Social Science Computer Review
Volume 24 Number 2
Summer 2006 255-261
© 2006 Sage Publications
10.1177/0894439305281498
http://ssc.sagepub.com
hosted at
http://online.sagepub.com

Development of Online Suites of Social Science–Based Resources for Health Researchers and Practitioners

Josefina J. Card
Tamara Kuhn
Sociometrics Corporation, Los Altos, CA

The burgeoning of the Internet has enormous potential for bringing scientific research into the hands of both health practitioners and health researchers to enhance their job performance. In this article, the authors give two examples of how carefully developed and organized online resources can leverage the engaging multimedia formats, ubiquitous access, and low cost of the Internet to address this goal. The article describes two new online suites of social and behavioral science-based resources designed for those in the HIV/AIDS and teen pregnancy prevention fields: HIV Research and Practice Resources and Teen Pregnancy Research and Practice Resources. Each online suite includes research data, survey instruments, prevention resources, and evaluation-related publications and tools that can enhance prevention research and practice. The article ends by peering into the future at how the field of health-related prevention and research might be further advanced using the Internet.

Keywords: *science-based resources; Internet; HIV/AIDS; prevention; health; research; practice*

To date, most cutting edge social and behavioral health research has been published in journals read by researchers who work in academic settings but not by health practitioners who work in clinics, K-12 schools, and community settings. A gap continues to exist between the worlds of health research and practice, even though each has much to offer the other. The near ubiquity of the Internet offers an opportunity to fill the gap by making social and behavioral science-based resources, tools, and findings widely available in language and formats usable by researchers and practitioners alike. This article describes efforts during the past 20 years by Sociometrics Corporation, a social science research and development firm, to leverage state-of-the-art technology to enhance the productive synergy between health research and practice.

Authors' Note: The authors wish to thank Julie Solomon for her helpful comments on an earlier draft of this article.

Addressing the Needs of Diverse Target Audiences

Researchers

From its founding in 1983 to the present, Sociometrics Corporation has addressed the data needs of health researchers by assembling the Social Science Electronic Data Library (SSEDL) with funding from various National Institutes of Health and from the National Science Foundation. Originally, SSEDL data were provided to users on mainframe tapes. With the advent of microcomputers, smaller data sets were distributed on diskette. Now available in the user's choice of CD-ROM or web-downloadable formats, SSEDL has grown to a collection of around 350 data sets (with accompanying data collection instruments and citations) from exemplary social and behavioral studies in nine health fields: adolescent pregnancy and fertility, the American family, social gerontology, maternal drug abuse, AIDS and sexually transmitted infections, disability, contextual influences on behavior, child welfare and poverty, and complementary and alternative medicine. Scientist expert panels have selected the leading data sets in each of these nine fields based on scientific merit, substantive utility for secondary data analysis, and program and policy relevance (Card, 1996, 2000, 2001a; Card & McKean, 1995; Card & Peterson, 1991; Card, Shapiro, Amarillas, McKean, & Kuhn, 2003; Carley & Card, 2000).

Practitioners

A decade ago we turned our attention to the science-based needs of new target audiences: health practitioners in clinics, community-based organizations, and K-12 schools working to prevent teen pregnancy and HIV/AIDS. We began developing collections of effective HIV/AIDS and teen pregnancy prevention programs and evaluation instruments that were used to demonstrate these programs' effectiveness. We also responded to the need for increasing practitioners' understanding and appreciation of program evaluation by developing training resources in the program evaluation field. Many of the same features that provided our data archives with credibility and ease of use characterize the new product lines as well. These include (a) basing product development on needs assessment research, or systematic assessment (through surveys, focus groups, and interviews) of the job-related needs of the target audience; (b) using scientist expert panels in selecting the best existing resources that meet these needs; (c) conducting usability tests with prototypes of new products prior to full-scale development; and (d) making sure that all products within a product family are processed and documented in standardized fashion, based on findings from the usability research, to facilitate their use.

Leveraging the Internet's Ubiquity and Power

Our needs assessment and usability research studies have included periodic assessments of the ubiquity of use of the Internet in both research and practice settings. In the early days, only a handful of the practitioners we worked with had access to the Internet. By 2001 the situation had improved dramatically. A survey of 52 members of a countywide teen pregnancy prevention network that we conducted in that year found that only 21% had no Internet access from work, only 18% had no access from home, and only 11% had no access from a public

library or Internet café.[1] Findings from larger, more recent studies confirm the near ubiquity of Internet access and use. The U.S. Department of Commerce reports that in 2003, 70.7% of those employed (85% of those with college degrees) had Internet access (U.S. Department of Commerce, 2004).

