Information Systems Action Research:

Debunking Myths and Overcoming Barriers

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.

Key Words

Action research, Engaged research, Publishing, Journals, Doctoral studies, Rigor, Relevance
INTRODUCTION
The rigor versus relevance debate, which has a long history in the information systems (IS) community (Keen, 1991; Straub & Ang, 2011), 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 (1996, 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 (Checkland & Scholes, 1990, Lindgren, Henfridsson & Schultzze, 2004). 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 (2003) 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 (1990) discuss a number of AR projects in organizations that defined and refined the Multiview IS development framework; Checkland (1999) and Checkland & Scholes (1990) describe a number of AR projects that helped define and develop Soft Systems Methodology; and Mathiassen (1998) 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) 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 amongst many other application contexts. They analyze IS topics such as business process reengineering, culture, data modeling, 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 (Van de Ven, 2007) 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 (Simonsen, 2009).
Nevertheless, Schwartz (2014, 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 Mathiassen et al. (2012) 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 Mathiassen et al. (2012) but included in the Senior Scholars’ basket of eight journals (AIS, Living). Our findings, shown in Table 1, lead to the 120 empirical AR articles of the Appendix mentioned above.

Table 1: AR publications in leading IS journals demonstrating empirical work (modified from Mathiassen, Chiasson, & Germonprez (2012))

<table>
<thead>
<tr>
<th>Journal</th>
<th>Total Papers: 1982 to 2016</th>
<th>Total AR Papers: 1982 to 2016 (%)</th>
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<tbody>
<tr>
<td>ITP: Information Technology &amp; People</td>
<td>485</td>
<td>21 (4.33%)</td>
</tr>
<tr>
<td>ISJ: Information Systems Journal</td>
<td>480</td>
<td>18 (3.75%)</td>
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<tr>
<td>I&amp;O: Information &amp; Organization</td>
<td>313</td>
<td>11 (3.5%)</td>
</tr>
<tr>
<td>EJIS: European Journal of Information Systems</td>
<td>738</td>
<td>22 (2.98%)</td>
</tr>
<tr>
<td>JIT: Journal of Information Technology</td>
<td>606</td>
<td>10 (1.65%)</td>
</tr>
<tr>
<td>MISQ: Management Information Systems Quarterly</td>
<td>998</td>
<td>15 (1.5%)</td>
</tr>
<tr>
<td>JSIS: Journal of Strategic Information Systems</td>
<td>433</td>
<td>6 (1.39%)</td>
</tr>
<tr>
<td>Database: ACM SIGMIS Database</td>
<td>550</td>
<td>6 (1.09%)</td>
</tr>
<tr>
<td>JAIS: Journal of the Association for Information Systems</td>
<td>414</td>
<td>2 (0.48%)</td>
</tr>
<tr>
<td>JMIS: Journal of Management Information Systems</td>
<td>1120</td>
<td>4 (0.36%)</td>
</tr>
<tr>
<td>I&amp;M: Information &amp; Management</td>
<td>1792</td>
<td>4 (0.22%)</td>
</tr>
<tr>
<td>ISR: Information Systems Research</td>
<td>790</td>
<td>1 (0.13%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>8719</strong></td>
<td><strong>120 (1.38%)</strong></td>
</tr>
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Interestingly, extending the period of our research by a further 7 years contradicts a conclusion of Mathiassen et al. (2012, 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 (Baskerville & Myers, 2004) 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 Figure 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?*

**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 (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.

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).

Table 2: A classification of issues impeding AR

<table>
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<th>Barriers suggested by AR authors</th>
<th>Frequency</th>
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<tbody>
<tr>
<td>AR is difficult to publish in leading IS journals</td>
<td>34</td>
</tr>
<tr>
<td>AR requires a lot of time and resource investment</td>
<td>22</td>
</tr>
<tr>
<td>AR is inappropriate for Ph.D. students</td>
<td>18</td>
</tr>
<tr>
<td>AR is considered to be less scientific than other methods</td>
<td>8</td>
</tr>
</tbody>
</table>

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). 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.

DEBUNKING THE MYTHS AND OVERCOMING THE BARRIERS

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 research and vice-versa, even when there are significant hurdles to overcome in publishing AR, but if AR is more difficult to publish than other research, this is a real problem in our “publish or perish” academic culture. Shirley Gregor argues, “My view is that you make a choice. You can do some things that may have more significant real-world impact and then know you may have trouble publishing, but you do it anyway because it is interesting and useful.”

