

Are Interpretative and Critical Research Methods Useful for Research in Project Management?

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Abstract

This paper proposes that the project management discipline would benefit from the findings of practitioners who conduct research into their own practice. Project management researchers associated with a UK government-funded research project [1] have recently suggested that the project management field requires more research into ‘*project actuality*’, focusing on social processes of how project managers think in action and that such research could contribute to more satisfactory outcomes of contemporary projects. This paper describes a hypothetical dilemma faced by a project manager and briefly describes four doctoral research projects carried out by practitioners who used action research, case research and systems thinking methodologies to address *real* problems they faced in their projects. It discusses their findings and some common features of these projects and argues that practitioner research using interpretative and critical research methods into actual problems faced by project managers could contribute to useful knowledge for project managers.

Keywords: Practitioner research, Project management, Action Research, Case Research

Hypothetical: John’s dilemma

John is a project manager in a multinational company managing projects in the energy industry dealing with clients and suppliers from across the world. Recently, John has been very busy in his projects and some of the projects are falling behind or overshooting their budgets. John is quite concerned as he has a good track record as a project manager but the projects he has been involved of late seem to have become more complex than those he has managed before.

Barry, John’s CEO recently attended a CEO breakfast by a project management consultancy and approaches John excitedly. ‘John, I have just come from a CEO breakfast where I listened to an expert in project management talk about the great value of setting up a Project Management Office. Maybe we should do this to get some of our projects out of trouble. What do you think?’ John agrees to consider it and talks to his manager Brian.

Brian is concerned about the recent rise in project budgets and tells John that it is better to look at some evidence that might help them, rather than increase their costs further. He points to some project management magazines lying on his table and says ‘Why don’t you browse through these to find out?’ He adds ‘Talk to Philip whose company does our installation work. He often talks about concepts presented at meetings conducted by the project management institutes’.

John takes the magazines home and finds some articles about the concept of the Project Management Office (PMO). The articles talk positively about their benefits. John also notices that some of these reviews have been written by consultants who advise organizations on how to set up PMOs. He then meets Philip over a drink but Philip expresses some doubts. 'John,' he says, 'From what I've been hearing there are some success stories but on talking to some other project managers it is obvious that not all implementations of PMOs have been beneficial. My advice is – tread carefully. You do not need more headaches right now.'

John wonders what independent research has been conducted about PMOs. He then recalls that his buddy from the University is now doing a postgraduate course in project management. 'David should have access to research papers' he thinks, and organises a lunch with David. David agrees to search for some papers about recent research into PMOs.

A week later, David sends him a few research papers written by some academics from various Universities. John takes the papers home to read but it's close to bed time when he gets a chance to read them as he had to go to his son's school to support him in his soccer match. As John starts reading the papers, which contain a lot of statistical information, he finds it difficult to stay awake. As he nods off, he wonders whether any project manager who has actually been involved in setting up and running a PMO has done some research into their benefits and limitations and written a paper that he could read and understand.

Sound familiar?

Introduction

This paper will attempt to address the concerns of project managers who are looking for practical solutions to real problems faced by them in their projects based on evidence collected through rigorous research. It will do so by using examples from four real research projects that were carried out by practitioners who wanted to solve problems faced by them in their projects. The paper will also argue that research methodologies such as action research and case research can be successfully used to conduct practitioner research and contribute to knowledge that would be useful to both theory and practice.

Researching the actuality of projects

There is an ongoing debate in the literature about rigour and relevance of research to professional practice. Donald Schön [2, p42], describing how professionals think in action, asks:

Shall the practitioner stay on the high, hard ground where he can practice rigorously, as he understands rigour, where he is constrained to deal with problems of relatively little social importance? Or shall he descend to the swamp where he can engage with the most important and challenging problems if he is willing to forsake technical rigour?

