

# Knowledge Organization

Formerly *International Classification*

**International Journal**

Devoted to Concept Theory,  
Classification, Indexing, and  
Knowledge Representation



**Vol. 25 (1998) No. 3**

# KNOWLEDGE ORGANIZATION

KO

Official Quarterly Journal of the International Society for Knowledge Organization ISSN 0943 - 7444  
 International Journal devoted to Concept Theory, Classification, Indexing and Knowledge Representation

## Contents

<b>Guest Editorial</b> .....	65	DDC News .....	115
<b>Articles</b>			
Chen, S. Y., & Ford, N. J.: Modelling User Navigation Behaviours in a Hypermedia-Based Learning System: An Individual Differences Approach.....	67	IFLA Section on Classification and Indexing .....	116
Vries, H. J. de: The Classification of Standards .....	79	Classification Research Group .....	117
Iivonen, M. & Kivimäki, K.: Common Entities and Missing Properties: Similarities and Differences in the Indexing of Concepts.....	90	<b>Book Reviews</b>	
<b>Reports and Communications</b>			
Conference Calander .....	103	Anderson, James D.: Guidelines for indexes and related information retrieval devices. NISO Technical Report 2; NISO-TR02-1997. Bethesda, Maryland: NISO, 1997. 52 p. ISSN 1081-8006. ISBN 3-409-29317-5. (Robert Fugmann).....	118
Technology News .....	103	Meiss, Brigitte: Information Retrieval und Dokumentmanagement im Multimedia-Zeitalter. Deutsche Gesellschaft für Dokumentation, Frankfurt/Main 1997 ISBN 3-925474-32-3, 118 pages, 8 figures. (Robert Fugmann) .....	119
In Other News .....	104	Galinski, Christian and Schmitz, Klaus-Dirk, Ed. (1996) TKE 1996 - Terminology and Knowledge Engineering : Proceedings : Fourth International Congress on Terminology and Knowledge Engineering, Vienna, 26-28 August 1996. Frankfurt: Indeks Verlag. viii, 464p. ISBN 3-88672-207-4. (Francis J. Devadason) .....	120
Appointments .....	104	Pollandt, Silke. Fuzzy-Begriffe: Formale Begriffsanalyse unscharfer Daten (Fuzzy concepts: Formal concept analysis of imprecise data). Berlin: Springer-Verlag, 1997. 146 p. ISBN 3-540-61335-8 (Karl Erich Wolff).....	123
Awards .....	104	<b>Knowledge Organization Literature</b>	
Kamel, Mouna: A Contribution to the Study of the Semantics of French Psychological and Communication Verbs.....	104	26(1998)No.3 .....	125
<b>ISKO News 32</b>			
Nominations of best papers for the ISKO fest-schrift.....	110		
ISKO General Assembly 1998.....	110		
<b>FID/CR News 47</b>			
Ranganathan Award .....	113		
People .....	113		
UDC Extension and Corrections.....	113		
UDC at IFLA .....	113		
DDC en langue française .....	114		

KO

KNOWLEDGE ORGANIZATION

Official Quarterly Journal of the International Society for Knowledge Organization ISSN 0943 - 7444  
International Journal devoted to Concept Theory, Classification, Indexing and Knowledge Representation

## Contents page

Chen, S. Y., & Ford, N. J. (1998). **Modelling User Navigation Behaviours in a Hypermedia-Based Learning System: An Individual Differences Approach.** *Knowledge Organization*, 25(3), 67-78, 26 refs.

**ABSTRACT:** The rapid evolution of hypermedia technology makes it possible to access an immense volume of information in an educational setting. This research examines the relationship between individual differences (in particular, cognitive styles) and navigation strategies using a WWW-based hypermedia learning system. The hypermedia learning system was used at Sheffield University's Department of Information Studies. Twenty Masters students were pre-tested for their cognitive styles. Dependent variables included navigation patterns, selection of navigation tools, and reactions to the hypermedia system. The results indicated that students with differing cognitive styles and individual characteristics selected different access facilities and applied different navigation patterns. The implication of these findings and the role of individual differences in designing hypermedia-based learning systems are discussed.