The time was right for organizing our several hundred science-based HIV/AIDS and teen pregnancy resources into two content-focused online suites to facilitate users' searches for resources apropos to the problems at hand. HIV Research and Practice Resources (HIV RAP) and Teen Pregnancy Research and Practice Resources (Teen Pregnancy RAP) are organized in similar fashion and include exemplary data, guides to effective prevention programs, research and evaluation survey instruments, program development and evaluation training resources, and publications on these topics (see `http://www.socio.com/hivrap.htm`; `http://www.socio.com/teenrap.htm`). Both RAP suites were developed in Flash with an optional HTML version for users without the Flash plug-in. Employing Flash allowed us to position a lot of content on a single page without being visually overwhelming. In addition, interactive features—such as additional resource descriptions that show on mouse-over and color changes based on mouse movement—were able to be incorporated with ease. A usability test of prototypes of the RAP suites was conducted.[2] A total of 12 HIV/AIDS and teen pregnancy prevention professionals performed a variety of tasks on the prototype RAP suites; assessed the prototypes on 13 criteria such as ease of use, interest, professionalism, information richness, clarity, attractiveness, and readability; and offered suggestions on how to improve the prototypes on these criteria. All suggestions for improvement made by 2 or more usability testers were incorporated into the final RAP suites. These suggestions included revising the suites' organization into categories of products used primarily by researchers and those used primarily by practitioners, adding descriptive information for each link and each available resource, and adding additional mouse-over movement for interest and clarity.

The HIV and Teen Pregnancy RAP suites were each developed with a distinct visual presence and color scheme while maintaining a consistent navigation and content structure to make accessing the most appropriate resource quick and easy for researchers and practitioners alike. Both home pages present information about the suite in general, along with links to each of the science-based resources included in the suite, categorized into tools most likely to be of interest to researchers (Resources for Researchers) and tools most likely to be of interest to practitioners (Resources for Practitioners).

Resources for Researchers

Exemplary data. By selecting the data archive link on the RAP home pages, researchers have 24-7 download access to original primary research data in the SSEDL. Included are data from 19 premier studies on HIV/AIDS and other sexually transmitted diseases in HIV RAP and from more than 150 studies on sexuality, health, and adolescence in Teen Pregnancy RAP. Scientist expert panels selected these data sets as best of breed in these two fields. Each data set is made available with standardized data and documentation files including a raw data file, complete SAS and SPSS program statements, an SPSS portable file, an SPSS dictionary, an SPSS frequency file, a user's guide comprising a standard set of sections and subsections describing the study's goals, methods, and content, and when possible the original instrument and codebook. Each variable in each data set has been indexed according to a set

of approximately 60 relevant topics that characterize the substance of the variable (e.g., physical health and disease, contraception) and 15 types that characterize the kind of measure (e.g., behavior, attitude). This topic and type classification affords users a powerful method for identifying variables of interest within and across data sets. Visitors to the RAP suites can perform an online search of the contents of all data sets in the topically focused data archives to assist with study and variable selection. The Verity-based search engine used on the site allows for Boolean full-text keyword or key phrase searches of all data sets and all variables within the data sets including study name, variable names, words in variable labels, and words in value labels.

Publications. Other offerings of interest to researchers include complimentary access to PDF versions of all publications related to the development of the data archives.

Resources for Practitioners

Guides to effective prevention programs. Using the RAP suites, web site visitors can quickly view lists of several dozen intervention programs that scientist expert panels have deemed effective in preventing HIV/AIDS, teen pregnancy, or their risky sex and drug behavior antecedents. In collaboration with the developers of these effective programs, Sociometrics has created replication kits for the programs to enhance their replication in schools, clinics, and community-based settings. The replication kits contain all of the materials required to replicate or creatively adapt the effective program. Typical replication kits contain a user's guide to the program, a teacher's or facilitator's manual, a participant workbook, one or more videos, and forms for individual homework assignments or group exercises. The kits enhance usability of the programs (most of which were heretofore only available as brief descriptions in scientific journal articles), facilitate low-cost access to program materials, and encourage additional rigorous evaluation of the interventions' effectiveness in a variety of populations and sites (included with each replication kit is the original evaluation instrument that was used to demonstrate the program's effectiveness and a generic evaluation instrument derived from leading national surveys; Card, 2001b). From the lists of available replication kits presented in the RAP suites, users have their choice of downloading users' guides to the effective programs or ordering the complete replication kit for shipment via postal mail.

Publications. All of Sociometrics' publications related to the development and content of the HIV/AIDS and teen pregnancy effective program collections are available for complimentary download from the RAP suites.

