UNIVERSITY OF MINNESOTA

Office of Information Technology

Vol. 9 No. 1

▼

Upcoming Tech Talk topics

- June 6,
  Video Conferencing

- June 13,
  Accessibility Online

- June 20,
  Creating Web Pages

- June 27,
  E-Commerce

  Details at
  techtalk.umn.edu

UMN

Information Technology

DMC Spotlight Issue
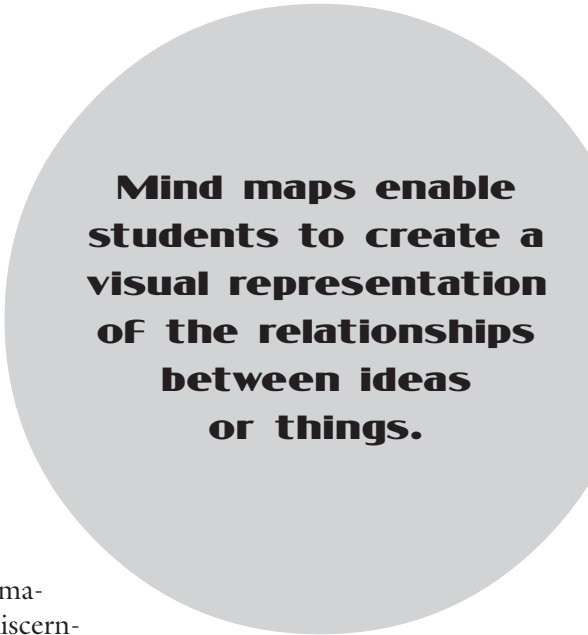## Mind–Mapping TEL Activities

Each month, Digital Media Center (DMC) consultants publish a "Spotlight Issues" article on our web site about a current technology-enhanced learning (TEL) issue highlighted at sessions of the TEL Seminar Series, in our classes, or at our program or project meetings. This month's article is excerpted below.

Mind-mapping and learning

When we engage higher-order thinking, an extraordinary pattern of neural networks is activated in the brain. Teachers are well aware of the disconnect that occurs when students are asked to translate these complex and holistic patterns into linear thinking — for instance, when we ask them to generate a thesis or write an essay.

Mind-mapping learning activities can help. They enable students to create a visual representation of the relationships between ideas or things and offer an intermediary step between the web of information in the brain and an expository representation of that information. The brain makes sense of the world by discerning and creating patterns; in the same way, learning happens when students perceive and construct patterns. Mind mapping can be used at any point students need to clarify and expand their ideas; specifically, it can help them

- access and record prior knowledge;
- brainstorm;

> **Mind maps enable students to create a visual representation of the relationships between ideas or things.**

- organize, develop, and edit their ideas;
- apply concepts; or
- summarize and review readings and notes.

Online Resources

Over the past year, we worked with Marieke van Dijk, a research assistant in the Department of Work, Community, and Family Education, to create an online mind-mapping tool for use in an online introductory class she teaches called the Psychological Foundation of Human Resource Development. She set out to fundamentally change the way students engage with the reading materials in the class. In the past, students read the materials on their own and took three online quizzes. This year, they used our tool to create mind maps, or visual representations of the relationships among concepts and theories addressed in their readings. They also submitted to van Dijk a brief narrative explaining their maps and discussed the maps using online communications tools.

Tools

You can use commercially available technology tools such as Inspiration® or graphics software to enhance mind-mapping learning activities. The advantage of using such technology is that the mind map can be stored and shared and can become the basis of an interaction between teacher and student or of a class discussion. However, although the tools available on the market are powerful, we wanted to provide students with one that was easier to use, so we created our own with Macromedia Flash® 6 software. Students access it with a web browser and the Macromedia Flash® Player 6 plug-in, available free from Macromedia's web site.

Educational Information and Examples

We also researched how traditional and technology-enhanced mind-mapping activities can be used for educational purposes, and on our web site we published information and examples, such as:

- John Budd from the Carlson School of Management promotes active learning in his classes by having students in small groups create two mind maps, one illustrating a moment in the history of labor unions and the other their historical impact.

- An instructor could integrate mind-mapping into the writing process to help students brainstorm, draft, develop, organize, and get feedback on papers.

- A philosophy instructor could use our tool to illustrate an argument and objections to it, and also have students use the tool themselves to illustrate different types of philosophical theories.