However, Gregor’s stance may not be expedient for a less experienced academic seeking tenure, promotion, or outside recognition. Karin Olesen, for example, informs us that, “I have moved to research methods that are more readily accepted as my tenure depended upon publications.” We responded by asking her if she has done AR since gaining tenure, and her negative reply is well argued: “I need research that can be produced relatively quickly and get published in a decent ranking journal. You may argue that AR may be one of the methods, but to organize a firm, a question, ethics approval and do the research for several iterations rules it out in the current regime.”

Karl Kautz recalls that, “On two occasions a senior management scholar and a senior IS scholar recommended to students and junior faculty NOT to do these kinds of studies: (a) due to institutional reward systems; (b) due to difficulty to provide ‘sound’ (as in traditionally sound) scholarly contributions and insights through AR; and (c) lack of recognition of AR contributions and insights in established outlets.” Kautz continues, “(b) and (c) result in high rejection rates with consequences for career progression.”

Other reasons recognizing that AR is difficult to publish in leading IS journals have been identified. Two respondents complained about the lack of AR experts reviewing papers. Another complaint is the somewhat formulaic requirements of our leading journals and the difficulty of fitting AR papers into those requirements. Eric Monteiro suggests that, “The way IS is institutionalised promotes a certain type of homogenisation of perspectives and methods.” David Allen sums up, “Many of the reviewers I have encountered don’t understand it, don’t like it and attempt to mould any paper that they review into a particular alternative ‘model.’”

On Allen’s last point, responding authors suggested that AR is sometimes published as case study, design science, action design research, engaged scholarship, or collaborative practice
research. Design science (DS) was referred to by 10 respondents in this category. The paper of Hevner, March, Park, & Ram (2004) has been influential in the recognition of DS as a valid research method in IS. Many of our respondents suggest that they might label their works as DS rather than AR to enhance their chance of publication in a top IS journal. To cite only a few, Dave Wastell informs us that he tends “to badge [his] work these days as design science rather than AR”; Hannu Salmela agrees that, “Design science can be more attractive and is sometimes an easier way to publish collaborative projects”; and Henk Akkermans states that, “Less and less do I present the research as action research.” Finally, Munir Mandviwalla suggests that, “In (Mandviwalla & Schuff, 2014) we are clearly doing action research but did not see any value in applying that umbrella.” However, AR and DS are not the same, as Papas et al. (2012) clearly demonstrate, and we do not see publishing AR as another type of research is a way of overcoming this barrier.

Repositioning the method may occur because of reviewer pressure. As Karin Hedström responds, “One of my published articles was first framed as an action research project, but as we received many questions about rigor, research bias and problems with generalizations we instead framed it as a case study. That worked with the reviewers … which is a bit strange as the questions regarding rigor and problems with generalizations should be the same, but there seems to be more understanding about case studies.”

This suggests that authors adapt their reported research method a posteriori to fit with trends and fashions. Fashion waves in IS research have already been discussed in Baskerville & Myers (2009). The phenomenon of AR being reported as something else, often for the entirely pragmatic reason that it is easier to publish as something else, is both common and yet problematic. If a project is conducted as AR, then to publish it under a different label is misleading, even when this is mandated by reviewers or editors. Editors and reviewers need to welcome AR, and authors should not be required to reframe it as something else during the course of a revision cycle.

However, in our experience as AR authors and editors, AR need not be more difficult than other research to publish if the review team (SE, AE, and Reviewers) is positive and constructive in its stance toward AR. Nevertheless, if a reviewer is unfamiliar with a topic or method, or is otherwise biased, then the likelihood of rejection rises (Davison, 2014). Elizabeth Davidson (I&O), as well as many other editors, recommends “getting AR qualified scholars on editorial boards and in editorial positions.” Dedicated workshops aimed at AR publishing, a special interest group in AR (SIG-AR) of the AIS, a dedicated AR webpage,
and journal special issues on AR would be positive. Editors will then find it easier to select review team members who are familiar with AR as a method and thus are likely to be favorably disposed to it.

Another way to achieve this is through mixed methods research. For example, a case study or survey may reveal a situation at an organization that could be ameliorated using AR. Conversely an interesting AR finding at one organization might lead to the investigation of other organizations using survey research to ascertain whether the finding applies more generally. Venkatesh, Brown, & Bala (2013) provide guidelines for doing mixed methods research.

