptors" section of the published ERIC Thesaurus.) On the other hand, invalid Descriptors remain in the ERIC files, and a comprehensive computer search of subjects represented by invalid Descriptors would necessitate their inclusion in one's search strategy. (For a complete list of invalid Descriptors, see the "Invalid (Dead') Descriptors" section of the published ERIC Thesaurus.)

A major objective of the ERIC system is the maintenance of synchronous authority and index (postings) ties. Most former main terms can be automatically reposted to one or more active Descriptors. Invalid Descriptors, however, cannot be handled in this manner. The inconsistency of their postings makes invalid Descriptors what they are. "Dead term' status effectively puts a hold on a concept, preventing its further use in indexing and allowing it to be set aside for possible manual reindexing (i.e., individual examination and reindexing of original records) at a later date. As time and funds permit, invalid Descriptors are reposted to preferred, active terms.

(See also discussion on "Ambiguous Usage" under "Scope Notes," item D.4 of this section.)

Deleted Descriptors

This third category of former main terms refers to concepts that have been totally removed from the Thesaurus file. The total number of terms in this group is quite small as compared to the other two categories, comprising no more than 30 Descriptors since ERIC became fully operational in 1966. These terms may be characterized by one of the following descriptions:

- Little-used ambiguous terms that encompass no appreciable subject content, e.g., ADVANCED SYSTEMS, LIMITED EXPERIENCE.

(These have been purged from the ERIC database and are no longer searchable; they may, however, be seen in older printed indexes.)

- Little-used highly specific terms whose existence cannot be justified because there is little or no data in ERIC on the subjects they represent,
VOCABULARY -- DESCRIPTORS

e.g., BIRACIAL GOVERNMENT, CABINET TYPE PROJECTORS.

(Like the first type, these also have been purged and are no longer searchable.)

• Highly specific proper nouns or coined terminology that more appropriately should be posted in the Identifier field, e.g., CHAUTAUQUAS.

(Though no longer in the Thesaurus, such terms are legitimate Identifiers and may be searched—see "Identifiers," Section VIII (Part 2).)

3. Descriptor Groups

The ERIC Thesaurus, like many other information retrieval thesauri (particularly those that cover fields as broad as "education"), incorporates a system of broad subject categories into which all Descriptors are grouped. These "Descriptor Groups" essentially represent a "table of contents" to the Thesaurus and provide an overview of the subject coverage of the ERIC system. Descriptor Groups provide easy initial access to the Thesaurus and are particularly useful to new or infrequent ERIC indexers and searchers who need to quickly obtain a basic familiarity with the total ERIC vocabulary. Descriptor Groups can also be helpful to the more experienced user in providing a means of narrowing down the total number of terms to be looked at, whether the task is indexing, searching, or lexicographic analysis.

The current ERIC Descriptor Groups are listed in Figure VIII-1-7; each group is identified by a unique 3-digit code.

This set of 41 Descriptor Groups was developed during the 1977-80 Vocabulary Improvement Project and first appeared in the 8th published edition of the Thesaurus (Completely Revised, 1980). A previous set of 52 groups (developed in the late 1960s) appeared in earlier published Thesaurus editions. There was much overlap between the earlier groups and the Thesaurus hierarchies. One of the purposes of the revision was to eliminate, as much as possible, this unnecessary hierarchical reiteration.

The Descriptor Group section of the published Thesaurus includes a Scope Note for each group, indicating subject coverage and including cross-references to other closely related groups. This is followed by a "Descriptor Group Display" in which the terms are listed alphabetically within each group.

The Descriptor Groups are represented by the series of 3-digit codes shown in Figure VIII-1-7. Each Thesaurus Descriptor has one of these codes in its record. The Alphabetical Display carries this code and serves as an index or key to the groups.
Groups Related to LEARNING AND DEVELOPMENT

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>110</td>
<td>LEARNING AND PERCEPTION</td>
</tr>
<tr>
<td>120</td>
<td>INDIVIDUAL DEVELOPMENT AND CHARACTERISTICS</td>
</tr>
</tbody>
</table>

Groups Related to PHYSICAL AND MENTAL CONDITIONS

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>210</td>
<td>HEALTH AND SAFETY</td>
</tr>
<tr>
<td>220</td>
<td>DISABILITIES</td>
</tr>
<tr>
<td>230</td>
<td>MENTAL HEALTH</td>
</tr>
<tr>
<td>240</td>
<td>COUNSELING</td>
</tr>
</tbody>
</table>

Groups Related to EDUCATIONAL PROCESSES AND STRUCTURES

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>310</td>
<td>THE EDUCATIONAL PROCESS: CLASSROOM PERSPECTIVES</td>
</tr>
<tr>
<td>320</td>
<td>THE EDUCATIONAL PROCESS: SCHOOL PERSPECTIVES</td>
</tr>
<tr>
<td>330</td>
<td>THE EDUCATIONAL PROCESS: SOCIETAL PERSPECTIVES</td>
</tr>
<tr>
<td>340</td>
<td>EDUCATIONAL LEVELS, DEGREES, AND ORGANIZATIONS</td>
</tr>
<tr>
<td>350</td>
<td>CURRICULUM ORGANIZATION</td>
</tr>
<tr>
<td>360</td>
<td>STUDENTS, TEACHERS, SCHOOL PERSONNEL</td>
</tr>
</tbody>
</table>

Groups Related to CURRICULUM AREAS

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>400</td>
<td>SUBJECTS OF INSTRUCTION</td>
</tr>
<tr>
<td>410</td>
<td>AGRICULTURE AND NATURAL RESOURCES</td>
</tr>
<tr>
<td>420</td>
<td>ARTS</td>
</tr>
<tr>
<td>430</td>
<td>HUMANITIES</td>
</tr>
<tr>
<td>440</td>
<td>LANGUAGES</td>
</tr>
<tr>
<td>450</td>
<td>LANGUAGE AND SPEECH</td>
</tr>
<tr>
<td>460</td>
<td>READING</td>
</tr>
<tr>
<td>470</td>
<td>PHYSICAL EDUCATION AND RECREATION</td>
</tr>
<tr>
<td>480</td>
<td>MATHEMATICS</td>
</tr>
<tr>
<td>490</td>
<td>SCIENCE AND TECHNOLOGY</td>
</tr>
</tbody>
</table>

Groups Related to HUMAN SOCIETY

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>510</td>
<td>THE INDIVIDUAL IN SOCIAL CONTEXT</td>
</tr>
<tr>
<td>520</td>
<td>SOCIAL PROCESSES AND STRUCTURES</td>
</tr>
<tr>
<td>530</td>
<td>SOCIAL PROBLEMS</td>
</tr>
<tr>
<td>540</td>
<td>BIAS AND EQUITY</td>
</tr>
<tr>
<td>550</td>
<td>HUMAN GEOGRAPHY</td>
</tr>
<tr>
<td>560</td>
<td>PEOPLES AND CULTURES</td>
</tr>
</tbody>
</table>

Groups Related to SOCIAL/ECONOMIC ENTERPRISE

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>610</td>
<td>GOVERNMENT AND POLITICS</td>
</tr>
<tr>
<td>620</td>
<td>ECONOMICS AND FINANCE</td>
</tr>
<tr>
<td>630</td>
<td>LABOR AND EMPLOYMENT</td>
</tr>
<tr>
<td>640</td>
<td>OCCUPATIONS</td>
</tr>
<tr>
<td>650</td>
<td>BUSINESS, COMMERCE, AND INDUSTRY</td>
</tr>
</tbody>
</table>

Groups Related to INFORMATION AND COMMUNICATIONS

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>710</td>
<td>INFORMATION/COMMUNICATION/COMMUNICATIONS</td>
</tr>
<tr>
<td>720</td>
<td>COMMUNICATIONS</td>
</tr>
<tr>
<td>730</td>
<td>PUBLICATION/DOCUMENT/DOCUMENTATION</td>
</tr>
</tbody>
</table>

Groups Related to MEASUREMENT AND RESEARCH

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>810</td>
<td>RESEARCH AND THEORY</td>
</tr>
<tr>
<td>820</td>
<td>MEASUREMENT</td>
</tr>
<tr>
<td>830</td>
<td>TESTS AND SCALES</td>
</tr>
</tbody>
</table>

Groups Related to FACILITIES AND EQUIPMENT

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>910</td>
<td>EQUIPMENT</td>
</tr>
<tr>
<td>920</td>
<td>FACILITIES</td>
</tr>
</tbody>
</table>

FIGURE VIII-1-7: DESCRIPTOR GROUPS
Example:

**Alphabetical Display**

<table>
<thead>
<tr>
<th>Descriptor Group Display</th>
<th>Descriptor Group Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADULT LEARNING</td>
<td>110</td>
</tr>
<tr>
<td>JUL66</td>
<td>110</td>
</tr>
<tr>
<td>BT Learning</td>
<td>LEARNING AND PERCEPTION</td>
</tr>
<tr>
<td>RT</td>
<td>Ability Identification</td>
</tr>
<tr>
<td>Adult Development</td>
<td>Abstract Reasoning</td>
</tr>
<tr>
<td>Adult Education</td>
<td>Adult Learning</td>
</tr>
<tr>
<td>Adult Programs</td>
<td>Arousal Patterns</td>
</tr>
<tr>
<td>Adult Students</td>
<td>Attention</td>
</tr>
<tr>
<td>Adults</td>
<td>Attention Control</td>
</tr>
<tr>
<td>Andragogy</td>
<td>Audience Response</td>
</tr>
<tr>
<td>Lifelong Learning</td>
<td>Auditory Discrimination</td>
</tr>
<tr>
<td></td>
<td>Auditory Perception</td>
</tr>
<tr>
<td></td>
<td>Auditory Stimuli</td>
</tr>
<tr>
<td></td>
<td>Aural Discrimination</td>
</tr>
<tr>
<td></td>
<td>Behavioral</td>
</tr>
</tbody>
</table>

The Descriptor Groups have had many roles in the past. At one time, the journal article citations in CIJE were arranged by Descriptor Groups. Several users have reported the utility of the groups in organizing various files, cataloging systems, awareness profiles, etc. Also, for a time, one of the online database vendors included Group Codes as an ERIC search option, allowing retrieval of all documents posted by a group's terms or subsets of those terms, and coordination of an entire group with single Thesaurus terms.

While sometimes helpful in the refinement of computer searches, Descriptor Groups are basically a tool for manual browsing, and users should be cautioned not to construe them as a formal classification scheme. Document indexing and search request formulation should never be based on Descriptor Groups alone. Before accurate decisions can be made on the use of individual Descriptors, they must be seen in the context of their hierarchies (the Hierarchical Display is a classified arrangement) and of the main Alphabetical Display with its Scope Notes and cross-references.

Individual Descriptors may often be conceptually broader than their group assignments might imply. For example, terms that have been scoped to include subject matter both within and outside of the education field may be found in “Groups Related to Educational Processes and Structures.” Such group assignments are based on the way the terms are most frequently used in ERIC indexing.

Each term in the *Thesaurus*, excluding UFs, is assigned to one Descriptor Group and to only one. However, many terms would admittedly appear to warrant assignment to more than one group. This situation is generally most apparent among closely related, conceptually overlapping Descriptor Groups (the groups are not mutually exclusive). The problem is currently handled with “see” and “see also” cross-references in the Scope Notes of the Descriptor Groups. Multiple-group assignments, while a possibility, are not planned for the immediate future. Such a capability would probably be most helpful when using the Descriptor Groups for searching, but more evidence of the day-to-day operational utility of the groups for this purpose is required.
The following guidelines are provided for selecting the one proper Descriptor Group for a given Descriptor:

- Group assignment should be made on the basis of the Descriptor's relationship to the entire field of education, rather than to a specialty (such as a particular Clearinghouse's subject area).

- Consult the Descriptor Group Display to determine:
  -- The assignment of similar, parallel, comparable, or analogous concepts.
  -- The assignment of terms that will be cross-referenced in the display of the Descriptor in question.

- Keep in mind that Descriptor Groups are adjuncts to other Thesaurus structures and displays. In evaluating whether a given term would be better in one group or another, consider its impact in each context. For instance, is CULTURE FAIR TESTS more illuminating or valuable to someone scanning the BIAS AND EQUITY group or the TESTS AND SCALES group? In this case, CULTURE FAIR TESTS is already displayed together with the other "test" terms in the Rotated Display, in the Hierarchical Display under TESTS, and in the main Alphabetical Display as a direct NT of TESTS. Assigning it to BIAS AND EQUITY provides a new view of this term.

- Use the guidance provided by the Descriptor Group Scope Notes. For instance, the Scope Note of the EQUIPMENT group says "see DISABILITIES for special equipment serving the handicapped," and one may find in this latter group such terms as HEARING AIDS and WHEELCHAIRS. The Scope Note of the OCCUPATIONS group specifically refers the user to a number of more precise groups, including HEALTH AND SAFETY, where terms such as NURSES and PHARMACISTS may be found.

Once the choice of the most appropriate Descriptor Group has been made for a given term, the 3-digit Group Code for that group is then entered along with the term and its display using the Vocabulary Development Form. (See Figure VIII-1 of this section.)

4. Scope Notes

a. General

A Scope Note is a brief statement (370 character limit, including intervening blanks) of the intended usage of a Descriptor. It may be used to clarify an ambiguous term or to restrict the usage of a term.

Scope Notes may include all alphabetical, numerical, and special characters within the limits of ERIC character availability, except for the semicolon (;). The semicolon is used in ERIC as a subfield delimiter.

Scope Notes may be definitional, instructional, or both. As definitions, Scope Notes define terms for the purposes of their use in ERIC indexing. In a broader
sense, definitional Scope Notes are, therefore, guides to what will be retrieved by searching on a Descriptor.

Instructional Scope Notes direct the user to other terms (Descriptors and/or Identifiers), indicate proper coordinations, provide historical notes on changes in usage or reference structure, or otherwise guide and explain preferred usage for both indexing and retrieval.

b. Definitional Scope Notes

Definitional Scope Notes are used in the Thesaurus for the following categories of Descriptors:

- Fundamental concepts appearing both by themselves and as components of precoordinated Descriptors.

<table>
<thead>
<tr>
<th>ABILITY</th>
<th>CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SN</td>
<td>SN</td>
</tr>
<tr>
<td>THE DEGREE OF ACTUAL POWER PRESENT IN AN ORGANISM OR SYSTEM TO PERFORM A GIVEN PHYSICAL OR MENTAL ACT (NOTE: USE A MORE SPECIFIC TERM IF POSSIBLE)</td>
<td>ACT OR PROCESS OF ALTERING, MODIFYING, TRANSFORMING, SUBSTITUTING, OR OTHERWISE MAKING OR BECOMING DIFFERENT -- INCLUDES DEVIATION FROM ESTABLISHED CHARACTER, CONDITION, SEQUENCE, OR DIRECTION (NOTE: DO NOT CONFUSE WITH &quot;DEVELOPMENT,&quot; WHICH REFERS TO SEQUENTIAL, PROGRESSIVE CHANGES -- USE A MORE SPECIFIC TERM IF POSSIBLE)</td>
</tr>
</tbody>
</table>

- Homographs.

FREE SCHOOLS

<table>
<thead>
<tr>
<th>SN</th>
<th>ALTERNATIVE SCHOOLS OFFERING A COMPLETELY VOLUNTARISTIC FRAMEWORK, INCLUDING AN UNSTRUCTURED CURRICULUM AND A SPONTANEOUS LEARNING ENVIRONMENT -- STUDENTS ARE FREE TO SELECT WHAT TO LEARN, WITH WHOM, WHEN, AND HOW -- GRADES, COMPETITION, AND COMPARISONS BETWEEN INDIVIDUALS ARE DISCARDED (NOTE: DO NOT CONFUSE WITH &quot;FREE EDUCATION&quot; OR &quot;FREEDOM SCHOOLS&quot;)</th>
<th>SN</th>
</tr>
</thead>
</table>

63
### VOCABULARY – DESCRIPTORS

- Descriptors containing words that may be ambiguous in some contexts.

<table>
<thead>
<tr>
<th>LANGUAGE HANDICAPS</th>
<th>SATELLITE FACILITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>SN RECEPTIVE OR EXPRESSIVE LANGUAGE DISABILITIES (NOTE: USE &quot;LEARNING DISABILITIES&quot; IF THE DISABILITY IS BEING CONSIDERED IN AN EDUCATIONAL SETTING -- USE &quot;SPEECH HANDICAPS&quot; FOR IMPAIRMENTS OF THE PERIPHERAL SPEECH MECHANISMS)</td>
<td>SN SUBSIDIARY FACILITIES THAT MAY BE SOME DISTANCE FROM THE FACILITY OR INSTITUTION TO WHICH THEY ARE ADMINISTRATIVELY RELATED</td>
</tr>
</tbody>
</table>

- Descriptors that include words that experience with the "terminology terrain" of education has shown are near-synonyms.

<table>
<thead>
<tr>
<th>HUMAN RESOURCES</th>
<th>INDIVIDUALIZED EDUCATION PROGRAMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SN PEOPLE WHO CAN BE DRAWN UPON FOR THEIR KNOWLEDGE, SKILLS, OR PRODUCTIVE CAPACITIES (NOTE: DO NOT CONFUSE WITH &quot;HUMAN CAPITAL&quot;)</td>
<td>SN EDUCATIONAL PROGRAMS FOR INDIVIDUAL STUDENTS, EACH GEARED TO THE PARTICULAR STUDENT'S NEEDS AND CONDUCTED IN ACCORDANCE WITH A WRITTEN PLAN AGREED ON BETWEEN THE STUDENT (AND/OR PARENTS) AND SCHOOL OFFICIALS -- IEP'S WERE ORIGINALLY CONCEIVED FOR USE IN EDUCATING HANDICAPPED CHILDREN AND WERE GRADUALLY EXPANDED TO INCLUDE ALL SPECIAL NEEDS GROUPS</td>
</tr>
</tbody>
</table>

- Terms that have a specialized, uncommon meaning in ERIC usage.

<table>
<thead>
<tr>
<th>LABORATORY TRAINING</th>
<th>MAINSTREAMING</th>
</tr>
</thead>
<tbody>
<tr>
<td>SN METHOD OF TRAINING DESIGNED TO FACILITATE SELF INSIGHT, PROCESS AWARENESS, INTERPERSONAL COMPETENCE, AND DYNAMICS OF CHANGE</td>
<td>SN PROGRESSIVELY INCLUDING AND MAINTAINING EXCEPTIONAL STUDENTS (DISABLED OR GIFTED) IN CLASSES AND SCHOOLS WITH REGULAR OR NORMAL STUDENTS, WITH STEPS TAKEN TO SEE THAT SPECIAL NEEDS ARE SATISFIED WITHIN THIS ARRANGEMENT</td>
</tr>
</tbody>
</table>

- Terms generally not used in common discourse (even if commonly used in the literature).

<table>
<thead>
<tr>
<th>NEONATES</th>
<th>SOCIOMETRIC TECHNIQUES</th>
</tr>
</thead>
<tbody>
<tr>
<td>SN AGED BIRTH TO APPROXIMATELY 1 MONTH (NOTE: ADDED MAR88 TO LIST OF AGE LEVELING DESCRIPTORS -- PRIOR TO THAT, THIS CONCEPT WAS FREQUENTLY INDEXED BY &quot;INFANTS&quot;)</td>
<td>SN PROCEDURES USED TO IDENTIFY THE PREFERENCES, LIKES, OR DISLIKES OF THE MEMBERS OF A GROUP WITH RESPECT TO EACH OTHER, AS WELL AS TO IDENTIFY VARIOUS PATTERNS OF GROUP STRUCTURE OR INTERACTION</td>
</tr>
</tbody>
</table>
- Technical terms (even if commonly known among the relevant subject experts).

**GENERATIVE PHONOLOGY**

**SN** THEORY OR SYSTEM OF RULES WHICH DESCRIBES OR PREDICTS WELL-FORMED PHONOLOGICAL OUTPUTS, AND IS USED TO EXPRESS THE ABILITY OF SPEAKERS TO PRODUCE THE SOUNDS OF THEIR NATIVE LANGUAGE

**MISCELLANEOUS ANALYSIS**

**SN** EXAMINATION AND INTERPRETATION OF OBSERVED RESPONSES IN ORAL READING WHICH DO NOT MATCH EXPECTED RESPONSES, AS A TECHNIQUE FOR MEASURING THE LEARNER'S CONTROL OF THE READING PROCESS

- Terms requiring historical notes, instructions for coordination with or reference to other Descriptors or Identifiers, or otherwise requiring explanation of usage.

**ACCESSIBILITY (FOR DISABLED)**

**SN** CHARACTERISTICS OF FACILITIES, PROGRAMS, AND SERVICES THAT ALLOW THEM TO BE ENTERED OR USED BY INDIVIDUALS DESPITE VISUAL, HEARING, MOBILITY, OR OTHER IMPAIRMENTS (NOTE: FOR PHYSICAL ACCESS, COORDINATE WITH "PHYSICAL MOBILITY" OR "VISUALLY HANDICAPPED MOBILITY" -- PRIOR TO JUN88, SEE ALSO "ARCHITECTURAL BARRIERS")

**FUND RAISING**

**SN** IDENTIFYING, SOLICITING, ACQUIRING, AND CULTIVATING FINANCIAL RESOURCES (NOTE: PRIOR TO FEB78, THE INSTRUCTION "FUND RAISING, USE FINANCIAL SUPPORT" WAS CARRIED IN THE THESAURUS)

**RELATIONSHIP**

**SN** TYPE OR MODE OF ASSOCIATION BETWEEN OR AMONG PHYSICALLY EXISTING ENTITIES, E.G., PEOPLE, INSTITUTIONS, OBJECTS (NOTE: USE A MORE SPECIFIC TERM IF POSSIBLE -- DO NOT CONFUSE WITH "CORRELATION" -- PRIOR TO MAR80, THE USE OF THIS TERM WAS NOT RESTRICTED BY A SCOPE NOTE)

**SOCIAL WELFARE (1966 1980)**

**SN** INVALID DESCRIPTOR -- USED FOR WELL-BEING AND VARIOUS TYPES OF SOCIAL SERVICES -- USE "WELL BEING" FOR FORMER CONCEPT, "WELFARE SERVICES" FOR ORGANIZED ASSISTANCE TO THE DISADVANTAGED, AND "SOCIAL SERVICES" OR OTHER APPROPRIATE TERMS FOR SOCIAL SERVICES PROVIDED TO THE GENERAL POPULATION

**C. Instructional Scope Notes**

Instructional Scope Notes are best illustrated by providing a series of examples of their major types.

(1) "USE ANOTHER TERM..."

**CAREER OPPORTUNITIES (1966 1980)**

**SN** INVALID DESCRIPTOR -- USED INCONSISTENTLY IN INDEXING -- USE "CAREERS," AND, IF APPROPRIATE, "EMPLOYMENT OPPORTUNITIES"
EDUCATIONAL FINANCE
SN ANY ASPECT OF RAISING AND SPENDING REVENUE FOR EDUCATIONAL PURPOSES (NOTE: USE A MORE PRECISE TERM IF POSSIBLE)

ORAL READING
SN THE ACT OF READING ALOUD, OFTEN USED TO DEVELOP OR TEST READING SKILLS (NOTE: USE "READING ALOUD TO OTHERS" WHEN THE PURPOSE OF ORAL READING IS TO INFORM OR ENTERTAIN A LISTENER OR GROUP OF LISTENERS)

PROBLEMS
SN DIFFICULTIES OR OBSTACLES NOT EASILY OVERCOME (NOTE: USE A MORE SPECIFIC TERM IF POSSIBLE)

SATELLITES (AEROSPACE)
SN (NOTE: IF APPLICABLE, USE THE MORE SPECIFIC TERM "COMMUNICATIONS SATELLITES")

INTERNATIONAL STUDIES

INVENTIONS
SN ORIGINAL PRODUCTS OR PROCESSES (THINGS NOT PREVIOUSLY EXISTING) DEVELOPED BY CREATIVE THOUGHT OR EXPERIMENTATION -- (NOTE: FOR "DISCOVERIES," SEE THE DESCRIPTOR "DISCOVERY PROCESSES")

(2) "SEE... SEE ALSO... FOR...SEE"

(REFERENCE IS MADE TO OTHER SUBJECT AREAS WITHOUT CITING SPECIFIC DESCRIPTORS)
PHARMACY
SN THE ART OR PRACTICE OF PREPARING, PRESERVING, COMPOUNDING, AND DISPENSING DRUGS (NOTE: SEE ALSO "PHARMACOLOGY")

PRESSURE (1970 1980)
SN INVALID DESCRIPTOR -- ORIGINALLY INTENDED AS A PHYSICAL SCIENCE TERM BUT USED INCONSISTENTLY FOR SOCIAL PRESSURE, PSYCHOLOGICAL STRESS, ETC., AS WELL AS PHYSICAL PRESSURE -- SEE SUCH DESCRIPTORS AS "PRESSURE (PHYSICS)," "POLITICAL INFLUENCES," "SOCIAL INFLUENCES," AND "STRESS VARIABLES"

UNCOMMONLY TAUGHT LANGUAGES
SN LANGUAGES NOT GENERALLY OFFERED FOR INSTRUCTION IN THE UNITED STATES EDUCATIONAL SYSTEM (NOTE: ALSO SEE THE SPECIFIC LANGUAGE, E.G., TURKISH, OR THE LANGUAGE FAMILY, E.G., URALIC ALTAIC LANGUAGES)

(3) "SEE ALSO...[IDENTIFIER]"

EQUIVALENCY TESTS
SN TESTS TO MEASURE THE EXTENT TO WHICH PREVIOUS SCHOOLING, KNOWLEDGE, OR EXPERIENCE SATISFIES COURSE OR JOB REQUIREMENTS (NOTE: SEE ALSO THE IDENTIFIER "GENERAL EDUCATIONAL DEVELOPMENT TESTS" -- PRIOR TO SEP77 AND MAR80 RESPECTIVELY, THE INSTRUCTIONS "GED TESTS, USE EQUIVALENCY TESTS" AND "PROFICIENCY EXAMINATIONS, USE EQUIVALENCY TESTS" WERE CARRIED IN THE THESAURUS)
VOCABULARY – DESCRIPTORS

(4) "COORDINATE WITH..., COORDINATE OTHER TERMS..., USE WITH..., COORDINATE WITH [IDENTIFIERS]"

FOREIGN CULTURE
SN CULTURE REGARDED AS FOREIGN FROM THE PERSPECTIVE OF THE DOCUMENT OR JOURNAL ARTICLE (NOTE: USE MAJOR GEOGRAPHIC IDENTIFIERS TO IDENTIFY THE FOREIGN CULTURE, AND MINOR GEOGRAPHIC IDENTIFIERS TO IDENTIFY THE NATIVE CULTURE — PRIOR TO MAR80, THIS TERM WAS NOT RESTRICTED BY A SCOPE NOTE AND CARRIED NO SPECIAL INSTRUCTION)

HEARINGS
SN SESSIONS IN WHICH WITNESSES ARE HEARD AND TESTIMONY IS RECORDED (NOTE: FOR U.S. CONGRESSIONAL HEARINGS, COORDINATE "HEARINGS" WITH SUCH IDENTIFIERS AS "CONGRESS," "CONGRESS 95th," ETC.)