- A biology instructor could have students use our tool to map the complex relationships between organisms in an ecostructure.

Bibliography

- Budd, John. "Mind Maps as Classroom Exercises." *Journal of Economic Education*, vol. 35, no. 1 (winter), pp. 35–46. http://www.legacy-irc.csom.umn.edu/faculty/jbudd/mindmaps/mindmaps.pdf .

  John Budd teaches labor relations at the University of Minnesota. His article addresses how mind mapping supports collaborative, active learning in the classroom. It details the pedagogical advantages as well as the practical how-tos of the "think-rap-map" method.

- Buzan, T., and B. Buzan. *The Mind Map Book: How to Use Radiant Thinking to Maximize Your Brain's Untapped Potential*. New York: Plume, 1993.

  According to a *Publishers Weekly* review of the 1994 edition of this book quoted on Amazon.com, "This idea-rich, relentlessly upbeat manual proffers graphic images as an aid to unlock creative thinking or clarify emotions. . . . Despite its inflated claims and cluttered presentation, this unusual how-to, replete with exercises, quizzes, dramatic color photos of patterns in nature, and sample mind maps, will challenge and stimulate the open-minded."

- Hyerle, David. *A Field Guide to Using Visual Tools*. Alexandria, VA: Association for Supervision and Curriculum Development, 2000.

  Hyerle connects the use of visual tools to how the brain processes, stores, and retrieves information. His wide range of examples and case studies come from K–12 classrooms.

Figure 1: Example mind map

J. D. Walker, a DMC consultant, created this mind map with our tool to illustrate how a philosophy instructor might represent, for students, an ontological argument and objections to it. The map:

- rectangles: argument premises and conclusions
- circles: objections to the argument
- solid arrows: (alleged) implications
- dotted arrows: the part of the argument affected by an objection

The tool also enabled Walker to add the dimension of color; see http://dmc.umn.edu/activities/mindmap/ontological.shtml .
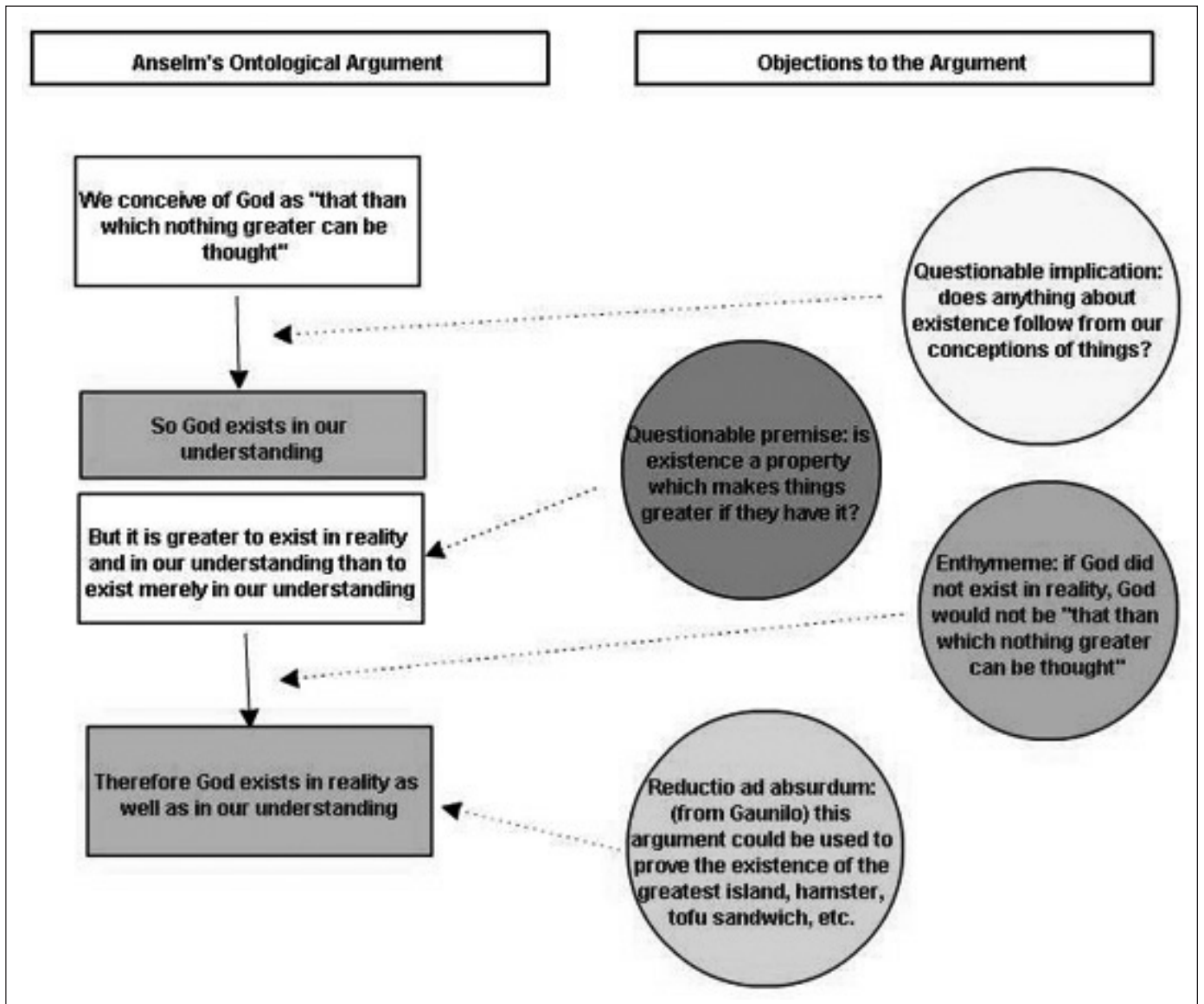
■ —. *Student Successes with Thinking Maps: School-Based Research, Results, and Models for Achievement Using Visual Tools.* Forthcoming from Corwin Press, May 2004.