**Keywords:** 1. Cognitive Styles, 2. Computer Assisted Learning (CAL), 3. Hypermedia, 4. Individual Differences, 5. Navigation Behaviours, 6. World Wide Web (WWW)

(Authors)

Vries, H. J. de (1998). **The Classification of Standards.** *Knowledge Organization*, 25(3), 79-89, 39 refs.

**ABSTRACT:** Many classifications of standards exist. These are often inconsistent, which may lead to confusion in standardization practice. This article includes an inventory of current classifications and a discussion of their applicability. Based on the new insights, gained from this examination, other possible

classifications of standards are suggested. These classifications may be related to the entities the standards refer to or to the users of the standards.

(Author)

Iivonen, M. & Kivimäki, K. (1998). **Common Entities and Missing Properties: Similarities and Differences in the Indexing of Concepts.** *Knowledge Organization*, 25(3), 90-102, 30 refs.

**ABSTRACT:** The selection and representation of concepts in indexing of the same documents in two databases of library and information studies are considered. The authors compare the indexing of 49 documents in KINF and LISA. They focus on the types of concepts presented in indexing, the degree of concept consistency in indexing, and similarities and differences in the indexing of concepts. The largest group of indexed concepts in both databases was the category of entities while concepts belonging to the category of properties were almost missing in both databases. The second largest group of indexed concepts in KINF was the category of activities and in LISA the category of dimensions. Although the concept consistency between KINF and LISA remained rather low and was only 34 %, there were approximately 2.2 concepts per document which were indexed from the same documents in both databases. These common concepts belonged mostly to the category of entities.

(Authors)

This contents page may be reproduced without charge.

# KNOWLEDGE ORGANIZATION

KO

Official Quarterly Journal of the International Society for Knowledge Organization   ISSN 0943 - 7444  
International Journal devoted to Concept Theory, Classification, Indexing and Knowledge Representation

## KNOWLEDGE ORGANIZATION

The journal is the organ of the INTERNATIONAL SOCIETY FOR KNOWLEDGE ORGANIZATION (General Secretariat: Prof. Hanne Albrechtsen, The Royal School of Librarianship, Birketinget 6, DK-2300 Copenhagen S)

### Editors

Mr. Charles T. GILREATH (Editor-in-Chief), 217 NW 34<sup>th</sup> Drive, Gainesville, FL 32607 USA

Dr. Ingetraut DAHLBERG, Am Hirtenberg 13, D-64732 Bad König, Germany

Dr. Robert FUGMANN, Alte Poststrasse 13, D-65510 Idstein, Germany

Prof. Hanne ALBRECHTSEN (ISKO News Editor), The Royal School of Librarianship, Birketinget 6, DK-2300 Copenhagen S, Denmark

Ms. Michelle M. FOSS (Assistant to the Editor-in-Chief; Reports & Communications Editor), 12020 Lake Ave. # 303, Lakewood, OH 44107 USA,  
E-mail: FOSS@uhrainbow.com

Dr. Gerhard RIESTHUIS (Literature Editor), Liendenhof 60, NL-1108 HB Amsterdam, Netherlands

Prof. Dr. Nancy WILLIAMSON (FID/CR News Editor), Faculty of Information Studies, University of Toronto, 140 St. George Street, Toronto, Ontario M5S 3G6 Canada

Michèle HUDON (Book Review Editor), École de bibliothéconomie et des sciences de l'information, Université de Montréal, C.P. 6128, Montréal, Québec, H3C 3J7 Canada.  
email: Michele.Hudon@UMontreal.CA

### Consulting Editors

Prof. Dr. Ulf G. BARANOW, Rua Ubaldino do Amaral 580, Apto. 51, BR-80060-190, Curitiba - PR, Brazil

Dr. Gerhard BUDIN, Dept. of Philosophy of Science, University of Vienna, Sensengasse 8, A-1090 Wien, Austria

Mr. Christian GALINSKI, Director: Infoterm, Simmeringer Hauptstr. 24, A-1110 Wien, Austria