Evaluation tools: Instruments, publications, and online training courses. The RAP suites also include a wide array of materials that facilitate the scientific evaluation of HIV/AIDS and teen pregnancy prevention programs. There are evaluation instruments available for download in PDF and/or Microsoft Word formats. There are also several how-to publications available for download in PDF format that assist practitioners with every stage of the evaluation process from planning to data analysis.

For those practitioners who need more extensive training in program development and evaluation, Teen Pregnancy RAP offers an innovative online course. The Institute for Pro-

gram Development and Evaluation Online (IPDE Online) provides sexually transmitted disease, HIV, and teen pregnancy prevention program staff from schools, community-based organizations, clinics, and other agencies with online professional training in program development, program modeling, and evaluation. The mission of IPDE Online is to teach course participants the comprehensive skills necessary to integrate evaluation into the planning and implementation of effective prevention programs

IPDE Online uses a simple HTML interface to lead the user through its four courses: overview, program modeling, process evaluation, and outcome evaluation. Each course is designed to be taken at the user's pace and includes several helpful features such as an interactive course guide with a list of each element of the course and check boxes that utilize JavaScript to track the user's progress through the course, multimedia presentations developed with Flash that introduce each course's main themes and objectives, streaming video previews of each course filmed at in-person versions of the course, online exercises for hands-on practice with key concepts, interactive course reviews with immediate feedback that help the user assess his or her understanding of the material, and a unique feature that adds a personal element to the online course—a course coach. The course coach is an experienced evaluation professional who is available by phone or email if the user needs assistance with any of the material.

A second course type available through the RAP suites is typified by the Data and Internet Literacy Series. Developed with funding from the National Science Foundation, the Data and Internet Literacy Series comprises a set of six self-paced training modules and a parallel set of teaching materials for instructors. The modules are user-friendly, self-paced guides to gaining usable skills for utilizing and understanding data and the Internet in the context of social science research. Each module is accompanied by a glossary and a set of activities to explore and apply data and Internet knowledge and skills. The instructor packages provide materials—such as a lesson plan, PowerPoint slides, review questions and answers, and photocopy masters of the module activities and review questions—for teaching the content of the Data and Internet Literacy Training Modules in a classroom setting.

Peering Into the Future

The HIV/AIDS and Teen Pregnancy RAP suites are a new and valuable resource for practitioners and researchers. As technological development progresses and broadband access increases, we will add science-based resources to the RAP suites. The new resources will illustrate further leveraging of the Internet for the advancement of the fields of health-related prevention and research. For example, there is significant potential for increasing the scale of dissemination and reducing the cost of distribution of the HIV/AIDS and teen pregnancy effective program replication kits by digitizing the kits' contents and making them available for download or for online access as interactive multimedia programs (Downs et al., 2004; Marsch & Bickel, 2004; Thomas, Cahill, & Santilli, 1997). In addition, the effectiveness of prevention programs could potentially be increased in cost-effective fashion by administering follow-up booster sessions online to reinforce the information imparted by the original program and to help maintain program effects (Metcalf et al., 2005; Pedlow & Carey, 2004). These booster sessions would present the information in interactive format with integrated audio and video. They would use methods that have been found to characterize effective pro-

grams such as actively involving the participants and helping participants personalize the information.

The execution of program evaluations could also benefit from advances in Internet technology. Sociometrics is currently developing and field testing a multimedia, Internet-based data collection and analysis tool that will assist small community-based organizations with minimal evaluation expertise in conducting scientific evaluations of their prevention programs. The tool enables practitioners to use the computer for several key information gathering and evaluation tasks including pretest, posttest, and follow-up survey creation, formatting and administration, and data entry, coding, and analysis.

Conclusion

The Internet can be used to bring science-based resources to the hands of researchers and practitioners alike in engaging and cost-effective fashion. As web-based technology develops, even more exciting new possibilities for health-related research, training, education, and practice open up.

Notes

1. Study details and access to the survey instrument are available on request.
2. Study details and access to the usability protocol are available on request.

References

Card, J. J. (1996). Development of the Sociometrics Data Library on families, aging, substance abuse, and AIDS. *Social Science Computer Review, 14*, 305-309.

Card, J. J. (2000). Development and dissemination of an electronic library of exemplary social science data. *Social Science Computer Review, 18*, 82-86.

Card, J. J. (2001a). Archiving: Ethical aspects. In N. J. Smelser & P. B. Baltes (Eds.), *International encyclopedia of the social and behavioral sciences* (pp. 646-649). Amsterdam: Elsevier.

Card, J. J. (2001b). The Sociometrics Program Archives: Promoting the dissemination of evidence-based practices through replication kits. *Research on Social Work Practice, 11*, 521-526.