According to the publisher's description reproduced on Amazon.com:

"Hyerle shares stories from those who have adopted thinking maps to increase student achievement and revitalize learning communities. Among the specific successes here, teachers and leaders will find ways to use thinking maps as a visual language and a frame of reference to:

• Provide a bridge to overcome cultural disconnects between teachers and learners
• Spur higher order thinking and discussion
• Offer a tool to assess content understanding in students with limited English
• Integrate learning from prior knowledge to new learning"

■ University of Melbourne Teaching and Learning Unit. "Concept Maps: A Valuable Learning Tool." University of Melbourne Teaching and Learning Unit, Faculty of Economics and Commerce. http://tlu.ecom.unimelb.edu.au/pdfs /concept_maps.pdf .

This is a "Learning Skills Booklet" for students that includes detailed instructions about how to draw a concept map and several examples of maps created for introductory macroeconomics classes: an input-output concept map; a production, expenditure, and income concept map; and a labor market concept map.

■ University of Victoria Counselling Services. "Concept Mapping." University of Victoria Counselling Services, 2003. http://www.coun.uvic.ca/learn/program /hndouts/map_ho.html .

This handout for students was created as part of a Learning Skills Program and includes detailed instructions about how to draw a concept map, represent organizational patterns, and use concept mapping to summarize readings and lectures; take seminar or workshop notes; review for exams; and write academic or creative essays.

Teachers are well aware of the disconnect that occurs when students are asked to translate these complex and holistic patterns into linear thinking.

Campus Resources

The following may help you further explore the educational uses of mind mapping:

● Find out more about how mind mapping can be used for teaching and learning on our web site at http://dmc.umn.edu/activities/mindmap/.

● Use our mind-mapping tool as-is on our server or download and store it on your computer or server. To access it and obtain instructions, see http://dmc.umn.edu/objects/mindmap/.

You also can obtain graphics software that can be used to create mind maps through the Faculty Toolkit. See http://dmc.umn.edu/toolkit/.

● Meet with one of our consultants to get help planning and designing mind mapping learning activities. See http://dmc.umn.edu /consultations/.

● Learn how to teach and create learning objects, such as our mind-mapping tool, in Designing Learning Objects: Producing Media-Rich Learning Activities and Creating Learning Objects: Flash MX Basics, TEL short courses. See http://training.micro.umn.edu/ShortCourses /ClassList2.cfm?Sort=Category#16 .

● Get more learning object resource information on our Spotlight Issues Learning Object Technologies page at http://dmc.umn.edu/spotlight /learning-object.shtml/.