**AR requires a lot of time and resource investment**

The responses to our surveys suggest that AR requires significant time and resource investment. This investment may be seen as risky when there is no guarantee that the AR project will lead to a successful outcome. Frank Land puts this well: “*Action research requires the researcher to be totally immersed in the organization he or she is researching and play an active and not passive role – a high ask for both researcher and organization.*” Ulrike Schultze agrees: “*There are a lot of moving parts and stakeholders that need to be satisfied and managed. It makes AR one of the most challenging methods in my mind.*”

Most respondents in this category commented on the length of time required to carry out a research project that may require significant iteration. For example, Craig Parker wrote, “*AR may be more time-consuming than other qualitative, interpretive approaches due to the iterations of action and reflection.*” The expenditure of time must also be balanced with other academic or administrative activities in which we engage, and it might be difficult to justify long periods of time in organizational settings.

Other respondents emphasize the difficulties involved in getting access to companies that are willing to both provide long-term access to academic researchers and engage in organizational change. For the investment of the researchers’ time to be profitable, permission to publish without strings is also important but organisations are sometimes reluctant to agree to this. Trust is necessary (a) to gain the support of academic institutions and (b) for organizations to host and sponsor AR projects. Frank Land considers that, “*Action research requires the researcher to be totally immersed in the organization requiring a great deal of trust on all sides, and requires blending different cultures.*” Elizabeth Davidson (I&O) invites us to examine “*other fields that do AR to see what is successful for them.*”
Research in the fields of education and health, for example, have a significant AR component.

However, not everyone agreed that the time investment was much different from some other research approaches if the AR is well planned. Researchers must set out to establish a strong researcher-client agreement with their organizational project champion (Avison, Baskerville, & Myers, 2001; Davison et al., 2004). If the organization is committed to the overall project, then intensive levels of productive interaction between the client and research teams can be achieved. Further, with sensible and achievable AR targets and intermediary goals, the likelihood of time delays is reduced. Ulrike Schultze argues that, “to do AR successfully, you need a significant infrastructure, including industry-academic partnerships, faculty project leaders that provide the methodological and theoretical guidance to ensure that the project is set up for potential publication and does not stay at the level of a consulting project, and Ph.D. students that have relevant industrial skills (e.g., industry knowledge, programming, project management, ...).”

This suggests that long-term access to organizations, for instance, through partnerships between academic institutions and organizations, is desirable. On the question of trust, Henry Linger suggests approaching AR “through smaller discreet research projects that precede the intervention” to establish and maintain trust over time. He adds that trust can be gained when “there is a long term relation with specific individuals in the target organization.” Long-term access would have a key benefit for researchers: they would not need to expend their time securing access to organizations, instead being free to pursue the scholarly activities associated with the AR itself. With regard to the relationship between action researchers and organizations, mutually accepted ethical values and trust are also important (Rapoport, 1970). “Win-win” relations between client organizations and action researchers, including contract negotiation and agreements with regard to publishing results, are discussed in Avison, Baskerville, & Myers (2001).

Many of our survey respondents advocated the action case approach. This involves publishing single AR cases, but not the entire AR project, if there is sufficient contribution in each case to merit publication (Vidgen & Braa, 1997). Each action researcher would then be responsible for an AR “case” or a single cycle within a larger AR team project consisting of several AR cycles. Ola Henfridsson, for example, argues that smaller AR iterations may help to address the gap between theory and practice: “more pointed versions of AR, where the intervention is snappier and deliberately designed to simultaneously test theory and address
a practical problem would address this.”

One example is found in Malaurent & Avison (2015) where the research consisted of one research cycle, in this case, because of a company acquisition along with the time limitations of Ph.D. research. This approach to AR requires planning from the research leadership and the organization so that each AR case within the project as a whole is viable for both Ph.D. and journal publication. Indeed, we would not be surprised if one AR project resulted in multiple publications as researchers frequently intervene in large, complex, fuzzy, and ill-structured problem situations. Each paper dealing with one case or one aspect of the research can remain focused (one referee complaint is that AR papers sometimes lack focus). Thus, AR, in terms of individual research cases or research theme, need not take any more time or resource investment than other forms of IS research and should be equally productive in terms of the number of journal papers that can be written.

