

Validating Action Research Field Studies: PEARL

Donna Champion^{1,3} and Frank A. Stowell²

Received April 17, 2002; revised July 28, 2002

The difficulty of establishing the validity of Action Research field studies has been well documented. Enabling interested individuals to follow the route of inquiry, or “recover” the inquiry process, has provided some means of addressing the difficult issue of validation. Such an approach, however, still fails to provide a sense of the manner in which an inquiry was undertaken, which can be important when individuals, participants in the inquiry or otherwise, are making their own judgments concerning validity. In this paper we argue that by supporting any interested individuals in making their own judgments concerning the manner in which the inquiry process was undertaken, it is possible for a public perception of the authenticity and credibility, or character, of that inquiry process to emerge. We argue that such a perception is an essential aspect of making judgments concerning the validity of an Action Research project.

KEY WORDS: Action Research; authenticity; validation.

1. INTRODUCTION

The challenge of establishing the rigor and validity of an Action Research project is currently exercising the minds of many researchers in the field of Information Systems (IS) (Avison *et al.*, 2001; Champion and Stowell, 2001; Checkland and Holwell, 1998; Klein and Myers, 1999; Reason and Bradbury, 2000; Stowell *et al.*, 1997). Establishing the value and worth of an inquiry undertaken within a complex human social setting, where the validity of the inquiry cannot be demonstrated through repetition, is fraught with difficulty. Checkland and Holwell (1998) have argued that a notion of “recoverability” is useful for establishing the validity of a social inquiry process. “Recoverability” offers the idea that interested individuals are facilitated in following the route of the inquiry, or “recovering” the inquiry process, so that the learning outcomes are understandable to other interested individuals

¹The Business School, Loughborough University, Loughborough LE11 1JY, United Kingdom. e-mail: d.champion@lboro.ac.uk

²De Montfort University, Milton Keynes MK7 6HP, United Kingdom. e-mail: fstowell@dmu.ac.uk

³To whom correspondence should be addressed.

(Checkland and Holwell, 1998). Checkland (1983, 1985) has offered the “F, M, A Model” (Framework of ideas, Methodology and Area of concern) as a means of structuring an Action Research field study to facilitate recoverability by interested others. We argue that “recovering” the learning outcomes through using the F, M, A model, while being essential, still evades a consideration of the *manner* in which the inquiry was conducted. In complex, messy human situations, the participants and some nonparticipants will need to make some judgment concerning the character, or authenticity, of any inquiry process, if the outcomes are to be accepted as valid and credible. Rather than attempt to control an Action Research project (Avison *et al.*, 2001), a notion we find incompatible with an Action Research field study, we argue that the mnemonic PEARL (Participation, Engagement, Authority, relationships, and Learning outcomes) can provide an Action Researcher with a framework with the means to reflect on the authenticity and character of the actual inquiry process. Crucially, the elements of the PEARL mnemonic offer the means for an individual who was not involved in the inquiry process to reflect upon and make a judgment about the authenticity of the inquiry process. It is this potential to involve “nonparticipants” that, in our opinion, makes PEARL such a powerful tool when making a judgment concerning the authenticity of a process of social inquiry. We argue that such judgments are an essential part of establishing a public perception of the authenticity of Action Research studies and that authenticity and credibility are integral elements of the validity of any process of social research.

2. SOCIAL INQUIRY

Undertaking inquiry in any field of endeavor requires careful thought concerning what will count as knowledge and how that knowledge will be created (Audi, 1998; Burrell and Morgan, 1979; Checkland and Holwell, 1998; Gadamer, 1989; Popper, 1959; Reason, 1993). Some sort of organization of the pursuit of knowledge will be necessary to make sense of the emerging experience, particularly when creating knowledge that is intended to be useful and insightful to a wide audience (Checkland and Scholes, 1999), as is the case during an Action Research field study. The set of principles chosen to guide an inquiry (or the methodology) will influence how an inquirer sets about undertaking the creation of new knowledge and also the perception of validity of the learning outcomes among a wider audience (Audi, 1998). Employing a scientific method in order to create knowledge, where there is an effort to observe the situation from a neutral stance, has been argued to be inappropriate within social situations (Checkland, 1981; Gadamer, 1989; Maturana, 1978; Reason, 1993; Tsoukas, 1993; Stowell and West, 1994; Weber, 1949; Winograd and Flores, 1987). As each problem situation is unique, undertaking inquiry within complex social environments and defending the knowledge thereby gained are both difficult (Checkland and Holwell, 1998;