■ Lauren Marsh and Christina Goodland, Digital Media Center

Business Process Training Opportunities

Project management

The Project Management Office is pleased to announce that we are engaging in a series of in-house presented training sessions for Information Technology Analysts in partnership with several business units across the University of Minnesota.

Our objective in hosting this training is to provide business analysts with the skills and tools they need to present a consistent set of business requirements as shown in the course descriptions below. Participants include:

Admissions
Student Records
Office of Student Finance
Human Resources
Financial Aid
Controller's Office
Office of Information Technology
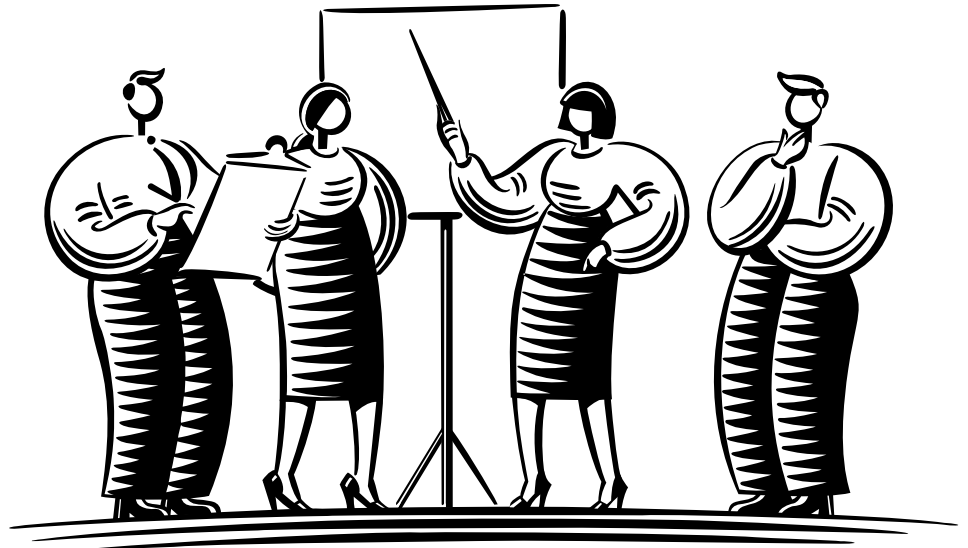
Training to provide business analysts with the skills and tools they need.

The kickoff

A kickoff of the training sessions began with Business Process: Mapping, Analysis & Improvement, which was held the week of April 12th. The focus of the course is to provide a practical and effective set of skills, techniques, and methods for identifying, mapping, measuring, objectively analyzing, and improving business processes and practices within your enterprise and crossing enterprise boundaries to share that with customers, suppliers and business partners. (It's a busy course!)

The next course, Business Systems Analysis: Defining Business & User Requirements, will be hosted the week of June 28. The focus of the course will be to utilize practical, proven, and user-friendly visual analysis techniques to capture, communicate, and analyze business requirements. The course's main goal is to provide core concepts and practical techniques to drive systems analysis from business concepts to business requirements to system specifications in a rapidly changing deployment environment.

These consistent business requirements will facilitate our continued success in the delivery of high quality production applications for the University of Minnesota and its community.

More information

For more information contact Steve Gudvangen, Project Management Office, gudva004@umn.edu .

■ Jacque Hoffsten, Office of Information Technology

Help

Short term computer support

URAG

U-Rent-A-Guru (URAG) consultants offer short-term computer support to the University of Minnesota community, including assisting U of M departments, with applying current Microsoft critical updates and/or service packs as well as updating antivirus software.

Security issues

University standards require that all security patches must be applied on a regular basis. If critical patches and updates are not applied on a regular basis, computers on the University network risk being vulnerable to various worms, viruses, Trojans, and direct hacker attacks. URAG consultants follow the recommended guidelines and procedures of the OIT Security group to disinfect affected computers and apply fixes to help prevent future attacks.

Due to recent computer virus and worm outbreaks URAG consultants have responded to many department requests and can assist your department, too, with:

- Applying all Microsoft Windows 2000/XP Critical Updates and/or Service Packs.

- Installing the most recent Symantec Antivirus (SAV) program.

- Setting up the SAV scheduled update feature; the URAG consultant will set your SAV software to automatically scan your computer daily at your requested time.