Researchers who participated in a UK government-funded research project [3] echo some of Schön's concerns and point out that there is need for more research producing theory for practice by treating projects as social processes. Cicimil et al. [1, p675-76] also suggest that 'a better understanding of *project actuality* 'focusing on *social processes* and how practitioners *think in action*' could 'contribute to more satisfactory outcomes of contemporary projects'. They add that besides looking at academic research, project managers would also benefit from practitioners 'who reflect and interpret their own experience' [1, p677]. They also point out that interpretative and critical research methods, such as rich ethnographic studies and action research, could pave the way for co-authorship between scholars and practitioners combining

‘scholarly theorising’ and ‘practitioner’s narratives’. These research methods rely on ‘listening to practitioners and their interpretations of their own experiences and actions’ and ‘engaging in a critical dialogue with the practitioner who reflects and interprets their own experience’ [1, p677].

There are many definitions of interpretative and critical research but the definitions that follow are mainly derived from information research papers and could apply to situations in projects. According to Walsham [4, p376] ‘Interpretive methods of research adopt the position that our knowledge of reality is a social construction by human actors. In this view value-free data cannot be obtained, since the enquirer uses his or her preconceptions in order to guide the process of inquiry, changing the perceptions of both the parties.’ There is some debate about critical research between information systems researchers and the following definition is from a paper published in *MIS Quarterly* in 1997 that is being updated constantly by the authors. According to Myers [5] ‘Critical researchers assume that reality is historically constituted and that it is produced and reproduced by people ... Critical research focuses on the oppositions, conflicts and contradictions in contemporary society, and seeks to be emancipatory i.e. it should eliminate the causes of alienation and domination.’

Brief description of case and action research approaches

Case research:

While there are a variety of case-based research approaches we will use the model recommended by Yin [6] and developed for management research by Carson et al. [7].

As recommended by these two references and actual applications, case-based research is used under the following situations:

- Lack of current knowledge about the issue
 - The literature review shows there are knowledge gaps
 - This indicates new theory needs to be built
- The phenomenon being studied is complex
 - Researcher needs to understand the full context
 - Researcher needs a rich understanding of the issues
- The phenomenon is contemporary and dynamic
- Multiple sources of evidence can be used.

A case research thesis tends to follow a conventional thesis structure used by scientific research as Yin [6] developed this methodology similar to the way multiple experiments are conducted in scientific research.

For Yin [6] each case was similar to an experiment in a real organization. His case research design resembles the use of multiple experiments in scientific research except that the experiments could use a variety of methods such as documentation, archival records, observations, interviews, physical artefacts etc. A typical format for such case research is:

1. Conduct a literature review to develop a theory.
2. Design the research.
3. Prepare a case or multiple cases or embedded cases.
4. Write individual case reports (for multiple cases or embedded cases)
5. Conduct cross-case analysis.
6. Modify developed theory based on the findings.
7. Identify policy implications.

Case studies can be designed as single cases, multiple cases or embedded case as shown in Figure 1.

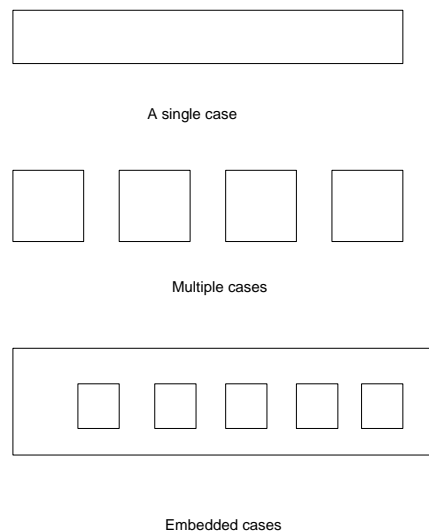


Figure 1: Potential case designs

As an example, researchers may want to understand what motivates project teams. If they used a single case they may study teams in a single project. However, if they want to compare factors that motivate teams in a variety of projects they may study teams in different type of projects – big, small, complex etc. On the other hand, if they want to study whether there are differences between factors that motivate teams in projects performing different tasks, they may use an embedded design and study teams in different parts of the project, e.g. hardware engineers, software engineers, installation engineers etc., where each team is considered a case.