Card, J. J., & McKean, E. (1995). Development of software to facilitate use of archived datasets. *IASSIST Quarterly, 19*, 4-11.

Card, J. J., & Peterson, J. L. (1991). Establishing and operating a social science data archive. In J. E. Sieber (Ed.), *Data sharing: Advantages and challenges* (pp. 116-127). Newbury Park, CA: Sage.

Card, J. J., Shapiro, L., Amarillas, A., McKean, E., & Kuhn, T. (2003). Broadening public access to data through the development of tools for data novices. *Social Science Computer Review, 21*, 352-359.

Carley, M., & Card, J. J. (2000). The Social Science Electronic Data Library: Serving the needs of data librarians and users. *IASSIST Quarterly, 24*, 8-14.

Downs, J. S., Murray, P. J., Bruine de Bruin, W., Penrose, J., Palmgren, C., & Fischhoff, B. (2004). Interactive video behavioral intervention to reduce adolescent females' STD risk: A randomized controlled trial. *Social Science & Medicine, 59*, 1561-1572.

Marsch, L. A., & Bickel, W. K. (2004). Efficacy of computer-based HIV-AIDS education for injection drug users. *American Journal of Health Behavior, 28*, 316-327.

Metcalf, C. A., Malotte, C. K., Douglas, J. M., Jr., Paul, S. M., Dillon, B. A., Cross, H., et al. (2005). Efficacy of a booster counseling session 6 months after HIV testing and counseling: A randomized, controlled trial (RESPECT-2). *Sexually Transmitted Diseases, 32*, 123-129.

Pedlow, C. T., & Carey, M. P. (2004). Developmentally appropriate sexual risk reduction interventions for adolescents: Rationale, review of interventions, and recommendations for research and practice. *Annals of Behavioral Medicine*, *27*, 172-184.

Thomas, R., Cahill, J., & Santilli, L. (1997). Using an interactive computer game to increase skills and self-efficacy regarding safer sex negotiation: Field test results. *Health Education & Behavior*, *24*, 71-86.

U.S. Department of Commerce. (2004). *A nation online: Entering the broadband age*. Washington, DC: Author.

Josefina J. Card, Ph.D., is founder and president of Sociometrics Corporation. She may be reached at `jjcard@socio.com`.

Tamara Kuhn, M.A., director of Internet development at Sociometrics Corporation, is an experienced social scientist and web developer who specializes in the design and programming of social science-related technology. She may be reached at `tkuhn@socio.com`.

Now in paperback from The MIT Press

In the Bubble

Designing in a Complex World

John Thackara

"If there is one pervasive criticism of global capitalism that cuts across all ideologies, it is this: goods have become more important and are treated better than people. We are producing higher quality computers than children. John Thackara's brilliant book about quotidian design describes design innovation driven by social fiction instead of science fiction. This is design focused on what Fernand Braudel called 'everyday life': the demands and pleasures of caring for others, raising children, meaningful work, and journeying. These inspired and innovative technologies return people back into the heart of the world and help them create a fulfilling life." — Paul Hawken, Natural Capital Institute, author of *The Ecology of Commerce*

288 pp. $16.95

Digital Nation

Toward an Inclusive Information Society

Anthony G. Wilhelm

"Anthony Wilhelm has written a public policy manifesto for the digital age." — William H. Dutton, Director, Oxford Internet Institute, University of Oxford

184 pp., 2 illus. $14.95 paper

To order call **800-405-1619**.

http://mitpress.mit.edu

3 ways to order and share the best scholarship in your field

▪ Back Issues

Make sure you don't miss any important articles that you need for your own practice, research, or classroom. To order, call Journals Customer Service at (805) 499-9774 or e-mail: journals@sagepub.com.

▪ Reprints

Customize your instructional materials to fit your classroom and symposia needs with powerful new ideas from leading scholars in the field. Reprints make cost-effective additions to your course materials and conference packets. They are convenient and easy to obtain. To order multiple copies of a recent article, call Sage Reprint Services at (805) 410-7763, or e-mail: reprint@sagepub.com.

▪ Special Issues

Occasionally an entire issue is devoted to a single relevant topic, viewing it at length and depth. The pertinent information in these Special Issues is something you will refer to again and again. Sage offers discounts of up to 25% on multiple copies for classroom adoption. For more information on multiple-copy prices, call Journals Customer Service at (805) 499-9774 or e-mail: journals@sagepub.com.

SAGE Publications
2455 Teller Road, Thousand Oaks, CA 91320 • Tel: (800) 818-7243 (toll free) or (805) 499-9774
Fax: (800) 583-2665 (toll free) or (805) 499-0871 • Visit us at www.sagepublications.com