- Setting up your computer to obtain future Microsoft critical updates through the new U of M OITSUS server — this service is available for Microsoft Windows 2000 and XP operating systems. Once your system is setup, you will receive an alert whenever a critical update is about to be automatically installed on your system. For more information, see: http://www.umn.edu/adcs/help/oitsus/.

The private data issue

URAG services are available for U of M desktop computers that do not contain private data, as defined by OIT Security. For a definition of "private data," see: http://www.umn.edu/oit/security/privatedata.shtml .

Computers that contain private data and/or servers must follow additional steps as outlined by OIT Security. For more information see http://www.umn.edu/oit/security .

Obtain antivirus software

The University has an agreement with Symantec Corp. to provide SAV Corporate Edition software on any computer paid for with University of Minnesota funds and owned by the U of M, or on one computer owned by any University of Minnesota staff, faculty member, or student for personal use. See: http://www.umn.edu/adcs/help/virus/ .

■ Renee Rivers, URAG and University Computer Services, http://www.umn.edu/ucs/

Journal Citation Reports Database

An Important Tool for Assessing the Value and Role of Scholarly Journals
Nancy K. Herther, University Libraries, http://www.lib.umn.edu

Publication has always been an important aspect of academic performance. Today the number and variety of publishing options is enormous. Print, online/print, online-only are just a few of the categories of publication made available today.

Writing in *Library Journal* in February 2004, researcher Carol Tenopir used the Ulrich's database as a tool and estimated that the number of active, refereed periodicals available today is over 21,000 titles and "active academic /scholarly weighs in at nearly 43,500. Most of the refereed are within the academic set, so the final answer to active serials (refereed or academic/scholarly) comes to just over 43,500." (Web address in Figure 1.) Even as an estimate, this number is staggering.

Figure 2: JCR sample screens

■ As an author

- How might you identify journals in which you would want to publish your research?
- How might you confirm the status of the journals in which you have published in the past?
- How can you identify journals most relevant to your research?

■ As journal editors

- How can you determine and evaluate your 'competition' in terms of related journals with the goal of assessing the quality and trends in publishing in your own field?
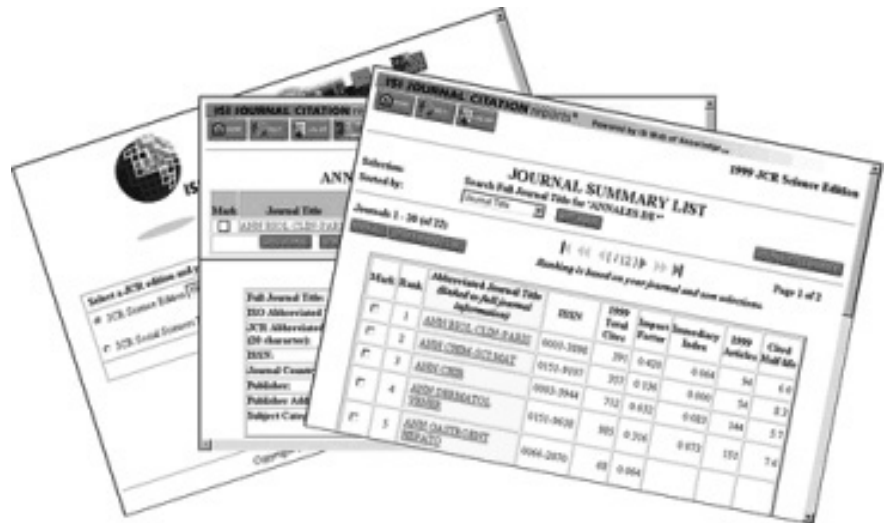
■ As librarians

- How can we stay ahead of the game, keeping track of new and up-and-coming journals or the continuing value/importance of existing, standard serials?

JCR: Journal Citation Reports

One tool that has become available is the *Journal Citation Reports* (JCR) database from Thomson ISI, the same company that produces the citation indexes and *Current Contents* database. Using this huge database as the core for its reports, JCR is a very unique bibliometric tool for journal evaluation that uses citation data from over 8,400 journals published by over 3,000 publishers worldwide.

Figure 1: Over 43,500 active serials

http://www.libraryjournal.com/article/CA374956?display=Online+DbsNews&industry=Online+Dbs&industryid=3761&verticalid=151

The database's role

The stated role of the database is to provide: "Quantifiable statistical data for evaluating the world's leading journals and their impact and influence in the global research community." The intention is to give users a "systematic and objective means of determining the relative importance of science and social sciences journals within their subject categories."

