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Information systems action research: Debunking myths and overcoming barriers

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ABSTRACT

The relevance of action research as a research method in the information systems (IS) discipline is not disputed. Nevertheless, the extent to which action research is published in good journals is infrequent enough to indicate a serious problem. In this article, we explore the reasons underlying this situation and make recommendations aiming to increase both the practice and the publication of action research. To identify both the barriers to undertaking action research and potential ways of overcoming those barriers, we survey 218 authors of 120 articles demonstrating empirical action research published in 12 of our good journals during the period 1982–2016. We received 70 usable responses. We also surveyed 52 editors of selected IS journals and received 25 usable responses. Our findings are revealing as they indicate both genuine barriers associated with action research and some apparent barriers that are in reality misperceptions or myths. In reflecting on these, we emphasize the special qualities of action research. We also reflect on the critical role that action research plays in the IS field as a whole and its potential for further contributions to research and practice, given the strong and close connections with organizational problem contexts that action research requires. Finally, we make a number of recommendations that are designed to increase the incidence of action research in the IS discipline

1. Introduction

The rigor versus relevance debate, which has a long history in the information systems (IS) community [1,2], has surely been "won" by those who argue that both are required for good IS research practice and publication in our leading journals. Amongst research methods, action research (AR) is particularly strong in this regard, given the way it synergistically and holistically associates research and practice so that research informs practice and vice versa. Indeed, Zmud [3,p.xxxviii] remarked in an MIS Quarterly editorial that "essentially any research effort claiming strong relevancy would by definition possess an action research component." Action researchers not only study problem situations in organizations but also see it as their task to assist in improving practice and report their learning to the research community [4,5]. AR is therefore an approach for understanding and improving organizational situations and for undertaking research and reporting new knowledge.

AR involves researchers working with practitioners to gain a shared understanding of a complex organizational problem situation, ameliorating the situation as experienced by various stakeholders in real time (not only at the end of a project), and subsequently communicating knowledge gained through the investigation to the research and practice communities more generally. To give well-known examples from IS, Mumford [6] discusses AR projects in several organizations related to the design of IS meeting human needs "effectively, ethically and participatively" (p.viii) that led to the ETHICS approach; Avison & Wood-Harper [7] discuss a number of AR projects in organizations that defined and refined the Multiview IS development framework; Checkland [8] and Checkland and Scholes [4] describe a number of AR projects that helped define and develop Soft Systems Methodology; and Mathiassen [9] describes how several AR projects led to the formulation of Reflective Systems Development. Each of these AR projects not only improved IS practice in those organizations where the AR took place but also provided significant knowledge to IS thinking and practice. Nevertheless, our research suggests that there have been few similarly sustained contributions in IS since that period.

Other examples are provided in a separate list of 120 papers (see Appendix A) describing empirical IS AR. These tend to discuss more piecemeal AR, each making contributions through experiences gained in smaller scale projects. These describe AR in agriculture, broadcasting, elderly care, electric power, electronic trading, food, healthcare, military, mobile technology, motoring, police, retail, and sport

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amongst many other application contexts. They analyze IS topics such as business process reengineering, culture, data modelling, data structures, digital libraries, electronic meetings, enterprise resource planning systems, group support systems, knowledge management, manufacturing IS, mobile technology use, power, prototypes, technology frames of reference, and trust.

The impacts of AR are perhaps best appreciated when deployed in the investigation of complex, real-life problem situations that also encompass primary IS concerns within organizations. Very often organizational problems are fuzzy, ill structured, and complex. To address such problem situations effectively and holistically, researchers need to be *in situ*. Such proximate involvement can lead to the discovery of subtler aspects of the situation that a case study researcher, for instance, might not perceive. These problems cannot be addressed from a distance or vicariously. With AR, researchers collaborate with practitioners as they intervene to make changes with the aim of both ameliorating the immediate problem situation in the organization, communicating that learning to a wider practice base, and informing the research community of relevant implications for theory and future research.

There is no richer form of engaged scholarship [10] than AR. It provides an opportunity for deep understanding of IS in their natural setting. Compared to a case study, for example, where the researcher is observing and commenting on a situation without being personally involved as a stakeholder, the action researcher is in the situation, perhaps developing models and methods, giving normative advice based on knowledge and theories relevant to practice, changing that practice whilst working with practitioners, and/or feeding back the knowledge gained to modify theories and develop new ones to add to our scholarly knowledge. Through these activities, researchers may be pursuing their own research agendas in a practice setting, and AR can therefore be a particularly satisfying research approach for the IS researcher to adopt. On the other hand, the personal commitment required can also be particularly challenging as AR projects can involve intensive engagement over extended periods of time [11].

