Making Research More Relevant While Not Diminishing Its Rigor

Robert L. Glass

... in which I discuss a proposal that would result in far more relevant computing research, at little extra cost.

The issue of research rigor versus relevance has been bandied about in the halls of computing for several decades now. This issue is about trying to ensure that research is not only rigorous—a goal we all support—but also relevant to practice—a goal that at least practitioners support wholeheartedly.

Notice I said “has been bandied about.” Unfortunately, the problem has been discussed—hands have frequently been wrung over it—but not resolved. Many believe that the two goals are almost mutually incompatible. For example, rigor tends to demand small, tightly controlled studies, whereas relevance tends to demand larger, more realistic studies. Can you really marry the goals of rigor and relevance and satisfy both?

Addressing the Issue

This issue has particularly affected the information systems (IS) field. In that field, the hands that have been wrung are very active, and those wringing them have been highly visible. But in spite of this, little change has been accomplished. I could list a dozen or more articles and opinion pieces that address this issue. The state of the research art is that

most researchers strive for rigor and see relevance as a lesser goal. But that attitude is a total turnoff to practitioners, who see the resulting research as uninteresting, too difficult to read, and (not surprisingly) irrelevant.

To address this issue, Michael Rosemann and Iris Vessey recently published an interesting proposal (“Toward Improving the Relevance of Information Systems Research to Practice: The Role of Applicability Checks,” *MIS Quarterly*, Mar. 2008, pp. 1–22). I focus on their proposal here because computing and software people seldom read the IS literature and thus are likely unaware of it. The proposal is astonishingly simple yet potentially powerful.

Applicability Checks

The basic proposal is this: Design and conduct IS research as usual. But at a research project’s beginning or end (or both), add an *applicability check*. That is, you first explain the research project and its model to a practitioner focus group. The group then provides thoughts, suggestions, and changes that you can report in your research and that could influence future related research.

Rosemann and Vessey noted the problems that have inhibited relevant research:

Continued on p. 95

Continued from p. 96

- Academic journals don't reward it.
- People believe that you simply can't achieve both rigor and relevance.
- Practitioners have shown lack of interest in academic research's products.

They see their proposal as a way to specifically overcome those problems.

First, academic journals can require submissions to note whether the authors have conducted applicability checks and can reject those who haven't. (Precedent for this exists—for example, some journals require authors to have subjected their concepts to evaluation in a realistic setting.)

Second, their proposal doesn't require a loss of rigor and therefore doesn't diminish traditional academic standards. (There's probably no simpler way to blend both rigor and relevance than by using an approach that allows research to be done as usual.)

Finally, once the establishment of relevance becomes commonplace in IS research papers, the lack of practitioner interest will likely disappear fairly quickly (presumably, word will get around).

A Tale of Two Versions

An earlier version of Rosemann and Vessey's paper appeared in the proceedings of the 2005 European Conference on Information Systems (ECIS). The ECIS version has a couple of interesting differences from the *MIS Quarterly* version—ones that provide insight into the research reviewing process. First, the ECIS version used the term "reality checks," not applicability checks. The *MIS Quarterly* reviewers requested the change, perhaps because the former term might suggest that research that didn't employ such checks would be unreal! (The computing research field tends to be sensitive to the notion that it deals with unreal, as opposed to pragmatic, situations.)

Second, the ECIS version cited five problems that inhibit relevant research, not three. These problems were the lack of practitioner awareness of the research, the written research's lack of understandability, the research's lack of relevance, the lack of timeliness regarding the research's value to practice, and the research's lack of practical applicability. Boiling these five down to three changed them considerably.

This revision was for several reasons, one of which probably had to do with blame. The first set implied that the research community was to some degree at fault in its current approaches. The second set is perhaps more neutral or even supportive of that community.

There was also a third difference. The *MIS Quarterly* version contained a method for conducting applicability checks and fleshed out the notion of a focus group.

Although Rosemann and Vessey aimed their proposal at the IS community, it clearly also applies to software engineering and computer science research. It presents us with an important challenge. It's possible to combine rigor and relevance in computing research in a fairly simple manner. Will (at least some) journals require

researchers to pursue this approach? Will researchers begin to employ it? Will practitioners, once relevant work starts pouring forth from research journals, pay attention?

Our field's future relevance is at stake. That communication chasm that has for so long separated our research and practice communities might at last begin to go away. ☎

Robert L. Glass is editor emeritus of Elsevier's *Journal of Systems and Software*, the publisher/editor of the *Software Practitioner* newsletter, and a visiting professor at Griffith University (where he's affiliated with the Australian Research Center for Complex Systems). He likes to tell people that his head is in the academic end of computing but that his heart is in its practice. He'd be pleased to hear from you. Contact him at rlglass@acm.org.

For more information on topics presented in *IEEE Software*, visit

www.computer.org/csdl

IEEE Software (ISSN 0740-7459) is published bimonthly by the IEEE Computer Society. IEEE headquarters: Three Park Ave., 17th Floor, New York, NY 10016-5997. IEEE Computer Society Publications Office: 10662 Los Vaqueros Cir., PO Box 3014, Los Alamitos, CA 90720-1314; +1 714 821 8380; fax +1 714 821 4010. IEEE Computer Society headquarters: 2001 L St., Ste. 700, Washington, DC 20036. Subscription rates: IEEE Computer Society members get the lowest rate of US\$51 per year, which includes printed issues plus online access to all issues published since 1988. Go to www.computer.org/subscribe to order and for more information on other subscription prices. Back issues: \$20 for members, \$163 for nonmembers (plus shipping and handling).

Postmaster: Send undelivered copies and address changes to *IEEE Software*, Membership Processing Dept., IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854-4141. Periodicals Postage Paid at New York, NY, and at additional mailing offices. Canadian GST #125634188. Canada Post Publications Mail Agreement Number 40013885. Return undeliverable Canadian addresses to PO Box 122, Niagara Falls, ON L2E 6S8, Canada. Printed in the USA.

Reuse Rights and Reprint Permissions: Educational or personal use of this material is permitted without fee, provided such use: 1) is not made for profit; 2) includes this notice and a full citation to the original work on the first page of the copy; and 3) does not imply IEEE endorsement of any third-party products or services. Authors and their companies are permitted to post their IEEE-copyrighted material on their own Web servers without permission, provided that the IEEE copyright notice and a full citation to the original work appear on the first screen of the posted copy.

Permission to reprint/republish this material for commercial, advertising, or promotional purposes or for creating new collective works for resale or redistribution must be obtained from IEEE by writing to the IEEE Intellectual Property Rights Office, 445 Hoes Lane, Piscataway, NJ 08854-4141 or pubs-permissions@ieee.org. Copyright © 2009 IEEE. All rights reserved.

Abstracting and Library Use: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy for private use of patrons, provided the per-copy fee indicated in the code at the bottom of the first page is paid through the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.