Unlike the company's citation indexes, JCR includes only two areas of study:

- *JCR Science Edition*, which covers over 5800 journals in 54 subject areas
- *JCR Social Sciences Edition,* which covers over 1700 journals.

There is no Arts & Humanities area analysis in the database.

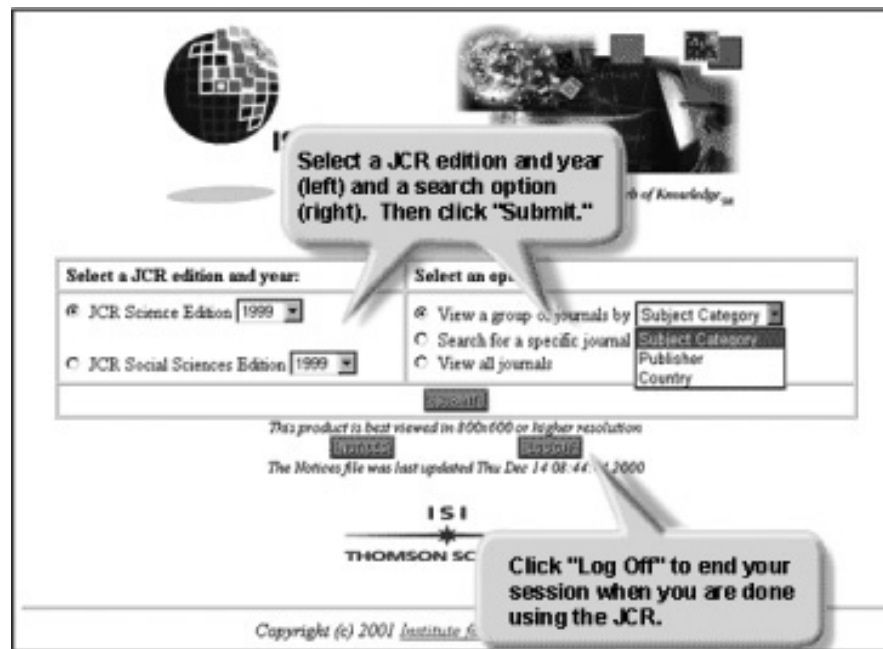Figure 3: JCR main Search screen

When not to use JCR

JCR is ***not*** a bibliographic database. There are no citations, abstracts or full-text of articles in the database. The core of this database is listings of journals based on or sorted by different factors, which may help users determine the relative value of some particular journal in light of others publishing in the same area.

JCR and its application are not without serious controversy within academe. However, it represents a potentially useful way to look at scholarly publication in journal literature today.

Librarians' considerations

For librarians, as an example, JCR provides an interesting picture of scholarly publication. However, in terms of making sound judgments on our collections, we carefully consider many variables, including intangibles such as our knowledge of the departments here on campus, the nature of current research underway, the research interests of graduate students, etc. Within the University Libraries, we do not use JCR alone in making decisions about adding or canceling journal literature.

Notes of caution

Certainly the selection of publishing venues is more complex than any single listing of titles. Also, your own personal needs — or that of the community that is served by a specific library — may lead to decisions that would not be reflected by the statistics in JCR.

A few other notes of caution about using JCR:

- Again, not all journals or fields are covered by JCR. If Tenopir's figures are correct, JCR covers only about one-fifth of the world's scholarly literature.

JCR and its application are not without serious controversy within academe. However, it represents a potentially useful way to look at scholarly publication in journal literature today.

- It is worth the time to go in and 'play around' with the data to get a feel for how useful this database would be for you. Examples of fields not well covered include anything in the arts and humanities, education, cultural studies, nursing, etc.

- It takes some time for new journals to establish an impact factor worth evaluating in this manner.

- Name changes to journals are not well handled in the database; so impact would be more difficult to ascertain.

- Publication schedule is another factor to be taken into consideration. A semi-annual will have very different metrics than something like *Nature* or *Science* that come out weekly.