Dr. Francisco Javier GARCIA MARCO, Area de Biblioteconomía y Documentación, Facultad de Filosofía y Letras, Universidad de Zaragoza, E-50.009 Zaragoza, Spain  
Prof. Dr. Winfried GÖDERT, Vice-Dean: FH Köln, Claudiustr. 1, D-50678 Köln, Germany

Dr. M. A. GOPINATH, DRTC, Indian Statistical Inst., 8th Mile, Mysore Road, R.V. College P.O., Bangalore-560059, India

Dr. Rebecca GREEN, College of Library and Information Services, Hornbake Bldg. (So. Wing), Room 4105, University of Maryland, College Park, MD 20742-4345

Dr. Norbert HENRICHES, Im Luftfeld 80, D-40489 Düsseldorf, Germany

Dr. Roland HJERPPE, Dept. of Computer and Information Science, Linkping University, S-58183 Linkping, Sweden

Dr. Barbara H. KWASNICK, School of Information Studies, Syracuse University, 4-206 Ctr. for Science & Tech., Syracuse, NY 13244-4100

Dr. Jaques MANIEZ, 61 Rue de la Corve, F-21000 Dijon, France

Dr. Ia C. MCILWAINE, Director: School of Library, Archive & Information Studies, University College London, Gower Street, London, WC1E 6BT, U.K.

Dr. Francis MIKSA, Graduate School of Library and Information Science, University of Texas at Austin, SZB 564, Austin, TX 78712-1276

Ms. Joan S. MITCHELL, Editor: Dewey Decimal Classification, Library of Congress, Washington, D.C. 20540-4330

Dr. Giliola NEGRINI, Consiglio Nazionale della Ricerca, Ist. di Studi sulla Ricerca e Doc. Scientifica, Via Cesare De Lollis, 12, I-00185 Rome, Italy

Ms. Annelise Mark PEJTERSEN, Systems Analysis Dept., Risoe National Laboratory, P.O. Box 49, DK-4000 Roskilde, Denmark

Dr. Stephen A. POLLITT, CeDAR Centre for Database Access Research, School of Computing & Mathematics, The University of Huddersfield, Queensgate, Huddersfield HD1 3DH, U.K.

Dr. M. P. SATIJA, Guru Nanak Dev University, School of Library and Information Science, Amritsar-143 005, India

Dr. Jos SCHREINEMAKERS, Erasmus University Rotterdam, PO Box 1738, 3000 DR Rotterdam, Netherlands

Dr. Otto SECHSER, In der Ey 37, CH-8047 Zürich, Switzerland

Dr. Dagobert SOERGEL, College of Library and Information Services, Hornbake Bldg. (So. Wing), Room 4105, University of Maryland, College Park, MD 20742

Dr. Eduard R. SUKIASYAN, Chief Editor of the Library-Bibliographical Classification, Russian State Library, 3 Vozdvizhenska Str., Moscow, 101000 Russia

Dr. Elaine SVENONIUS, Graduate School of Education and Information Studies, UCLA, 5380 ½ Village Green, Los Angeles, CA 90016

Prof. Dr. Harald ZIMMERMANN, Softex, Schmollerstrasse 31, D-66111 Saarbrücken, Germany

KO

KNOWLEDGE ORGANIZATION

Official Quarterly Journal of the International Society for Knowledge Organization ISSN 0943 – 7444  
International Journal devoted to Concept Theory, Classification, Indexing and Knowledge Representation

**Publisher**

ERGON-Verlag, Grombühlstr. 7, GER-97080 Würzburg,  
Phone: + 49 (931) 280084; FAX + 49 (931) 282872; E-mail:  
ERGON-Verlag@t-online.de

**Editor-in-chief (Editorial office)**

Mr. C. Gilreath, 217 NW 34<sup>th</sup> Drive, Gainesville, FL 32607  
USA; Phone +1 (352) 373-6891; Fax: +1 (352) 373-6924;  
E-mail: [gilreath@grove.ufl.edu](mailto:gilreath@grove.ufl.edu)

**Instructions for Authors**

*Manuscripts* should be submitted in English only to the editor-in-chief in two double-spaced copies and should be accompanied by an indicative abstract of 100 to 200 words. After manuscripts are accepted for publication in *Knowledge Organization*, they must be provided on a 3.5" diskette encoded in Word, WordPerfect, or ASCII text. Our preference is Word 6.0 (or later). Diskettes should not be sent until requested by the editor.