Action research

According to Dick [8] you pursue both action and research in an action research project. The research is conducted in cycles with critical reflection at the end of each cycle as shown in Figure 2. It is also usually participative and qualitative although quantitative methods are used when the situation demands it.

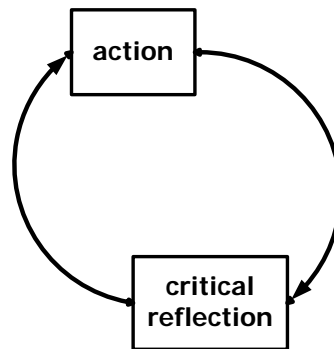


Figure 2 – General model of action research

In action research the research problem may not be defined very well as in conventional research. For example, in a project that you are involved in, you may have an intuitive feeling that quality problems are occurring repeatedly due to cultural issues but you are unsure about it. So you decide to introduce a change in the organization by organizing a talk from an expert on differences in national culture to the members of a diverse team and observe their reaction to the comments made. You could also engage with them in a conversation about how cultural issues are affecting their work situation. Then you observe whether there is some reduction in quality issues. So often you start with a ‘fuzzy’ problem in action research and, as you make changes, the problem becomes clearer and you can converge to an appropriate solution.

What methods can be used to conduct action research? In action research data drives the research. It is more important in action research to consider what methods will produce valid data that you require to progress your research rather than follow a predetermined sequence of methods. As an action researcher you must always show some scepticism about what you find to disconfirm your findings. The more you try to disconfirm your findings, the more rigorous your research will be. Therefore, it is quite common to find a variety of methods used in action research to confirm/disconfirm your findings.

Typical methods used are:

1. Interviewing
2. Large group intervention processes such as search conferences, open space meetings.
3. Focus groups.
4. Surveys.
5. Project evaluation exercises.
6. Soft systems methodology.
7. Journal writing.
8. Storytelling and narrative analysis.

Action research is often criticized for addressing local issues and therefore the findings are not generalisable in comparison to research using experiments or surveys using statistical analysis. However, action research can be carefully designed to be rigorous to contribute to both theory and practice.

Four research projects

This paper will now discuss four research projects conducted by practitioners who used action research, case research and system thinking approaches. The author of the paper, who worked in industry as a project manager before joining academia, was involved in the academic supervision of these research projects.

Connecting information to people in a public sector organization [9]

Michelle was working as a systems analyst in a public sector undertaking in Australia when she decided to enrol in a doctoral program. Her organization was being corporatised at that time and was facing a serious information storage and retrieval issue. However, Michelle realised that besides the information systems issues she was addressing, the organization needed better knowledge sharing and dissemination. She attended a research workshop at her University and became attracted to the notion of action research as it offered her an opportunity to participate as a change agent in her own organization as well as contribute to the theoretical aspects of knowledge management in a public sector organization.

She then decided to explore how knowledge was actually created and used in her organization. Since her role in the organization was to improve the information systems she framed her research questions as follows:

1. Who uses what information (in the organization)?
2. Where is the source of this information?
3. What is added to the information when it is used?
4. Where does information flow to after use?
5. What issues do knowledge workers face in a public sector organization while using information systems in their organization?

To address her research question, she conducted a survey and interviewed four groups of employees – administrators, executives, professionals and technical staff. Some of these staff were located in remote locations with poor connectivity to the corporate information networks. The survey provided several surprises on information usage that resulted in a better understanding of the real issues being faced by the organization so that she could identify and prioritize *real* projects that would improve the situation. These projects were then implemented using an action research approach by working closely with the people who were affected by the lack of information and knowledge to do their work effectively.