LANGUAGE TESTS
SN TESTS TO MEASURE PROFICIENCY, DIAGNOSE STRENGTHS AND WEAKNESSES, OR PREDICT FUTURE PERFORMANCE IN A NATIVE OR FOREIGN LANGUAGE (NOTE: FOR FOREIGN LANGUAGE TESTS, COORDINATE THIS TERM WITH "SECOND LANGUAGE LEARNING," AND, WHEN APPROPRIATE, THE LANGUAGE)

MEDICAL RECORD ADMINISTRATORS
SN INDIVIDUALS WHO PLAN, DEVELOP, AND ADMINISTER MEDICAL RECORD SYSTEMS FOR HOSPITALS, CLINICS, HEALTH CENTERS, ETC. (NOTE: FOR LIBRARIANS IN MEDICAL LIBRARIES, COORDINATE "LIBRARIANS" AND "MEDICAL LIBRARIES" — FOR LIBRARIANS WHO ARE DIRECTLY INVOLVED IN PATIENT CARE, USE THE IDENTIFIER "CLINICAL MEDICAL LIBRARIANS")
VOCABULARY – DESCRIPTORS

(5) "USE FOR..."

SEX FAIRNESS

SN THE CORRECTION OF SEX BIAS OR DISCRIMINATION (NOTE: USE FOR DESCRIPTIONS OF MATERIALS, PROCEDURES, ACTIVITIES, OR PROGRAMS THAT TREAT THE SEXES EQUITABLY)

(6) "DO NOT USE FOR..."

READING DIFFICULTIES

SN PROBLEMS IN READING, CAUSED EITHER BY DISABILITIES ASSOCIATED WITH PSYCHOLOGICAL PROCESSES OR BY SUCH FACTORS AS PHYSICAL OR SENSORY HANDICAPS, CULTURAL BACKGROUND, LOW ABILITY, ETC. (NOTE: DO NOT USE FOR "READABILITY" — THE PREVIOUS TERM "READING DIFFICULTY" WAS NOT Scoped AND WAS OFTEN CONFUSED WITH "READABILITY")

(7) "DO NOT CONFUSE WITH..."

PROGRAM DEVELOPMENT

SN PROCESS OF FORMULATING A SCHEME, DEVISING PROCEDURES, OR PLANNING ACTIVITIES WITH REGARD TO SPECIFIC PROGRAM OBJECTIVES (NOTE: DO NOT CONFUSE WITH "PROGRAM DESIGN" OR "PROGRAM IMPLEMENTATION" — PRIOR TO MARBO, THE USE OF THIS TERM WAS NOT RESTRICTED BY A SCOPE NOTE)

(8) "SEE.../USE..." Other Sections of the Thesaurus

CATALOGS

SN (NOTE: USE A MORE SPECIFIC TERM IF POSSIBLE — SEE ALSO "REFERENCE MATERIALS" HIERARCHY FOR MORE PRECISE TERMINOLOGY) (refers to Hierarchical Display)
VOCABULARY – DESCRIPTORS

TEACHERS
SN (NOTE: SEE "FACULTY" FOR OTHER SPECIFIC TERMINOLOGY RELATED TO "TEACHERS")

(Refers to another term and all its cross-references in the Alphabetical Display)

UNIVERSITIES
SN DEGREE-GRANTING INSTITUTIONS OF HIGHER EDUCATION THAT TYPICALLY INCLUDE A LIBERAL ARTS UNDERGRADUATE COLLEGE, A GRADUATE SCHOOL, AND TWO OR MORE UNDERGRADUATE AND GRADUATE PROFESSIONAL SCHOOLS (NOTE: FOR SPECIFIC ASPECTS, USE A "COLLEGE" TERM WHERE A CORRESPONDING "UNIVERSITY" TERM IS NOT AVAILABLE)

(Refers to the entire range of terms having the same word—thus, the Rotated Display)

d. Historical Notes

(1) Previous UF Established as Main Term

DAY CARE CENTERS
SN PROFESSIONALLY RUN FACILITIES THAT CARE FOR GROUPS OF CHILDREN ON A PARTIAL OR FULL DAY BASIS (NOTE: PRIOR TO MAR77, THE INSTRUCTION "DAY CARE CENTERS, USE DAY CARE SERVICES" WAS CARRIED IN THE THESAURUS)

REDUCTION IN FORCE
SN REDUCTION IN THE TOTAL NUMBER OF PEOPLE EMPLOYED BY AN ORGANIZATION -- INCLUDES SUCH METHODS AS LAYING OFF PERSONNEL, CREATING EARLY RETIREMENT OPTIONS, TRANSFERRING PERSONNEL, AND NOT FILLING OPENINGS CREATED THROUGH NORMAL STAFF ATTRITION (NOTE: PRIOR TO MAR77, THE INSTRUCTION "REDUCTION IN FORCE," USE "JOB LAYOFF" WAS CARRIED IN THE THESAURUS)
VOCABULARY – DESCRIPTORS

(2) Another Descriptor Used Previously for This Concept

COLLEGE SECOND LANGUAGE PROGRAMS
SN (NOTE: PRIOR TO MARBO, THIS CONCEPT WAS INDEXED UNDER "COLLEGE LANGUAGE PROGRAMS")

SCHOOL CATALOGS
SN PUBLICATIONS ISSUED BY SCHOOLS TO PROVIDE INFORMATION ON THEIR COURSES, FACULTY, FACILITIES, ETC. (NOTE: PRIOR TO MARBO, "CATALOGS" WAS USED TO INDEX THIS CONCEPT)

(3) Significant Change in Scope

POSTSECONDARY EDUCATION
SN ALL EDUCATION BEYOND THE SECONDARY LEVEL -- INCLUDES LEARNING ACTIVITIES AND EXPERIENCES BEYOND THE COMPULSORY SCHOOL ATTENDANCE AGE WITH THE EXCEPTION OF ADULT BASIC EDUCATION AND HIGH SCHOOL EQUIVALENCY PROGRAMS (NOTE: APPEARS IN THE LIST OF MANDATORY EDUCATIONAL LEVEL DESCRIPTORS -- BEFORE APR75, RESTRICTED TO EDUCATION BEYOND GRADE 12 AND LESS THAN THE BACCALAUREATE LEVEL)

(4) Previous Usage Has Varied
(Useful for dealing with terms that have been used inconsistently)

FIELD EXPERIENCE PROGRAMS
SN PRACTICAL EXPERIENTIAL LEARNING ACTIVITIES UNDER INSTITUTIONAL OR ORGANIZATIONAL SPONSORSHIP, USUALLY AWAY FROM THE CLASSROOM OR CAMPUS -- ASSOCIATED MOST OFTEN WITH GRADES 10-16, AND CHARACTERIZED AS LESS FORMAL AND CONCENTRATED THAN PROFESSIONAL INTERNSHIP PROGRAMS (NOTE: BEFORE JUN78, THE USE OF THIS TERM WAS NOT RESTRICTED BY A SCOPE NOTE)
VOCABULARY – DESCRIPTORS

INEQUALITIES (1970 1980)
SN INVALID DESCRIPTOR -- USED INCONSISTENTLY IN INDEXING -- FOR MATHEMATICAL INEQUALITIES, USE "INEQUALITY (MATHEMATICS)" -- FOR EDUCATIONAL INEQUALITIES, USE "EQUAL EDUCATION" -- FOR SOCIAL OR ECONOMIC INEQUALITIES, SEE "DISADVANTAGED" OR DESCRIPTORS RELATING TO SOCIAL, RACE, SEX, OR ETHNIC BIAS OR DISCRIMINATION (gives alternatives to an ambiguous term that has been made invalid)

PRODUCTIVE THINKING
SN CREATIVE THINKING THAT RESULTS IN SOMETHING NEW (NOTE: PRIOR TO MAR80, THE USE OF THIS TERM WAS NOT RESTRICTED BY A SCOPE NOTE) (refers to an invalid "dead" term on which this improved term is based)

SECURITY (PSYCHOLOGY)
SN BEING OR FEELING FREE FROM RISK OR UNCERTAINTY (NOTE: THE DESCRIPTOR "SECURITY," WITHOUT THE PARENTHETICAL QUALIFIER, WAS USED FROM 1967 TO MAR78) (restricts term to one meaning and indicates appropriate term covering alternative meaning)

TELECOURSES
SN SEQUENCES OF LESSONS OFFERED OVER TELEVISION FOR CREDIT OR AUDITING PURPOSES (NOTE: FOR COURSES ON THE SUBJECT OF TELEVISION, USE "TELEVISION CURRICULUM" -- PRIOR TO MAR90, THIS TERM DID NOT CARRY A SCOPE NOTE) (restricts term to one meaning and indicates appropriate term covering alternative meaning)

UNITED STATES HISTORY
SN (NOTE: PRIOR TO MAR80, "AMERICAN HISTORY" WAS OCCASIONALLY USED FOR THIS CONCEPT) e. Notes Indicating a Range of Possible Applications or Subsumed Concepts

"Includes," "Example," and "Excludes" Scope Notes are useful devices for delineating the range of subject matter, characteristics, attributes, conditions, properties, or settings, found among the usages of a Descriptor.
(1) "INCLUDES..." Scope Notes

AMERICAN INDIANS
SN BOTH NORTH AND SOUTH AMERICAN INDIANS

ANNUAL REPORTS
SN INCLUDES DATA ON PROGRESS, FINANCE, MATERIAL, PERSONNEL, INSTRUCTION, ETC.

ITEM RESPONSE THEORY
SN THE STUDY OF TEST AND ITEM SCORES BASED ON ASSUMPTIONS CONCERNING THE MATHEMATICAL RELATIONSHIP BETWEEN ABILITIES (OR OTHER HYPOTHEORIZED TRAITS) AND ITEM RESPONSES (NOTE: "ITEM RESPONSE THEORY" INCLUDES BOTH THE "RASCH MODEL" AND THE "BIRNBAUM MODELS" -- SEE THOSE IDENTIFIERS)

LANGUAGE MAINTENANCE
SN THE MAINTENANCE OF A GIVEN LANGUAGE RATHER THAN ITS DISPLACEMENT BY ANOTHER LANGUAGE (INCLUDES MAINTAINING THE LANGUAGES OF CULTURAL MINORITY GROUPS THROUGH FAMILY PRACTICES, RITUALS, CONCERTED EDUCATIONAL ENDEAVORS WITH SOCIETY AT LARGE, ETC.)

MECHANICS (PHYSICS)
SN THE SCIENCE THAT DEALS WITH THE EFFECTS OF ENERGY AND FORCE ON THE EQUILIBRUM, DEFORMATION, OR MOTION OF SOLID, LIQUID, AND GASEOUS BODIES -- INCLUDES BOTH CLASSICAL (NEWTONIAN) AND MODERN (ATOMIC-LEVEL) MECHANICS
NONINSTRUCTIONAL STUDENT COSTS

SN  COSTS MET BY STUDENTS THAT ARE NOT
INSTRUCTIONAL COSTS (TUITION,
ETC.) BUT ARE NECESSARY IN THE
PURSUIT OF AN EDUCATION --
INCLUDES ROOM AND BOARD,
TRANSPORTATION EXPENSES, BOOK
COSTS, PERSONAL EXPENSES, FOREGONE
INCOME, ETC.

(distinguishes the
term from its
antonym)

PHYSICAL EXAMINATIONS

SN  MEDICAL INSPECTIONS OF
INDIVIDUALS TO DETERMINE THEIR
PHYSICAL CONDITION, INCLUDING
THE DETECTION OF PRESENT OR
POTENTIAL DYSFUNCTION

(2)  "Example" Scope Notes: 'E.G.," "SUCH AS...," "AS IN..."

"Includes" and "Example" Scope Notes are similar in that
they indicate scope by providing lists of subsumed concepts or by
providing examples of possible applications.

ARTIFICIAL LANGUAGES

SN  LANGUAGES CREATED FOR
INTERNATIONAL COMMUNICATION,
E.G., ESPERANTO, INTERLINGUA,
NOVIAL, VOLAPUK

ASIAN STUDIES

SN  STUDIES, USUALLY
INTERDISCIPLINARY IN APPROACH,
OF SUCH GEOGRAPHIC AREAS AS
ASIATIC RUSSIA, ARMENIA,
AZERBAIJAN, BANGLADESH, BHUTAN,
CHINA, GEORGIA, KAZAKHSTAN,
KIRGIZSTAN, INDIA, INDONESIA,
JAPAN, KOREA, MALDIVES,
MONGOLIA, NEPAL, PAKISTAN, THE
PHILIPPINES, SRI LANKA,
TAJIKISTAN, TURKMENISTAN,
UZBEKISTAN, AND THE SOUTHEAST
ASIANSUBCONTINENT
### DEVELOPMENTAL STAGES

**SN** Natural or common divisions of the human developmental process, characterized by types of behavior (as in the oral stage), by biological properties or manifestations (as in the embryonic stage), or by mental processes (as in Piaget's "concrete operations" stage).

### NEW JOURNALISM

**SN** Reporting which combines traditional journalism techniques with such devices of fiction writing as: scene by scene reconstruction of settings, recording of dialogue, use of third person point-of-view, and extensive recording of external characteristics of individual characters -- emphasis is on capturing the "concrete reality" or "immediacy" of cultural phenomena.

### ELIGIBILITY

**SN** Qualifying for certain benefits or services (e.g., student eligibility for financial aid, institutional eligibility for accreditation, family eligibility for welfare assistance, employee eligibility for retirement).

### ABSTRACT REASONING

**SN** Process of reaching conclusions through the use of symbols or generalizations rather than on concrete factual information.

### INFORMAL ASSESSMENT

**SN** Appraisal of an individual's or group's status or growth by means other than standardized instruments.

### ANALOG COMPUTERS

**SN** Computers that translate physical conditions (flow, temperature, pressure, etc.) into related mechanical or electrical quantities (length, voltage, current, etc.) -- unlike digital computers, which count discrete quantities, analog computers measure continuous variables.

### LOW VISION AIDS

**SN** Lenses or devices other than conventional eyeglasses used to improve visual functioning in the partially sighted.

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(3) "Excludes" Scope Notes: "OTHER THAN...", "RATHER THAN...", "UNLIKE...", and "NOT"

Sometimes it is easier to define a scope by stating what is excluded. This approach can both point to and distinguish from a Descriptor representing the excluded concept.
<table>
<thead>
<tr>
<th>MIDDLE MANAGEMENT</th>
<th>TORTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SN</strong> THE INTERMEDIATE LEVEL OF MANAGEMENT, EXCLUDING TOP-LEVEL MANAGEMENT ON THE ONE HAND AND FIRST-LEVEL SUPERVISION ON THE OTHER</td>
<td><strong>SN</strong> PRIVATE OR CIVIL WRONGS, NOT INCLUDING BREACH OF CONTRACT, FOR WHICH PERPETRATORS MAY BE LEGALLY PROSECUTED AND INJURED PARTIES MAY BE COMPENSATED</td>
</tr>
</tbody>
</table>

**NONPROFIT ORGANIZATIONS**

**SN** ORGANIZATIONS NOT DESIGNED PRIMARILY TO PAY DIVIDENDS ON INVESTED CAPITAL (NOTE: PRIOR TO DEC77, THE INSTRUCTION "NONPROFIT ORGANIZATIONS, USE VOLUNTARY AGENCIES" WAS CARRIED IN THE THESAURUS)

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**Notes That Slant Meaning or Emphasis in Certain Directions (Without Precluding Other Possibilities)**

Words such as "usually" can be important hedges in Scope Notes, avoiding excessively tight definitions. "Usually" and "generally" can also be helpful when definitions supplied by authorities differ or where shifts in meaning have occurred over time.

These qualifiers can be viewed as a continuum from "not-quite-absolute" to "maybe"---

1. "ALMOST ALWAYS..."

**IMMERSION PROGRAMS**

**SN** EDUCATIONAL PROGRAMS IN WHICH ALL CURRICULUM MATERIALS ARE TAUGHT IN A SECOND LANGUAGE, GENERALLY AT THE ELEMENTARY LEVEL AND ALMOST ALWAYS WITHIN THE CONTEXT OF A FIRST LANGUAGE SCHOOL

2. "ESPECIALLY..." "PARTICULARLY..."

**EDUCATIONAL MALPRACTICE**

**SN** WRONGFUL OR NEGLIGENT ACTS ON THE PART OF TEACHERS OR SCHOOLS THAT RESULT (OR MAY RESULT) IN STUDENT DETRIMENTS, ESPECIALLY INCLUDING THE FAILURE OF STUDENTS TO LEARN

**PHARMACOLOGY**

**SN** THE SCIENCE OF THE NATURE AND PROPERTIES OF DRUGS, PARTICULARLY THEIR ACTIONS OR EFFECTS (NOTE: SEE ALSO "PHARMACY")
VOCABULARY – DESCRIPTORS

(3) "USUALLY..."

ENDOWMENT FUNDS
SN CAPITAL SUMS SET ASIDE AS SOURCES OF INCOME -- THE PRINCIPAL OF EACH SUM IS USUALLY LEFT INTACT AND INVESTED, WHILE THE INCOME MAY BE EXPENDED

RETRENCHMENT
SN REDUCTION OF COSTS OR EFFORTS, USUALLY AS AN ECONOMIC NECESSITY

(4) "GENERALLY...", "NORMALLY..."

BUILDING SYSTEMS
SN ASSEMBLIES OF BUILDING SUBSYSTEMS AND COMPONENTS (STRUCTURAL AND MECHANICAL), WITH INSTRUCTIONS FOR PUTTING THEM TOGETHER -- NORMALLY THESE COMPONENTS ARE MASS-PRODUCED AND USED FOR SPECIFIC GENERIC PROJECTS IN BUILDING CONSTRUCTION

CURRICULUM
SN PLAN INCORPORATING A STRUCTURED SERIES OF INTENDED LEARNING OUTCOMES AND ASSOCIATED LEARNING EXPERIENCES -- GENERALLY ORGANIZED AS A RELATED COMBINATION OR SERIES OF COURSES (NOTE: USE A MORE SPECIFIC TERM IF POSSIBLE)

LIFETIME SPORTS
SN SPORTS WHERE PARTICIPATION CAN BE CARRIED ON THROUGHOUT ONE'S LIFETIME -- GENERALLY INCLUDES (BUT IS NOT NECESSARILY LIMITED TO) A VARIETY OF INDIVIDUAL AND DUAL SPORTS FOR WHICH FACILITIES ARE WIDELY AVAILABLE, AND BODY CONTACT IS LIMITED OR UNNECESSARY
(5) "FREQUENTLY..."

CAREER EXPLORATION
SN INVESTIGATING OCCUPATIONAL INTEREST
 AREAS OFTEN THROUGH REAL OR
 SIMULATED JOB EXPERIENCE --
 FREQUENTLY FOUND IN CAREER
 EDUCATION PROGRAMS FOR GRADERS 6
 THROUGH 10

(6) "OFTEN..."

CAREER AWARENESS
SN APPRECIATION FOR AND UNDERSTANDING
 OF THE VARIETY OF TYPES OF CAREERS
 -- OFTEN REFERS TO THE INITIAL
 PHASE OF CAREER EDUCATION
 APPROPRIATE TO THE ELEMENTARY
 SCHOOL

HANDICRAFTS
SN CREATIVE ACTIVITIES OF MAKING
 ARTICLES BY HAND, OFTEN WITH THE
 AID OF SIMPLE TOOLS OR MACHINES --
 ALSO, THE HANDWORKS RESULTING
 FROM SUCH ACTIVITIES

(7) "SOMETIMES..."

ALTRUISM
SN CONSIDERATION FOR THE WELFARE
 OF OTHERS, SOMETIMES IN
 ACCORDANCE WITH AN ETHICAL
 SYSTEM

LABOR EDUCATION
SN EDUCATION AND TRAINING OF
 WORKERS OFTEN SPONSORED BY
 LABOR UNIONS AND SOMETIMES IN
 COOPERATION WITH EDUCATIONAL
 INSTITUTIONS

COLLEGE GOVERNING COUNCILS
SN ORGANIZATIONS OF FACULTY
 REPRESENTATIVES, SOMETIMES
 INCLUDING ADMINISTRATORS AND
 STUDENTS, THAT CONSIDER
 ADMINISTRATIVE, ACADEMIC, OR
 OPERATIONAL POLICIES OF THE
 INSTITUTION

(8) "PERHAPS..."

SELF SUPPORTING STUDENTS
SN STUDENTS WHO ARE LEGALLY (OR
 PERHAPS FINANCIALLY) INDEPENDENT
 OF THEIR PARENTS OR FORMER
 GUARDIANS
VOCABULARY – DESCRIPTORS

(9) "EMPHASES ON...", "ATTENTION ON..."

Special features or characteristics can be indicated in a number of ways—

- "WITH EMPHASIS...", "EMPHASIS IS ON..."

<table>
<thead>
<tr>
<th>COMMUNICATIVE COMPETENCE (LANGUAGES)</th>
<th>ORIENTEERING</th>
</tr>
</thead>
<tbody>
<tr>
<td>SN THE ABILITY TO CONVERSE OR CORRESPOND WITH A NATIVE SPEAKER OF THE TARGET LANGUAGE IN A REAL-LIFE SITUATION, WITH EMPHASIS ON COMMUNICATION OF IDEAS RATHER THAN ON CORRECTNESS OF LANGUAGE FORM</td>
<td>SN THE ACT OR SPORT OF CROSS-COUNTRY NAVIGATION USING A MAP AND COMPASS AS GUIDES -- EMPHASIS IS ON DETERMINING, THEN TAKING, THE SHORTEST AND QUICKEST WAY TO A SPECIFIED DESTINATION</td>
</tr>
</tbody>
</table>

- "WITH ATTENTION TO...", "ATTENTION IS GIVEN TO..."

ANTHROPOLOGICAL LINGUISTICS

| SN APPLICATION OF ANTHROPOLOGICAL AND LINGUISTIC TECHNIQUES TO THE STUDY OF SPEECH COMMUNITIES, PARTICULARLY THOSE WITH NO WRITING SYSTEM -- ATTENTION IS GIVEN TO SPECIFIC INTERRELATIONSHIPS IN THE CONCURRENT AND SYSTEMATIC DEVELOPMENT OF CULTURE AND LANGUAGE |

- "ASSOCIATED WITH..."

(See FIELD EXPERIENCE PROGRAMS, page VIII-1-56.)

g. Special Problems in Meaning and Usage Treated by Scope Notes

(1) Relational Homographs

"Relational homographs" are those terms whose meaning changes according to the direction of the relationship between the component concepts. Such terms should always be scoped. Whether they should be scoped to exclude one meaning or to include both will depend upon their usage.

Generally, if a relational homograph has been used primarily in only one sense, it should be scoped to exclude the other meaning. It should always be scoped to exclude the other meaning when other Descriptors exist to cover that other meaning. Examples:
COUNSELOR EVALUATION
SN PROCESS OF JUDGING COUNSELOR PERFORMANCE AS RELATED TO ESTABLISHED CRITERIA

TEACHER DISCIPLINE
SN DISCIPLINE OF, NOT BY, TEACHERS

EMPLOYEE ATTITUDES
SN ATTITUDES OF, NOT TOWARD, EMPLOYEES

TEACHER GUIDANCE
SN GUIDANCE PROVIDED BY TEACHERS (NOTE: PRIOR TO MARBO, THIS TERM WAS NOT SCOPE AND WAS SOMETIMES USED TO INDEX GUIDANCE GIVEN TO TEACHERS)

PRIVATE FINANCIAL SUPPORT
SN FINANCIAL AID RECEIVED FROM PRIVATE SOURCES (NOTE: DO NOT CONFUSE WITH "PRIVATE SCHOOL AID")

Only occasionally should a relational homograph be scoped to include both meanings, e.g.,

PUBLIC TELEVISION
SN NON-COMMERCIAL TELEVISION, PUBLICLY OWNED AND OPERATED, THAT IS DEDICATED TO EDUCATIONAL, CULTURAL, AND PUBLIC-SERVICE PROGRAMS (both by and for the public)

(2) "Double" Scope Notes

Many concepts have two (or more) meanings or uses that are so closely related that they must be considered synonymous from the point of view of retrieval. ADJUSTMENT, for example, is both a condition and a process and is scoped as such. Most of the time such usage can be easily handled in the initial clause of a Scope Note; the Thesaurus provides many examples—

"BEING OR FEELING..."
"THE STATE OR QUALITY OF..."
"TRAITS OR QUALITIES..."
"THE ACT OR SPORT OF..."
"THE CONDITION AND PROCESS OF..."

In some cases, however, it is helpful to make the dual role of such concepts more obvious or explicit. This can be done through a "double" (or multiple) Scope Note. The Scope Note for DESIGN illustrates this by including the meaning of the term both as a noun and as a verb:
VOCABULARY – DESCRIPTORS

DESIGN
SN THE PROCESS OF CONCEIVING AND SELECTING THE STRUCTURE, ELEMENTS, ARRANGEMENT, MATERIALS, STEPS, OR PROCEDURES OF SOME ACTIVITY OR THING -- ALSO, THE PLAN, LAYOUT, OR MENTAL SCHEME THAT RESULTS (NOTE: USE A MORE SPECIFIC TERM IF POSSIBLE)

Other "double" Scope Notes show meanings that while separable are so conceptually intertwined that there would be little or no advantage to trying to tease them apart, e.g.,

FISCAL CAPACITY
SN WEALTH OF A GOVERNMENT, INSTITUTION, ORGANIZATION, OR INDIVIDUAL -- ALSO, THE RELATIVE ABILITY TO OBTAIN REVENUE

SOCIAL COGNITION
SN CONCEPTIONS ABOUT INTERPERSONAL AND SOCIAL PHENOMENA (E.G., PERSONS, THE SELF, MOTIVES, FEELINGS, RELATIONS, SOCIAL RULES, SOCIETAL INSTITUTIONS) -- ALSO, COGNITIVE PROCESSES AND SKILLS USED IN SOCIAL INTERACTION (E.G., COMMUNICATION SKILLS, PERSPECTIVE TAKING, EMPATHY)

A frequent need for double Scope Notes is found in the Descriptors representing the various intellectual disciplines, which in ERIC are also curriculum areas:

INTERNATIONAL RELATIONS
SN RELATIONS AMONG POLITICAL UNITS OF NATIONAL RANK -- ALSO, A FIELD OF STUDY (OFTEN CONSIDERED AS A BRANCH OF POLITICAL SCIENCE) DEALING PRIMARILY WITH FOREIGN POLICIES, THE ORGANIZATION AND FUNCTION OF GOVERNMENTAL AGENCIES CONCERNED WITH FOREIGN POLICY, AND THE FACTORS (AS GEOGRAPHY AND ECONOMICS) UNDERLYING FOREIGN POLICY

The meaning of terms may also vary between or among disciplines. These terms may be double-scoped when retrieval is not affected, e.g., when two contexts are so closely related that searchers would usually want them both and when other additional index terms would normally be used to distinguish the contexts. Example:

81
ERROR ANALYSIS (LANGUAGE)

SN In language teaching and testing, a technique of measuring progress and of devising teaching methods by recording and classifying the mistakes made by students -- in linguistics, the observation of errors in the speech process as a means of understanding the phonological and semantic components of language, interactional processes, and speakers' discourse strategies.