*Criteria for acceptance* will be appropriateness to the field of the journal (see Scope and Aims), taking into account the merit of the contents and presentation. The manuscript should be concise and should conform to professional standards of English usage and grammar. Manuscripts are received with the understanding that they have not been previously published, are not being submitted for publication elsewhere, and that if the work received official sponsorship, it has been duly released for publication. Submissions are refereed, and authors will usually be notified within 6 to 10 weeks. Unless specifically requested, manuscripts and illustrations will not be returned.

The text should be structured by numbered subheadings. It should contain (a) an *Introduction*, giving an overview and stating the purpose, (b) a *main body*, describing in sufficient detail the materials or methods used and the results or systems developed, and (c) a *conclusion or summary*.

*Reference citations within the text* should have the following form: (author, year). For example, (Jones, 1990). Specific page numbers are optional e.g. (Jones, 1990, p.100). A citation with two authors would read (Jones & Smith, 1990); three or more authors would be: (Jones et al., 1990). When the author is mentioned in the text, only the date and optional page number should appear in parenthesis – e.g. According to Jones (1990), ...

*References* should be listed alphabetically by author at the end of the article. Journal names should not be abbreviated. Multiple citations by the same author should be listed chronologically and should each spell out the author's name. Articles appearing in the same year should have the following format: Jones, T. (1990a) ... , Jones, T. (1990b) ...

**Examples:**

Dahlberg, I. (1978). A referent-oriented, analytical concept theory for INTERCONCEPT. *International Classification*, 5(3), 142-151.

Graesser, A., Person, N. & Huber, J. (1992). Mechanisms that generate questions. In T. W. Lauer, E. Peacock, & A. C. Graesser (Eds.). *Questions and Information Systems*. Hillsdale, NJ: Lawrence Erlbaum Associates. 167-187.

Sager, J.C. (1990). *A Practical Course in Terminology Processing*. Amsterdam: John Benjamins.

Sukiasyan, E. R. (1996). Change as a problem of classification system development. In R. Green (Ed.). *Knowledge Organization and Change: Proceedings of the 4<sup>th</sup> International ISKO Conference*. Frankfurt: Indeks Verlag. 119-122.

*Footnotes* should be kept to a minimum. They should be indicated in the text with numbered superscripts, and the corresponding notes should be collected at the end of the article, before the *references*, under the heading *Notes*.

*Illustrations* should be kept to the necessary minimum. Graphs and diagrams should be supplied as black and white drawings suitable for reproduction. Half-tone illustrations should be sharp, well-contrasted glossy prints. Illustrations should be numbered lightly with a soft pencil on the back, and a numbered legend should be attached on a separate sheet. Clear copies of the illustrations should accompany the submitted manuscript, but camera-ready originals should not be sent until requested by the editor. *Tables* should contain a number and a title at the top, and all columns and rows should have headings. All illustrations should be cited in the text as Figure 1, Figure 2, etc. or Table 1, Table 2, etc.

Upon acceptance of a manuscript for publication, authors must provide a wallet-sized photo and a one-paragraph biographical sketch. Authors will receive from the publisher 25 reprints of their articles free of charge. Additional reprints may be ordered before publication.

**Advertising**

Responsible for advertising: Dr. H.-J. Dietrich, ERGON-Verlag, Grombühlstr. 7, 97080 Würzburg (Germany).

© 1998 by ERGON-Verlag Dr. H.-J. Dietrich.  
All Rights reserved.

Printed in the Federal Republic of Germany  
by Offizin Hildburghausen GmbH Druckhaus.

KO is published quarterly by ERGON-Verlag.  
The price is DM 158,-/ann. including airmail delivery.