AR is inappropriate for Ph.D. students

The question of whether AR is an appropriate method for Ph.D. students is clearly critical. If AR is perceived as being inappropriate for Ph.D. research, then the chances of our future academics being favorably disposed toward AR are much diminished. Many of our respondents highlighted how the amount of time needed for a successful AR project exceeded the time commonly available to Ph.D. students who, in addition to a thesis, must also complete substantial amounts of coursework and pass qualifying exams. If the risks of not completing a project are high and the opportunities to publish AR, even when complete, are low, then the tendency to advise students not to attempt to use AR becomes all the more understandable.

Gert-Jan de Vreede argues that AR is too long with regard to typical Ph.D. constraints. He also comments on the rigidity of Ph.D. programs and the lack of support for non-conventional approaches: “AR is too time intensive. As Ph.D. programs keep getting more and more rigidly formatted in terms of classes that Ph.D. students have to take, working with practitioners is almost programmed out of our students.” Jacob Nørbjerg highlights the difficulties of publishing AR articles in top journals during the course of Ph.D. studies (compared to more conventional approaches such as quantitative research or some other qualitative approaches such as case studies): “It takes more time to mature AR to high level publications. Therefore, AR looks incompatible with Ph.D. students who are increasingly expected to ‘hit’ the top level journals during their studies.”
Henk Akkermans emphasizes the uncertain outcomes associated with AR-based findings in organizational settings: “You never know if you will ‘strike gold’ during your investigation at the start of it, and that’s not the kind of plan that Ph.D. advisors like. For many of my colleagues, the real world simply has become too dangerous and too unknown a place.” John Nosek similarly identified how AR involves “more variables out of control, takes longer, is riskier, and the rigor required to gain acceptance takes more effort than other techniques such as surveys and statistical analyses (although these are also valuable if done correctly).”

A recurrent argument, also valid for Ph.D. students, is that our institutions do not support AR. Hannu Salmela states that, “The university system is moving fast towards the calculation of journal article numbers – other things don’t matter that much,” and Hazel Taylor agrees, “I’ve heard negative comments from faculty on action research in tenure and promotion meetings and in hiring discussions, for example, statements like ‘it is no different from consulting.’” Karin Olesen even suggests that, “in my current university I would have problems getting ethics approval for the use of action research.”

A final issue here concerns the fact that Ph.D. students (and their supervisors) may lack the business experience to carry out such research. Doug Vogel observed, “our current crop of Ph.D. students are very young with no business experience. This makes it very difficult for them to do credible action research since they typically have no ability to influence what an organization does and lack credibility and acceptance, for good reason, with any organization’s senior managers. By the way, their supervisors also often lack any real business experience.”

The suggestion of considering each cycle or iteration as a “case” so that each AR project effectively consists of several such cases, each published separately, is also a potential solution to enabling Ph.D. students to do AR. AR would then be more of a team effort, which would help reduce the risks associated with AR for Ph.D. research. It is likely that each AR cycle (or case) has sufficient originality as well as practical and theoretical value to warrant publication as a Ph.D. thesis and in the form of a journal publication, even if the AR project as a whole itself is incompletely described in each publication.

Although it seems that very few seasoned IS professors conduct AR, it does not necessarily follow that AR is an unsuitable method for Ph.D. students, as asserted by some of our correspondents. Nevertheless, if this assertion is accepted, then the situation regarding the lack of Ph.D. supervisors will only be exacerbated as ever fewer Ph.D. students will become
familiar with AR and become competent to supervise future generations. Rather than pursuing this negative line of thinking, we suggest that AR is suitable for those who care to undertake research that has a significant impact on practice and are willing to learn about the method. There may be even possible for Ph.D. programs to include some months of internship. This would encourage AR and help to ensure that our research more generally is relevant and rigorous. Therefore, the issue of suitability is closely tied to the researcher’s epistemological and ontological position vis-à-vis the value of doing research in the first place, along with the relative importance of rigor and relevancy in IS research, which we discuss next.

For a Ph.D. student to be an effective action researcher, a rigorous pattern of training is required, ideally with hands-on experience of an AR project under the aegis of an experienced senior colleague. It is not sufficient for this training to be relegated to a single class in a research methodology course: a whole Ph.D. course needs to be devoted to interpretive research methods, with several hours spent examining AR. A qualified and supportive supervisor, ideally one who has excellent connections with industry providing access to potential AR projects, is desirable as students rarely have the contacts needed to initiate an AR project in a limited time frame.