Also, some terms are used interchangeably in both broad and narrow senses, e.g.,

EDUCATIONAL TECHNOLOGY

SN Systematic identification, development, organization, or utilization of educational resources and/or the management of these processes -- occasionally used in a more limited sense to describe the use of equipment-oriented techniques or audiovisual aids in educational settings.

(3) "Forced" Concepts

Concepts that, in indexing, have been "forced" into being represented by a closely related Descriptor should be established as new Descriptors if the initial Descriptor becomes moderately to well posted or high to moderate search interest develops.

Where the "forced" concept has in the past been represented in the Thesaurus by a USE reference, creation of a note linking past with present is appropriate, e.g.,

BEHAVIOR MODIFICATION

SN Alteration of behavior by the use of conditioning techniques (note: prior to MAR80, the instruction "behavior modification, use behavior change" was carried in the Thesaurus).

When no USE reference is present (or where the word form of the USE reference varies from that selected as the preferred form of the new Descriptor), the historical note linking the term with its prior indexing requires other forms, e.g.,

82
MULTICULTURAL EDUCATION

SN EDUCATION INVOLVING TWO OR MORE ETHNIC GROUPS AND DESIGNED TO HELP PARTICIPANTS CLARIFY THEIR OWN ETHNIC IDENTITY AND APPRECIATE THAT OF OTHERS, REDUCE PREJUDICE AND STEREOTYPING, AND PROMOTE CULTURAL PLURALISM AND EQUAL PARTICIPATION (NOTE: DO NOT CONFUSE WITH "CROSS CULTURAL TRAINING," WHICH, PRIOR TO JAN79, WAS FREQUENTLY USED FOR "MULTICULTURAL EDUCATION")

Where two concepts have previously been "forced" under one Descriptor as a result of "word indexing" (i.e., indexing strictly by words rather than by the meanings behind them), a reciprocal historical note should be made, e.g.,

FOUNDATION PROGRAMS

SN SYSTEMS WHEREBY STATE FUNDS ARE USED TO SUPPLEMENT LOCAL OR INTERMEDIATE SCHOOL DISTRICT FUNDS FOR ELEMENTARY AND SECONDARY EDUCATION -- A "MINIMUM FOUNDATION" OF FINANCIAL SUPPORT IS USUALLY GUARANTEED REGARDLESS OF THE LOCAL DISTRICT'S ABILITY TO SUPPORT EDUCATION (NOTE: PRIOR TO MAR80, THIS TERM WAS NOT SCOPE AND WAS SOMETIMES USED TO INDEX "PHILANTHROPIC FOUNDATIONS")

PHILANTHROPIC FOUNDATIONS

SN TRUSTS OR CORPORATIONS CREATED FOR CHARITABLE PURPOSES THAT PROVIDE GRANTS OF FUNDS TO FINANCE RESEARCH, SERVICES, FACILITIES, EQUIPMENT, OR LIBRARY RESOURCES (NOTE: PRIOR TO MAR80, THIS CONCEPT WAS OFTEN INDEXED UNDER "FOUNDATION PROGRAMS," WHICH WAS NOT SCOPE)

Mandatory Leveling Terms

Scope Notes must account for Descriptors having any special roles or functions in ERIC indexing. The mandatory educational level Descriptors are intended to serve a "classing" function—-to bring together all materials falling within a certain educational range. (See Section VII, item I.3.a.(1) of this manual.)

The use of a limited authority list of educational level terms for this special function is somewhat at variance with the principle of indexing to the level of specificity of the document/article. One effect is their preponderant assignment as minor index terms. They are major index terms only when representing the subject of a document.

Because of their unique status, the mandatory educational level Descriptors are flagged within the body of the Thesaurus with a special instruction in the Scope Note, e.g.,
VOCABULARY - DESCRIPTORS

HIGHER EDUCATION

SN
ALL EDUCATION BEYOND THE SECONDARY LEVEL LEADING TO A FORMAL DEGREE (NOTE: ALSO APPEARS IN THE LIST OF MANDATORY EDUCATIONAL LEVEL DESCRIPTORS)

(5) Descriptors Corresponding to Publication Type Categories

Certain Descriptors are sometimes used to index document characteristics other than subject content. Among these are the so-called 'Publication Type' Descriptors that are frequently used to index document form, e.g., ABSTRACTS, CURRICULUM GUIDES, QUESTIONNAIRES.

Since mid-1974, however, ERIC has provided a special field for Publication Type tags. Wherever there is an exact match between one of the authorized Publication Type categories and a Descriptor, the Descriptor (as of March 1980) has been reserved for use only when indexing document subject, e.g.,

BIBLIOGRAPHIES

SN
DESCRIPTIVE LISTS OF BOOKS OR OTHER PRINTED MATERIALS, WHICH ARE WRITTEN BY ONE AUTHOR, DURING ONE PERIOD, ON ONE SUBJECT, PRODUCED BY ONE PRINTER AND/OR PUBLISHER, OR LOCATED IN ONE PLACE (NOTE: CORRESPONDS TO PUBTYPE CODE 131 -- DO NOT USE EXCEPT AS THE SUBJECT OF A DOCUMENT)

TESTS

SN
DEVICES, PROCEDURES, OR SETS OF ITEMS THAT ARE USED TO MEASURE ABILITY, SKILL, UNDERSTANDING, KNOWLEDGE, OR ACHIEVEMENT (NOTE: USE A MORE SPECIFIC TERM IF POSSIBLE -- THIS BROAD TERM CORRESPONDS TO PUBTYPE CODE 160 AND SHOULD NOT BE USED EXCEPT AS THE SUBJECT OF A DOCUMENT)

DOCTORAL DISSERTATIONS

SN
THESIS SUBMITTED IN PARTIAL FULFILLMENT OF DOCTORAL DEGREE REQUIREMENTS (NOTE: CORRESPONDS TO PUBTYPE CODE 041 -- DO NOT USE EXCEPT AS THE SUBJECT OF A DOCUMENT)

The 22 Descriptors so limited are listed in the Introduction to the Thesaurus and are discussed in greater detail in Section VII, item 1.3.d of this manual.

(6) Ambiguous Usage

Certain ERIC Descriptors have had such inconsistent usage over time as to have little value in retrieval. The postings level of
some of these terms may be so large as to make reposting to other, more precise terms impractical.

As such terms are discovered and if it is determined that postings cannot be readily transferred, they are relegated to "dead" term status. In other words, they are qualified in the Thesaurus with birth/death dates, along with relatively standardized Scope Notes that lead users to other terminology.

EDUCATIONAL PROGRAMS (1966 1980)

SN INVALID DESCRIPTOR -- USED INCONSISTENTLY IN INDEXING -- COORDINATE MORE SPECIFIC DESCRIPTORS

(very broad term used inconsistently in prior years and therefore with little apparent retrieval value—further study may show that most postings may be purged without loss)

HISTORICAL CRITICISM (1969 1980)

SN INVALID DESCRIPTOR -- ORIGINALLY INTENDED AS A LITERARY TERM, BUT USED INDISCRIMINATELY IN INDEXING -- SEE "LITERARY CRITICISM" AND APPROPRIATE "HISTORY" TERM(S) FOR THIS CONCEPT -- SEE ALSO "LITERARY HISTORY" OR "HISTORIOGRAPHY"

(indiscriminate usage of this term was caused by "word indexing"—postings need to be examined individually to determine potential value)

SELF EVALUATION (1966 1980)

SN INVALID DESCRIPTOR -- USED FOR PERSONAL, ORGANIZATIONAL, OR PROGRAM SELF EVALUATION -- SEE "SELF EVALUATION [INDIVIDUALS]" AND "SELF EVALUATION [GROUPS]" RESPECTIVELY FOR THESE CONCEPTS

(heavily posted term with two meanings, which need to be distinguished—every usage will most likely need to be reposted to one of two preferred Descriptors)

Retrieval considerations occasionally necessitate a cross-reference in the Scope Notes of preferred terms back to "dead" terms. ("Dead" terms carry no standard Thesaurus cross-references, i.e., NTs, BTs, and RTs.)

AMERICAN HISTORY (1966 1980)

SN INVALID DESCRIPTOR -- ALTHOUGH SCOPE NOTE REFERRED TO NORTH, SOUTH, AND CENTRAL AMERICA, TERM USED FREQUENTLY FOR U.S. HISTORY -- SEE "NORTH AMERICAN HISTORY," "LATIN AMERICAN HISTORY," OR "UNITED STATES HISTORY"

(Heavy usage often of this term in prior years and therefore with little apparent retrieval value—further study may show that most postings may be purged without loss)

UNITED STATES HISTORY

SN (NOTE: PRIOR TO MARBO, "AMERICAN HISTORY" WAS OCCASIONALLY USED FOR THIS CONCEPT)
(7) Dates Appearing in Instructional Scope Notes

Dates in instructional Scope Notes reflect the calendar month/year of particular Thesaurus updates or changes and do not refer to RIE and CUE issues. Thesaurus updates usually occur from 1 to 2 months in advance of RIE/CUE issues; however, on occasion, they may occur up to 6 months ahead of these publications. Therefore, searchers must assume that a given change may not have been effective in RIE or CUE for up to 6 months after a Scope Note’s calendar date. For that 6-month period, searchers should consider and employ both the old (pre-change) way of indexing and the new way of indexing.

5. UF (Used For)/USE References

a. General

The UF and USE references are generally employed to solve problems of synonymy occurring in natural language. Terms following the UF notation are synonyms or variant forms of so-called main terms or postable Descriptors. These synonyms or quasi-synonyms, also known as "non-preferred" terms, are not used in indexing or searching; their listing merely provides a pathway to the preferred terms in the Thesaurus. They thus serve as the access vocabulary, i.e., they represent various points of entry that users (both indexers and searchers) are likely to try. Ideally, there should be as many entry points for a given concept as there are ways to describe that concept.

The importance of the UF notation extends beyond the clear-cut case of synonymy. The notation can represent the relationship to a Descriptor o. a near synonym that has a general conceptual similarity, but that is not a true synonym, and it may also be used to indicate highly specific terms that, for the purposes of storage and retrieval, are indexed under a more general term.

UFs are entered in the Thesaurus as cross-references to main terms, e.g.,

LABOR
UF MANPOWER

GRADES (SCHOLASTIC)
UF MARKS (SCHOLASTIC)

For each UF entered in this manner, the ERIC Thesaurus software automatically generates a reciprocal USE reference. (USE references cannot be added directly to the Thesaurus; they appear only as a reciprocal result of the generation of UFs.) The reciprocals of the above UF are:

MANPOWER
USE LABOR
MARKS (SCHOLASTIC)
USE GRADES (SCHOLASTIC)

These reciprocals are mandatory. They refer the Thesaurus user from a non-postable or non-indexable term to the preferred, indexable term or terms.

b. Summary of Approved Functions for USE References

(1) To refer from synonyms and variant word forms to the preferred form established as the main term. "Synonym" must be understood to mean synonymous for the purposes of retrieval in ERIC. Distinctions made in the literature and in authorities are not important if they do not hold up from the point of view of retrieval.

SIGHT USE VISION HOIKKU USE HAIKU SUBJECT ACCESS USE INDEXING

ABUSED CHILDREN USE CHILD ABUSE DEATH EDUCATION USE DEATH

(2) To refer from a highly specific term to a more general term (posting up), including bringing together the points in a conceptual continuum.

LEGAL SECRETARIES USE SECRETARIES GAS WELDING USE WELDING EARLY DETECTION USE IDENTIFICATION

(3) To refer from a commonly accepted acronym or abbreviation to its full form.

ITA USE INITIAL TEACHING ALPHABET LRC USE LEARNING RESOURCES CENTERS

(4) To refer from a colloquial term to its scientific or technical equivalent, or from a scientific or technical term to its commonly used equivalent.

CROSS EYES USE STRABISMUS CYESIS USE PREGNANCY

(5) To refer from older to current terminology.

NEGROES (1966 1977) USE BLACKS

(6) To refer from an antonym when distinctions between opposites are determined to be unimportant for ERIC retrieval.

DEHUMANIZATION USE HUMANIZATION MALNUTRITION USE NUTRITION
(7) To prescribe simultaneous use of more than one term to express a concept.

FATHER ROLE
USE FATHERS
and PARENT ROLE

(8) To refer from a deleted main term to the main term(s) to which the older postings have been transferred.

COLLECTIVE NEGOTIATION (1967 1977)
USE COLLECTIVE BARGAINING

c. Rules for USE References

The phrase "USE reference" and the abbreviation "UF" represent reciprocal references to and from the same entity, a non-postable Thesaurus term, and the two are often used interchangeably in the following discussion, depending on the point being made.

UF construction follows the rules for the construction of main terms (see item D.2.c of this section), including:

- UFs are limited to 50 characters, including blanks.
- Only noun and noun phrases should be used for UFs.
- Parentheses ( ) are the only punctuation allowed in UFs.

The following additional rules also apply:

(1) UFs may refer laterally or upward, but never downward, i.e., never from a broader concept to a narrower, more specific concept.

(2) UFs must bear the same relationship to the hierarchy (BTs/NTs) of a main term as does the main term itself—except where a UF, conceptually bearing an RT relationship to the main term, is being treated as synonymous for the purposes of retrieval.

(3) UFs must bear the same relationship to the RTs of the main term as does the main term itself.

(4) UFs are restricted to useful entry points—those for which there is good probability of use.

(5) All entry points likely as user approaches to a concept should be included as UFs in the Thesaurus.
d. Evaluation and Decision Criteria for USE References

(1) Relationship Between UF and Main Term

The relationship between a UF and its main term should normally be either synonymous or hierarchical.

- Testing for Synonymity

Synonyms can be tested by inserting the words "is always" or "are always" between the two terms. The relationship should be true in both directions. Examples:

SELF DISCIPLINE USE SELF CONTROL

SELF DISCIPLINE is always SELF CONTROL

SELF CONTROL is always SELF DISCIPLINE

MINORITY CULTURE USE MINORITY GROUPS

MINORITY CULTURE is always MINORITY GROUPS

MINORITY GROUPS are always MINORITY CULTURE

VILLAGE WORKERS USE CHANGE AGENTS

VILLAGE WORKERS are always CHANGE AGENTS

CHANGE AGENTS are always VILLAGE WORKERS

--- If the test holds true in both directions, the terms are synonymous.

--- If the terms do not meet the test of "always" in both directions, but do meet the test of "usually" or "frequently," they are near-synonyms. Then the criterion is whether they are synonymous for the purposes of retrieval from the ERIC database. For example, SELF DISCIPLINE and SELF CONTROL are not identical, but are very nearly so:

--- If the UF term were also established as a main term, would the postings on the two terms be distinguishable?

--- Would searchers frequently want one concept but not the other?

If the answers to these questions are negative, then the terms are essentially synonymous and the UF term is appropriate.

--- If the two terms meet the test of "always" only in the direction "UF is always main term," then the relationship is hierarchical and legitimate.
--- If the two terms meet the test of "sometimes" in one or both directions, e.g., CHANGE AGENTS are sometimes VILLAGE WORKERS, then there may be a hidden hierarchical relationship that could be expressed in a new pre-coordination: VILLAGE [or rural] CHANGE AGENTS Use CHANGE AGENTS.

• Testing for Hierarchy

Hierarchically related UFs can be similarly tested by inserting the words "kind(s) of" or "specific application of" between the two terms. The relationship will hold true in one direction. Examples:

- [UF] are kinds of [main term]
- [main term] are kinds of [UF]

- GRANDFATHERS are kinds of GRANDPARENTS (true)
- GRANDPARENTS are kinds of GRANDFATHERS (false)
- FAILURE is a kind of ACADEMIC FAILURE (false)
- ACADEMIC FAILURE is a kind of FAILURE (true)
- GRAIN MARKETING is a specific application of GRAINS (FOOD) (true)
- GRAINS (FOOD) is a specific application of GRAIN MARKETING (false)

--- If the test holds true from UF to main term, the relationship is upward and legitimate.

--- If the test holds true from main term to UF, the relationship is downward and violates the rules for UFs. Such errors can be remedied by qualifying the UF, e.g., FAILURE (SCHOLASTIC).

--- If the test does not hold true in either direction, the relationship is an RT relationship and violates the rules. However, it should be remembered that such relationships may exist whenever the concepts are judged to be sufficiently synonymous for searching purposes. (For a brief discussion of these RT relationships, see "Special Problems in Meaning and Usage" below, item "D.5.e.(5)."

(2) Relationship Between UF and Rest of Cross-Reference Structure

The BTs, NTs, and RTs of a main term should normally have the same relationship to a UF of the main term as they do to the main term itself.
Examples:

**FILMS**
- UF: BLACK AND WHITE FILMS
  - CINEMA
  - COLOR FILMS
  - MOTION PICTURES
  - SILENT FILMS
  - SOUND FILMS (1966-1980)
- NT: FOREIGN LANGUAGE FILMS
  - INSTRUCTIONAL FILMS
  - KINESCOPE RECORDINGS
  - SINGLE CONCEPT FILMS
- BT: MASS MEDIA
  - NONPRINT MEDIA
  - VISUAL AIDS
- RT: AUTEURISM
  - CAPTIONS
  - CARTOONS
  - COPYRIGHTS
  - DOCUMENTARIES
  - FILM CRITICISM
  - FILM INDUSTRY
  - FILM LIBRARIES
  - FILM PRODUCTION
  - FILM STUDY
  - FILMOGRAPHIES
  - FILMSTRIPS
  - LITERARY STYLES
  - PHOTOGRAPHS
  - POPULAR CULTURE
  - REPETITIVE FILM SHOWINGS
  - THEATER ARTS
  - TRANSPARENCIES
  - VIDEOTAPE RECORDINGS

**DISARMAMENT**
- UF: ARMS CONTROL
  - MULTILATERAL DISARMAMENT
  - NUCLEAR CONTROL
  - UNILATERAL DISARMAMENT
- RT: ARMED FORCES
  - CONFLICT
  - INTERNATIONAL RELATIONS
  - MILITARY SCIENCE
  - NATIONAL DEFENSE
  - NUCLEAR WARFARE
  - PEACE
  - WAR
  - WORLD PROBLEMS

(3) Usefulness of UF as an Access Point

The access point provided by the UF should be genuinely useful, i.e.,
there should be a good possibility that users of the *Thesaurus* might actually approach the concept via the UF's terminology; and

- the UF's terminology should be found in the literature and in relatively common discourse.

**Example:**

**FASHION INDUSTRY**

- SN CONCERNED WITH THE DESIGN, PRODUCTION, AND MARKETING OF CLOTHING
- UF APPAREL INDUSTRY
  - CLOTHING INDUSTRY
  - GARMENT INDUSTRY
- BT INDUSTRY
- RT CLOTHING
  - CLOTHING DESIGN
  - CLOTHING INSTRUCTION
  - NEEDLE TRADES
  - OCCUPATIONAL HOME ECONOMICS
  - SERVICE OCCUPATIONS
  - SEWING INSTRUCTION
  - SEWING MACHINE OPERATORS
  - TEXTILES INSTRUCTION

(4) Need for UF as an Access Point

The need for additional UFs or access points can be tested as follows:

- Check the *Rotated Display* under the key component words of the main term to see the surrounding "terminology terrain." Determine whether UFs from and to those words point to other words that meet the test for synonymity or near-synonymity. Any identifiable patterns of references not already provided for in the Descriptor's UFs should be added.

In the example below, the adjective "occupational" of the 2-word Descriptor OCCUPATIONAL TESTS is viewed in the context of the Rotated Display. Alternative words (such as "JOB," "VOCATIONAL," "CAREER," "EMPLOYMENT") that should be considered as additional access points are easily seen.

**ALPHABETICAL DISPLAY**

**OCCUPATIONAL TESTS**

- SN TESTS DESIGNED TO PREDICT JOB PERFORMANCE BY RECORDING SPECIFIC ABILITIES AND INTERESTS THAT CORRESPOND WITH THOSE OF PERSONS SUCCESSFULLY ENGAGING IN THE PARTICULAR FIELD OF WORK (NOTE: FOR OCCUPATIONAL INTEREST INVENTORIES, USE "INTEREST")
VOCABULARY – DESCRIPTORS

INVEnORIES")
UF ADMISSION TESTS (OCCUPATIONAL)
EMPLOYMENT TESTS
PERSONNEL TESTS
VOCATIONAL TESTS
NT WORK SAMPLE TESTS
BT TESTS
RT APTITUDE TESTS
ASSESSMENT CENTERS (PERSONNEL)
CAREER COUNSELING
EMPLOYMENT QUALIFICATIONS
INTEREST INVENTORIES
JOB PERFORMANCE
JOB SKILLS
LICENSING EXAMINATIONS (PROFESSIONS)
MATURITY TESTS
PERFORMANCE TESTS
PERSONNEL EVALUATION
PREDICTIVE MEASUREMENT
VOCATIONAL APTITUDE
VOCATIONAL EVALUATION
VOCATIONAL INTERESTS

ROTATED DISPLAY

OCCUPATIONAL ADJUSTMENT Use VOCATIONAL ADJUSTMENT
ADMISSION TESTS (OCCUPATIONAL) Use OCCUPATIONAL TESTS
OCCUPATIONAL ANALYSIS Use JOB ANALYSIS
OCCUPATIONAL ASPIRATION
OCCUPATIONAL ASPIRATION LEVEL Use OCCUPATIONAL ASPIRATION
OCCUPATIONAL AWARENESS Use CAREER AWARENESS
OCCUPATIONAL CHOICE (1966–1980) Use CAREER CHOICE
OCCUPATIONAL CLUSTERS
OCCUPATIONAL COUNSELING Use CAREER COUNSELING
OCCUPATIONAL DISEASES
SUPERVISED OCCUPATIONAL EXPERIENCE (AGRICULTURE)
OCCUPATIONAL EXPLORATION Use CAREER EXPLORATION
OCCUPATIONAL FAMILIES Use OCCUPATIONAL CLUSTERS
OCCUPATIONAL FOLLOWUP Use VOCATIONAL FOLLOWUP
OCCUPATIONAL GUIDANCE (1966–1980) Use CAREER GUIDANCE
OCCUPATIONAL HEALTH Use OCCUPATIONAL SAFETY AND HEALTH
OCCUPATIONAL HOME ECONOMICS
OCCUPATIONAL INFORMATION
OCCUPATIONAL INFORMATION SYSTEMS Use CAREER INFORMATION SYSTEMS
OCCUPATIONAL LEVEL Use EMPLOYMENT LEVEL
OCCUPATIONAL MOBILITY

PROMOTION (OCCUPATIONAL)
OCCUPATIONAL PSYCHOLOGY Use INDUSTRIAL PSYCHOLOGY
OCCUPATIONAL SAFETY AND HEALTH
OCCUPATIONAL SAFETY AND HEALTH STANDARDS Use LABOR STANDARDS and OCCUPATIONAL SAFETY AND HEALTH

OCCUPATIONAL SATISFACTION Use JOB SATISFACTION
OCCUPATIONAL SUCCESSION Use OCCUPATIONAL MOBILITY
OCCUPATIONAL SURVEYS
OCCUPATIONAL TESTS
OCCUPATIONAL THERAPISTS
OCCUPATIONAL THERAPY
OCCUPATIONAL THERAPY ASSISTANTS
OCCUPATIONAL TRAINING Use JOB TRAINING
• Make sure that access is provided from important key words in
the main term (or perhaps in the Scope Note), e.g.,

<table>
<thead>
<tr>
<th>FEAR OF SUCCESS</th>
<th>PRETEND PLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>SN NEED TO REFRAIN FROM MAXIMALLY</td>
<td>SN PLAY INVOLVING FANTASY OR MAKE</td>
</tr>
<tr>
<td>UTILIZING ONE'S ABILITIES IN</td>
<td>BELIEVE</td>
</tr>
<tr>
<td>ACHIEVEMENT SITUATIONS BECAUSE OF</td>
<td>UF FANTASY PLAY</td>
</tr>
<tr>
<td>EXPECTED NEGATIVE CONSEQUENCES</td>
<td>MAKE BELIEVE PLAY</td>
</tr>
<tr>
<td>UF SUCCESS AVOIDANCE</td>
<td>SYMBOLIC PLAY</td>
</tr>
<tr>
<td>BT FEAR</td>
<td>BT PLAY</td>
</tr>
<tr>
<td>RT ACHIEVEMENT</td>
<td>RT BEHAVIOR DEVELOPMENT</td>
</tr>
<tr>
<td>FAILURE</td>
<td>BEHAVIOR PATTERNS</td>
</tr>
<tr>
<td>GOAL ORIENTATION</td>
<td>DRAMATIC PLAY</td>
</tr>
<tr>
<td>INHIBITION</td>
<td>FANTASY</td>
</tr>
<tr>
<td>LOW ACHIEVEMENT</td>
<td>IMAGINATION</td>
</tr>
<tr>
<td>MOTIVATION</td>
<td>IMITATION</td>
</tr>
<tr>
<td>SELF MOTIVATION</td>
<td>ROLE PLAY</td>
</tr>
<tr>
<td>SEX ROLE</td>
<td></td>
</tr>
<tr>
<td>SUCCESS</td>
<td></td>
</tr>
<tr>
<td>UNDERACHIEVEMENT</td>
<td></td>
</tr>
</tbody>
</table>
Check titles of documents and articles posted to the main term for clues about alternate word forms and terminology.

**FUTURES (OF SOCIETY)**
- America or Aztlan? Los Chicanos En El Año 2001 (America or Aztlan? Chicanos in the Year 2001). ED 178 247
- Article Booklet for the Seventh Course by Newspaper Connections: Technology and Change. ED 178 247

A Futures Curriculum for Symmetry. ED 180 905
Future Studies in the K-12 Curriculum. ED 180 859
Futu...m: A Workbook for Planning the Use of Land. ED 176 943
Future Trends in Education Policy. ED 177 965/
Futurism: Framework for Composition. ED 179 980
Futuristic Forecasting: Calculated Curriculum Relevance (Using the Methods of the Futurist as a Forecasting Technique). ED 175 804
Futuristic Images of Guidance and Student Services. ED 181 400
Futuristics and Education. Fastback 131, ED 179 390

Make sure that access is provided for embedded concepts in any compound words in the main term, e.g., COLLEGE COOPERATION, in the case below:

**INTERCOLLEGIATE COOPERATION**
- Cooperation between or among colleges, universities, or professional schools
- College Cooperation (1966-1980)
- Intercollegiate Athletics
- Intercollegiate Programs (1967-1980)
- Educational Cooperation
- Institutional Cooperation
- Articulation (Education)
- College Planning
- College School Cooperation
- Colleges
- Consortia
e. Special Problems in Meaning and Usage

(1) Filing Order/Filing Distance

The requirements for effective access to the vocabulary vary in different alphabetical sections of the Thesaurus. Provision of UF's that have the same first word as the main term is unnecessary if they will file in close proximity to the main term, and if the possibility of additional intervening references and displays appears small. Similarly, several UF's referring to the same Descriptor are redundant if they will file together, whether or not they will appear adjacent to the main term. However, in core areas of the Thesaurus, such as the "school" terms, the "student" terms, etc., UF's beginning with the same word, or beginning with the same word as the main term, may nevertheless file at a substantial distance from each other. These references may be vital, e.g.,

SCHOOL PERSONNEL
UF SCHOOL EMPLOYEES
SCHOOL OFFICIALS

A further consideration in determining the usefulness of additional references of this type is the effect of word-by-word filing of the Thesaurus Alphabetical Display. In letter-by-letter filing used in ERIC Thesaurus editions before 1980, certain USE references would file immediately before or after their respective main terms, and the chances were remote that new entries would fall between them. The following two sets illustrate this situation:

AUTO MECHANICS
UF AUTOMOBILE MECHANICS
SOCIALIZATION
UF SOCIAL LEARNING

AUTOMOBILE MECHANICS
USE AUTO MECHANICS
SOCIAL LEARNING
USE SOCIALIZATION

With word-by-word filing, however, many entries now intervene between these sets of terms and the importance of having the USE references is more pronounced.