The projects that were prioritised for her research as a result of her survey using face-to-face interviews were:

1. Improvements to business intelligence reports: This resulted in improvements in the delivery of business reports with secure access for decision making and problem resolution using a secure corporate portal.
2. Migrating to a single database environment: Looking at different types of information developed by staff in various parts of the organization using different software programs into a single database so that information critical to the business could be retrieved and exchanged easily.

3. Setting up a common intranet: Delivering corporate information to all staff in a consistent manner including the delivery of documents required for work such as manuals and work procedures using a common platform.
4. Implementing an electronic document and records management system to help her business meet new requirements due to corporatisation.

Michelle used a mixed-methods approach as she was unfamiliar with action research when she started her research. She started her research using surveys which she was used to as a systems analyst. This had many benefits. She was using a research method in which she was competent and interviewing people using her survey questions brought her closer to the people who faced the problems she was addressing to understand their real concerns as well as build ownership among those who would both participate in her projects and derive benefits from them. They were key stakeholders for her action research projects. The use of action research also helped her alternate between 'action' and 'reflection' by implementing change while at the same time understanding the effects of the change. She was part of the change and could not be an independent observer in her research process.

Implementing a complex health information system [10]

Martin worked as a psychiatrist in a hospital managed by a large district health board providing publicly funded primary and secondary care to a population of 450,000 people in New Zealand. He enrolled in a doctoral program when the organization was implementing a series of clinically focused information and communication technology (ICT) systems. The features that were planned for this large project were:

1. A single login interface to view all patient data, medical alerts, past treatment history and tests
2. An electronic medical document repository
3. A real-time patient tracking system for the emergency care centre
4. A surgical audit system
5. Electronic referral status messaging and discharge summaries for primary care
6. Electronic signoff of laboratory results.

Such a large and complex system had not been built before in New Zealand. So Martin wanted to use a methodology that would be responsive and emergent as the project scope had many questions to be answered at the start. He selected action research as his methodology as it helped him to implement change and learn from it, which could become the focus of his research.

He used the following methods in his research using an action research framework:

- participant observation
- personal and action research group feedback
- convergent interviews
- document examination.

He was conscious about his research being rigorous and triangulated his findings by continuously looking for disconfirming evidence as he implemented the research project using several action research cycles, with each cycle informing the next.

Martin and his team came up with an overall concept to manage the various projects. They called their projects 'stepping stone projects' to bridge the gap between the 'concept' and 'reality' supported by what they called 'foundation' projects that provided a safe path to new

ways of managing knowledge. In order to reduce the risk of completing the complex project successfully, the various component projects were carried out in small steps using an iterative action research approach applying the lessons learnt from one project to the next. Each project had to be carefully orchestrated, keeping people's concerns for safety and privacy in mind. Martin and his project team also devised acronyms to keep the main focus in each project. Figure 3 shows their concept. As one of the participants in the project observed, 'We are weaving fibres together to create a beautiful rug not stacking cans in a supermarket'.