Pernille Bjørn suggests setting up Ph.D. courses in AR (which already exist in Scandinavia) and “every researcher so qualified should be allowed to do AR if their research topic and interests call for this kind of approach.” Frada Burstein agrees that we need to “train all our Ph.D. students on how to do it properly.” However, she somewhat qualifies her enthusiasm by arguing that “only those coming with industry experience can and should be allowed to try it as part of their Ph.D.”

On the other hand, Helen Hasan suggests that engaged research ought to be of interest to everyone: “Among younger students we need to get the message across that the exciting thing about IS is that it is all about solving important and meaningful problems, even grand and wicked ones. I think it is better for Ph.D. students to work in an area that they are passionate about and feel that their work is making a difference in the world, not just getting them a qualification for a job.” Further, practitioners may well be more positive about AR than other research in organizations. As Bob McQueen points out, AR has a way “to constructively give something substantive back to participants in exchange for being disturbed, observed, ‘questionnaired,’ etc.”
Some respondents highlight the importance of getting an experienced supervisor or of engaging Ph.D. students in larger AR projects where senior scholars are also involved. Doug Vogel points out that he has “often used supervision teams. It can help junior faculty get necessary experience to become successful AR supervisors.” Ola Henfridsson argues for building “long-term AR programs where many researchers and practitioners are involved (like in collaborative practice research) because this would distribute the risk and increase the possibility to rescue a project going in the wrong direction.” Lars Matthiassen complements this suggestion with a proposal to design a virtual platform where AR experts could mentor young researchers: “Being an engaged scholar requires a different approach. That is not only true for AR, but for all engaged scholarship. In the global world with virtual teams it should be possible to find appropriate mentors. Could we create an AR consortium in which advice and mentorship would be readily available?”

Pat Finnegan suggests that, “AR should be seen as a team effort much as we see in medicine and science. This makes it a team risk rather than an individual risk. This would serve to expose doctoral students and early career researchers to AR.” Peter Kawalek adds that a national or international network of AR Ph.D. students can help them feel less isolated and can help further AR in the long run.

To conclude this list of arguments for considering AR as appropriate for Ph.D. students, we wish to quote Craig Parker’s point about the “action case” suggestion made earlier. He argues that, “a single paper (or more) per AR cycle should be just as acceptable [for Ph.D. research]. I would argue for each AR cycle to be seen as completed research, rather than an AR project only being completed after multiple cycles and needing to be reported at the end of the entire project. For instance, viewing each AR cycle as a completed piece of research which provides an incremental step in building scholarly knowledge means that a Ph.D. student would only need to do one cycle, another Ph.D. student the next, etc. This would greatly reduce the time-frame and make AR feasible for a Ph.D. student and achieve publications.” All these suggestions provide counter-arguments to the view that AR is not suitable for Ph.D. research in IS.

AR is considered to be less scientific than other methods

Some correspondents highlighted the perception that AR is less scientific than other research approaches. There are three components to this perception. First, they perceive that AR is less rigorous than other methods. Second, they argue that it is difficult to make theoretical
contributions from AR-based investigations. Third, they assume that AR is very similar to consulting. These three perceptions, taken together, combine to give the impression that AR is less scientific than other methods and therefore has less academic worth. We consider each of these perceptions in turn.

Darren Meister suggests that in Ph.D. research programs, “there seems to be a sustained increase in the amount of statistics over the last decade and ‘so-called rigorous’ methods. This leaves a perception that AR is less valid.” Other criticisms concern the subjectivity of the researcher, difficulties of generalization, and its perceived association with consultancy. Richard Vidgen further argues that the practical contributions that AR makes do not compensate for this perceived weakness. Bob Galliers agrees: “the lack of AR-type papers is, I think, a product of the field’s quest for so-called research rigor, which requires strong theoretical contributions, often at the expense of practical outcomes.”

Nevertheless, Ari Heiskanen considers that, “AR is not inferior when compared to the more ‘rigorous’ approaches that also have problems,” and Suprateek Sarker (JAIS) argues that AR is rigorous: “The important point for me is for the SEs/AEs to recognize the complexities of conducting an AR study and not insist on the same methodological rigor as, say, the level of control in a lab experiment! The review process needs to look at AR work in a more holistic fashion.” He also notes how “the theoretical contributions may be of a different nature and need to be assessed a bit differently.”