(2) Error of "Mixed Signals"

Confusion can occur when UF's are considered only from the point of view of the main term. In evaluating UF's and in judging their correctness, it is imperative to consider them not only in the Main Term display but also---

ο at the place where they file reciprocally
The above examples of "mixed signals" existed in the pre-1980 Thesaurus.

The situation illustrated by the first example was particularly confusing because COUNSELORS was (and is) a Narrower Term of GUIDANCE PERSONNEL. This error was corrected in three steps:

---Deleting GUIDANCE WORKERS as a UF.

---Clarifying GUIDANCE SPECIALISTS with a double USE reference.

---Adding a historical note to the Scope Note of GUIDANCE PERSONNEL.

GUIDANCE PERSONNEL
SN PROFESSIONALS ENGAGED IN
ASSISTING INDIVIDUALS AND GROUPS
TO DEVELOP REALISTIC AND
SATISFYING PLANS, GOALS, AND
ACTIVITIES (NOTE: PRIOR TO MAR80,
THE INSTRUCTION "GUIDANCE
WORKERS, USE COUNSELORS" WAS
CARRIED IN THE THESAURUS)

The mixed signals among the above "teacher" term examples were repaired with the following two displays:

TEACHER EFFECTIVENESS
SN DEGREE TO WHICH TEACHERS ARE SUCCESSFUL IN SATISFYING THEIR OBJECTIVES, OBLIGATIONS, OR FUNCTIONS
UF EFFECTIVE TEACHING (1966 1980)
TEACHER QUALITY
TEACHING QUALITY (1966 1980)
BT TEACHER BEHAVIOR
RT ACADEMIC ACHIEVEMENT
CLINICAL SUPERVISION (OF TEACHERS)
EXCELLENCE IN EDUCATION
INSTRUCTIONAL EFFECTIVENESS
VOCABULARY – DESCRIPTORS

INSTRUCTIONAL IMPROVEMENT
INSTRUCTIONAL INNOVATION
SCHOOL EFFECTIVENESS
STUDENT EVALUATION OF TEACHER PERFORMANCE
TEACHER EVALUATION
TEACHER INFLUENCE
TEACHER ROLE
TEACHERS
TEACHING (OCCUPATION)
TEACHING MODELS
TEACHING SKILLS
TEACHING STYLES

TEACHER QUALIFICATIONS
SN ONE'S EDUCATION, EXPERIENCE, AND PHYSICAL, SOCIAL, AND MENTAL CHARACTERISTICS THAT DETERMINE FITNESS FOR A TEACHING POSITION
BT QUALIFICATIONS
RT ALTERNATIVE TEACHER CERTIFICATION EMPLOYMENT QUALIFICATIONS MISASSIGNMENT OF TEACHERS TEACHER BACKGROUND TEACHER CERTIFICATION TEACHER CHARACTERISTICS TEACHER EDUCATION TEACHER EDUCATION CURRICULUM TEACHER EVALUATION TEACHER SELECTION TEACHERS TEACHING (OCCUPATION) TEACHING EXPERIENCE

(Note: No reference was found to be necessary to the old UF TEACHER COMPETENCY since a postings check showed it to have no impact on the earlier use of TEACHER QUALIFICATIONS.)

(3) Precoordinated Upward UFs

Upward UF references cause no problem as single-word or multiword constructions that directly parallel the words or component concepts of a main term.

ADHESIVES
UF CEMENTS (ADHESIVES)
GLUES
PASTES (ADHESIVES)
SEALANTS
STICKERS

NONTRADITIONAL EDUCATION
SN EDUCATIONAL PROGRAMS THAT ARE OFFERED AS ALTERNATIVES WITHIN OR WITHOUT THE FORMAL EDUCATIONAL SYSTEM AND PROVIDE INNOVATIVE AND FLEXIBLE INSTRUCTION, CURRICULUM,
(Note: The qualifier "adhesives" was necessary in two instances of the first example to avoid so-called "downward" UFs (i.e., from a broader to a narrower concept); downward UFs are serious errors in the "terminology terrain" of a thesaurus.)

However, precoordinated upward UFs that add a new concept, one not directly related to the component concepts of a main term, can cause confusion when they are interpreted too "literally" by indexers and searchers. This problem can best be illustrated with an example.

ACADEMIC ENRICHMENT (1966 1980)
USE ENRICHMENT

ENRICHMENT
UF ACADEMIC ENRICHMENT (1966 1980)
ENRICHMENT EXPERIENCE (1966 1980)
NT CULTURAL ENRICHMENT
CURRICULUM ENRICHMENT
JOB ENRICHMENT
LANGUAGE ENRICHMENT
MATHEMATICAL ENRICHMENT
RT ENRICHMENT ACTIVITIES

As of 1980, the Thesaurus says "ACADEMIC ENRICHMENT, Use ENRICHMENT." (ACADEMIC ENRICHMENT is a former main term.) Beyond the literal command to "use ENRICHMENT," this instruction does two other things:

- It gives the user access to the "terminology terrain" of the word "academic." If one takes the USE reference too literally and uses ENRICHMENT only, access via the word "academic" could be lost. Depending on the document being indexed or the search strategy being formulated, this may or may not be important. Only the indexer or searcher can decide, based upon the particular circumstances of the document being indexed or his/her retrieval needs, whether access via the word "academic" is necessary.

- It leads the user to a display where more specific or precise terminology may be found, including, quite possibly, a more suitable term for the particular document or search strategy. Again, if the user takes the USE reference literally, ENRICHMENT will be used, possibly in lieu of more appropriate terms, e.g., CURRICULUM ENRICHMENT.

(Note: Access under ENRICHMENT is not lost if
CURRICULUM ENRICHMENT is used, certainly not in computerized retrieval with its word searching capability, but neither in manual searching if users are trained to use the Thesaurus properly.

A USE reference specifies that Term "A" is not a postable concept for the ERIC indexes and that Term "B" (and sometimes Term "C") will be used instead, providing there are no contravening considerations. Thus, the indexing or searching process does not necessarily stop with the use or posting of Term "B." Users should remember that the Thesaurus is an access vocabulary, and that USE references merely provide a pathway to the most probable term that one might wish to use. Indexing decisions or search strategies should never be based rigidly on a USE reference alone. Before making a final decision, users should examine the surrounding "terminology terrain" and then proceed to the main term display to which a USE reference leads. To do otherwise is to engage in mere "word indexing" and defeats the utility of a structured vocabulary.

Inverted Entries or Term Reversals

An early rule with respect to ERIC Thesaurus development specifically prohibited the use of inverted entries in cross-referencing. The reasoning behind the rule was that the Rotated Descriptor Display provides access to all words of a multiword Descriptor.

A plethora of inverted entries, of course, would be undesirable, and over the years, this rule has been followed with only rare exceptions. Some examples of inverted entries that presently exist in the Thesaurus are:

<table>
<thead>
<tr>
<th>BATTERIES (ELECTRIC)</th>
<th>DIAGNOSIS</th>
<th>DISCRIMINATION (SOCIAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USE ELECTRIC BATTERIES</td>
<td>USE IDENTIFICATION</td>
<td>USE SOCIAL DISCRIMINATION</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIAGNOSIS (CLINICAL)</th>
<th>DIAGNOSIS (EDUCATIONAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USE CLINICAL DIAGNOSIS</td>
<td>USE EDUCATIONAL DIAGNOSIS</td>
</tr>
</tbody>
</table>

Justification for the "batteries" and "discrimination" reversals is a need for access at the most logical, or commonly thought of, point of entry. Support for the "diagnosis" entries is based on a perceived need to lessen indexer/searcher confusion and eliminate any possibility of term misuse.

It should be emphasized, however, that inverted entries are generally discouraged and that special demonstrable circumstances are necessary to justify them.
(5) Related-Term Type of Relationship Between a Main Term and the UF Leading To It

A main term and a UF leading to it may have the same conceptual relationship between them as two Related Terms (RTs).

Such relationships will often be precoordinated upward UF's. In the case of "GRAIN MARKETING, Use GRAINS (FOOD)," the UF is hierarchically related to the main term MARKETING and has an RT relationship to GRAINS (FOOD). The usefulness of the UF GRAIN MARKETING is strictly in preventing the concept's use as an Identifier and requiring that the more general term be used. Confusion over what to do about "marketing" in this instance can be avoided if one remembers to not take the UF "literally." MARKETING or another term to convey this aspect of the document can and should be used also, if warranted.

RT-type UF/main term relationships between "population" concepts and "condition" concepts may cause confusion as well. For instance, the Thesaurus instruction "VISUALLY HANDICAPPED, Use VISUAL IMPAIRMENITS" may be difficult to accept. However, experience shows that any differences that may exist between such terms cannot be consistently articulated in the indexing process.

(6) Colloquialisms

Slang and colloquialisms are ordinarily not used as UF's, particularly when the terminology of the main term is commonly known and widely used, e.g.,

MARY JANE (DRUG)   STRAW BOSSES
USE MARIJUANA       USE CREW LEADERS

Alternatives to some colloquial expressions, however, may not come readily to mind. Such expressions may be needed for additional access, e.g.,

BREADWINNERS
USE HEADS OF HOUSEHOLDS

(7) Transferred Descriptors

A former indexable or main term that has been downgraded to the status of a UF term is accompanied by a "life span" notation in parentheses, e.g., "(1966 1974)." The life span notation indicates the span of time in which a term was used in indexing and is helpful in retrospectively searching older manual indexes and computer files. Transferred terms with end dates of 1980 and earlier no longer appear in the ERIC vendor files, i.e., their postings have been transferred to the preferred USE term(s). Transferred terms with end dates after 1980, however, have not been completely updated, and both old and new terms ordinarily must be searched in order to
gather all postings. (The last complete reload of ERIC by the major
database vendors was in December 1980.) There are approximately
840 terms in the "1980 and earlier" group as opposed to fewer than
100 in the "after-1980" group. The "transferred, but still searchable"
group of terms is listed in commercially published editions of the
ERIC Thesaurus (see "Transferred Descriptors" in the Table of
Contents).

Examples:

STUDENT TESTING (1966 1980)
USE EDUCATIONAL TESTING
(Transfer accomplished during the last
vendor reload [Dec80]; only the current
term needs to be searched.)

VIDEODISC RECORDINGS (1979 1986)
USE VIDEODISKS
(Transfer occurred since the last vendor
reload [Dec80]); both old and new
terms should be searched.)

An additional parenthetical qualifier accompanies c in
transferred Descriptors that, because of their unusual or _mal
wording, would appear out-of-place or even erroneous if not qualified
in their new roles as UFs.

Example:

PROGRESSIVE RETARDATION (1966 1980)
(IN SCHOOL)
USE EDUCATIONALLY DISADVANTAGED

Transferred Descriptors with postings split two ways are qualified in
the same manner.

Example:

PAINTING (1966 1980) (ARTISTIC)
USE PAINTING (VISUAL ARTS)
PAINTING (1966 1980) (INDUSTRIAL)
USE PAINTING (INDUSTRIAL ARTS)

(This situation is not to be confused with Descriptors whose postings
were each transferred to two other Descriptors and are now "double
UFs"—See next section.) The qualifiers in the above examples were
not attached to the original Descriptors; therefore, they follow the life
span notations. Qualifiers that were part of original Descriptors
precede the life span notations.
Example:

CARDIAC (PERSON) (1968 1980)
USE HEART DISORDERS

Multiple UFs

The multiple USE reference capability allows for the specification of a concept by up to five term coordinations.

A pound sign (#) following a UF term signifies that two or more main terms are to be used in coordination to represent that UF.

Example:

ATHLETICS
SN SPORTS, GAMES, OR PHYSICAL CONTESTS OFTEN ENGAGED IN COMPETITIVELY
UF ATHLETIC ACTIVITIES (1966 1974) ATHLETIC PROGRAMS (1966 1980) SPORTS SPORTS NEWS # SPORTS REPORTING #

COLLEGE ATHLETICS
UF INTERCOLLEGIATE ATHLETICS #

A footnote warning users that at least two terms are required to retrieve these flagged concepts appears on every page of the Thesaurus Alphabetical Display. This footnote reads as follows:

# = TWO OR MORE DESCRIPTORS ARE USED TO REPRESENT THIS TERM. THE TERM'S MAIN ENTRY SHOWS THE APPROPRIATE COORDINATION.

To determine the proper coordination for a multiple UF, the user needs only to consult the UF's reciprocal USE reference (i.e., main entry) in the Alphabetical Display. The reciprocals or main entries for the three multiple UFs given above would be:

INTERCOLLEGIATE ATHLETICS USE COLLEGE ATHLETICS SPORTS NEWS USE ATHLETICS SPORTS REPORTING USE ATHLETICS and INTERCOLLEGIATE COOPERATION and NEWS MEDIA and NEWS REPORTING

Multiple UFs should not be used for concepts having high search interest. Direct and specific Descriptors are most necessary and desirable in areas of high search interest, to ensure ease and precision for manual retrieval.

Many existing multiple UFs reflect former precoordinated main terms that had low utility and whose postings were transferred to two broader terms.
Example:

REMEDIAL ARITHMETIC (1966 1980)
USE ARITHMETIC
and REMEDIAL MATHEMATICS

As explained in the immediately preceding discussion on "Transferred Descriptors," terms like the above with end dates of 1980 or earlier have been replaced by their preferred Descriptors and are no longer computer searchable; alternatively, those with end dates of 1981 or later may still exist in the database and, therefore, need to be included in comprehensive search strategies.

Users should be cautioned to be flexible in their use and interpretation of multiple UFs. Like other UFs, multiple UFs can sometimes be taken too "literally." For instance, one of the multiple UFs illustrated above says:

SPORTS NEWS, Use ATHLETICS and NEWS MEDIA

ATHLETICS has many narrower terms or NTs, one of which is FOOTBALL. NEWS MEDIA also has some NTs, including NEWSPAPERS. Remembering ERIC's policy to index to the most specific available Descriptor, the concept "football news" should obviously be indexed with FOOTBALL and NEWS MEDIA, not also with ATHLETICS. For the even narrower concept "football newspapers," NEWSPAPERS should be used, not NEWS MEDIA.

Disallowance of UFs as Postable Terms

UFs are never to be used as index postings in ERIC records, either in the Descriptor field or as Identifiers.

Any indexer or user who disagrees with a UF, and can see a need to post it, should request a Thesaurus change via the procedures in item E5.d. Reasons for requesting such a change might include the following:

- A broad Descriptor is continually being posted for documents that really pertain to the more specific subject of a UF.

- An outmoded Descriptor is being posted for more contemporary terminology represented by a UF.

- A Descriptor is being misused for different subjects because of a broad or otherwise inappropriate UF.

All errant UFs should, of course, be removed from the Thesaurus. UFs so removed would then be acceptable for posting.
6. Narrower Terms/Broader Terms

a. General

Narrower Term/Broader Term (NT/BT) notations are used to indicate hierarchical relationships among Descriptors. Because they are Descriptors, NTs and BTs are indexable and searchable. More than any other feature, hierarchies distinguish a systematic thesaurus from other organized lists of terms. They provide the capability for fine-tuning the indexing and searching processes to the most appropriate level of subject specificity.

Hierarchical relationships are structured using the taxonomic concept of "class membership." Placement of terms within hierarchies helps to define the terms and limits their possible indexing and searching applications.

Narrower Terms represent concepts totally included in the broader class listed above them in the hierarchy.

Example: READING
   NT ORAL READING
   SILENT READING

Broader Terms include as a subclass each concept represented by a Narrower Term in the hierarchy.

Examples: ORAL READING
          BT READING
          SILENT READING
          BT READING

BTs and NTs have a mandatory reciprocal relationship. Sometimes a term may have more than one Broader Term.

Example: MIGRANT CHILDREN
         BT CHILDREN
         MIGRANTS

b. Generic Structuring

Generic structuring involves organizing Descriptors into "hierarchical families." A single hierarchical family is made up of a class or category of concepts and each of its members. Thus, the relationship is the same as that between a thing and its types, or, in zoological terms, a genus and its member species. In ERIC, and many other contemporary information systems, this is the BT/NT relationship.

(1) BT/NT Relationship

ERIC Descriptors are names (or tags) for classes of information, and a NARROWER TERM of a given Descriptor is simply a subclass within the scope of that given Descriptor, as
If A and B represent terms in the *Thesaurus*, then B is a **narrower term** to Term A, because all members of the class represented by Term B are also members of the class represented by Term A. The corresponding reciprocal statement is, of course, that Term A is a **broader term** to Term B because, while it has members which are not members of Term B, it does include all members of Term B.

The so-called "all-and-some test" is useful in determining whether terms are related in this manner. In one of the ERIC hierarchies, using Example 1, A = ANIMALS and B = LIVESTOCK. The BT/NT relationship of these terms passes the test as represented by the following diagram:

```
ANIMALS  \     i.e.,
  some       \   some animals
  all       all livestock;
  LIVESTOCK  \   all livestock
              i.e., all animals.
```

On the other hand, two terms where each has only some members in common with the other (i.e., a class overlap) would be illustrated as follows:

**Example 2:**

In this example, Term C is not a **narrower term** to Term B, nor is Term B a **broader term** to Term C, because although the terms have members in common, all of the members of Term C are not also members of Term B.

**Example 2** can be illustrated with the ERIC terms LIVESTOCK (= B) and HORSES (= C). Using the "all-and-some test":

```
B
\  i.e.,
C
  some animals
  all livestock;
  all animals.
```
Two terms representing totally different types of things such as actions, objects, properties, fields of study, etc., obviously cannot pass the "all-and-some test" and, therefore, cannot logically be hierarchical.

Example 3:

A pair of terms such as ANIMALS and ANIMAL HUSBANDRY, or HORSES and HORSEBACK RIDING, may be considered associated, but not associated hierarchically. (For "associative relationships," see section D.7 on "Related Terms.")

Hierarchical Levels and Branches

There can be many levels in a hierarchy, as in the following example:

Example 4:

Term F lies in the middle of this hierarchy with two broader terms and two narrower terms. These levels would appear in the Thesaurus Alphabetical and Hierarchical Displays like this:

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Invalid multiple entries or unintentional splits can occur in the Hierarchical Display if care is not taken in BT/NT structuring. Terms should be entered in the Thesaurus file with only their most immediate broader and narrower terms cited, i.e., in the same manner in which they will appear in the Alphabetical Display. In Example 4, if Term F were entered citing both D and E as broader terms and G and H as narrower terms, the Hierarchical Display, interpreting this as meaning D and E are at the same level of broadness and G and H are at the same level of narrowness, would contain incorrect double entries.

<table>
<thead>
<tr>
<th>Alphabetical Display</th>
<th>Hierarchical Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term F</td>
<td>::Term D</td>
</tr>
<tr>
<td>NT Term G</td>
<td>:Term E</td>
</tr>
<tr>
<td>BT Term E</td>
<td>Term F</td>
</tr>
<tr>
<td></td>
<td>.Term G</td>
</tr>
<tr>
<td></td>
<td>.Term H</td>
</tr>
</tbody>
</table>

On the other hand, assume that Terms D through H are members of an existing hierarchy and that new Term "X" needs to be inserted between F and G. The input of Term X would correctly carry the BT Term F and the NT Term G. But, in addition, the previous (now invalid) relationship between F and G would need to be expunged. Otherwise, the following faulty hierarchy would result:

| Term D               |
| :Term E             |
| .Term F             |
| ...Term G] - Incorrect Double Entry |
| ...Term X           |
| ...Term G           |
| .....Term H         |

The inverse situation occurs if a term is deleted from the middle of a hierarchy. For instance, if Term F were deleted from the Example 4 hierarchy or purged altogether from the Thesaurus, a second transaction would be necessary in order to maintain the BT/NT relationship between Terms E and G. Otherwise, a hierarchical "split" would result and leave two independent and seemingly unrelated hierarchies, as in Example 5.
Example 5:

Example 4 illustrates a hierarchy with many levels, each with only one immediately adjacent BT or NT relationship. Although only the next higher (BT) or lower (NT) level is used in generic structuring, this does not mean that a term is limited to one BT or NT.

A given term may be a member of two entirely separate hierarchies. Example 6 illustrates this characteristic, sometimes called a polyhierarchical relationship:

Example 6:

INSTITUTIONS (K)  INFORMATION SOURCES (L)
LIBRARIES (M)  
SCHOOL LIBRARIES (N)

Terms K and L are both immediately broader to Term M and should be so displayed. Term M (and its NT, Term N) will then properly appear in both hierarchies. Below the example are four ERIC Descriptors, arranged to further illustrate this relationship.