Reason and Rowan, 1981; Tsoukas, 1993). Conducting research within social situations creates a difficult conundrum for a researcher. Recognizing that any inquiry process within such situations will be unrepeatably leaves the problem of how to organize a process of social inquiry in a manner that will be perceived by others as capable of creating valid research outcomes (Checkland and Holwell, 1998).

Eden and Huxham (1996, p. 536) argue that the insights gained through an Action Research inquiry can offer a unique perspective unavailable to a practitioner when other research methods are employed and that the knowledge created often “. . . cannot be gleaned in any other way.” They also argue that any data that are collected cannot be expected to “triangulate” but that the differences between various viewpoints held by those involved can act “. . . as an effective dialectic for the generation of new concepts.” Nonetheless, Eden and Huxham (1996) fail to provide any means of establishing the validity of any learning outcomes from an Action Research inquiry with a wider audience. They simply suggest ensuring that the “general value is disseminated” to a wider audience than the direct participants in the inquiry process (Eden and Huxham, 1996, p. 539). The challenge for any Action Researcher is to become involved in the situation of focus and gain the collaboration of others in the problem situation. For the research to be judged as being useful and valid, an Action Researcher must also establish that the research was tackled in a manner that is perceived by others to have been a credible effort undertaken with due care and attention (Checkland and Holwell, 1998; Reason, 1993; Tsoukas, 1993).

The difficulty in establishing that an Action Research inquiry has been undertaken with due care and attention, or rigor, was commented on by Susman and Evered (1978) in their paper on Action Research. Susman and Evered (1978, p. 588) argue for “a cyclic process with five phases: diagnosing, action planning, action taking, evaluating and specifying learning.” They suggest that such an approach to undertaking research within social situations helps to create the “appropriate structures” to encourage “communication and problem-solving procedures” among those involved, such as “self-help skills” (Susman and Evered, 1978). Bargal *et al.* (1992) also identify a continuous cyclic process of planning, action, and evaluation as being central to Action Research. Although planning and preparation are essential, Susman and Evered (1978) and Checkland (1983) both argue that *predicting* the learning outcomes from an inquiry within a social setting is not possible and so inquiry within such situations ought to be agnostic to the outcomes of the research. Checkland (1983) explains the concept of agnostic inquiry as not directing “the learning outcomes towards some perceived to be desired end.” Checkland and Holwell (1998) argue that planning activities and specifying learning outcomes, while essential, do not necessarily permit scrutiny by an interested individual not involved in the actual inquiry process. In order to plan an Action Research field study, it is important to consider how the researcher will establish that the inquiry was undertaken “with rigor,” among a wider audience. First, it is

worth an examination of the contribution that the elements of participation and local improvement make toward creating a public perception of a valid inquiry process.

3. PARTICIPATION IN SOCIAL INQUIRY

Participation in the inquiry process, by those involved in the situation of focus, is widely accepted as being a fundamental characteristic of Action Research (Baskerville and Wood-Harper, 1996, 1998; Borda, 2000; Breu and Peppard, 1999; Checkland and Scholes, 1999; Elden and Chisholm, 1993; Dunning-Lewis, 1999; Heron and Reason, 2000; Park, 2000; Reason, 1993; Stowell *et al.*, 1997; Whyte, 1991). The emphasis on participation arises in part, as a move away from the methods of scientific inquiry that value “objective observation” and “measurable results,” as such concepts are meaningless within social settings, where each person will have his/her own particular views concerning a situation (Checkland, 1983). Tsoukas (1993) suggests that one difficulty with a dependence on establishing the validity of the learning outcomes through participation in the learning process is that it is too easy for a single opinion to dominate. Reason (1993) also argues that participation alone is not sufficient and ought to be examined and explained. Most practitioners of Action Research do not rely only on participation to establish the value of an inquiry process and deem the practical outcomes of social inquiry to be of equal importance, particularly any evidence of local improvement in the situation of concern.