Considering the nature of rigor in AR, Benbasat & Zmud’s (1999, p.5) reference to rigor as “the correct use of methods and analyses appropriate to the tasks at hand” is instructive. Rigor is a meta-methodological term as it is not attendant upon the method itself but rather requires that a method is used correctly with regard to the context where the research is conducted. To apply a method correctly, one must be familiar with the principles and guidelines that pertain to the method. Consequently, the notion that AR is inherently less rigorous than other methods is fallacious and merely implies poor understanding of the meaning of rigor. Where AR is concerned, there are clear guidelines, most notably for the classic canonical form (Davison et al., 2004; 2012). Further, there is broad recognition of the value of theory in AR (Davison et al., 2012; McKay & Marshall, 2001). In effect, AR is no more or less rigorous than any other method. The extent to which an individual piece of research exhibits characteristics of rigor depends, as in all research, on the application of the method by the researcher.
With regard to theory, some of our correspondents suggest that it is difficult to make theoretical contributions from AR-based investigations. For example, Carol Ou wrote, “AR projects are highly driven by practice; the lack of a theoretical perspective prevents them from being published in the top journals in the IS field.” John Kruse considers that some authors may indeed be reluctant to apply or claim theory building: “There are also those in the research community who shy away from actually attempting to apply theory. In some cases, they feel it is not in their purview, but in others it is because actually trying things is really difficult.” Jeremy Rose notes the absence of “work on how to construct theory from engaged research,” and Hazel Taylor suggests that, “For AR to get more traction we have to find a way to get that theoretical perspective.”

While there is a need to address this apparent theory-practice gap, some respondents suggested that a shifting trend toward the recognition of AR as a valid and impactful research approach is emerging. For instance, David Allen underlined the new research evaluation metrics that is currently used in the United Kingdom: “I believe that the move in the UK to focus on the ‘impact’ of research on practice (which now needs to be demonstrated in funding bids and through the Research Excellence Framework Impact Case Studies) could provide institutional legitimacy for AR approaches allowing researchers who use AR to be recognised by the demonstration of the impact of their work.” Doug Vogel also shares this perception: “I think there is the beginning of a shift towards research with more impact which should favor AR.” Munir Mandviwalla argues that, “The pendulum is swinging again as the need for relevant research is increasing.” Pat Finnegan writes that AR “is a fantastic way both to demonstrate the usefulness of our theories and help to solve problems for organizations. Thus AR is a legitimate ‘use test’ of our models, framework and theories.” As Joe Peppard argues, “What could be a greater endorsement of research results than when practitioners actually use them!”

Pernille Bjorn calls for the creation of a specific framework to assess and evaluate AR that would be different than the one used for more mainstream approaches: “We need to re-think our evaluation of action research, looking at the interesting findings, judging whether this is worth sharing with the world. Action research is about interesting, relevant, exciting contributions where we learn something new.”

Avison & Malaurent (2014) argue that there is an over-emphasis in IS to theory in our research publications. Nevertheless, although organizational needs may not directly reflect a theoretical gap, the action researcher usually has a theory to test when going into a problem
situation, as Checkland & Scholes (1990) stress. Indeed, McKay and Marshall (2001) emphasize that AR without theory is not research at all. For example, in the development of the Multiview framework in the early to mid-1980s and later (Avison & Wood-Harper, 1990; Vidgen, Avison, Wood, & Wood-Harper, 2002; Wood-Harper, Antill, & Avison, 1985), the researchers defined a theory about IS development that emphasized organizational and social aspects rather than technical ones. AR was a way of testing this theory in practice, improving the organizational situation in most cases with each experience, and, after reflection, helping to reshape the theory and therefore redefine Multiview to a greater or lesser extent.