Example 7 illustrates the possibility of Terms K, L, M, and N appearing together in one hierarchy:
Example 7:

```
Term J encompasses Terms K through N. Once again, EJIC Descriptors are arranged below the example to further illustrate these relationships.

In this instance, Terms M and N would appear twice in the hierarchy of Term J, under both Term K and Term L. This double appearance of M and N is legitimate, since Terms K and L have no generic relationship to each other even though they share a common BT and the same NTs. A Hierarchical Display printout of this example would appear as follows:

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As one often finds more than one BT at the next higher generic level, multiple NTs at the next lower generic level are even more common. This situation may be illustrated as follows:
Terms Q through T are all narrower to Term P at the next generic level and would be carried as NTs during input to the Thesaurus file. Only Term U would not be included during input, since it is an NT of Term Q. Its inclusion directly under Term P would cause an invalid double entry in the hierarchy.

c. Part-Whole Relationships

One relationship that is occasionally handled by the NT/BT structure but that cannot legitimately be called "generic" is the part-whole relationship. Parts and their wholes, if cross-referenced to each other at all, are usually related as RTs. For example, SCHOOL BUILDINGS and CAMPUSES are certainly related to one another but in the sense of a part to the whole, not a generic sense. SCHOOL BUILDINGS are a part of CAMPUSES, but are not CAMPUSES in themselves. (See section D.7 on "Related Terms."

Part-whole NT/BT relationships, in which the "part" always and unambiguously belongs to a particular "whole," are used in many information retrieval systems. It is particularly common to see geographic locations structured in this manner (e.g., Maryland BT United States, Maryland NT Baltimore). Parts of the human body are sometimes arranged this way also (e.g., Stomach BT Digestive System, Brain NT Cerebrum).

The ERIC system indexes geographic locations as Identifiers (see Identifier section VIII-2). Identifiers are not structured in hierarchies. Also, the ERIC Thesaurus carries only a few Descriptors relating to the human body, and these are not structured into part-whole hierarchies. Part-whole hierarchies can be useful in structuring the relationships of a certain limited number of terms for indexing and searching. However, there are few such hierarchies in the ERIC Thesaurus today, and their use generally is discouraged.

d. Possible Use Relationships

Just as part-whole relationships are generally disregarded for BT/NT structuring, so are relationships based on the possible applications or uses of an entity. For example, the term ATLAS is not considered to be a member of the generic family INSTRUCTIONAL MATERIALS because, although ATLAS is sometimes used as INSTRUCTIONAL MATERIALS, they are not necessarily used this way. However, ATLAS
are always REFERENCE MATERIALS, and an NT/BT structure here would be correct. ATLASES and INSTRUCTIONAL MATERIALS could be RTs, but since REFERENCE MATERIALS is already carried as an RT of INSTRUCTIONAL MATERIALS, the one relationship is sufficient. (See RT rules regarding proliferation, item D.7.c.(2) of this section.)

Another example of this situation is the relationship between WINDOWS and VENTILATION. WINDOWS are objects, and VENTILATION is a process—so there can be no NT/BT relationship. But, even if the latter term's form was VENTILATORS, there could still be no hierarchy, because some WINDOWS are not VENTILATORS at all, but are used for the sole purpose of LIGHTING. Usage relationships such as these—WINDOWS used for LIGHTING and VENTILATION—are carried in the ERIC Thesaurus as RTs.

e. Special Problems with Hierarchies

(1) Finding the Right Hierarchy

Determining the correct hierarchical placement for a particular term is usually not a difficult task. Familiarity with, and experience in using, the Thesaurus are valuable for generic structuring, but are not essential.

The important thing is to remember to determine Thesaurus precedents and to follow their examples. The attempt should be to locate parallel Thesaurus terms and to use their hierarchical placement as a guide. The type of term being worked on is important—does it represent action, a group of objects, a process, a subject field or discipline? A determination of "type" will narrow down considerably the hierarchical families where a particular term might fit. The proper Descriptor Group should also be determined, and existing terms in the chosen group should be examined to see where they fit in the hierarchies. Additionally, the Rotated Display should be consulted to locate terms having the same, or nearly the same, words as the term under consideration—see the hierarchies of those terms. If a proper hierarchical placement cannot be determined after these steps, other thesauri or structured word lists should be checked to see if and how they carry the particular term. (Remember, however, that the existing structure in the ERIC Thesaurus takes precedence and should guide the final placement of a term more than the structures of other authorities.)

If, after all of the above steps, a proper hierarchy still cannot be found, the particular term is most likely a hierarchical "isolate" (i.e., it has no NTs nor BTs).

Proper hierarchical placement requires that the scope of a particular term: (1) be within the scopes of its BTs; and (2) adequately subsumes the scopes of all its NTs. This is why it is better to leave a term in isolation than to force it into a hierarchy where it does not truly belong. Terms improperly placed in isolation
may be overlooked in "subject-specific" indexing and searching; on the
other hand, improper hierarchical placement can cause the incorrect
term and all its NTs and BTs to be misread and misused (a more
serious consequence).

(2) Hierarchical Visibility

A rule for generic structuring in item D.6.b.(2) states that
terms are entered in the Thesaurus file citing only their most
immediate broader and narrower terms. Without this rule, there
could be no multilevel hierarchical structures (i.e., beyond one
BT/NT level).

Terms appear in the Alphabetical Display (main display) of
the Thesaurus just as they are entered in the file. Therefore, just as
it must be remembered to enter a term with only its most immediate
BTs and NTs, so it must also be remembered that the main
Alphabetical Display of a term shows nothing beyond these
immediate levels. Take, for example, the term PHYSICAL
ACTIVITIES as it appears in the Alphabetical Display:

PHYSICAL ACTIVITIES
\begin{itemize}
\item NT ATHLETICS
\item BICYCLING
\item DANCE
\item EXERCISE
\item HORSEBACK RIDING
\item LIFTING
\item RUNNING
\item UNDERWATER DIVING
\end{itemize}

BT ACTIVITIES

This display shows eight NTs and one BT. Additional
generic structures or more distant hierarchical relationships could, of
course, be checked by examining the main display of each BT/NT
cross-reference and continuing to track BTs and NTs until the most
general or specific term is found. Such cross-checking is tedious and
time-consuming and can be entirely avoided if the Hierarchical
Display is consulted. PHYSICAL ACTIVITIES appears in this
display as follows:

\begin{itemize}
\item ACTIVITIES
\item PHYSICAL ACTIVITIES
\item . ATHLETICS
\item .. AQUATIC SPORTS
\item .. DIVING
\item .. SAILING
\item .. SURFING
\item .. SWIMMING
\item .. WATER POLO
\item .. WATERSKIING
\item .. ARCHERY
\item .. BOWLING
\item .. COLLEGE ATHLETICS
\item .. EXTRAMURAL ATHLETICS
\item .. FENCING (SPORT)
\end{itemize}
The Hierarchical Display provides complete two-way visibility of the broader-narrower relationships of every Descriptor in the Thesaurus. In the case of PHYSICAL ACTIVITIES, the display confirms that there is, in fact, only one BT, but it also shows a total of 58 NTs (ICE HOCKEY, WATER POLO, and WEIGHTLIFTING appear twice), including 50 additional specific terms that were not evident in the main display of the term.

Total hierarchical visibility is provided only by the Hierarchical Display. Indexers and searchers alike need to be familiar with this tool and encouraged to use it regularly. Consistent usage by indexers results in subjects of the appropriate level of specificity being posted to ERIC records. Assuming proper indexing,
consistent usage by searchers assures precise and relevant retrieval. Failure to consult this display may cause confusion over seemingly incomplete BT/NT relationships that can result in indexing inconsistencies and consequent retrieval problems.

Indexing and searching, however, should never be performed on the basis of the Hierarchical Display alone. Full meanings and proper uses of terms cannot be determined without consulting the main Alphabetical Display, with its Scope Notes and cross-references.

Hierarchical Searching

ERIC documents are indexed to the most specific available Descriptors. An NT and its BT would not normally be indexed to the same document, unless both specific and general subjects were spoken to in some detail. Thus, complete searching of a broad concept (e.g., PHYSICAL ACTIVITIES) needs to consider not only documents posted by the broad term but all documents posted by its narrower terms (e.g., LIFTING, RUNNING) as well. Relevant RTs must be considered too (e.g., PHYSICAL ACTIVITIES has the RTs PHYSICAL EDUCATION and PLAYGROUND ACTIVITIES among others).

Access to the Thesaurus is essential in searching. A manual searcher might look up a term like LIBRARIES and never think to consider ACADEMIC LIBRARIES, SPECIAL LIBRARIES, or other available NTs under which documents of interest might be found. And, what if the searcher looks up the BT LIBRARIES in an index journal and finds nothing? Without considering the Thesaurus and its NTs, it might be assumed at this first glance that the particular index journal has nothing on the subject. On the other hand, without access to the Thesaurus, a computer searcher might use a common word to "hit" a number of Descriptors (e.g., LIBRARIES, ACADEMIC LIBRARIES, etc.) but, at the same time, fail to find many documents indexed by cross-referenced terms not having such common words. Even in full-text computer searching, the Thesaurus provides many clues for alternative words, phrases, and coordination strategies.

The online and CD-ROM vendors offering access to ERIC usually include the ERIC Thesaurus as an online/ondisk search aid, and have the capacity to "explode" terms from the Thesaurus, i.e., to automatically retrieve not only specified terms, but their most immediate narrower terms as well. This would not generally include the automatic searching of entire generic trees. (See previous section on "Hierarchical Visibility" and the Descriptor PHYSICAL ACTIVITIES, an explosion of which would include its own postings plus those of its eight immediately NTs, but typically not those of the remaining 57 terms further down the hierarchy.)
Rule of Specificity

Just as the "rule of specificity" comes into play in the indexing process, it must be a consideration in generic structuring as well.

Basically, the rule as applied to indexing states that documents will be indexed to the specific level of subject matter with which they deal, and will not also be "indexed up" to a higher generic level, except in instances where generalities and particulars are handled together in the same material. Indexing "specifically" gives a searcher, armed with the Thesaurus, the maximum number of options, i.e., the searcher may request those items indexed by:

* an NT alone;
* its BT alone;
* either the NT or its BT;
* both the NT and BT.

If the rule of specificity is not observed, the searcher has fewer options. This principle is discussed in more detail in Section VII of this manual, under the subitem entitled "Indexing Specificity."

However, the rule of "specificity" applies only to indexing with Descriptors since only Descriptors have comprehensive NT/BT structures.

Identifiers are not hierarchically related to Descriptors. Therefore, as the examples below illustrate, specific Identifiers are often assigned concurrently with generic or conceptually broader Descriptors.

Examples:

IDEN_Oklahoma  
DESC_State Programs; State Surveys

IDEN_Test of English as a Foreign Language  
DESC_Language Tests; Second Language Learning

IDEN_Individuals with Disabilities Education Act  
DESC_Children; Disabilities; Federal Legislation; Federal Programs

IDEN_Apollo Program  
DESC_Aerospace Technology; Lunar Research
Emerging subjects or concepts in the literature that have the characteristics of Descriptors, but which have not yet been added to the Thesaurus, should not be permitted to linger for long in the Identifier field. Because of the "indexing to the specific Descriptor" rule, Identifier indexing does not allow generic/specific distinctions and, without the guidance of hierarchical and related-term structures, can be very inconsistent. It is not hard to see that a group of indexers will more readily agree on how to index a particular document, if most of the appropriate vocabulary is controlled and structured. On the other hand, indexing disagreements are more likely when a large percentage of a system's indexing vocabulary is
based on a simple alphabetical list of (theoretically unlimited) term choices.

Excluding the first four examples, each of the above Identifiers has the characteristics of a Descriptor and might be considered as a candidate for the ERIC Thesaurus. A Clearinghouse's general rule of thumb should be to start thinking of a term's Thesaurus "fit" after about 5 postings, and to have a Thesaurus input form in the mail to the Facility after about 10 postings.

7. Related Terms

a. General

Related Terms (RTs) are cross-references that are neither hierarchical (BT/NT) nor equivalent (USE/UF) but are essential for informing users of alternative terms for indexing/locating documents on given subjects. An RT relationship exists when there is a strong conceptual bond between two terms, which sometimes, but not always, is reflected by concurrent usage in the literature.

The RT relationship is always reciprocal or two-sided, as the two examples given below show:

CHILD ABUSE
  UF ABUSED CHILDREN
  BT ANTISOCIAL BEHAVIOR
  RT CHILD WELFARE CHILDREN

CHILD WELFARE
  BT WELL BEING
  RT ADOPTED CHILDREN
  CHILD ABUSE CHILDREN

b. Categories of RTs

(1) Defined by Engineers Joint Council (EJC), 1966

Sometimes called the "associative relationship," the RT has been referred to as "vague" and "difficult to define," and it is universally acknowledged that assignments must be somewhat subjective. Various rules and principles have developed over the years that indexers or lexicographers can consider in establishing RTs. Some of the clearest and best guidance in the area, however, was written over 25 years ago. The following paragraph from American National Standard Z39.19-1974 is a slightly modified version of an earlier writeup in Thesaurus Rules and Conventions, published by the Engineers Joint Council (New York) in November 1966. The examples, however, are ERIC's.

"The RT reference is employed as a guide from a given term to other terms that are closely related in ways other than the genus-species (BT-NT) relationship. In general, any two terms bear the cross-reference RT to each other if it is believed that the user, when examining one of them, might
want to be reminded of the existence of the other. RT references may be used to identify relationships such as the following.

- **Terms that are near-synonyms**
  
  ACHIEVEMENT/PERFORMANCE  
  BIRTH/REPRODUCTION (BIOLOGY)  
  CURRICULUM GUIDES/TEACHING GUIDES  
  EDUCATION/INSTRUCTION  
  ORAL READING/READING ALOUD TO OTHERS

- **Terms that have viewpoint (or practical) interrelationships, such as a relationship based on usage**
  
  ARITHMETIC/FRACTIONS  
  ARTISTS/PAINTING (VISUAL ARTS)  
  CHILDREN/PLAY  
  COST INDEXES/INFLATION (ECONOMICS)  
  CULTURE FAIR TESTS/TEST BIAS  
  HEALTH/DISEASES  
  HEALTH FACILITIES/MEDICAL SERVICES  
  HUNGER/NUTRITION  
  WINDOWS/VENTILATION

- **Terms representing concepts bearing a whole-part relationship to each other**
  
  BUILDINGS/ROOFING  
  HUMAN BODY/CARDIOVASCULAR SYSTEM  
  INTERNATIONAL RELATIONS/DISARMAMENT  
  SCHOOL CATALOGS/COURSE DESCRIPTIONS

- **Terms that represent overlapping concepts**
  
  CIVIL LIBERTIES/JUSTICE  
  CREDIBILITY/INTEGRITY  
  DRUG EDUCATION/DRUG REHABILITATION  
  GEOGRAPHY/CARTOGRAPHY  
  SOCIAL PSYCHOLOGY/CRIMINOLOGY  
  SPECIFICATIONS/CRITERIA

(2) Defined by Other Authorities

Other authorities which elaborate the RT relationship and provide useful examples are:

VOCABULARY -- DESCRIPTORS

  - 1972, 1st ed. pp 80-85
  (Includes the Barhydt/Schmidt discussion).


These few sources, constituting about all that has been written on the subject of RTs, provide an appreciation and understanding of the complexities of RT relationships. Each source defines somewhat different categories of RTs, but all are variations on the four basic E/C categories given above. Some of the other categories of RT relationship to be found in these works (again, the examples are ERIC's) are:

- Field of Study and Items Studied
  *CHEMISTRY/ATOMIC STRUCTURE*
  *PSYCHIATRY/MENTAL HEALTH*
  *SEX EDUCATION/VENEREAL DISEASES*

- Near Antonyms (Interactive)
  *DEDUCTION/INDUCTION*
  *FAILURE/SUCCESS*
  *MARRIAGE/DIVORCE*

  --- A Thing and Its Counter Agent
  *RATS/PESTICIDES*

- Cause and Effect
  *DEATH/WIDOWED*
  *LEARNING/SCHOLARSHIP*
VOCABULARY – DESCRIPTORS

- A Thing and Its Producing Agent

INSURANCE/RISK
LONELINESS/SOCIAL ISOLATION
POPULAR CULTURE/MASS MEDIA
VIOLENCE/REVOLUTION

--- Product and Process

ORAL HISTORY/INTERVIEWS
PHOTOGRAPHS/PHOTOGRAPHY
READERS THEATER/ORAL INTERPRETATION
TECHNOLOGICAL ADVANCEMENT/INVENTIONS

--- Process and Responsible Group

AGRICULTURE/FARMERS
SUPERVISION/SUPERVISORS

- A Thing and Its Recipient or User

CHILD WELFARE/FOSTER CHILDREN
SEASONAL EMPLOYMENT/MIGRANT WORKERS
SEWING MACHINE OPERATORS/FASHION INDUSTRY

- A Thing and Its Purpose or What It Characterizes

BIBLIOGRAPHIES/BOOKS
LOCAL GOVERNMENT/COMMUNITY SERVICES
MARRIAGE COUNSELING/MARITAL INSTABILITY
TEACHING MACHINES/PROGRAMED INSTRUCTION
TOYS/PLAY

- Having the Same Broad Term and Overlapping Conceptually

(sometimes referred to as “siblings”; often used interchangeably)

AMERICAN INDIANS/CANADA NATIVES
PARENTS/FAMILY (SOCIOLOGICAL UNIT)
RETAILING/MERCHANDISING
RHETORIC/SPEECH

The above categories illustrate the most common RT relationships. No attempt has been made to describe every conceivable type of RT. Lancaster states that “in a sense, every thesaurus term is related to every other thesaurus term at varying strengths of semantic association.” The task of the indexer or lexicographer, then, in developing an RT display, is to try to include those terms that are sufficiently closely related to be of obvious benefit to users of the ERIC Thesaurus.
Selection of RTs for a Term Display

(1) Establishing a List of Candidate RTs

It is recommended that you do not start by trying to fit the concept you are working on into predetermined RT categories such as the ones described above. Instead, break the concept down into the various ways it can be used or expressed. (For example, BOOKS are written, published, reviewed, serialized, listed in bibliographies, housed in libraries, etc.) Make a list of all potential RTs as you think of them.

Now, look at the Scope Note you developed for the concept and definitions you consulted, and add key words and phrases from these to your list. You may want to expand your list by looking at other thesauri to see how they express and display your concept. Also of value is a check to see if the concept appears as an Identifier or in the text of ERIC records. Full-text and Identifier searches of the file, to examine the indexing terms assigned to the retrieved records, are recommended for this purpose. You should now have a reasonably complete list of alternative words and phrases that are available for expressing your concept and for putting it into a proper thesaurus context.

You are now ready to begin structuring RTs for your concept. First, match all terms on your list with existing Descriptors in the Thesaurus. You will then have a new list of terms to work from, and your original list of terms may be set aside. From this point on, you are working with legitimate ERIC Descriptors.

Go Descriptor-by-Descriptor down your new list, looking at the full display of each term. In doing this, you will undoubtedly find other Descriptors that you initially did not consider. Add these to your list. The main thing that you'll be trying to decide by this exercise is whether your concept fits comfortably in each of the various displays of the candidate RTs under examination. Consider your concept's hierarchical siblings (other Descriptors from the hierarchy(s) you chose for your concept, especially those at the same hierarchical level) and other Descriptors that are grammatical variations of your concept and its synonyms (e.g., gerunds, adjectival variations, etc.). Do they appear in a given display? If not, your concept probably does not belong there.

On finishing this exercise, you will have a third list of Descriptors which, in all probability, will be your final list of recommended RTs. However, it is usually helpful to go through the list once more to look for conceptual "holes" or "displacements." A look at the Rotated Display is helpful here. Ask yourself during this check if broader or single-word Descriptors can better express the relationships you want to convey than the more specific terms you are considering.
Avoiding Proliferation of RTs

It is very important to avoid proliferating RTs since no one can effectively use excessively long displays. Often, one RT cross-reference at the broad conceptual level can better express the desired relationship than several more specific references. In this regard, the maxim known as "Ockham's Razor" is useful to keep in mind.

Ockham's Razor...

"Multiplicity ought not to be posited without necessity."

William of Ockham
(philosopher, early 14th century)

For example, if HISTORY INSTRUCTION is related to HISTORY, it does not also need to be related to UNITED STATES HISTORY, MODERN HISTORY, BLACK HISTORY, etc. Additional examples are given below of ways to avoid proliferation in the RT field:

- Avoid proliferation. In the example below, STUDENT CHARACTERISTICS could conceivably be related to STUDENTS and all of its Narrower Terms, but a single cross-reference to STUDENTS is all that's necessary.

Preferred: STUDENTS
RT STUDENT CHARACTERISTICS

Not Preferred: PART TIME STUDENTS
RT STUDENT CHARACTERISTICS

- Try to select the proper hierarchical level for your cross-references. For example, DUAL ENROLLMENT and SHARED RESOURCES AND SERVICES are best related to INSTITUTIONAL COOPERATION, and not also to the narrower INTERCOLLEGIATE COOPERATION.

Preferred: INSTITUTIONAL COOPERATION
RT DUAL ENROLLMENT
SHARED RESOURCES AND SERVICES

Not Preferred: INTERCOLLEGIATE COOPERATION
RT DUAL ENROLLMENT
SHARED RESOURCES AND SERVICES
INSTITUTIONAL COOPERATION
RT DUAL ENROLLMENT
SHARED RESOURCES AND SERVICES
Try to select the simplest, most direct term, particularly when deciding among several potential terms in the same alphabetic sequence.

**Preferred**
- VERBAL COMMUNICATION
  - RT READING

**Not Preferred**
- VERBAL COMMUNICATION
  - RT READING MATERIALS
  - RT READING SKILLS

Try to select the most subject-specific relationship available among several possible terms.

**Preferred**
- INTERNATIONAL EDUCATIONAL EXCHANGE
  - RT INTERNATIONAL PROGRAMS
    - STUDENT EXCHANGE PROGRAMS
    - STUDY ABROAD
  - INTERNATIONAL PROGRAMS
    - RT INTERNATIONAL EDUCATIONAL EXCHANGE

**Not Preferred**
- INTERNATIONAL EDUCATIONAL EXCHANGE
  - RT INTERNATIONAL PROGRAMS
    - STUDENT EXCHANGE PROGRAMS
    - STUDY ABROAD
  - INTERNATIONAL PROGRAMS
    - RT INTERNATIONAL EDUCATIONAL EXCHANGE

Avoid improperly slanting or restricting a term. For example, PART TIME STUDENTS may be enrolled at all educational levels.

**Not Preferred**
- PART TIME STUDENTS
  - RT ADULT STUDENTS

(3) **RT Lists as Mini-Indexes**

There are occasional situations where abundant RTs may be useful and valid. RTs can provide mini-indexes to some of the Thesaurus’ most general terms. This is why broad terms like BEHAVIOR, BLACKS, COLLEGES, COMMUNITY, READING, etc., acquire long RT displays. This is particularly helpful for the
beginning Thesaurus user who usually has a nominal concept in mind and needs to know the various combinations in which that concept is displayed in adjectival form. It could be argued that the "Rotated Display" should be used for this purpose, but such "selective" proliferation has become standard practice in most thesauri. Additionally, the conceptual relationships among terms in these situations are often not clear-cut. For example, who would want to argue that COMMUNITY ATTITUDES and COMMUNITY ROLE have a closer conceptual relationship to COMMUNITY than COMMUNITY LEADERS and COMMUNITY SCHOOLS? It is easier and less confusing in these cases to simply list all such RT relationships under the broad, most general terms.

E. Vocabulary Development Form

The Vocabulary Development Form is provided for the convenient recording and processing of all changes to the Thesaurus, whether additions of new Descriptors, modifications of existing Descriptor displays, or Descriptor deletions (purges). All justification information is recorded on the form, including both authorities cited and personal contacts. Space is provided for indicating any RIE and CUE postings changes that are necessary to keep the Thesaurus and postings files synchronous. Characteristics of the Vocabulary Development Form and requirements for completing it are discussed in the following paragraphs.

1. Pre-Printed Vocabulary Development Forms or Computer-Prepared Substitutes?

Thesaurus additions and changes may be prepared either on pre-printed vocabulary/forms or on computer-prepared substitutes. Any computer-prepared forms used should be arranged similarly to the pre-printed forms and contain the same data elements.

