

Evaluation of Knowledge Organization Systems (KOS)

Characteristics for describing and evaluating KOS

(classifications/ontologies/taxonomies/index languages/thesauri/glossaries/dictionaries)

(For some items, a section number from Soergel, Organizing information (starting with a digit), and/or Soergel, Indexing languages and thesauri (starting with a capital) is given.)

1. **Purpose**, for example

Providing "conceptual infrastructure"

Mapping out the conceptual structure and providing a common language for a field

Providing classification/typology and concept definitions. Clarifying concepts by putting them into context. Thus providing orientation and serving as a reference tool for individual researchers and practitioners and thereby

Assisting with the exploration of the conceptual context of a research problem and in structuring the problem, thereby providing the conceptual basis for the design of good research, for the consistent definition of variables, and thus the cumulation of research results.

Providing the conceptual basis for the exploration of the various aspects of a program in program planning, in the identification of approaches and strategies, and in the development of evaluation criteria

Information storage and retrieval (ISAR)

One information system

Using several ISAR systems, switching language. Support the coordination or combination of several databases in the same area to facilitate access to multiple databases.

Assisting readers in understanding text

Assisting writers with conceptualizing a topic and with finding the proper term

Translation

Language learning

In each case specify the intended audience

If purpose is ISAR specify

Information system(s) in which the vocabulary is to be used

Use of the vocabulary

Vocabulary control in indexing and searching (controlled vocabulary)

Vocabulary control only for searching. Assist with clarifying a search topic and assembling all applicable concepts and terms, whether searching with a controlled vocabulary or free-text.

ISAR technique(s) (such as: printed index, computer search system). Support of inclusive (hierarchically expanded) searching

Automated vs. manual indexing or query formulation. Approach to indexing to be supported: Request-oriented vs. entity-oriented

Techniques for eliciting user needs (e.g., menu based on search tree; questions based on facet structure)

Summary evaluation of the vocabulary's adequacy for the stated purpose on the more detailed analysis as outlined below.

2. Coverage of concepts and terms. Sources, quality of usage analysis.

2.1 Concepts: scope, breadth of coverage (See also 2.3.1)

2.2 Concepts: specificity, depth of coverage

Completeness of coverage at each level of specificity considering all concepts (descriptors and other preferred terms) and descriptors alone (F0.4.3)

Specificity must be adapted to the purpose. Assistance in the choice of terms or the comprehension of text requires many nuances. An ISAR system for propositions requires high specificity. A bibliographic ISAR systems may require only low specificity.

2.3 Sources from which concepts and terms are included (natural languages, classifications/thesauri, etc.).

Relationship to other vocabularies, especially standard schemes.

For each source:

2.3.1 Completeness of coverage; all vs. selected concepts; all vs. selected terms for each concept (this includes coverage of synonyms)

2.3.2 Quality of analysis of actual term usage in the source.

2.3.3 Recency

Specifically: Completeness of coverage of the terminology from a given language (English, French, German, Chinese, etc.; the language is the source)

2.4 Augmentation of sources through concepts created in concept analysis (15, C3)

2.4.1 Are all necessary facets included?

2.4.2 Formation of new concepts arising from semantic factoring and other methods of concept analysis. Specifically: Are the concepts applicable across disciplines?
Are the concepts applicable across different societies and cultures? (See also 3.4)

2.5 Choice of terms

2.5.1 Form of terms - consistency, adherence to common usage.

2.5.2 Appropriateness of selection of preferred terms from among synonyms.

2.5.3 Choice of terms to designate descriptors (F0.4.2) Closeness to user terminology.

2.6 Nature of notation (if none, state that) (D4)

3. **Conceptual analysis and conceptual structure. Terminological analysis**

3.1 Quality of conceptual structure (14, C1)

Types and degree of differentiation of conceptual relationships included:

3.1.1 Expression of concepts through elemental concepts (closely related to definition)

3.1.2 Hierarchical relationships (polyhierarchy)

3.1.3 Associative relationships

Completeness of conceptual relationships included.

3.2 Quality of definitions, explications, scope notes (correctness, detail, clarity). (C3)

3.3 Completeness of terminological relationships.

Does the thesaurus contain terms that are synonymous or quasi-synonymous without indicating the relationship?

4. **Use of precombination in the index language** (cuts across 2 and 3) (14, 15, C2)

4.1 To what degree are descriptors precombined?

4.2 To what extent are precombined descriptors enumerated and/or given in the alphabetical index? Built by the indexer? Updating characteristics.

Are precombined descriptors designated by an independent symbol or a string of symbols? Citation order free or fixed? To what extent do the components of a precombined descriptor determine its place in the arrangement? (Relates also to 5)

5. **Access and display. Format of presentation of the vocabulary**

Consider for each format access/retrieval by concepts versus access/retrieval by terms

Access can be provided through arrangement in a printed document or through a computerized search system.

5.1 Format of printed document

5.1.1 Overall format (D1)

Thesaurus parts and information given in each, connections between them.

Is the overall format clear and helpful for finding the appropriate concepts and terms or notations in indexing and query formulation?

5.1.2 Display of conceptual relationships

- through arrangement (15.5.2, C2, D3)
- through cross-references (D3.1.1,1)
- through descriptor-find index (15.5.1, D3.6)

How well does the display reflect the conceptual analysis (e.g., sequence of concepts on some hierarchical level) (D3.1.2)

5.1.3 Display of terminological relationships (C5)

5.2 Access through computer systems. Retrieval of concepts and terms. Navigation. Format of on-line displays (needs to be expanded)

5.3 Format of machine-readable form (if any)

5.4 Detail of keeping records of the origin of information included in the vocabulary.

6. **Updating**