Thus, theory building can be seen as a particular strength of AR, rather than the opposite. As Susman and Evered (1978, p.590) make clear, “AR generates theory grounded in action. … AR contributes to the development of theory by taking actions guided by theory and evaluating their consequences for the problems members of organizations face. Theory may then be supported or revised on the basis of the evaluation.” More specifically, Davison, Martinsons, & Ou (2012) discuss the use of two different types of theory in AR. The authors stress the need to use both instrumental and focal theories to provide precise and efficient outputs for both practitioners and researchers. They suggest guidelines and provide practical examples to formally incorporate these two types of theories in AR. A focal theory is the theoretical cornerstone for action-oriented change in an AR project. It is the intellectual basis influencing and guiding the research scope of the AR project. In contrast, instrumental theories “include any tools, processes, or models that theorize how work is done and how outcomes are achieved” (Davison et al., 2012, p. 766). Thus instrumental and focal theory complement one another in AR, with the former helping researchers understand organizational problems and the latter helping researchers remedy them.

Again, therefore, a lack of understanding of AR does seem to have led to myths rather than true barriers to doing AR. Echoing earlier suggestions, Patrick Chau (I&M) suggests that we should first “organize and run action research workshops in our major AIS conferences to promote the method and educate our researchers in the field. Second encourage this small number of action research scholars to approach leading journals to develop special issues in action research. Third, create a ‘Best Action Research Paper’ award to recognize the best work of the year (AIS sponsored?). These suggestions should be implemented on a regular basis, not ad-hoc, and can be considered as a three-pronged approach. The first one is to educate; the second one is to promote and provide publication opportunities; and the third is to recognize the best achievers.”

17
We now turn to the question of AR being perceived as consultancy. Frank Land wrote, “A considerable amount of prescriptive IS research is seen as ‘consultancy’ and may not pass the ‘rigour’ test though it may pass the ‘relevance’ test with flying colours … This sometimes leads to the denigration of AR as ‘mere’ consultancy.’” However, we see the view that “AR equals consulting” as a myth, albeit a widespread one, and we therefore distinguish them formally:

1. Consultants work exclusively for a client, whereas action researchers work with both client practitioners and also need to report to a broader research community with their findings (Kock & Lau, 2001).

2. Action researchers may see the “client” as consisting of all the stakeholders in the problem situation, along with the research community at large, whereas consultants are more likely to see the client as the person who engaged them and organizes the financing of their work.

3. Although consultants might aim to address only the problem that they were brought in to solve, action researchers generally attempt to improve the problem situation as a whole. This can mean, for instance, that action researchers take a more emancipatory line, helping employees improve their working situation even if this means that in some situations, they encourage or recommend behavior that violates corporate norms.

4. Although AR is a collaborative practitioner-researcher effort, consultants are seen as experts coming in to solve an organizational problem. However, too often a consultant is brought in to solve a problem, such as a bottleneck, only for the client to discover another new bottleneck further down the line, perhaps leading to another lucrative contract for the consultant.

5. The action researcher is rarely financed by the client organization that benefits from the research, which is unlikely to be the case for a consultant. Such considerations may bring about ethical disagreements between the action researcher and the organizational client, which again are unlikely to occur between consultant and client. For instance, the action researcher attempts to improve the problem situation for all stakeholders, whereas the consultant does a job demanded by the client.

Sometimes consultancy is written up under the pretense that it is AR, but this not acceptable because, in short, AR is not consultancy! Nevertheless, AR is a method that consultants may employ (Davison & Martinsons, 2007), although consultants are unlikely to undertake AR as
deeply as would action researchers, especially where rigor, theory testing, and theory contributions are concerned.

**Summary of barriers and ways to overcome them**

In Table 3, we propose a summary of the four barriers and directions that should help overcome them in practice.