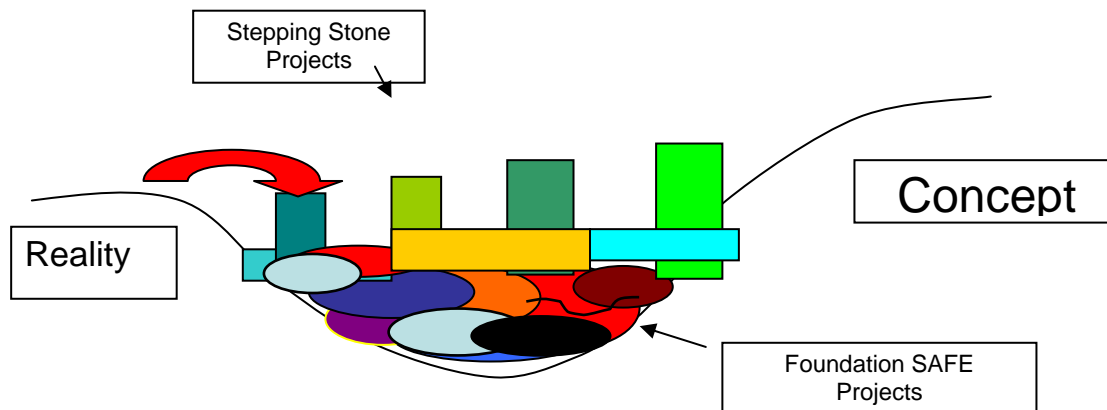


Figure 3 Crossing the acceptance gap [10]

Some interesting observations made during his research were that while a project management framework helped drive the processes along, it was not possible to fix scope and timelines in what turned out to be a very complex project [11]. They found that conventional project management methodologies were deficient in dealing with wider systemic issues, ambiguities that often rose in the process, emergent phenomena, and the challenges and opportunities that arose throughout the project. The implementation team also recognised that they were not just project managers monitoring time, scope, cost and quality, but also ambassadors of information and communication systems that could empower health systems. Martin and his team concluded that project managers in healthcare need to become reflective practitioners who are able to cope with complexity and ambiguity in real time.

Cultural risks in international projects [12]

Anne was an Australian project manager involved in international construction projects in countries that were either developing or had gone through a major transformation from socialistic to democratic forms of government.

Anne was a qualified and accredited project manager experienced in standard project management methodologies adopted by project management professionals. As her Australian company embarked into international projects she faced many problems such as:

1. A non-business attitude towards commercial aspects of a project
2. Project management tools not being professionally applied and often ignored
3. Differences in communication methods and value systems
4. Poor use of modern technologies
5. Fear of the unknown as new methods were being introduced to manage projects.

It was at this time that Anne enrolled in a doctoral program and learnt about the case research approach. She thought that she could treat each of these ‘unusual’ international projects as a ‘case’ and study the impact of cultural issues in each project – both national culture and organizational culture. As the work progressed, she realised that some of these issues affected her project outcomes considerably and therefore decided to treat her research as a study of cultural risks in international projects.

She investigated ten cases based on projects carried out in Argentina, Bulgaria, East Timor, Estonia, Kazakhstan, Poland, Romania, Russia, Tanzania and Ukraine. Based on a review of the literature, Anne decided to investigate seven cultural issues in these projects – time (how it is viewed in different cultures), communication, technology, business ethics, value systems, commercialisation and business methods. As these issues were not present in all the cases she decided to treat the cases as ten ‘embedded cases’ rather than ‘multiple cases’.

Anne used multiple sources of evidence to collect her data – obtrusive and unobtrusive observations, semi-structured interviews and project documents (minutes of meetings, project reports), and the use of case research enabled her to use this as evidence. The approach also helped her to conduct exploratory research into a contemporary phenomenon concerning attitudes and behaviours of people over whom she had no control.

She identified the major cultural risks to such projects as business methods and ethical issues. She also observed that many cultural risks that she encountered had maximum impact on a project during the implementation phase (when it is too late and expensive to take corrective action). Her research also contributed indirectly to the personal attributes of project managers and project teams to manage international projects effectively.

Her recommendations to project teams to manage cultural risks were:

1. Developing cultural awareness to differences between own and host country culture
2. Employing a cultural interpreter (*not* just a language interpreter)
3. Undertaking a cultural risk analysis as part of the overall risk analysis of the project at the planning stage
4. Employing a project manager with cross-cultural skills.

She also recommended a set of attributes for project managers who are assigned to manage international projects.

1. Being inquisitive
2. Establishing emotional connections
3. Demonstrating integrity
4. Handling uncertainty
5. Balancing tension (stress)
6. Being business and organizational savvy.