The pre-printed Vocabulary Development Form (2-sided) is illustrated in Figure VIII-1-8. This is a completed version of the form, showing its use for adding a new Descriptor. The form was introduced in 1980 as part of the new Vocabulary Development Program (see item "B.3"). Its design is similar to ERIC's earlier "Descriptor Justification Form (DJF)," a version of which is shown in Figure VIII-1-ATT-1-1. The line spacing is set up for any standard typewriter, so that when the form is lined up for entry of the Main Term, it should not be necessary to adjust the typewriter subsequently.

An example of a microcomputer-prepared template of the Vocabulary Development Form (in WordPerfect 5.1) is illustrated in Figure VIII-1-9. Both a blank copy and a completed version are shown. Two additional examples of what completed VDF templates look like are shown in Attachment #2 of this section. Whether such templates are unique to a particular indexer or whether they are designed for use by everyone in a Clearinghouse, or across several Clearinghouses, is immaterial, as long as the required data elements are present.

The decision on whether to use the pre-printed form, to generate one independently, or to share one with others, is left to individual discretion.
**FIGURE VIII-1-8: VOCABULARY DEVELOPMENT FORM**
(Example of Completed New Term Recommendation)

May 1992

<table>
<thead>
<tr>
<th>TERM</th>
<th>MAGNET SCHOOLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCOPE</td>
<td>SCHOOLS OFFERING SPECIAL COURSES NOT AVAILABLE IN THE REGULAR SCHOOL CURRICULUM AND DESIGNED TO ATTRACT STUDENTS ON A VOLUNTARY BASIS FROM ALL PARTS OF A SCHOOL DISTRICT WITHOUT REFERENCE TO THE USUAL ATTENDANCE ZONE RULES -- OFTEN USED TO AID IN SCHOOL DESEGREGATION</td>
</tr>
</tbody>
</table>

**JUSTIFICATION INFORMATION**
(Attach additional sheets if necessary)

A. Indexer's CH

A. Stevenson/UD

G. Chapin/UD

B. Supervisory Approval & Date

C. Personal Contacts

- Clearinghouse Consultation
- LHF, CP, contact, and indicate agreement/disagreement, state reasons for disagreement

EA agrees.

- Other Personal Contacts and Reactions

None.

Disposition (Facility Use Only)

- Implemented
- Not implemented
- Awaiting Further Action

Send form to:
ERIC Processing and Reference Facility
ATTN: Lex开发商
1301 Pebble Drive, Suite 300
Rockville, MD 20850-4305

ERIC Processing Manual

VIII-1-111
ERIC VOCABULARY DEVELOPMENT FORM

A. Authorities Used

<table>
<thead>
<tr>
<th>Authority</th>
<th>Term Found</th>
<th>Term Not Found</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCES, Combined Glossary, 1974</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ED156915 -- &quot;The Role of Career Education in Desegregating Schools in Large Cities&quot;</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

B. Impact on Thesaurus

Indicate potential impact of this transaction on hierarchies and other terms in the Thesaurus. Consider, particularly, any overlap with other terms. Homographs should be qualified; occasionally, additional forms, revising older scope notes and displays, will need to be submitted in order to avoid indexing misuse.

Unambiguous. No overlap. Not a homograph.

C. Impact on Database

1. New Term

- Attach full-text search, including strategy. Do not limit the search (i.e., by clearinghouse, by RE or CUE, etc.).
- List identifiers to be transferred to new term. Include all versions. It is unnecessary to also list accession numbers to which the identifiers are posted.

- Magnets
- Russell Conwell Middle Magnet School
- Magnet Centers
- Magnet School Plan
- Magnet Programs
- Conwell Middle Magnet School

- List all accession numbers to which the new term should be posted, excluding those posted by the identifiers listed above. Proceed by an asterisk (*) those accession numbers where the new term should be a major Descriptor.

ED016718 ED064434 *ED117206 ED145054 ED148969 *ED156915 ED178646 *EJ203973
ED019341 ED078621 ED117226 ED145058 *ED149454 ED166314 *ED181931 *EJ207708
ED041056 ED094014 ED130450 *ED146313 ED152905 ED169172
*ED064125 ED116307 ED137433 ED146708 ED152912 *ED170423

2. Purge

- Attach search.

- Show total postings.

- Check one:
  - Transfer all postings to
  - Transfer postings to __________________________, excluding:

(List accession numbers and show necessary manual reindexing for each.)

- Postings are not transferable.

   (Attach 2nd form for invalid "deed" upon entry, or provide manual reindexing for all postings.)

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FIGURE VIII-1-8 (Side 2)
ERIC VOCABULARY DEVELOPMENT FORM

I. TERM
II. GROUP
III. SCOPE
IV. UF
V. NT
VI. BT
VII. RT

A. INDEXER & CH:
B. SUPERVISORY APPROVAL & DATE:
C. PERSONAL CONTACTS:

CLEARINGHOUSE CONSULTATION
(List CHs contacted, and indicate agreement/disagreement; state reasons for disagreement.)

OTHER PERSONAL CONTACTS AND REACTIONS

D. AUTHORITIES USED:
X = Term Found.
O = Term Not Found.

E. IMPACT ON THESAURUS

F. IMPACT ON DATABASE
1. NEW TERM - Attach full-text search, including strategy.
   List Identifiers to be transferred to new term:
   List all accession numbers to which the new term should be posted, excluding those posted by the
   Identifiers listed above. Precede by an asterisk (*) those accession numbers where the new term should
   be a major Descriptor.

2. PURGE - Attach search.
   Show total postings:
   Check one:
   □ Transfer all postings to:
   □ Transfer postings to:
      (List accession numbers and show necessary manual reindexing for each.)
   □ Postings are not transferrable.
      (Attach 2nd form for invalid/dead term entry, or provide reindexing for all postings.)

FIGURE VIII-1-9a: MICROCOMPUTER-PREPARED VOCABULARY DEVELOPMENT FORM
(EXAMPLE - BLANK)
ERIC VOCABULARY DEVELOPMENT FORM

1. TERM _DRUG USE TESTING_
2. GROUP _210_
3. SCOPE _SCREENING FOR DRUG USE OR ABUSE BY THE QUANTITATIVE DETERMINATION OF DRUG METABOLITES IN THE BLOOD, URINE, TISSUE, ETC._
4. UF _DRUG TESTING (PRESENCE IN BODY)_
5. NT_
6. BT _EVALUATION METHODS_
7. RT _DRUG ABUSE_; _DRUG USE_; _ILLEGAL DRUG USE_; _PHYSICAL EXAMINATIONS_

A. INDEXER & CH: Jim Houston, AA
B. SUPERVISORY APPROVAL & DATE:
C. PERSONAL CONTACTS:

CLEARINGHOUSE CONSULTATION
(List Chs contacted, and indicate agreement/disagreement; state reasons for disagreement.)

OTHER PERSONAL CONTACTS AND REACTIONS

D. AUTHORITIES USED:
X = Term Found.
O = Term Not Found.

X- MedLine (uses subheadings, e.g., "Substance Abuse – Diagnosis")
X- PsycInfo (uses "Drug Use Screening" since 1988)
O- Sociological Abstracts
O- Consumer Drug Information File
O- Drug Information Fulltext
X- Health Planning & Administration (follows MedLine)
O- Mental Health Abstracts
X- Nursing & Allied Health CINAHL (follows MedLine)
O- Occupational Safety & Health NIOSH
X- Magazine ASAP (uses "Drug Use Testing" along with subheadings)

All above are DIALOG databases.

---

FIGURE VIII-1-96: MICROCOMPUTER-PREPARED VOCABULARY DEVELOPMENT FORM
(EXAMPLE – COMPLETED) Page 1 of 2
E. IMPACT ON THESAURUS

"Drug Use Testing" borrowed from Magazine Index. The common usage "Drug Testing" is ambiguous; UF added to cover that form.

F. IMPACT ON DATABASE

1. NEW TERM - Attach full-text search, including strategy.

List Identifiers to be transferred to new term:

**JUL89 Postings**
- 1 Drug Detection
- 12 Drug Testing
- 2 Drug Testing Programs
- 8 Drug Use Testing
- 4 Mandatory Drug Testing

List all accession numbers to which the new term should be posted, excluding those posted by the Identifiers listed above. Precede by an asterisk (*) those accession numbers where the new term should be a major Descriptor.

- EJ381970
- EJ354980
- EJ345800
- *EJ330013
- ED285449
- EJ379431
- *EJ352285
- *EJ341512
- *EJ328903
- ED282327
- EJ360329
- *EJ350706
- *EJ335263
- *EJ135318
- ED281304
- *EJ357608
- *EJ349449
- *EJ334596
- ED275272

2. PURGE - Attach search.

Show total postings:

Check one: 

- [ ] Transfer all postings to:

- [ ] Transfer postings to:
  - (List accession numbers and show necessary manual reindexing for each.)

- [ ] Postings are not transferrable.
  - (Attach 2nd form for invalid/"dead" term entry, or provide reindexing for all postings.)

FIGURE VIII-1-9b: MICROCOMPUTER-PREPARED VOCABULARY DEVELOPMENT FORM
(EXAMPLE — COMPLETED) Page 2 of 2
2. Character Limitations

In fields 1 and 4 through 7, allowable characters are limited to the following:

- Upper-case letters A-Z;
- Arabic numerals 0-9;
- Left and right parentheses ( ).

In field 2, use Arabic numerals only (3-digit Group Code).

In field 3, Scope Note/Definition, use any upper-case alphabets, numerals, and special characters within the standard ERIC character set, except for the semicolon (;). Except in the case of an abbreviation, do not conclude a Scope Note with a period.

3. Field Length

a. Terms

A Thesaurus term, whether Descriptor or UF (Used For), may not exceed 50 characters (including spaces) in length. If a term contains more than 50 characters, it is invalid and cannot be accepted by the system.

There is no system limitation to the number of Used For terms, Narrower Terms, Broader Terms, and Related Terms that may be entered. However, practical considerations limit the number of lines that can be provided on the pre-printed Vocabulary Development Form. If more space is needed for any of these fields, additional forms should be used and marked SHEET 1 of X, SHEET 2 of X, etc. Also, enter "(CONTINUED)" on the last line of each block that is continued on a following sheet, as in the following example:

FIRST SHEET

<table>
<thead>
<tr>
<th>UF_</th>
<th>ACADEMIC PERFORMANCE (1966 1974)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ACADEMIC PROGRESS</td>
</tr>
<tr>
<td></td>
<td>ACADEMIC SUCCESS</td>
</tr>
<tr>
<td></td>
<td>EDUCATIONAL ACHIEVEMENT</td>
</tr>
<tr>
<td></td>
<td>(CONTINUED)</td>
</tr>
</tbody>
</table>

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In fields 1 and 4 through 7 of the pre-printed Vocabulary Development Form (see Figure VIII-1-8), the distance between the underscore following the data-entry keyword and the end of the field block is sufficient to permit the entry of 50 characters and spaces with a PICA (10 characters/inch) typewriter. A vertical mark is provided on each line to mark the 50-character point for ELITE (12 characters/inch) typewriters.

b. Group Code

This field is limited to three (3) numeric characters only, i.e., one Descriptor Group Code.

c. Scope Note

The Scope Note/Definition field is limited to 370 characters, including spaces. The pre-printed form provides for that number of PICA characters between the end of the underscore following the keyword and the beginning of the shading on the fifth line. For ELITE typewriters, there are 370 spaces between the underscore and the vertical mark on the fifth line.

Because words may not be divided (hyphenated) at the end of lines, it is likely that some additional spaces will be available when the "end" marks are reached. Unused character spaces at the end of lines one through four can be used for continuation beyond the fifth line's end marks. In determining whether there are enough unused positions, remember that the computer system inserts a space after the last word in each line, so that if there are seven character spaces unused on a line, only six are available for carryover use.

4. Adding New Term

A "V" or "X" should be entered in the "ADDING NEW TERM" box at the top of the form's front side, as shown:

<table>
<thead>
<tr>
<th>Action Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>ADDING NEW TERM</td>
</tr>
<tr>
<td>12</td>
<td>MODIFYING EXISTING TERM</td>
</tr>
<tr>
<td>11</td>
<td>PURGING EXISTING TERM</td>
</tr>
<tr>
<td>*</td>
<td>See reverse side of form for special instructions.</td>
</tr>
<tr>
<td>'</td>
<td>Action Codes for Modifications Only.</td>
</tr>
</tbody>
</table>

A - ADD  C - CHANGE  D - DELETE
VOCABULARY – DESCRIPTORS

This reminds the indexer (preparer) to check the back of the form for special instructions and alerts the Facility Lexicographer to the purpose of the submittal.

Note: The Action (Act.) boxes accompanying fields 2 through 7 are not used when adding a new term.

a. Main Term (Field #1)

Candidate Descriptors should conform, in both intellectual content and format, to the rules for Main Terms, item D.2 of this section.

A candidate Descriptor is entered in field 1, as follows:

1. Main Term (50 Character Limit)

TERM_ COUNSELORS

b. Group Code (Field #2)

Each candidate Descriptor must be assigned a Group Code by the indexer submitting the form. The Group Code places the new term in one of forty-one (41) broad subject categories called Descriptor Groups. A listing of the Descriptor Groups and Group Codes, and guidelines for selecting the one proper group for a new Descriptor, may be found in the rules for Descriptor Groups, item D.3 of this section.

The selected 3-digit Group Code is entered in field 2, as follows:

2. Group Code

GROUP_ 240

Act.

c. Scope Note/Definition (Field #3)

Most new terms require accompanying Scope Notes. Absence of a Scope Note for a new term must be justified. Most information retrieval thesauri employ Scope Notes to restrict usage of potentially ambiguous terms. Because of the inherent “softness” or imprecision of educational terminology and its overlap across many fields of study, ERIC carries definitional Scope Notes on all terms whose meanings are not self-evident. ERIC’s Scope Notes should not be construed as formal definitions, but as indicators of how terms are (or should be) used in indexing. Instructional notations frequently are part of Scope Notes. These notations direct the Thesaurus user to other terms, indicate proper coordination, provide historical notes on changes in usage or cross-reference structure, or otherwise guide and explain preferred usage for both indexing and searching.

Scope Notes should be written in accordance with the guidelines and rules of item D.4 of this section, as well as the following:

• Scope notes should be succinct. Keep the length of a Scope Note to the minimum consistent with clarity. Maximum length is 370 characters.
While the system will accept lower case alphabetic characters, Scope Notes should be entered in all upper case to maintain consistency with existing entries.

Be sure to examine the existing Scope Notes of related terms and other terms having the same component words as the candidate Descriptor. Don't "re-invent the wheel" when it is possible to borrow or adapt the work done by others.

In preparing Scope Notes for new Descriptors, it is necessary to project the possible future applications of the concept in different contexts—to move beyond the applications found in existing documents and articles to consider the potential development, expansion, or refinement of the concept in future years. Dictionaries and other authorities serve as checks against unnecessary restriction of a Descriptor's scope that might inhibit future applications.

A minimum of three authorities must be cited for each definitional Scope Note prepared. More are desirable. It is strongly recommended that wherever a number of subject-specialized authorities exist, i.e., those directly relevant to the subject area or topic at hand, as many as possible should be consulted. All authorities consulted should be listed on the back side of the input form (block "D"), whether or not they contributed elements to a Scope Note or helped in its justification or support. The check marks X for "term found" and O for "term not found" (see block "D"), inform the Lexicographer that a particular authority was taken into consideration.

As an aid to lexicographic analysis, submit copies of all definitions utilized in the wording of a Scope Note when these may not be readily available to the Lexicographer, e.g., pages from journal articles. Mark the appropriate passages. (If a microfiche reader/printer is not available and ERIC documents are cited, submit the ED number and the page or frame number.)

The Scope Note is entered in field 3, as follows:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TERM_ LIBRARY SCIENCE</td>
<td>GROUP_ 710</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Scope Note/Definition (370 Character Limit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCOPE_ STUDY AND PROFESSION OF THE ADMINISTRATION OF LIBRARIES AND THEIR CONTENTS - INCLUDES THE PROCEDURES BY WHICH LIBRARIES RECOGNIZE, ACQUIRE, ORGANIZE, DISSEMINATE, AND UTILIZE INFORMATION</td>
</tr>
</tbody>
</table>

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### VOCABULARY – DESCRIPTORS

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TERM_ OUT OF SCHOOL YOUTH</td>
<td>GROUP_ 510</td>
<td></td>
</tr>
</tbody>
</table>

### Scope Note/Definition (370 Character Limit)

SCOPE_ CHILDREN OF COMPULSORY SCHOOL AGE WHO HAVE BEEN EXCUSED FROM ATTENDING SCHOOL, OR ADOLESCENTS OVER 16 YEARS OF AGE WHO ARE OUT OF SCHOOL LEGALLY (NOTE: COORDINATE WITH AN APPROPRIATE AGE OR EDUCATIONAL LEVEL DESCRIPTOR)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TERM_ SECOND LANGUAGES</td>
<td>GROUP_ 450</td>
<td></td>
</tr>
</tbody>
</table>

### Scope Note/Definition (370 Character Limit)

SCOPE_ ANY LANGUAGES OTHER THAN ONE'S NATIVE OR MOTHER TONGUE, USUALLY LEARNED BY FORMAL INSTRUCTION (NOTE: PRIOR TO MAR88, THE INSTRUCTION "FOREIGN LANGUAGES, USE LANGUAGES" WAS CARRIED IN THE THESAURUS)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TERM_ WIND (METEOROLOGY)</td>
<td>GROUP_ 490</td>
<td></td>
</tr>
</tbody>
</table>

### Scope Note/Definition (370 Character Limit)

SCOPE_ THE NATURAL MOTION OF AIR (NOTE: DO NOT CONFUSE WITH "AIR FLOW")

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TERM_</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Cross-References (Fields #4 - #7)

Necessary cross-references must accompany all new term recommendations. The Vocabulary Development Form carries these cross-references in the same order that they are found in the Thesaurus, thereby minimizing confusion both in structuring and evaluating a recommended display. ERIC uses the standard cross-references found in most contemporary information retrieval thesauri—compatible with those recommended by the American National Standard Guidelines for the Construction, Format, and Maintenance of Monolingual Thesauri.

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VOCABULARY -- DESCRIPTORS

(ANSI/NISO Z39.19-199X).* These cross-references include the following:

(1) Used For (UF) Terms

See rules for UF (Used For)/USE References, item D.5.

A UF reference is a synonym or variant form of the main term and is not used in indexing. Its mandatory reciprocal is the USE reference. UFs are entered in field 4, as in this example:

<table>
<thead>
<tr>
<th>TERM</th>
<th>COMPUTER SOFTWARE DEVELOPMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. UF</td>
<td></td>
</tr>
<tr>
<td>COMPUTER SOFTWARE DESIGN</td>
<td></td>
</tr>
<tr>
<td>COMPUTER SOFTWARE ENGINEERING</td>
<td></td>
</tr>
<tr>
<td>COMPUTER SOFTWARE MAINTENANCE</td>
<td></td>
</tr>
<tr>
<td>COURSEWARE DEVELOPMENT #</td>
<td></td>
</tr>
<tr>
<td>SOFTWARE DEVELOPMENT (COMPUTERS)</td>
<td></td>
</tr>
</tbody>
</table>

The fourth entry in this example is followed by a pound sign (#), indicating a multiple UF and signifying that two or more main terms must be coordinated in order to index or retrieve that concept. Multiple UFs must be entered under each main term to be used in the coordination. In the above instance, a second Vocabulary Development Form is required, as follows:

<table>
<thead>
<tr>
<th>TERM</th>
<th>COURSEWARE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. UF</td>
<td></td>
</tr>
<tr>
<td>COURSEWARE DEVELOPMENT #</td>
<td></td>
</tr>
</tbody>
</table>

*Proposed 1990 revision of ANSI Z39.19-1980. Developed by the National Information Standards Organization (NISO); circulated 1/10/90 among NISO voting members for comment.
Narrower Terms (NT)

See rules for Narrower Terms (and Broader Terms), item D.6.

The NT represents an indexable subclass of the concept represented by the main term; the indexable NT achieves ERIC's goal of "subject-specific" indexing. Its mandatory reciprocal is the "Broader Term." NTs are entered in field 5, as in the following example:

<table>
<thead>
<tr>
<th>TERM</th>
<th>MATHEMATICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>NT.</td>
<td></td>
</tr>
<tr>
<td>ALGEBRA</td>
<td></td>
</tr>
<tr>
<td>ARITHMETIC</td>
<td></td>
</tr>
<tr>
<td>CALCULUS</td>
<td></td>
</tr>
<tr>
<td>GEOMETRY</td>
<td></td>
</tr>
<tr>
<td>PROBABILITY</td>
<td></td>
</tr>
<tr>
<td>STATISTICS</td>
<td></td>
</tr>
<tr>
<td>TECHNICAL MATHEMATICS</td>
<td></td>
</tr>
<tr>
<td>TRIGONOMETRY</td>
<td></td>
</tr>
</tbody>
</table>

NTs are entered only at the next lower level of hierarchy. Terms such as ADDITION (NT to ARITHMETIC) and SOLID GEOMETRY (NT to GEOMETRY) are NOT entered in the case above.

Particular care must be taken, when inserting a new term into the midst of an existing hierarchical string, to remove existing generic references and thereby avoid incorrect double entries. See item E.5.e.(3) for an explanation of how to deal with this problem.

Broader Terms (BT)

See rules for Broader Terms (and Narrower Terms), item D.6.

The BT represents the broad conceptual class into which a main term is placed. Each Broader Term is an indexable concept and the mandatory reciprocal of an NT. BTs are entered in field 6,
as follows:

1. Main Term (50 Character Limit)

| TERM       | PHYSICIANS |

6. Broader Terms

<table>
<thead>
<tr>
<th>BT</th>
<th>HEALTH PERSONNEL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PROFESSIONAL PERSONNEL</td>
</tr>
</tbody>
</table>

BTs are entered only at the next higher level of hierarchy. The BT to both HEALTH PERSONNEL and PROFESSIONAL PERSONNEL, is NOT entered in the above example. To do so would create the "invalid hierarchy" seen below. Illustrated also is the correct hierarchy in which PHYSICIANS appears twice; this is legitimate since there is no direct hierarchical relationship between HEALTH PERSONNEL and PROFESSIONAL PERSONNEL.

**INVALID HIERARCHY**

PERSONNEL
- Health Personnel
- Physicians
- Physicians
- Professional Personnel
- Physicians

**CORRECT HIERARCHY**

PERSONNEL
- Health Personnel
- Physicians
- Professional Personnel
- Physicians

(4) Related Terms (RT)

See rules for Related Terms, item D.7.

The RT is an indexable concept that is closely associated with a main term, but is neither equivalent (UF/USE) nor hierarchical (NT/BT). Part-whole relationships, near-synonyms, and other conceptually related terms, of obvious benefit to indexers and searchers, appear as RTs. RTs are reciprocally related in the Thesaurus. They are entered in field 7, as shown below:

1. Main Term (50 Character Limit)

| TERM       | AGENDA SETTING |

7. Related Terms

<table>
<thead>
<tr>
<th>RT</th>
<th>AUDIENCE ANALYSIS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AUDIENCE RESPONSE</td>
</tr>
<tr>
<td></td>
<td>BIAS</td>
</tr>
<tr>
<td></td>
<td>COMMUNICATION (THOUGHT TRANSFER)</td>
</tr>
</tbody>
</table>

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Only relatively close relationships need be cross-referenced as RTs, and unnecessary proliferation should be avoided. See the guidelines in item D.7 on avoiding RT proliferation.

e. Special Note on Cross-Reference Reciprocals

It is not necessary for the preparer of a Vocabulary Development Form to generate cross-reference reciprocals, as this is done automatically by the ERIC Thesaurus software. Examples of this capability follow:

<table>
<thead>
<tr>
<th>ENTERED VIA FORM</th>
<th>GENERATED VIA COMPUTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANAGEMENT GAMES</td>
<td>BUSINESS GAMES</td>
</tr>
<tr>
<td>UF BUSINESS GAMES</td>
<td>USE MANAGEMENT GAMES</td>
</tr>
<tr>
<td>INTERACTION</td>
<td>GROUP DYNAMICS</td>
</tr>
<tr>
<td>NT GROUP DYNAMICS</td>
<td>BT INTERACTION</td>
</tr>
<tr>
<td>SPEECH</td>
<td>LANGUAGE ARTS</td>
</tr>
<tr>
<td>BT LANGUAGE ARTS</td>
<td>NT SPEECH</td>
</tr>
<tr>
<td>NEIGHBORHOODS</td>
<td>SUBURBS</td>
</tr>
<tr>
<td>RT SUBURBS</td>
<td>RT NEIGHBORHOODS</td>
</tr>
</tbody>
</table>

Of the examples in the right column, only the USE reference cannot also be entered via the Vocabulary Development Form. (USE references can only be generated reciprocally via the entry of a UF.) Even if a computer-generated NT, BT, or RT is also input inadvertently with a form, the Thesaurus software prevents invalid double entry of a term in a single
field.

However, the software does not detect invalid cross-referencing of the same term in different fields (i.e., the same term could be filed both as an NT and BT, NT and RT, or BT and RT). In fact, a term can be cross-referenced with itself. Obviously, care must be taken to avoid these illogical relationships.

The software also prevents an existing UF from being filed as a main term, and vice versa; therefore, the above problem of double filing across fields does not extend to the UFs.

5. Modifying Existing Term

After a Descriptor has been entered into the Thesaurus file, it may be necessary to correct errors or omissions in its cross-references or to reflect subsequent changes in its application. Modifications to an existing term's Group Code, Scope Note, and/or cross-references may be made by entering a "✓" or "✗" in the "MODIFYING EXISTING TERM" box at the top of the Vocabulary Development Form's front side, as shown:

- ADD C - DELETE
- MODIFYING EXISTING TERM
- ADDING NEW TERM

See reverse side of form for special instructions.

This reminds the indexer (preparer) to use the Action Codes A, C, and D for recommending specific changes and alerts the Facility Lexicographer to the purpose of the submittal.

For all Thesaurus modifications, the preparer should indicate the main term and ONLY those elements of the term's display that he/she wishes to change. Elements not being changed should NOT be shown.

b. Action Codes

Action Codes are provided for the convenience of the preparer, permitting all add, change, and delete modifications recommended for a single Descriptor to be recorded on one Vocabulary Development Form. (In actuality, the Thesaurus system requires separate transactions for the add, change, and delete commands, and combinations of these must be separated and sequenced by the Lexicographer, as appropriate, before implementation.)