*Table 3: Summary of the barriers and ways to overcome them*

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<tr>
<th>Barriers</th>
<th>Description</th>
<th>Overcoming the barriers</th>
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<tbody>
<tr>
<td><em>AR is difficult to publish in leading IS journals</em></td>
<td>Our survey of AR in 12 leading IS journals demonstrates the lack of published AR and the phenomenon of AR being published as something else.</td>
<td>• Ensure that action researchers are included in editorial boards.</td>
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<td>• Organize dedicated workshops aiming at publishing AR in our leading journals.</td>
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<td>• Set up journal special issues on AR.</td>
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<td>• Ensure better communications about what is AR, its particular strengths, and its differences from other interventionist approaches.</td>
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<td>• Demarcate AR from other methods.</td>
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<td>• Establish a SIG-AR within the AIS.</td>
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<tr>
<td><em>AR requires a lot of time and resource investment</em></td>
<td>AR requires significant time and resource investment, though not everyone agreed that this was much different from some other research approaches.</td>
<td>• Establish partnerships between academic institutions and organizations for securing long-term relationships and access.</td>
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<td>• Privilege the “action case” approach by publishing single AR cases if there is sufficient contribution in each case to merit publication.</td>
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<td>• Examine other fields that do AR (education, health) and see how they overcome the time investment barrier.</td>
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<tr>
<td><em>AR is inappropriate for Ph.D. students</em></td>
<td>The amount of time needed for a successful AR project usually exceeds the time commonly available to Ph.D. students. Students and supervisors do not have sufficient experience of outside organizations to entertain AR for Ph.D. research</td>
<td>• Consider each cycle of an AR project or iteration as a “case” so that each project consists of several cases, each published separately and each consisting of a whole Ph.D. project.</td>
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<td>• Propose a rigorous pattern of training, ideally with hands-on experience of an AR project under the aegis of an experienced senior colleague.</td>
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<td>• Programs of AR training, perhaps including internships, as part of the Ph.D. training program.</td>
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<td>• Communicate the potential of AR to solve “grand and wicked” problems,</td>
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particularly in a team environment.

- Develop an AR virtual platform where AR experts can mentor young researchers.
- Ensure AR representation at junior faculty consortia and doctoral consortia.

<table>
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<th><strong>AR is considered to be less scientific than other methods</strong></th>
<th>It is difficult to make theoretical contributions from AR-based investigations, which are seen as being less rigorous than other methods and seen as consulting rather than research.</th>
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|                                                           | • Communicate AR practice as being rigorous and not consulting.  
• Theory building can be a particular strength of AR as theory may be supported or revised on the basis of the in-field evaluation and reflection phases.  
• Emphasize the growing requirement for research to show relevance and impact as well as rigor. |

6. **CONCLUSIONS AND FURTHER RESEARCH**

Through a process of expert opinion solicitation and analysis, we have identified a number of myths and barriers associated with AR that may have contributed to a documented decline in its visibility in the mainstream IS literature. Our survey respondents have also suggested ways of countering these myths and barriers to AR practice in IS. As action researchers ourselves and strong advocates of the method, we see the opportunity to reinvigorate AR as an appropriate approach for IS research. In suggesting ways to counter the barriers to doing AR, we have emphasized the special qualities of AR, its claim to rigor and relevance, characteristics that distinguish it from consultancy, its potential for theory building and testing, and its potential appropriateness for Ph.D. research. With this paper, we aim to bridge the gap between the proponents of AR and the wider IS community. The recent decline in the visibility of AR in IS is unfortunate because it suggests that IS researchers are increasingly less relevant to and less interested in the world of practice. Divorce from practice is not a desirable outcome in an era where the practical relevance of research is increasingly being recognized, appreciated, and indeed expected. We have written this paper as part of a process of securing a role for AR that is more central to IS research and more influential in our key scholarly publications in order that IS research can exert a greater impact in the world at large.

Our research has also revealed potential for further research. To focus our attention on myths associated with and barriers to undertaking AR, we have “assumed” one AR approach and generally ignored the different forms of AR. Baskerville & Wood-Harper (1998) identified 10
forms of AR. We see the forms of AR somewhat differently than these authors. To give some examples, we suggest that Multiview and ETHICS, mentioned above, are not AR forms but approaches to IS development that used AR to help define them; action learning only focuses on situation diagnosis but does not require researcher intervention or change and therefore is not AR, while Dialogical AR (Mårtensson & Lee, 2004) could be added to the earlier list. Therefore, there needs to be further work on this to update the earlier analysis of AR forms.

We have also limited our journal analysis to that of Mathiassen et al. (2012) for consistency, but added JIT and JSIS as they were not included in that earlier paper but are included in the AIS “basket of eight” research journals. To give only one further example, the Scandinavian Journal of Information Systems has consistently published AR over many years. A broader journal analysis might therefore provide further insights. In this paper, we have stressed “published AR” rather than “AR being carried out.” It could be that these follow similar trends, but only further research can ascertain the validity of this. Further, we have focused our attention on the academic side of AR. There is also a need for research examining AR issues from the organization’s point of view.

ACKNOWLEDGEMENTS

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REFERENCES


APPENDIX

THE 120 PAPERS CONSIDERED AS EMPIRICAL ACTION RESEARCH INCLUDED IN OUR STUDY