Developing diagnostic systems for military vehicles [13]

Tay was a consultant and software developer for a large government-linked company in Singapore that produced military equipment. He managed software projects for use in military vehicles when he embarked on a PhD. At the time he started his research, his main concern was that his projects were not being effectively handed over to his clients upon completion. Often his engineers were requested to make changes to the software that they had already delivered and while they had already embarked on a new project, causing resource issues for

the new projects. He decided to use a participatory approach to developing software that both addressed his concerns as well as helped train young software engineers and modellers.

The PhD program he had enrolled in encouraged candidates to use action research and he decided to use a soft systems methodology (SSM) as his approach to address his research concerns as it involved both technology (expert systems) and people (software engineers and modellers). He then studied the methods used by SSM practitioners and used a dialectical framework under an action research umbrella alternating between the 'real world', where the problems arose, and the 'ideal world', where systems were modelled.

Tay observed that the conventional way his company built expert systems, using functional block diagrams and fault trees, had a few shortcomings in terms of content (knowledge about faults) capture and representation, especially for novice modellers.

Therefore, he combined action research cycles into the inquiry process of a dialectic soft systems framework, using an approach proposed by Dick [14] based on Checkland's [15] SSM. This framework is shown in Figure 4.

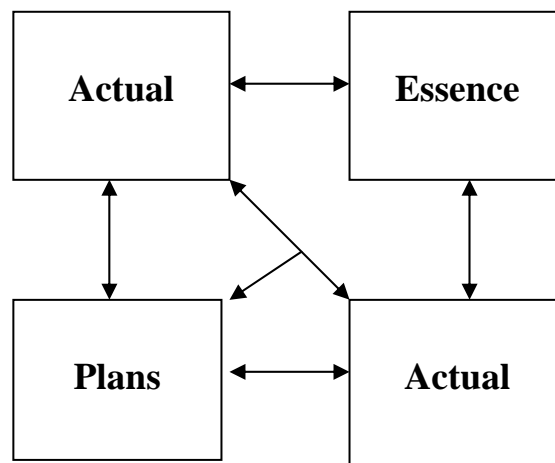


Figure 4 Dialectical Framework of SSM [14]

Dick's [14] framework advocates the application of soft systems 'thinking' as progressing through four dialectics:

1. Between immersion (rich picture) and essence (root definition), where researchers try and experience the problem situation as fully as possible and then stand back and define its essential features. (Steps 1 to 3 of Checkland's [15] SSM).
2. Between the essence (root definitions) and the ideals (conceptual model), where the researchers try to find an ideal way to achieve the same transformation of inputs into outputs. (Steps 3 and 4 of Checkland's [15] SSM).
3. Between ideals and reality, where researchers think about improvement to the ideals or the actual situation. (Steps 5 and 6 of Checkland's [15] SSM).
4. Between plans and implementation, where the plans are implemented and differences between plans and reality can be monitored through which further improvements can be carried out. (Steps 6 and 7 of Checkland's [15] SSM).

Figure 5 shows how Dick's [14] framework was applied by Tay [13] in his research.