The Action (Act.) boxes on the form are used to record Action Codes. Use of each of the three (3) codes is described below.

(1) Add

The code for adding an element to a term's display is the letter A. This indicates that the coded item is to be entered in an empty field, or, if there are already entries in the field, that the coded item is to be added to these. The A code is most frequently used in the cross-reference fields (fields 4 through 7). It should be used in
recommending a Scope Note (field 3) only when that field is not currently occupied. It cannot be used for a Group Code (field 2), since that field is never empty and accommodates a single code only.

(2) **Delete**

The code for deleting an element from a term's display is the letter D. This indicates that the coded item is to be deleted from the field it occupies. The D code is most useful for recommending the deletion of a specific cross-reference (fields 4 through 7). It can also be used to recommend the elimination of an existing Scope Note (field 3), when it has been determined that the Scope Note is unnecessary. It cannot be used for a Group Code (field 2).

(3) **Change**

The code for changing an entire existing field is the letter C. This indicates that ALL data existing in a particular field is to be removed and replaced with the new data provided on the Vocabulary Development Form. The C code is used most often to change a Group Code (field 2) or a Scope Note (field 3). However, it may also be used to recommend complete changes in cross-reference fields (fields 4 through 7), i.e., when the recommended changes are so extensive that it is easier to enter the result desired than to treat each entry separately. When using the C code, it is important to remember that ALL information that is to appear in the field must be included on the input form.

b. **Group Code Changes**

Recommended Group Code changes are entered using the C code. (A and D codes are never used for Group Code changes.) Example:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TERML MICROCOUNSELING</td>
<td>GROUP_ 240</td>
<td>C</td>
</tr>
</tbody>
</table>

c. **Scope Note Changes**

The A code is used to recommend a Scope Note when one did not previously exist. Example:
### VOCABULARY - DESCRIPTORS

1. **Main Term** (50 Character Limit)
   - **TERM**: PREREADING EXPERIENCE
   - **GROUP**: 
   - **Act.**: 

2. **Scope Note/Definition** (370 Character Limit)
   - **SCOPE**: PRESCHOOL INCIDENTAL LEARNING THAT PREPARES CHILDREN FOR READING (NOTE: USE "READING READINESS" FOR FORMAL PREREADING TRAINING — PRIOR TO SEP60, THE USE OF THIS TERM WAS NOT RESTRICTED BY A SCOPE NOTE)

The C code is used to recommend the replacement of an existing Scope Note with a new Scope Note (provided on the form). Example:

1. **Main Term** (50 Character Limit)
   - **TERM**: PROJECTS (1966 1980)
   - **GROUP**: 
   - **Act.**: 

2. **Scope Note/Definition** (370 Character Limit)
   - **SCOPE**: INVALID DESCRIPTOR — SEE "PROGRAMS" AND ITS HIERARCHY (i.e., NARROWER TERMS "RESEARCH PROJECTS," "PILOT PROJECTS," ETC.)

The D Code recommends that the Scope Note on the form be expunged from the file. Example:

1. **Main Term** (50 Character Limit)
   - **TERM**: ART TEACHERS
   - **GROUP**: 
   - **Act.**: 

2. **Scope Note/Definition** (370 Character Limit)
   - **SCOPE**: TEACHERS OF ONE OR MORE OF THE VISUAL ARTS

   **d. Used For (UF) Changes**

   Nonpostable "synonyms," i.e., USE references, may not be entered directly. The addition of a USE reference must be accomplished by submitting a form on the main term to which it will be cross-referenced. If, for example, it is desired to provide the entry MIDLIFE, USE MIDDLE AGED ADULTS, a form would be submitted as follows:

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**VOCABULARY – DESCRIPTORS**

1. Main Term (50 Character Limit)

<table>
<thead>
<tr>
<th>TERM</th>
<th>MIDDLE AGED ADULTS</th>
<th>Act.</th>
</tr>
</thead>
</table>

4. Used For (i.e., Synonyms and Other Nonpreferred Terms)

<table>
<thead>
<tr>
<th>UF</th>
<th>MIDLIFE</th>
<th>Act.</th>
</tr>
</thead>
</table>

The deletion of a USE reference is accomplished as follows:

1. Main Term (50 Character Limit)

<table>
<thead>
<tr>
<th>TERM</th>
<th>AUTO MECHANICS</th>
<th>Act.</th>
</tr>
</thead>
</table>

4. Used For (i.e., Synonyms and Other Nonpreferred Terms)

<table>
<thead>
<tr>
<th>UF</th>
<th>SMALL ENGINE MECHANICS</th>
<th>Act.</th>
</tr>
</thead>
</table>

If a USE reference is to be made a main term, a separate form deleting the USE reference must accompany the form for the new Descriptor. Also, the new Descriptor should be identified in its Scope Note as a former USE reference (see item C.1.e.(4)).

In adding or deleting "multiple UFs," a separate Vocabulary Development Form must be prepared for each Descriptor used (or to be used) in the coordination. Additionally, each entry of a multiple UF on the forms must be followed by the pound sign (#).

e. Hierarchical (NT/BT) Changes

Extreme care should be exercised in making changes to Narrower and Broader Terms to ensure that hierarchical validity is maintained. The following examples will illustrate some of the problems that can occur and how they can be solved.

1. Broader Term (BT) Changes

Assume that the term MEDICAL ASSISTANTS has the two BTs HEALTH PERSONNEL and PARAPROFESSIONAL PERSONNEL. Upon examination, it is determined that ALLIED HEALTH PERSONNEL would be the more appropriate BT.
allowing the existing BTs to be deleted since both appear in the ALLIED HEALTH PERSONNEL display. The required changes would be entered as follows:

1. Main Term (50 Character Limit)

<table>
<thead>
<tr>
<th>TERM</th>
<th>MEDICAL ASSISTANTS</th>
</tr>
</thead>
</table>

6. Broader Terms

<table>
<thead>
<tr>
<th>BT</th>
<th>ALLIED HEALTH PERSONNEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEALTH PERSONNEL</td>
<td></td>
</tr>
<tr>
<td>PARAPROFESSIONAL PERSONNEL</td>
<td></td>
</tr>
</tbody>
</table>

   Act. | A | |

Note that HEALTH PERSONNEL, BT to ALLIED HEALTH PERSONNEL, must be deleted to prevent an invalid double appearance of MEDICAL ASSISTANTS in the hierarchy. In the example, the same end result could have been accomplished as follows:

1. Main Term (50 Character Limit)

<table>
<thead>
<tr>
<th>TERM</th>
<th>MEDICAL ASSISTANTS</th>
</tr>
</thead>
</table>

6. Broader Terms

<table>
<thead>
<tr>
<th>BT</th>
<th>ALLIED HEALTH PERSONNEL</th>
</tr>
</thead>
</table>

   Act. | C | |

Since the Change transaction first clears the field and then replaces it with the new information, it is not necessary to enter specific Deletes for HEALTH PERSONNEL and PARAPROFESSIONAL PERSONNEL.

(2) Narrower Term (NT) Changes

Assume that examination of the NTs for STUDENTS shows that STUDENT VOLUNTEERS has been omitted from the list, and that STUDENT-TEACHERS erroneously carries both COLLEGE STUDENTS and STUDENTS as BTs. The required changes would be entered as follows:

1. Main Term (50 Character Limit)

<table>
<thead>
<tr>
<th>TERM</th>
<th>STUDENTS</th>
</tr>
</thead>
</table>

5. Narrower Terms

<table>
<thead>
<tr>
<th>NT</th>
<th>STUDENT TEACHERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>STUDENT VOLUNTEERS</td>
<td></td>
</tr>
</tbody>
</table>

   Act. | D | A |
In this case, the Change transaction would not be used because of the large number of terms in this field that are being retained (i.e., not being changed). The result could, of course, have been accomplished by Broader Term changes to STUDENT TEACHERS and STUDENT VOLUNTEERS, but this would have required two input forms. Without additional modifications taking place, the above approach would be preferred.

Hierarchical Insertions

When a new term is inserted in the middle of an existing hierarchical string, it is usually necessary to prepare a second Vocabulary Development Form in order to prevent invalid double entries in the hierarchy. For example, assume it becomes desirable to collect several of the NTs to AFRICAN LANGUAGES under a new Descriptor MAI DE LANGUAGES. The NT/BT structure of the new term might be as follows:

<table>
<thead>
<tr>
<th>TERM</th>
<th>MANDE LANGUAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Narrower Terms</td>
<td></td>
</tr>
<tr>
<td>NT_</td>
<td>DYULA</td>
</tr>
<tr>
<td>MANDINGO</td>
<td></td>
</tr>
<tr>
<td>MENDE</td>
<td></td>
</tr>
<tr>
<td>SUSU</td>
<td></td>
</tr>
<tr>
<td>6. Broader Terms</td>
<td></td>
</tr>
<tr>
<td>BT_</td>
<td>AFRICAN LANGUAGES</td>
</tr>
</tbody>
</table>

If only this addition was made to the Thesaurus file, all of the NTs to MANDE LANGUAGES would show both that Descriptor and AFRICAN LANGUAGES as BTs, creating improper double references in the hierarchical display of AFRICAN LANGUAGES. Therefore, a second input form modifying AFRICAN LANGUAGES must accompany the one adding the new term. The modification, in this case, would appear as follows:
### VOCABULARY DESCRIPTORS

<table>
<thead>
<tr>
<th>Term</th>
<th>Narrower Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFRICAN LANGUAGES</td>
<td>DYULA, MANDINGO, MENDE, SUSU</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Term</th>
<th>Related Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>VICTIMS OF CRIME</td>
<td>DEATH, MALPRACTICE, PATIENTS, REHABILITATION, WAR</td>
</tr>
</tbody>
</table>

**Recommendations for RT changes can be made by adding and/or deleting terms from the field as necessary.**

However, use of the Change transaction is advisable if extensive modifications are recommended:
### VOCABULARY – DESCRIPTORS

**1. Main Term (50 Character Limit)**

<table>
<thead>
<tr>
<th>TERM</th>
<th>DESIGN CRAFTS</th>
</tr>
</thead>
</table>

**7. Related Terms**

<table>
<thead>
<tr>
<th>RT_</th>
<th>CERAMICS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CLOTHING DESIGN</td>
</tr>
<tr>
<td></td>
<td>CRAFT WORKERS</td>
</tr>
<tr>
<td></td>
<td>DESIGN</td>
</tr>
<tr>
<td></td>
<td>FURNITURE DESIGN</td>
</tr>
<tr>
<td></td>
<td>HANDICRAFTS</td>
</tr>
<tr>
<td></td>
<td>INDUSTRIAL DESIGN</td>
</tr>
<tr>
<td></td>
<td>SKILLED OCCUPATIONS</td>
</tr>
</tbody>
</table>

**g. "Across-Field" Modifications**

Care should be taken to avoid invalid double cross-references when moving terms between fields. Before cross-references are added to a field, each should be checked to assure they are not retained in another field. Across-field modifications can be entered on the same input form, as follows:

<table>
<thead>
<tr>
<th>1. Main Term (50 Character Limit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TERM_ INFORMATION DISSEMINATION</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. Broader Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT_ INFORMATION SERVICES</td>
</tr>
<tr>
<td>INFORMATION UTILIZATION</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7. Related Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>RT_ INFORMATION SERVICES</td>
</tr>
<tr>
<td>INFORMATION UTILIZATION</td>
</tr>
</tbody>
</table>

**6. Purging Existing Term**

A "purge" is used for recommending the total discontinuance of an indexable term. A "*" or "X" should be entered in the "PURGING EXISTING TERM" box at

---

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the top of the Vocabulary Development Form's front side:

- **Adding New Term**
- **Modifying Existing Term**
- **Deleting Existing Term**

See reverse side of form for special instructions.

Action Codes for Modifications Only.
- A - ADD
- C - CHANGE
- D - DELETE

This reminds the indexer (preparer) to check the back of the form for special instructions and alerts the Facility Lexicographer to the purpose of the submittal.

After checking the purge box, the term to be purged is entered in Field #1, the "main term" line. Fields 2 through 7 are NOT used when purging a term.

Example:

<table>
<thead>
<tr>
<th>Main Term (50 Character Limit)</th>
<th>Group Code</th>
<th>Act.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TERM_ DRAFTERS</td>
<td>GROUP_</td>
<td>0</td>
</tr>
</tbody>
</table>

No other elements need be entered because a "purge" command automatically deletes a term's complete display and all of its reciprocal cross-references from the Thesaurus file.

Descriptor purges are based on, and necessitated by, one of two factors:

1. Changes occurring in the literature of the system;
2. Situations of ambiguity, synonymity, and inutility discovered in the vocabulary.

Because purges have an immediate and significant impact on searching, a decision on what to do with a term's existing postings must accompany all purge recommendations. The following alternatives are available, but, before considering them, the indexer should be familiar with the guidelines for Former Main Terms, item D.2.e of this section.

a. **Transfer to New Term**

This alternative is used for word form corrections, including the replacement of obsolete, incorrect, or unnecessarily specific terminology.

Examples:

- Transfer postings on CEREBRAL DOMINANCE to (new term) BRAIN HEMISPHERE FUNCTIONS
- Transfer postings on MANPOWER DEVELOPMENT to (new term) LABOR FORCE DEVELOPMENT
- Transfer postings on NAVAHO to (new term) NAVAJO
- Transfer postings on WATER POLLUTION CONTROL to (new term) WATER POLLUTION

Each of the above situations involves the creation of a new Descriptor, and two Vocabulary Development Forms are required to complete each transaction. In most cases, the need for purging a Descriptor and
transferring its postings to a new word form can be demonstrated in an examination of the titles posted to the concept. Database searches should be conducted to statistically test the validity of such changes. (Relying on one's indexing experience is not enough.) Statistical evidence and available supporting evidence from authorities should be gathered and submitted on the back of, or attached to, the Vocabulary Development Forms. Justification should include comments on the equivalency of the old and new expressions, and on shifts in emphasis and meaning.

Transferred Descriptors must be identified in the Thesaurus by parenthetical "life span" notations, e.g., "[1966 1980]." They are entered as UFs to the Descriptors to which they are transferred. Using the first example above, the Vocabulary Development Form for the new term BRAIN HEMISPHERE FUNCTIONS would include the following entries:

1. Main Term (30 Character Limit)
   
   TERM: BRAIN HEMISPHERE FUNCTIONS

4. Used For (i.e., Synonyms and Other Nonpreferred Terms)
   
   UF: CEREBRAL DOMINANCE (1967 1986)
   HEMISPHERIC SPECIALIZATION (BRAIN)

The UF HEMISPHERIC SPECIALIZATION (BRAIN) is a "carryover" from the former Descriptor CEREBRAL DOMINANCE.

(See also "Transferred Descriptors" discussion under "UF (Used For)/USE References," item D.5 of this section.)

b. Simple Merge

This alternative is used for the merging of synonyms, of near-synonyms (where one is not warranted or where the terms are synonymous for purposes of retrieval), and of very lightly posted terms.

Examples: Transfer postings on TEACHER RATING to TEACHER EVALUATION

Transfer postings on UNEMPLOYED to UNEMPLOYMENT

Transfer postings on GIRLS CLUBS to YOUTH CLUBS

"Simple merge" transactions also require two Vocabulary Development Forms, one to first purge the unwanted term and a second to update the display of the retained term. The form for the retained (receiving) Descriptor should include a "life span" UF for the deleted term (see example
VOCABULARY DESCRIPTORS

of BRAIN HEMISPHERE FUNCTIONS and CEREBRAL DOMINANCE in the previous section), any of the deleted term's UFs that are needed to maintain access, and any other cross-reference or Scope Note modifications that are needed to reflect conceptual changes stemming from the transfer. Copies of subject index pages, printouts of searches, and evidence from authorities should be attached to the input forms to demonstrate the usefulness of such changes. In the justification, the indexer should explain the retention/deletion decision and comment on the following as appropriate:

- statistical effect of the merger on future postings;
- any distinguishing differences in meaning or usage between the terms; and
- possibilities for separate retrieval by computer where differences exist.

(See also discussion on synonymity, "Is It a Synonym?", item C.1.d of this section.)

(SPECIAL NOTE: The mere fact of infrequent use is not an adequate justification for purging a lightly posted term. Unless lightly posted terms can be transferred to other meaningful Descriptors without information loss, it is usually best to leave them alone.)

c. Multiple Merge

This alternative is used to eliminate multiple synonyms or to gather several lightly posted NTs under an existing or new BT.

Examples: Transfer postings on FOOD SERVICE INDUSTRY, FOOD SERVICE OCCUPATIONS, and FOOD SERVICE WORKERS to FOOD SERVICE

Transfer postings on GROUPING PROCEDURES, SORTING PROCEDURES, TAXONOMY, and TYPOLOGY to CLASSIFICATION

A separate Vocabulary Development Form is required for each term involved in a multiple merge transaction, whether being purged or retained. As with alternatives "a" and "b" above, "life span" UFs must be included on the forms of the retained Descriptors, as well as necessary "carryover" cross-references and other data from the deleted displays. Justification should include statistical evidence from the postings and definitional/structural evidence from authorities.

d. Term Split

This alternative allows the transfer of low-use terms to two (or more) more general terms, when a one-to-one transfer (either to a BT or RT) would result in information loss. The receiving terms can then be coordinated to retain specificity.

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Examples: Transfer COMMUNITY SCHOOL DIRECTORS to ADMINISTRATORS and COMMUNITY SCHOOLS
Transfer AFTER SCHOOL TUTORING to AFTER SCHOOL EDUCATION and TUTORING
Transfer BOOK THEFTS to BOOKS and STEALING

Again, a separate Vocabulary Development Form must be prepared for each term involved. However, this type of transaction requires that the UF for the purged Descriptor be entered as a new "multiple UF," as in the following example:

<table>
<thead>
<tr>
<th>1. Main Term (50 Character Limit)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TERM:</strong> AFTER SCHOOL EDUCATION</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. Used For (i.e., Synonyms and Other Nonpreferred Terms)</th>
<th>Act.</th>
</tr>
</thead>
<tbody>
<tr>
<td>UF: AFTER SCHOOL TUTORING (1986 1980)</td>
<td>A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1. Main Term (50 Character Limit)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TERM:</strong> TUTORING</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. Used For (i.e., Synonyms and Other Nonpreferred Terms)</th>
<th>Act.</th>
</tr>
</thead>
<tbody>
<tr>
<td>UF: AFTER SCHOOL TUTORING (1986 1980)</td>
<td>A</td>
</tr>
</tbody>
</table>

(Note that on both input forms, the A action code was used because the receiving terms are existing Descriptors.)

(See discussion on "Multiple UFs" in item D.5.e of this section.)

In justifying "term splits," the preparer should comment on other alternatives for transfer and the reasons for wanting the "multiple UF," the appropriateness of the postings to each of the recipient terms, and the effects of the "multiple UF" on manual retrieval.

e. Postings Split

This alternative is used when an existing term has been employed for different concepts, either because it is a homograph or because of indexing...
VOCABULARY -- DESCRIPTORS

misuse.

Examples: Transfer postings on FRESHMEN
to either COLLEGE FRESHMEN or
HIGH SCHOOL FRESHMEN

Transfer postings on ANIMAL SCIENCE
to either ANIMAL HUSBANDRY or ZOOLOGY

Every "postings split" requires some manual reindexing. Before this
can occur, however, the postings for each indexable meaning of a "split" must
be isolated. For example, the records posted to FRESHMEN would need to
be separated into at least two sets—those pertaining to COLLEGE
FRESHMEN and those pertaining to HIGH SCHOOL FRESHMEN.

Computer searching is required for isolating these sets; the following search
strategies might be employed:

Set #1—COLLEGE FRESHMEN

FRESHMEN and (HIGHER EDUCATION or TWO YEAR
COLLEGES or COLLEGE STUDENTS or TWO YEAR
COLLEGE STUDENTS)

Set #2—HIGH SCHOOL FRESHMEN

FRESHMEN and (HIGH SCHOOLS or JUNIOR HIGH
SCHOOLS or HIGH SCHOOL STUDENTS or JUNIOR
HIGH SCHOOL STUDENTS or GRADE 9)

The possibility of some records that pertain to multiple subsets of
meaning (in this example, to both Set #1 and Set #2) should not be
overlooked, i.e.:

Set #3—Both COLLEGE FRESHMEN and HIGH SCHOOL FRESHMEN

(Set #1 Results) and (Set #2 Results)

Since the precision of search "hits" is dependent on the search strategy
employed, as well as the original indexing, it is always best to "eyeball" the
individual records in each set to ensure their accuracy. Once this check and
necessary adjustments are made, the preparer of the Vocabulary Development
Form can list his/her recommendations for manual reindexing. This may be
done on the back of the form (under the check box that reads "transfer
postings to_______, excluding:_____") or on the copy of the search
submitted with the form.

Assume that the three searches on FRESHMEN produced the
following numbers of hits: 100 in Set #1, 40 in Set #2, and 10 in Set #3.
Sets #2 and #3 have fewer hits and are, therefore, the logical choices in this
example for manual reindexing. Thus, FRESHMEN needs to be deleted
from, and HIGH SCHOOL FRESHMEN added to, each record in Sets #2
and #3. Other indexing errors and inconsistencies in these records could,
of course, be recommended as well. Four sets of transactions are normally
required for manual reindexing: Delete EDs, Delete EJs, Add EDs, and Add
EJs. An example for each set is given below:
Delete transactions need not show whether a term is major or minor, i.e., preceded or not preceded by an asterisk (*); all asterisks are ignored by the Delete transaction process. Add transactions, on the other hand, must include the asterisk if the Descriptor (or Identifier) is to be a major term in the reindexed record. In the above examples, HIGH SCHOOL FRESHMEN will be a minor Descriptor in the ED (RIE) record and a major Descriptor in the EJ (CIJE) record. Terms other than FRESHMEN and HIGH SCHOOL FRESHMEN in these examples represent typical additional reindexing recommendations desired by the reviewer (preparer of the Vocabulary Development Form).

All recommended manual reindexing is reviewed by the Facility lexicographic staff and, when approved, is keyed, proofed, and released to the ERIC master files. Continuing with the example of FRESHMEN, once manual reindexing for the 50 hits of Sets #2 and #3 is accomplished, the remaining 100 hits in Set #1 can be updated using ERIC's "Transfer-and-Delete" program. This program requires only one transaction to remove FRESHMEN from the 100 remaining records and to add COLLEGE FRESHMEN to each, while retaining major/minor designators intact.

All manual reindexing recommendations for postings splits should accompany the Vocabulary Development Forms submitted for the terms to be purged. Additional forms are required to retain the transferred Descriptors as USE references. Terms whose postings are split should be entered as USE references in one of two ways:

- A 'split' homograph is entered as a UF under all of the other Descriptors that were used to break down its postings and multiple meanings. Split homographs carry parenthetical life span notations as other transferred Descriptors do. Additionally, however, each must carry a second qualifier that will limit its meaning to the particular context of the main term or Descriptor under which it is entered. The following examples show the ultimate disposition of the split homograph FRESHMEN:
Definitional qualifiers for split homographs always follow the life span notations. This structure is used because such qualifiers were not part of the original Descriptors. (Qualifiers that were part of original Descriptors precede the life span notations.)

Purged terms whose postings are split because of misuse in indexing should normally be carried as single or multiple UFs under those Descriptors that best reflect how the purged terms should have been used (had they been used correctly). The purged Descriptor ANIMAL SCIENCE is an example of this situation.

ANIMAL SCIENCE is a branch of agriculture concerned with "the breeding and husbandry of agricultural animals, and the production, processing, and distribution of agricultural animal products" (Classification of Instructional Programs, National Center for Education Statistics, 1991). It had been structured in the AGRICULTURE hierarchy of the ERIC Thesaurus and should have been used exclusively in that sense. Its usage by indexers for the biological science of ZOOLOGY is not supported by lexicographic authorities nor by the educational literature. ANIMAL SCIENCE, therefore, cannot be considered as a "split" homograph, although its former postings were split between ANIMAL HUSBANDRY and ZOOLOGY. Only one USE reference presently appears in the Thesaurus to indicate the existence of this former Descriptor, i.e.:

ANIMAL HUSBANDRY
UF ANIMAL SCIENCE (1967 1980)
USE ANIMAL HUSBANDRY

This single USE reference may not tell the whole story of this former Descriptor's usage, but additional Thesaurus entries for the term are not justified by either authorities or the literature.

f. "Dead" or Invalid Term Option

This option is used for purging unwanted Descriptors that, because of inconsistent usage over time, are not readily transferrable. "Dead term" status puts a hold on former Descriptors, preventing their further use in indexing and allowing them to be set aside for examination and possible reindexing at a later date.

A minimum input of two Vocabulary Development Forms is required. One form is used for the purge transaction (see back of form for check box
that reads "postings are not transferrable"). The term is then reentered on the second form as an invalid/"dead" Descriptor, e.g.:

```
TERM_ READING LEVEL (1986 1980) GROUP_ 460

3. Scope Note/Definition (370 Character Limit)

SCOPE INVALID DESCRIPTOR - USED FOR BOTH THE READING LEVEL OF PEOPLE AND THE READABILITY LEVEL OF MATERIALS - SEE "READING ACHIEVEMENT" AND "READABILITY" RESPECTIVELY FOR THESE CONCEPTS

Since their postings have not been transferred, invalid Descriptors are reentered as main terms rather than as UFs. Like transferred Descriptors, invalid Descriptors carry life span notations, which indicate the period of time these terms were used in indexing, make their "dead" status easily identifiable in all Thesaurus displays, and effectively prevent their further use in indexing. Also, like other main terms, invalid Descriptors are assigned to one of the Descriptor Groups and carry Scope Notes intended to lead indexers and searchers to more precise or meaningful terminology. Unlike other main terms, however, invalid Descriptors carry none of the standard Thesaurus cross-references (i.e., no UFs, NTs, BTs, nor RTs). (See item E4, parts a, b, and c of this section for additional information.)

Although invalid Descriptors carry no standard cross-references, retrieval considerations sometime necessitate a reference to an invalid Descriptor in a preferred term's Scope Note. In the case of READING LEVEL, two additional Vocabulary Development Forms were prepared and submitted for this purpose, as follows:

```
TERM_ READABILITY                  GROUP_          

3. Scope Note/Definition (370 Character Limit)

SCOPE THE QUALITY OF READING MATTER THAT MAKES IT INTERESTING AND UNDERSTANDABLE TO THOSE FOR WHOM IT IS WRITTEN (NOTE: PRIOR TO JUNE 80, "READING DIFFICULTY" AND "READING LEVEL" WERE OCCASIONALLY USED TO INDEX THIS CONCEPT)
Both READABILITY and READING ACHIEVEMENT were in the Thesaurus at the time READING LEVEL was made invalid; thus, the above entries were handled as "change" transactions (with a check in the box that reads "modifying existing term"). Notice the action codes "C" and "A" where "C" indicates a replacement Scope Note, while "A" is used to add a Scope Note where none existed previously. Also, notice the reference to READING DIFFICULTY in the READABILITY Scope Note; during the same Thesaurus update, both READING DIFFICULTY and READING LEVEL were made invalid because of inconsistent usage.

(See also discussions on "Invalid 'Dead' Descriptors" under "Main Terms" in item D.2 and "Ambiguous Usage" under "Scope Notes" in item D.4 of this section.)

g. Transfer to Identifier Field

This alternative permits those Descriptors that hindsight shows are more suitable as Identifiers to be reposted to the Identifier Field. There are several situations where this action is appropriate, i.e.:

- Highly specific proper nouns.

Example: Move postings of CHAUTAUQUAS to Identifier Field

- Coined terminology.

Example: Move postings of NUCLEATION (LANGUAGE LEARNING) to the Identifier Field

- Synonym of a "true" Identifier.

(Note: A true Identifier is a subject concept used in indexing that does not qualify as a Descriptor—see item C.1.b of this section.)

Example: Transfer the Descriptor SOUTHERN STATES to the Identifier UNITED STATES (SOUTH).

Only one Vocabulary Development Form is needed for Descriptor-to-Identifier transfers. The form should reflect the purge transaction,
accompanied by specific transfer instructions and justification information that explains why the term is not a suitable Descriptor.

Descriptors transferred to Identifier synonyms are added as UF's to the Identifier Authority List (IAL) by the Facility lexicographic staff. Scope Notes reflecting such transfers may be added to the IAL, particularly if the former Descriptor was heavily posted.

Descriptor-to-Identifier transfers are extremely rare, comprising fewer than 10 instances in ERIC's first 25 years. Another purge alternative is almost always more suitable.

b. Simple Delete

A final alternative for purging a Descriptor is to expunge all references to it from the Thesaurus and all of its postings from the database. Like Descriptor-to-Identifier transfers, "simple deletes" are generally not recommended and should be restricted to the following instances:

- Little-used ambiguous terms that encompass no appreciable subject content.
  Examples: ADVANCED SYSTEMS; LIMITED EXPERIENCE; NONFARM YOUTH.

- Little-used highly specific terms whose existence cannot be justified because there is little or no data in ERIC on the subjects they represent.
  Examples: BIRACIAL GOVERNMENT; CABINET TYPE PROJECTORS; HORIZONTAL TEXTS.

Only one Vocabulary Development Form is required for a "simple delete." However, a search must be attached that shows that each individual posting of the term was checked for alternate retrievability. Other Descriptors should be recommended for all records that need compensatory reindexing.

7. "Justification Information" Section

This section of the Vocabulary Development Form lists the requirements for justifying all Thesaurus transactions (whether new term, change, or purge). As an aid to the preparer, specific instructions accompany some of the information blocks. There are six information blocks, labeled A-F.
a. **Indexer & CH**

Preparer's name and organizational affiliation are entered. For Clearinghouses, enter indexer's name and Clearinghouse prefix.

<table>
<thead>
<tr>
<th>A. Indexer &amp; CH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jane T. Doe, TM</td>
</tr>
</tbody>
</table>

b. **Supervisory Approval & Date**

Preparer's supervisor signs and dates the form. For Clearinghouses, the form must be examined by and have the signature of the Clearinghouse Vocabulary Coordinator (or his/her designated representative).

<table>
<thead>
<tr>
<th>B. Supervisory Approval &amp; Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>William N. Brooks 5/4/91</td>
</tr>
</tbody>
</table>

c. **Personal Contacts**

This block is subdivided into “Clearinghouse Consultation” and “Other Personal Contacts.” Education encompasses wide-ranging subject fields, and ERIC serves a highly diversified user community. Adequate consultation on Thesaurus transactions among ERIC's subject-specialty Clearinghouses is necessary in order to avoid parochial points of view. Any transactions on a particular term must be considered from the viewpoints of all those Clearinghouses that may frequently use the term or whose scope areas cover the subject conveyed by the term. Subject specialists, within or outside a particular Clearinghouse, are often contacted with reference to Thesaurus transactions. The form reminds the preparer to list such contacts and give their reactions.

The form should list individuals contacted at Clearinghouses, if other than designated Vocabulary Coordinators. Addresses and phone numbers of consultants outside of the Clearinghouses should be provided for lexicographic followup when necessary.
VOCABULARY – DESCRIPTORS

C. Personal Contacts

- Clearinghouse Consultation

(List Chs contacted, and indicate agreement/disagreement; state reasons for disagreement.)

EA, HE, and SE agree.

- Other Personal Contacts and Reactions

Scope Note recommended by:
Linda E. Littlejohn
Dept. of Psychology
Univ. of XYZ

(214) 678-9100


d. Authorities Used

Authorities must always be cited for new Descriptors, or for redefining or merging existing Descriptors. Preparers should list all dictionaries, glossaries, and ERIC documents used in preparing Scope Notes, as well as the thesauri used to structure a term's display. The ERIC Facility maintains a "Thesaurus Bibliography" of frequently cited terminological references (see item B.6, "Lexicographic Authorities"). A minimum of three authorities must be cited for each definitional Scope Note prepared (see item E.4.c, "Scope Note/Definition (Field #3)").

Each Clearinghouse should copy its regularly used, core authorities on its copies of the form to avoid rekeying the same citations every time a form is completed. Citations, particularly of well-known authorities, may be abbreviated, and each should include the edition or year of publication. In listing core authorities on the form, Clearinghouses should leave enough space so that sources used less frequently, and special sources such as specific ERIC documents and journal articles, can be written or keyed in as needed.

Each authority examined for a specific transaction should be marked "X" or "O" ("Term Found" or "Term Not Found"). In this way, the Lexicographer at the Facility can avoid unnecessary rechecking of authorities.
that the preparer of the form has already checked. Copies of pertinent sections of journal articles and other special sources cited should be submitted with the form, as these may not be readily available to the Lexicographer; appropriate passages on these copies should be marked or highlighted. (See also item E.4.c.)

<table>
<thead>
<tr>
<th>D. Authorities Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Citations of regularly used authorities may be copied onto the form.) Each authority used should be marked as: X = Term Found; O = Term Not Found.</td>
</tr>
<tr>
<td>Random House Unabridged, 2nd ed</td>
</tr>
<tr>
<td>A Women's Thesaurus, 1987</td>
</tr>
<tr>
<td>British Education Thesaurus, 1988</td>
</tr>
<tr>
<td>PsychAbs Thesaurus, 1991</td>
</tr>
<tr>
<td>SocAbs Thesaurus, 1989</td>
</tr>
<tr>
<td>CRS Thesaurus, 1990</td>
</tr>
<tr>
<td>Nati Criminal Justice Thesaurus, 1990</td>
</tr>
<tr>
<td>MeSH, 1991</td>
</tr>
<tr>
<td>SPINES Thesaurus, 1988</td>
</tr>
<tr>
<td>NCES, Class. of Instructional Progs., 1991</td>
</tr>
</tbody>
</table>

e. Impact on Thesaurus

This information block asks the preparer to consider the basic pitfalls of a typical vocabulary transaction. These include homographs, overlapping concepts, and invalid hierarchical insertions. Thoughtful consideration of the
f. Impact on Database

The last "justification information" block covers the basic procedures that are necessary to assure compatibility at all times between the Thesaurus and the ERIC database. This compatibility is a stated ERIC policy (see item B.5, "Synchronization of Lexicography and Indexing") and represents a practice that is not often seen among other major database systems.

Where practicable, a comprehensive update of the database backfile is made whenever a Thesaurus term is either added or deleted. These updates lessen the complexities of computer searching, enhance retrieval, and promote user satisfaction with search results. Essentially, each preparer of a Vocabulary Development Form, usually a Clearinghouse indexer, is asked to do a computer search before finalizing his/her recommendation. The perspective of the searcher is an ingredient in all successful indexing, and the practice of researching Thesaurus transactions on the computer undoubtedly results in better indexing.

This practice, of course, requires that indexers have ready access to a computer with a modem. Users who are interested in recommending a Thesaurus change but without ready access to the ERIC database are requested to contact the Facility Lexicographer for assistance.

The following illustration shows the results of a typical comprehensive search for a new term recommendation. The new term in this case is MAGNET SCHOOLS. Seven (7) functions were performed in order to obtain these results:

1. Find word "magnet" in the Identifier Field.
2. Eliminate (manually) Identifiers retrieved that do not fit the Scope Note of MAGNET SCHOOLS (e.g., any pertaining to metallic attraction).
3. Repeat step #1 full-text (e.g., for titles and abstracts).
4. "Not out" step #1 results from step #3 results.

5. Repeat step #2 on results of step #4.

6. Evaluate the records remaining after step #5 to determine whether MAGNET SCHOOLS should be major or minor.

7. List results of step #2 (second bullet below) and step #6 (third bullet below).

F. Impact on Database

1. New Term
   - Attach full-text search, including strategy. Do not limit the search (i.e., by Clearinghouse, by RE or CUE, etc.).
   - List Identifiers to be transferred to new term. Include all variations. It is unnecessary to also list accession numbers to which the identifiers are posted.

   | Magnet Schools       | Russell Conwell Middle Magnet School          |
   | Magnet Centers       | Magnet School Plan                             |
   | Magnet Programs      | Conwell Middle Magnet School                   |
   | Magnet Program       |                                               |

   - List all accession numbers to which the new term should be posted. Including those posted by the identifiers listed above. Precede by an asterisk (*) where accession numbers to which the new term should be a major Descriptor.

   | ED016718 | ED078621 | ED130450 | ED146708 | ED156915 | ED181931 |
   | ED019341 | ED094014 | ED137433 | ED148969 | ED166314 |
   | ED041056 | ED116307 | ED145054 | ED149454 | ED169172 | *EJ203973 |
   | *ED064125| *ED117206| ED145058 | ED152905 | *ED170423 | *EJ207708 |
   | *ED064434| ED117226 | *ED146313| ED152912 | ED178646 | *EJ210203 |

The second part of this information block is used for delineating purge recommendations. There are eight alternatives for dealing with the postings of purged Descriptors, each of which is explained under item E.6, "Purging Existing Term." A choice among these alternatives will determine which among the form's three check boxes is appropriate. The example below shows a one-to-one transfer between two existing terms. As the example illustrates, liberal use of the form may be made for explanations and other notes.

2. Purge
   - Attach search.
   - Show total postings: 28
   - Check one:
     - Transfer all postings to DRAFTING (has 216 postings...overlapping with DRAFTERS 12 times -- total after merge will be 232)
     - Transfer postings to
       (List accession numbers and show necessary manual reindexing for each.) excluding:
     - Postings are not transferrable.

   (Attach 2nd form for invalid/dead term entry, or provide manual reindexing for all postings.)
8. Transmittal of Form

All completed Vocabulary Development Forms (with attachments) should be transmitted as they occur to the address at the bottom of the form's front side, i.e.:

Send form to:
ERIC Processing and Reference Facility
ATTN: Lexicographer
1301 Piccard Drive, Suite 300
Rockville, MD 20850-1616

Be sure to include search strategies and backfile change recommendations. Backfile changes may be recorded on the Vocabulary Development Forms themselves or, if that is not convenient, on search printouts. Note: Unscrutinized or unedited ERIC printouts normally need not be sent, since the data they would contain is usually readily available both online and via CD-ROM to all ERIC staff. When sizable search results must be submitted, it is usually easier and more economical to use floppy disks (either 3¼-inch or 5¼-inch disks are acceptable).

To avoid confusion and delays, do not include Vocabulary Development Forms with RIE or CIJE shipments to the ERIC Facility.

Originators, whether Clearinghouses or external users, should retain copies of all Vocabulary Development Forms and related attachments for reference in case coordination is necessary.

9. ERIC Facility Processing

Upon receipt of a Vocabulary Development Form, the Facility Lexicographer performs a preliminary review to ensure compliance with the ERIC Processing Manual. If there is a significant problem, the originator of the input is contacted prior to entering the recommendation in the Vocabulary Status Report (VSR). The VSR is prepared every 1-6 months, but at least twice per year; it is a listing of all Thesaurus recommendations and serves as the medium for Vocabulary Review Group (VRG) evaluation and feedback. VSR recommendations approved by the VRG are entered in the Thesaurus and the ERIC database by the Facility lexicographic staff; the staff also prepares a periodic summation entitled Thesaurus Changes and Statistical Data, which serves as a Thesaurus supplement. All of these procedures are fully discussed in item "B.3" of this section, "Vocabulary Development Program."
ATTACHMENT #1

History of the Thesaurus of ERIC Descriptors

The Western Reserve (WR) Studies

The ERIC feasibility studies funded by the Office of Education (OE) and conducted in the early 1960s by Western Reserve University led in June 1966 to a list of 4,500 terms in the subject area of educational media, structured in an array of broad facets such as activities, characteristics, and people, subdivided by subfacets, and further by numerous groups. The WR team of Gordon Barhydt, Charles Schmidt, & Kee Chang felt strongly that "...the establishment of useful and valid interterm relationships could be accomplished only by the conceptual analysis that is a prerequisite to faceting." This philosophy was supported by earlier classification works such as the American Petroleum Institute's Subject Headings, and The London Education Classification by D.J. Foskett, as well as early advocates such as Maurice Tuber and Oliver Lilley. The Barhydt & Schmidt faceted array thesaurus was published in 1968 by Case Western University Press under the title Information Retrieval Thesaurus of Education Terms.

Operation Fingertip and the "Disadvantaged Collection"

Another functional, but less elaborate, approach to thesaurus construction was being pursued in the mid-1960s by the Engineers Joint Council (EJC), the Department of Defense, and a COSATI indexing subpane. This collaboration, under the rubric Project LEX, led in 1967 to the landmark TEST Thesaurus. ERIC followed the activities of Project LEX closely, and in this connection, contracted in 1964 a project called Operation Fingertip with Jonker Business Machines, Inc. Jonker, under Operation Fingertip, developed a "free in lexing" core of 2,300 terms while indexing 1,700 ESEA Title I reports. The Central ERIC staff, under the direction of its chief lexicographer James Eller, then structured these terms, using a set of preliminary guidelines based on EJC conventions. The terms were then reviewed by a volunteer group of librarians, information specialists, and educators, and an interim or "Phase I" Thesaurus was made available in June 1966. The so-called "disadvantaged collection" became the first set of documents in the ERIC database. (See ED-070485, Catalog of Selected Documents on the Disadvantaged: Subject Index.)

Choosing the "Disadvantaged" Terms over the Western Reserve Facets

Central ERIC decided in mid-1966 to abandon Western Reserve's faceted array of terms and to go with the structured terms of the "disadvantaged collection." Why? The facets were thought to be somewhat inflexible. The new ERIC Facility contractor, North American Aviation, had used the EJC conventions to develop its own Thesaurus, and the resultant software was incompatible with faceted arrays. Also, the WR Thesaurus, originally developed around a collection of documents in the educational media field, was incompatible with the terms and documents on the "disadvantaged" that comprised the initial ERIC database. Thus, a precedent was being set for what still remains true for the ERIC Thesaurus. That is, the ERIC Thesaurus is an "authority list" and not really a theoretically comprehensive "thesaurus", i.e., only those terms are accepted for the Thesaurus that are actually used to index documents in the ERIC database.

Some of this information was borrowed from "The Vocabulary," Chapter VII of Delmer J. Trester's ERIC - the First Fifteen Years; A History of the Educational Resources Information Center (ED-195289).
Choosing the structured "disadvantaged" terms over the WR facets turned out to be the correct path. The American National Standards Institute's Z39 guidelines for thesaurus structure, construction, and use, published in 1974 (revised & updated in 1980 & 1990) and now the standard for information retrieval thesaurus in the U.S., was developed primarily from the earlier precedents established by the TEST Thesaurus and the ERIC Thesaurus.

The Panel on Educational Terminology

Concurrently with the indexing of the "Disadvantaged Collection," a thesaurus advisory group was formed to consult with Central ERIC. This small 6-person group, called the Panel on Educational Terminology (PET), consisted of both educators and information experts from both inside and outside the Federal Government. Early meetings also involved observers from various subject-matter areas. The PET group, under the direction of ERIC Lexicographer James Eller, guided the development of the ERIC Thesaurus through its first 8 years (1965-72).

"Rules for Thesaurus Preparation"

Concurrently with the structuring of the "disadvantaged" terms, the PET group began preparing a formal set of rules or conventions to govern vocabulary expansion beyond the initial core of terms. PET had decided that the rules and conventions appropriate for the physical sciences and engineering (developed by the Engineers Joint Council and the Department of Defense's Project LEX) were not entirely suitable for the social sciences and for the field of education. As a result, a modified set of rules regarded as appropriate for ERIC began to take shape. First published in October 1966, these rules were entitled "Rules for Thesaurus Preparation."

The rules contained instructions on proper Descriptor construction, format, and content. Special emphasis was placed on the convention that Descriptors must represent concepts found in the literature and must be actually used in the ERIC database. Earlier work at Central ERIC had indicated that the expression of educational concepts is frequently not possible by the use of uniterms (single-word terms). The rules indicated that multword Descriptors should be used when false coordinations are otherwise probable, when single words combined in searching mean something different than intended, and when single-word terms have excessively high postings. The rules were completed in time for use with the initial indexing for the first issue of RIE, published in November 1966. CIJE appeared about 2 years later, in January 1969.

The 1966 "Rules for Thesaurus Preparation" represent the foundation of the ERIC vocabulary rules followed today (see Section VIII (Part 1), item D). A second (and last) edition of these rules was published in September 1969 (see ED-033740).

Vocabulary Expansion (Period of Significant Growth)

The emphasis during the early years was on expanding the ERIC vocabulary beyond the initial core list of terms. New Descriptors were added on the basis of their need in indexing the documents going into the system. When an ERIC indexer determined the need for a new Descriptor, he/she would prepare the appropriate justification with authority citations and definitions, and submit such justification to the Facility Lexicographer. (These same basic practices are in effect today.)

The increase of new Descriptors was rapid during the early years of the ERIC system. A

**1990 draft revision, ANSI/NISO Z39.19-199x, developed by the National Information Standards Organization (NISO), circulated 1/10/90 among NISO voting members for comment.
plateau was reached in 1971 with about 7,200 terms, including 4,900 postable main terms. The ensuing 8 years through 1979 brought an average of about 100 new terms per year to the Thesaurus. Not until 1980 and the implementation of the results of the comprehensive Vocabulary Improvement Project (VIP) was this trend substantially altered.

Thoughts of Backtracking

As the Thesaurus continued to grow, it gradually became apparent that some early decisions were not wholly satisfactory. Problems such as nearly synonymous Descriptors, ambiguity among terms, and discrepancies among generic (hierarchical) relationships began to surface.

The first talk of possibly merging nearly synonymous Descriptors occurred in 1969, but the idea was rejected for the time-being because of the great expense thought to be involved.

By the time DIALOG was commercially operational for online computer searching in early 1972, the PET group had decided it was time to shift attention away from Thesaurus expansion to an evaluation of the existing Thesaurus terminology from the users' point of view. Before any activity could get underway, however, the PET group disbanded, primarily because its chairperson and ERIC's original Lexicographer, Dr. James Eller, left the ERIC system.

Vocabulary Improvement Program

Before the end of 1972, the ERIC Facility submitted a proposal for the establishment of a nationwide Vocabulary Improvement Program. The program got underway in the fall of 1973 with the development of the "Transfer-and-Delete" software system, and the establishment of the Vocabulary Review Group and the Thesaurus Advisory Panel.

The new "Transfer-and-Delete" system allowed one transaction to be written that would both delete a term and simultaneously transfer all of its postings to another term. Such a capability permitted the master files for RIE and CIE to remain compatible with a substantially modified Thesaurus. Vocabulary Review Group members were selected so as to achieve a broad base of coordination. Representatives or 'vocabulary coordinators' were included from the ERIC Clearinghouses, as well as from various university libraries and State Education Departments having access to the ERIC database and experience in its use. Recommended changes to the Thesaurus were accepted from all network staff and external users. Such recommendations were recorded on a Term Change Notice (TCN) Form and distributed to the review group members for their reactions. The Thesaurus Advisory Panel (TAP) was set up as a locally (Washington) based group, consisting of membership from Central ERIC, the ERIC Facility, and several other members within and outside the ERIC network. The group's purpose was to replace the disbanded, policy-making PET group and to resolve those relatively few issues of Thesaurus change for which a consensus of review group members could not be achieved.

Never designed as a centralized, intensive clean-up effort, the original Vocabulary Improvement Program was effective in meeting its objectives. During the 1973-78 time frame, 50 TCNs were evaluated by the review group, resulting in the deletion and reposting of 87 unwanted Descriptors. In its meetings, the TAP approved several innovations (e.g., two-way hierarchical display, add/entry dates, multiple "Use" references) that ultimately became integral parts of the Thesaurus. However, the program was somewhat cumbersome with its complicated paperwork flow and documentation requirements. In April 1976, an ERIC indexing seminar (held in Annapolis, Maryland, as part of that year's National Technical Meeting) helped to solidify the feeling that it would take far too long to accomplish a thorough thesaural clean-up with the existing program. Following up in November 1976, Central ERIC funded a small study project for Jim Houston, the Facility Lexicographer, to investigate
ways in which comprehensive vocabulary improvement might be accomplished in a reasonable time frame.

Shifting Into a Higher Gear

Three information systems known to have engaged in vocabulary revitalization efforts (NTIS, the Engineering Index, and the Chemical Abstracts Service) were surveyed by the Facility with the hope that their experience would prove useful in planning a new vocabulary effort for ERIC. In fact, however, ERIC proved to be breaking new ground in planning and accomplishing its vocabulary improvement. The survey report concluded that the best people to turn to for real vocabulary revitalization would be the actual users of the ERIC Thesaurus, i.e., the indexers in the ERIC Clearinghouses and the searchers within ERIC's community of users. A plan was presented to Central ERIC on how to elicit this participation.

Utilizing this basic groundwork, Central ERIC selected a "Coordinator" to organize a new, more intensive project in which a thorough Thesaurus clean-up could be realized in a relatively short period of time. The newly proposed effort was called the Vocabulary Improvement Project or the VIP. Its first Coordinator was Barbara Booth of the ERIC Clearinghouse for Junior Colleges. Central ERIC selected Lynn Barnett, ERIC Clearinghouse on Higher Education, to coordinate the project when Ms. Booth left the ERIC system in mid-1979.

Vocabulary Improvement Project (VIP)

The new VIP was inaugurated in September 1977 with a national meeting of Clearinghouse vocabulary coordinators and selected users involved in the original Vocabulary Review Group. At that meeting, an Executive Committee was selected consisting of the VIP Coordinator, the Central ERIC Monitor, the Facility Lexicographer, and two vocabulary coordinators from the Clearinghouses. This overall coordination meeting was followed quickly by three more vocabulary coordinators' meetings, held in conjunction with regional technical meetings, where the actual procedures of the new project were worked out.

Phase I: "Thesaurus Review"

The first phase of the project was labeled "Thesaurus Review." The goal was to permit as many individuals as possible to critically evaluate each Thesaurus Descriptor and its accompanying display. A "Descriptor Review Form" was developed by the VIP Executive Committee, and Clearinghouses participated in preparing a form for each Descriptor and its display -- about 5,200 originals. (See Figure VIII-1-ATT-1-1 for an example of this form complete with a reviewer's comments.) Each Clearinghouse received a complete set of forms from the Facility in March 1978. Sixteen user organizations also received some of the forms (or all of them, in some cases). By August, over 60,000 Descriptor evaluations had been completed, about 10,000 by the external users.

All forms were returned to the Facility where they were collated into a complete set for each Descriptor. The Executive Committee then sorted the forms again for Clearinghouse assignment (based on "scope of interest"), and the Facility arranged their distribution. Each Clearinghouse and the Facility received approximately 300 Descriptor assignments. Clearinghouses then determined priorities and arranged their schedules in order to complete their assignments. The axiom "usage determines meaning" was the overriding guideline for Phase II.
FIGURE VIII-1-ATT-1-1: "DESCRIPTOR REVIEW FORM" OF THE VOCABULARY IMPROVEMENT PROJECT (VIP)

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Addition comments (e.g., special meanings within sub-disciplines, relationships with other terms). Continue on back if necessary:

Little difference between the terms "lab procedures" & "lab techniques" are used in indexing. Recommend deleting latter term. With a merge, above scope note should be changed to something very general or deleted entirely.
Phase II: "Production"

Phase II or the "Production" phase extended from November 1978 to September 1979, during which time Clearinghouse personnel (using the completed "Descriptor Review Forms") wrote and rewrote scope notes, merged synonymous terms, updated obsolete terminology, and revised cross-references. All suggestions were recorded on a special Thesaurus input form (designed by the Executive Committee — see Figure VIII-1-ATT-1-2), sent to and reviewed by the Facility lexicographic staff, then keyed into a special Thesaurus file informally called the "Play Thesaurus" (PT). Each suggestion in the PT identified the originator by Clearinghouse/Facility prefix and was coded "approved/disapproved" by the Lexicographers. The PT was updated twelve times over a 14-month period. Each issue was distributed to all participants, who could then react to the suggestions of others, or to lexicographic decisions, via a special "Comment" field. Each "Comment" was also identified by Clearinghouse/Facility prefix and arranged chronologically so that a continuing dialog was provided throughout the twelve PT issues. Nearly 11,000 transactions had been entered into the PT file when the last issue was published shortly after New Year's Day 1980. The Executive Committee met during the week of January 14-18, 1980 in Washington, D.C., to close out the PT phase of the VIP. Over 500 terms that had not received final resolution in the PT were reviewed by the Committee, and final dispositions were made.

Nearly 7,000 suggestions from the "production" phase were designated as "approved." These were keyed directly from the PT to the "real" Thesaurus file. The working copies of the "new" Thesaurus were ready in March 1980 for use in indexing; the published version followed in June 1980. A summary of the major VIP transactions follows:

- 1,437 Scope Notes Written
- 512 New Main Terms Added
- 841 Main Terms Converted to "USE" Terms
- 123 Terms Invalidated (i.e., kept on the file, but no longer used)
- 18 Terms Purged
- 563 New "USE" Terms Added
- 716 "USE" Terms Deleted

The RIE and CIEJE master files and the inverted postings were updated to reflect all of these changes—this involved more than 2 million transactions to individual records in the database. Updated magnetic tapes were sent to the online vendors in September 1980.

The VIP Legacy

The 1977-80 Vocabulary Improvement Project (VIP) was a major event in the history of ERIC and in the information/library science field. Such an undertaking by a major information system was virtually unprecedented. The ERIC Thesaurus was completely revised to reflect contemporary indexing needs, while the integrity of the ERIC database was preserved for the searcher through massive updating, and both were done within a period of 3 years.

Total Network Involvement in Thesaurus Development

The VIP introduced a new methodology for thesaurus development and maintenance activities within a decentralized system. Prior to the VIP, changes to the ERIC Thesaurus (particularly with respect to individual terms) were based essentially on negotiations solely between a submitting Clearinghouse and the central lexicographic staff. The VIP, through its interactive "Play Thesaurus," extended the negotiation process to all Clearinghouses.
In the VIP, decisions negotiated between a submitting Clearinghouse and the Lexicographers were recorded in a "Play Thesaurus" (PT) for other Clearinghouses to see. All Clearinghouses could then review these decisions and use the PT for communicating their opinions and other comments. The Lexicographers, conducting additional negotiations as necessary, would then use these remarks in finalizing a term, its Scope Note, and/or display for the "real" Thesaurus file.

This system of total participation worked so well that it was retained and continued after the VIP was completed.

"Vocabulary Development Program"

In May 1980, Patricia Coulter (Central ERIC Monitor of the VIP), Lynn Barnett (VIP Coordinator), Jim Houston (Facility Lexicographer), and Carolyn Weller (Identifier Coordinator) met to determine how to use the experience gained during the comprehensive Vocabulary Improvement Project for the future development and control of the ERIC Thesaurus. Through their deliberations, a new program was outlined having the overall purposes of increasing efficiency, reducing costs, and more thoroughly involving the Clearinghouses and users in the Thesaurus activities of the future. In order to represent a new beginning, the new program was called the "Vocabulary Development Program." With the blessing of Central ERIC, and after a review by Clearinghouse staff members involved in vocabulary work, the new program became operational in December 1980.

The "Vocabulary Development Program" is structured to permit all Thesaurus recommendations to be examined by a "Vocabulary Review Group" (VRG) before final dispositions are made. Reconstituted from the earlier VRG (see "Vocabulary Improvement Program"), the present VRG's 29 members include representatives from every Clearinghouse, Central ERIC, ACCESS ERIC, the CIJE Publisher, the Facility, several user organizations, and "International ERIC."*** The Vocabulary Status Report (VSR), issued at least twice a year, serves as the mechanism for alerting the VRG to proposed changes, for soliciting the membership's comments and recommendations, and for notifying all members of final dispositions.

Lynn Barnett of the ERIC Clearinghouse on Higher Education was the first Chair of the reconstituted Vocabulary Review Group in 1980-81. Anita Colby of the ERIC Clearinghouse for Junior Colleges has served as the VRG Chair from 1982 to the present.

Each ensuing year since 1980 has seen approximately 100 new main terms added to the Thesaurus file. The latest 12th (1990) edition of the Thesaurus contains approximately 10,000 vocabulary terms, of which approximately 5,600 are main-entry Descriptors and 4,400 are non-indexable Use references and "dead" terms.

Although the new program requires some additional turnaround time to determine dispositions, this appears to be fully justified considering the additional lexicographic perspectives gained across Clearinghouse subject areas and between indexers and users. The functions, work flow, and documentation procedures of the new "Vocabulary Development Program" are discussed in item B.3 of this section.

***"International ERIC" (informally, InterEd) includes representatives of the Australian Education Index, British Education Index, and Canadian Education Index, as well as ERIC.
ATTACHMENT #2

Vocabulary Development Form (VDF) Computer Templates

(These two sample computer templates are provided as possible models in addition to the one illustrated in Figure VIII-1-9 of this section.)
Adding new term

TERM: INFORMATION SCIENCE EDUCATION

GROUP:

SCOPE: POSTSECONDARY EDUCATION OR TRAINING OF INFORMATION SCIENTISTS AND OTHER INFORMATION PROFESSIONALS (NOTE: PRIOR TO MONTH YEAR, THIS CONCEPT WAS SOMETIMES INDEXED UNDER "LIBRARY EDUCATION")

UF:

NT: LIBRARY EDUCATION

RT: POSTSECONDARY EDUCATION

PROFESSIONAL EDUCATION

Betsy Reifsnyder, IR

Supervisory Approval & Date:

\[10/27/88\]
VOCABULARY - DESCRIPTORS

PERSONAL CONTACTS: None

AUTHORITIES USED

NOTE: X = term(s) considered (as listed in parentheses)
    O = relevant terms not found

Education Authorities

O Dictionary of education, Good, 1973
X Education Index

(INFORMATION SCIENCE--TEACHING)

Library/Information Science Authorities

O ALA glossary of library and information science, 1983
O Hennepin County Library Cumulative Authority List, July 1988
O Librarians' glossary of terms used in librarianship, Harrod, 1984
X Library Literature

(INFORMATION SCIENCE--TEACHING; INFORMATION SCIENTISTS--EDUCATION)

X Library of Congress Subject Headings, 11th ed. or as updated online

(INFORMATION SCIENCE--STUDY AND TEACHING)

IMPACT ON THESAURUS/EXPLANATION OF PROPOSALS

Accompanying change needed in LIBRARY EDUCATION, which is proposed as a NT of INFORMATION SCIENCE EDUCATION. Although LIBRARY EDUCATION was placed solely under POSTSECONDARY EDUCATION, it is proposed that INFORMATION SCIENCE EDUCATION be placed both under POSTSECONDARY EDUCATION and PROFESSIONAL EDUCATION. NOTE: LIBRARY EDUCATION includes the education of professionals and paraprofessionals. The inclusion of LIBRARY EDUCATION in a PROFESSIONAL EDUCATION hierarchy is based on the precedent set by LEGAL EDUCATION (PROFESSIONS), which is placed under PROFESSIONAL EDUCATION and which includes the education of attorneys and paralegals.
IMPACT ON DATABASE

Full-text search attached.

Identifiers to be transferred to the Descriptor:

INFORMATION SCIENCE EDUCATION

Accession numbers to which the new term should be posted, excluding any posted from Identifiers listed above. Accession numbers where the new term should be a major Descriptor are preceded by an asterisk. Note: Records retrieved by the following search strategy/ies but inappropriate for posting are crossed out.

NOTE: Records already assigned the terms LIBRARY SCHOOLS or LIBRARY EDUCATION are not proposed for posting to the new term.

Title NOT Identifier search strategy:

information (w) science (w) education

EJ365047 EJ347053 EJ269665 * EJ009668 ED265954
EJ365047 EJ347053 EJ264721 ED275274 ED265949
EJ331279 EJ349860 EJ225665 ED272281 ED265959
EJ331279 EJ349860 * EJ214707 ED266966 ED265958
EJ344989 EJ344989 * EJ119857 ED265964 ED265957
EJ344989 EJ344989 * EJ119857 ED265959 ED265956
EJ334244 EJ316565 EJ162646 ED265962 ED265955 * ED059615
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TERM PAYING FOR COLLEGE

GROUP_620

SCOPE NOTE DISCUSSION ABOUT OR METHODS FOR FINANCING AN INDIVIDUAL'S COLLEGE EDUCATION -- NOTE: DO NOT CONFUSE WITH "STUDENT COSTS"

A. Indexer & CH: Lynn Barnett/HE

B. Supervisory Approval & Date: Lynn Barnett, 7/20/89

C. Personal Contacts:

   Clearinghouse Consultation -- JC agrees

   Other personal contacts/reactions

D. Authorities Used:

   British Education Thesaurus
   Good's Dictionary of Education (3rd)
   International Encyclopedia of Higher Education
   Medical Subject Headings (1979)
   NASA Thesaurus (1985)
   Sociological Abstracts
   Thesaurus of Psychological Index Terms
   UNESCO Thesaurus
   A Woman's Thesaurus

   X EJ 304 667 - "Paying for College: Plot a Course Now"
   X EJ 292 818 - "Paying for College: Beyond Financial Aid"
   X ED 260 670 - "How Middle-Income Families Pay for College"
   X ED 002 924 - "How People Pay for College"
E. Impact on Thesaurus

Indicate potential impact on hierarchies and other terms, particularly overlap with other terms. Qualify homographs.

The descriptor STUDENT COSTS may have been used in the past for the concept represented by PAYING FOR COLLEGE, but STUDENT COSTS implies more. Probably the note in the SN will take care of that. "Paying for college" is really a hot topic in the literature and in the discussions of the student financial aid legislation. We've toyed with other phrases (e.g. COLLEGE COSTS), but they are not specific enough for the concept. Some documents previously indexed with the iden COLLEGE COSTS have been identified below for re-indexing with PAYING FOR COLLEGE.

F. Impact on Database

1. New Term

Attach full-text search, including strategy. Do not limit search by CH, RIE, CIJE, etc.

Search shows:
90 PAYING FOR COLLEGE/ID
123 COLLEGE COSTS/ID
21 PAY(2W)COLLEGE?/TI
73 PAY?/AB(2W)COLLEGE/AB [most not relevant]

List identifiers to be transferred to new term.

PAYING FOR COLLEGE

List all accession numbers to which the new term should be posted, excluding identifiers. Use * to note majors.

*EJ304667  *EJ172074  *EJ005450  *ED260670  *ED193980  *ED002924
*EJ292818  *EJ104462  *ED266704  *ED074887
*EJ234481  *ED260673  *ED195182  *ED038124

Also, see attached page for additional accession numbers.

2. Purge

n/a
Add PAYING FOR COLLEGE

to highlighted acc. numbers

10/1/1-72

EJ34160 EJ334537 EJ302996 EJ265832
ED266753 ED260672 EJ302995 ED296636
EJ377717 EJ330100 EJ302992 ED296633
ED266750 ED260671 EJ299882 ED286395
EJ376206 EJ325425 ED260670 EJ296934 ED283499
EJ344128 ED260608 EJ312153 ED259614
ED265783 EJ310290 EJ281336 ED272044
EJ344118 ED259600 EJ281330 ED272041
ED264807 ED258516 EJ279742 ED271038
EJ341547 EJ308586 ED260616 EJ278169 ED267696
ED263843 EJ308562 EJ278164 ED267684
EJ341546 ED255161 EJ306942 ED267681
ED263835 ED255159 EJ309299 ED271462 ED267676
EJ341543 EJ306942 EJ296934 ED283499
ED262713 ED255160 EJ281336 ED272044
EJ341542 EJ306939 EJ281330 ED272041
ED267212 ED255159 EJ278164 ED267684
* EJ339085 EJ302998 ED260673 ED254130
* EJ336157 EJ302997 ED271462 ED267676

10/1/73-121

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ED231315 ED223165 ED247804 ED242240
ED253142 ED249913 ED246820 ED242231
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ED250985 ED247862 ED243392 ED232586
ED224435 ED247862 ED243392 ED232586
F. Impact on Database

1. New Term

Attach full-text search, including strategy. Do not limit search by CE, RIE, CIJE, etc.

n/a

List identifiers to be transferred to new term.

n/a

List all accession numbers to which the new term should be posted, excluding identifiers. Use * to note majors.

n/a

2. Purge

n/a
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