Figure 4: JCR Journal Search page
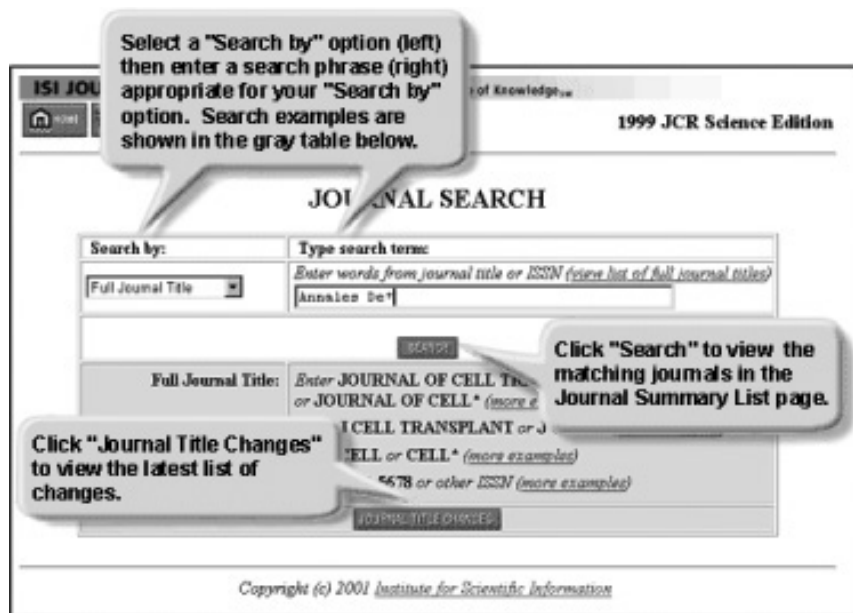
Constructing the database

Using the huge ISI database as its resource, for each journal covered JCR provides the following information:

- Citation and article counts
- Impact Factor
- Immediacy Index

- Citing Half-Live
- Cited Half-Live
- Source Data Listing

- Citing Journal Listing
- Cited Journal Listing
- Subject Categories

- Publisher Information
- Journal Title Changes

Workshop

Journal Citation Reports Database Workshop

JCR is a complicated database that provides bibliometric information on scholarly journals. This workshop will briefly provide an overview of the database and time for hands-on experience in the database.

■ Registration is required for this one-hour free workshop. Training is in S30C Wilson Library

Section	Date	Time
1	Tuesday, June 15	9:45–10:45 AM
2	Wednesday, June 23	11 AM–noon
3	Tuesday, July 20	12:30–1:30 PM

For registration or more information, go to:
http://www.lib.umn.edu/registration
/index.phtml#eventidXX89 .

The core of this database is listings of journals based on or sorted by different factors, which may help users determine the relative value of some particular journal in light of others publishing in the same area.

Gauging impact

The most frequent use of JCR is to compare similar publications using the 'impact factors' for each journal. Impact factor is defined as:

"the average number of times articles published in a specific journal in the two previous years were cited in a particular year. So, an article published in a journal with an impact factor of two is, on average, twice as likely to be cited as a similar article published in a journal with an impact factor of one.

Therefore, the impact factor can help you to evaluate a journal's relative importance, especially when you compare it with others in the same field."

The database can be used to quickly see:

- a listing of the most cited journals in your discipline — by sorting by **Total Cites**

- largest journals in your discipline — by sorting by **Current Articles**

- high-impact journals in your discipline — by sorting by **Impact Factor**

- hottest or most currently cited journals in your field — by sorting by **Immediacy Index**

Some recent research about JCR

The JCR database has, itself, been the source of scholarly analysis and commentary in recent years. Below are just a few articles about this database that have appeared in the last few years.

- Kokko H. & Sutherland W. J. "What do impact factors tell us?" **TRENDS IN ECOLOGY & EVOLUTION** 14 (10): 382-384 OCT 1999.

- Lange L. L. "The impact factor as a phantom – Is there a self-fulfilling prophecy effect of impact?" **JOURNAL OF DOCUMENTATION** 58 (2): 175-184 2002.

- Leydesdorff L. "Can networks of journal-journal citations be used as indicators of change in the social sciences?" **JOURNAL OF DOCUMENTATION** 59 (1): 84-104 2003.

- Metcalfe N. B. "Journal Impact Factors," **NATURE** 376 (6543): 720-720 AUG 31 1995.

- Moed H. F. & vanLeeuwen T. N. "Impact factors can mislead," **NATURE** 381 (6579): 186-186 MAY 16 1996.

- Moed H. F., Van Leeuwen T. N. & Reedijk J. "Towards appropriate indicators of journal impact," **SCIENTOMETRICS** 46 (3): 575-589 NOV-DEC 1999.