Nevertheless, Schwartz [12,p.212] suggests that there continues to be a disconnect between IS practice and research. Our research confirms this, suggesting that despite the potential of AR, accounts of AR interventions are not widely published in leading IS journals. In coming to that conclusion, we followed the approach of [13] who analyzed 10 journals over the period 1982 to 2009, searching for articles both explicitly framed in the AR tradition and describing empirical research using that approach. We developed Mathiassen et al.'s analysis in two ways: first, by extending the period from 1982 to 2016 and, second, by adding two journals (JIT and JSIS) that were not included in [13] but included in the Senior Scholars' basket of eight journals [14]. Our findings, shown in Table 1, lead to the 120 empirical AR articles of the Appendix A mentioned above.

Interestingly, extending the period of our research by a further 7 years contradicts a conclusion of Mathiassen et al. [13,p.355] that, "Contrary to conventional wisdom, there is a considerable number of action research publications in leading IS journals." Their research data followed an MIS Quarterly special issue on AR [15] when AR publications peaked and came before the clear decline in the proportion of AR papers published in these journals since then that we have observed.

As we see in Fig. 1, the past 10 years indicates a significant decline in such publications, from a height of over 2.5% in the period preceding and following the year 2000 to less than 1% in the most recent two periods. In view of the potential of AR in IS and this disproportionately low number of publications, our research questions are, *What are the barriers to doing AR in IS?* and *How can we overcome these barriers?*

2. Research approach

To identify the issues that may impede IS AR, we recognized that a review of the published literature would not be particularly revealing as the authors of published papers have generally overcome any barriers and therefore are unlikely to have reported them. Therefore, we surveyed the population of authors of the 120 papers in the Appendix A (the related survey of the 52 editors is discussed later). We wrote personal emails to all the 218 authors of these (most papers had more than one author and some authors wrote more than one paper) to ask for their opinion about issues connected with IS AR yet without requiring them to focus exclusively on barriers. We received 70 responses in all, a 32% response rate. We did not receive responses from all authors as some of the them have changed discipline, left academia, retired, or passed away. In some cases, one author replied on behalf of all joint authors.

Table 1
AR publications in leading IS journals demonstrating empirical work (modified from Mathiassen et al. [13]).

Journal	Total Papers: 1982–2016	Total AR Papers: 1982–2016 (%)
ITP: Information Technology & People	485	21 (4.33%)
ISJ: Information Systems Journal	480	18 (3.75%)
I & O: Information & Organization	313	11 (3.5%)
EJIS: European Journal of Information Systems	738	22 (2.98%)
JIT: Journal of Information Technology	606	10 (1.65%)
MISQ: Management Information Systems Quarterly	998	15 (1.5%)
JSIS: Journal of Strategic Information Systems	433	6 (1.39%)
Database: ACM SIGMIS Database	550	6 (1.09%)
JAIS: Journal of the Association for Information Systems	414	2 (0.48%)
JMIS: Journal of Management Information Systems	1120	4 (0.36%)
I & M: Information & Management	1792	4 (0.22%)
ISR: Information Systems Research	790	1 (0.13%)
Total	**8719**	**120 (1.38%)**

One of the authors of the current paper analyzed these responses by hand, and a second author analyzed the responses using NVivo, with the third author reconciling the two. As an output from this analysis, we generated a list of four over-arching issues that reflect the suggestions made by the authors of AR papers as to how the conduct of AR may be impeded (see Table 2) (the total frequency is greater than 70 as some respondents identified more than one issue).

Following our first-round analysis, we sent another email to those 70 colleagues who had responded to our earlier email. We presented our list of major issues that appear to have contributed to the decline in AR and asked them to provide suggestions as to how we may counteract these impediments to doing AR. Thirty-five of them responded to our request (a 50% response rate). We also sent an equivalent email to the editors-in-chief of the 52 IS journals listed as either A* or A in the rankings of the Australian Council of Professors and Heads of Information Systems for the Australian IS community (ACPHIS, Living [16]). We received 34 replies from journal editors, of which 25 were usable for this purpose (a usable response rate of 48%). Alarmingly, 3 of these 25 editors said that they did not know what AR is.

In the next section, we draw on some of the textual arguments offered by our respondents to discuss the barriers to doing AR and explore how we see them being overcome.

3. Debunking the myths and overcoming the barriers

3.1. AR is difficult to publish in leading IS journals

The first barrier is the perceived difficulty of getting AR research published. The lack of published AR was highlighted in our survey of 12 leading IS journals and by several of our respondents. AR is an attractive approach for scholars willing to inform practice through

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