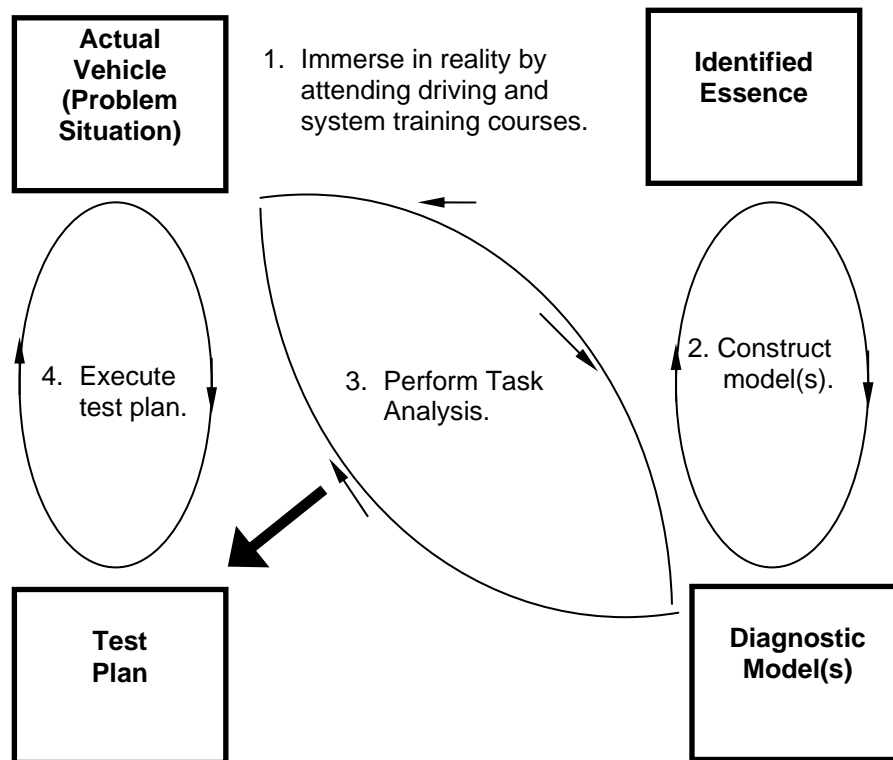


Figure 5: Application of a dialectical framework of SSM [14:113]

Due to his modified approach, the software engineers in Tay's firm were immersed in the 'reality' of the software they were building by actually experiencing how the vehicles they built software for were operated. They were also exposed to 'systems' thinking concepts to build better models before they embarked on the task of developing software and coding.

How the four research projects contributed knowledge to theory and practice

Both Michelle and Martin were looking for better ways to implement projects they were responsible for. Both felt that their projects needed a different implementation approach to the conventional one for different reasons. Both projects produced successful and useful outcomes for their organizations and also contributed to the theories of information and knowledge management and organizational change.

Anne's concern was personal, as she wanted to find a more effective way of implementing projects she was involved in. Her research contributed to the theory of project management in terms of risk management due to cultural issues. Tay's research also had a personal angle as he wanted to improve his business practice to improve the outcomes of software projects. His research contributed to the theory of expert systems and project management.

All four research projects delivered both research and practical outcomes. All the projects started with a 'fuzzy' situation which became clearer as the research proceeded. In two cases the research questions changed as the research progressed. In the three action research projects the people who were affected by the projects also participated in them, thus building ownership resulting in effecting organizational change. Anne's colleagues (project managers

and team members) participated in the research by providing information from their own experiences and helped her triangulate some of her findings.

All the research projects used a mixture of methods selected reflectively to collect the essential data thus making the research process efficient by being responsive to the situation.

Conclusions

If you consider how experienced project managers solve ‘unusual’ problems that arise in their projects, you will notice similarities with the processes used in the research projects discussed. Project managers often make sense of the problem situation through a combination of hard facts, observations and ‘selective’ communication with stakeholders before they come up with a workable solution. Often, the solution is implemented using a plan-do-check-act process that resembles an action research cycle.

Cicmil et al [1] argue that:

1. Traditional project management is the language of design, regularity and control. It is prescriptive.
2. Traditional view of research in project management is based on a functionalist and instrumental view of organizations.
3. Real projects are increasingly tending to be complex social settings, unpredictable (ambiguous and uncertain) with control and collaborative interactions between diverse actors.
4. Project management in practice needs to be viewed as a social conduct, defined by history, context, individual values and wider structural frameworks.

They do not argue that all research into project management should use interpretative and critical research methodologies but that the project management field would benefit through the application of these methodologies where the research problem suits these approaches.

The four research projects that were analysed in this paper are examples of projects with some of the characteristics described by Cicmil et al [1]. The four projects have been shown to produce useful organizational outcomes while contributing to theory.

Such projects might also provide practical advice to battlers like John!

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