- Schoonbaert D. & Roelants G. "Impact takes precedence over interest," **NATURE** 391 (6664): 222-222 JAN 15 1998.

- Shin E. J. "Do Impact Factors change with a change of medium? A comparison of Impact Factors when publication is by paper and through parallel publishing.**" JOURNAL OF INFORMATION SCIENCE** 29 (6): 527-533 2003.

Getting into the database

The complexity of the database makes any explanation more difficult to follow than simply going into it for yourself and getting a feel for the information that it contains.

Try it

Our subscription begins with the latest, 2002, edition. To access JCR,

- go to the *Indexes* option from the Libraries' web page
- select the "J" option to pull up a listing of all databases starting with the letter J, then
- select *Journal Citation Reports* and you will be taken to the ISI's database

From the Home Page,

- select one of the two JCR editions to search, then
- select a query option, either to (1) view all journals in the database; (2) search for a particular journal title; or (3) view a group of journals by one of three methods: Subject Category, Publisher, or Country, and finally
- click on Submit

Journal search page

The *Journal Search Page* allows you to search for a specific journal by Full Journal Title, Abbreviated Journal Title, Title Word, or ISSN.

Publisher and country selections

Publisher Selection or *Country Selection* allows you to pick one or more publishers/countries and view the journals by Journal Title, Total Cites, Impact Factor, Immediacy Factor, Current Articles, or Cited Half-Life.

Search for the largest journals

To view the subsets of journals by subject, to see what journals are included in the database and how they rank against one another, begin by selecting one of the Editions and view a group of journals by *Subject Category.* Then a listing will come up.

When you select the area of interest, the list of journals for that subject area will come up. You can **sort** that list by Impact Factor, Journal Title, Total Cites, etc. The lists can be marked for printing or downloading.

You can transfer listings from JCR into an Excel spreadsheet.

Criminology example

Taking the area of criminology, as an example, select the *JCR Social Science Edition* and view by *Subject Category.* Scroll through the subjects until you get to *Criminology & Penology* and then submit the search. The listing of 24 journals will appear. By clicking on the abbreviated journal title, you will get full journal information. Or you may choose to sort the listing by the factor of interest.

Importing into Excel

Listings from JCR can easily be transferred into an Excel spreadsheet. First, save the results as a text file, then open the file in Excel. If you select the options for delimited text that uses a semicolon, the Excel software will then convert the text file into a spread-sheet.

Help

From the JCR main page, you can click on *Information for New Users* for some helpful tips on navigating the system. Context-sensitive help is available at every stage in your search process. You can also ask for assistance anytime at any reference desk or through our AskUs service: http://infopoint.lib.umn.edu .

Your departmental liaison from the Libraries is another important resource. A full listing of liaisons is at: http://www.lib.umn.edu/about/selector.phtml .

Lastly, the Libraries will be offering a workshop on JCR with some hands-on opportunities to get into the database and try out some searches of your own. For registration or more information, please go to: http://www.lib.umn.edu/registration /index.phtml#eventidXX89 .

Communications about this column should be addressed to: Nancy K. Herther, Social Sciences Bibliographer, 170b Wilson Library, West Bank; 612-624-2020, n-hert@umn.edu .

▼ Help

Computer Misuse or Abuse (also see Procedure 2.8.1.1)
- • Emergency Network Help Line 612-625-0006
- • Non-emergency, e.g., spamming .... abuse@umn.edu

1–HELP 612-301-4357

Dial 1-HELP. Listen to the voice menu list of options.
Press the number of your desired option.
- • Technology Help.................. www.umn.edu/adcs/help

▼ Modem pool for active UM accounts

Internet/PPP: up to 53kps if v.90................ 612-627-4250

▼ Quick Guide

- • Internet/Email account options .... www.umn.edu/validate
- • Office of Information Technology ....www.umn.edu/oit
- • One Stop Services .... onestop.umn.edu
- • Techmart .... www.techmart.umn.edu
- • Computer Accommodation Program .... cap.umn.edu
- • University Computer Services .... www.umn.edu/ucs
- • MNCAT/LUMINA (Library) ....www.lib.umn.edu
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Twin Cities campus address label trivia: 1st # is record #; 2nd # is your Campus Mail delivery code, http://umn.edu/lookup

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