# KNOWLEDGE ORGANIZATION

KO

Official Quarterly Journal of the International Society for Knowledge Organization ISSN 0943 - 7444  
International Journal devoted to Concept Theory, Classification, Indexing and Knowledge Representation

## Scope

The more scientific data are generated in the impetuous present times, the more ordering energy needs to be expended to control these data in a retrievable fashion. With the abundance of knowledge now available the questions of new solutions to the ordering problem and thus of improved classification systems, methods and procedures have acquired unforeseen significance. For many years now they have been in the focus of interest of information scientists the world over.

Until recently, the special literature relevant to classification was published in piecemeal fashion, scattered over the numerous technical journals serving the experts of the various fields such as

philosophy and science of science  
science policy and science organization  
mathematics, statistics and computer science  
library and information science  
archivistics and museology  
journalism and communication science  
industrial products and commodity science  
terminology, lexicography and linguistics

Beginning 1974, KNOWLEDGE ORGANIZATION (formerly INTERNATIONAL CLASSIFICATION) has been serving as a common platform for the discussion of both theoretical background questions and practical application problems in many areas of concern. In each issue experts from many countries comment on questions of an adequate structuring and construction of ordering systems and on the problems of their use in opening the information contents of new literature, of data collections and survey, of tabular works and of other objects of scientific interest. Their contributions have been concerned with

- (1) clarifying the theoretical foundations (general ordering theory/science theoretical bases of classification, data analysis and reduction)
- (2) describing practical operations connected with indexing/classification, as well as applications of classification systems and thesauri, manual and machine indexing
- (3) tracing the history of classification knowledge and methodology
- (4) discussing questions of education and training in classification
- (5) concerning themselves with the problems of terminology in general and with respect to special fields.

## Aims

Thus, KNOWLEDGE ORGANIZATION is meant to be a programme for the improvement of classification methods and processes, a forum for discussion for all those interested in the organization of knowledge on a universal or a subject-field scale, using concept-analytical and/or concept-synthetic approaches as well as numerical procedures and comprising also the intellectual and automatic compilation and use of classification systems and thesauri in all fields of knowledge, with special attention being given to the problems of terminology.

KNOWLEDGE ORGANIZATION publishes original articles, reports on conferences and similar communications, the Newsletters of the International Society for Knowledge Organization (ISKO News) and the Committee on Classification Research of the International Federation for Information and Documentation (FID/CR News) as well as book reviews, letters to the editor, and an extensive annotated bibliography of recent classification and indexing literature, covering some 500 items in each issue.

KNOWLEDGE ORGANIZATION should therefore be available at every university and research library of every country, at every information center, at colleges and schools of library and information science, in the hands of everybody interested in the fields mentioned above and thus also at every office for updating information on any topic related to the problems of order in our information-flooded times.

KNOWLEDGE ORGANIZATION was founded in 1973 by an international group of scholars with a consulting board of editors representing the world's regions, the special classification fields, and the subject areas involved. From 1974-1980 it was published by K.G. Saur Verlag, München. Back issues of 1978-1992 are available from ERGON-Verlag, too. (The 14 volumes of 1978-1992 are offered now at the highly reduced price of DM 200,-)

As of 1989, KNOWLEDGE ORGANIZATION has become the official organ of the INTERNATIONAL SOCIETY FOR KNOWLEDGE ORGANIZATION (ISKO) and is included for every ISKO-member, personal or institutional in the membership fee (US \$ 50/US \$ 100).

*Rates:* From 1997 on for 4 issues/ann. (including indexes) DM 158,- (forwarding costs included). Membership rates see above.  
ERGON-Verlag, Grombühlstr. 7, GER-97080 Würzburg;  
Phone: +49 (931) 280084; FAX +49 (931) 282872;  
E-mail: ERGON-Verlag@t-online.de

The contents of this journal are indexed and abstracted in *Referativnyi Zhurnal Informatika* and in the following online databases: *Information Science Abstracts*, *INSPEC*, *Library and Information Science Abstracts (LISA)*, *Library Literature*, *PASCAL* and *Sociological Abstracts*.