4. LOCAL IMPROVEMENT EMERGING FROM SOCIAL INQUIRY

Many authors argue that research within social settings ought to result in identifiable learning outcomes within the situation of focus (Checkland and Holwell, 1998; Elden and Chisholm, 1993; Elliot, 1991; Reason, 1993; Tsoukas, 1993; Stowell *et al.*, 1997; Susman and Evered, 1978; Whyte, 1991). Elliot (1991, p. 49) argues that “. . . the fundamental aim of Action Research is to improve practice rather than to produce knowledge.” This seems rather an extreme statement, as such a view seems to overlook the usefulness of theoretical ideas in helping those involved in first making sense of a situation and of practice being improved by reflecting back on the action taken and the initial guiding ideas.

Susman and Evered (1978) and de Zeeuw (1995) have suggested that competence in problem-solving and self-help skills is one of the practical outcomes of Action Research that helps to establish validity in the longer term. Bødker (1996) argues that outcomes such as these will be very localized and specific to a particular group of people. She also suggests that groups gathered for specialized purposes (as is often the case in IS design) can be disbanded at the end of a project, competent participants will disperse to other roles and so learning outcomes, such as

problem-solving skills, which may have emerged within a group will be uncertain in the longer term (Bødker, 1996). Dash (1999) has argued that establishing that there has indeed been some local improvement within the situation of concern is still not sufficient to validate the wider usefulness of any knowledge created. He suggests that as improvement within the local situation may well cause detrimental effects within the wider environment, it is necessary to reflect upon the long-term aftereffects of an inquiry (Dash, 1999). Reason (1993) argues that in order to “judge the adequacy” of research reports and, therefore, the validity of any generated knowledge, it is essential to discuss the epistemology applied. Indeed, Checkland (1985) has long argued for the epistemology to be declared in advance, and recent work has argued that a “notion of recoverability” is useful when undertaking inquiry within an Action Research framework (Checkland and Holwell, 1998; Checkland and Scholes, 1999).

5. A NOTION OF RECOVERABILITY

Checkland and Holwell (1998) argue that a “notion of recoverability” is essential when undertaking an Action Research approach to inquiry, as such a notion will support interested individuals in scrutinizing the results. To achieve such “recoverability,” they suggest that an open declaration of the aims of the inquiry and also of the intended research method, prior to involvement in the situation of interest, is necessary and that “without that declaration, it is difficult to see how the outcome of [Action Research] can be more than anecdotal” (Checkland and Holwell, 1998, p. 14).

Checkland (1985, p. 758) suggests that to make sense of any area of interest, a set of “linked ideas in a framework F” can be applied by using a “methodology M” to explore an “area of concern A.” By undertaking inquiry guided by a methodology it is possible to learn about the area of interest *and* “about the adequacy of F and M” (Checkland and Holwell, 1998). For the learning outcomes of inquiry within complex and uncertain social situations to be accepted as useful lessons, Checkland (1985) argues that the framework of ideas, F, the methodology, M, and the area of interest, A, must all be “declared in advance.” Such a declaration not only enables those involved in the inquiry to make sense of the emerging experience, but also enables other interested individuals to scrutinize the learning outcomes and so make judgments concerning the credibility of the results (Checkland and Holwell, 1998; Checkland and Scholes, 1999). Zmud (1998, p. 23) argues against having “a well-defined research model” set out in advance, as such an approach “implies that a ‘solution’ is known *a priori* by the research team.” He then contradicts himself by arguing that “practice-driven research is best served if the research team . . . bring a required expertise regarding prior research on a topic, relevant theories, and relevant research methodologies” (Zmud, 1998, p. 23). Zmud appears to confuse a “research model” with offering a “solution” to

any perceived difficulties. Defining a “research model” in advance (Zmud, 1998) is *not* the same as offering a preconceived “solution” to the difficulties faced by those involved. Indeed, the most challenging aspect of undertaking social inquiry is that the ideas concerning F, M, and A all may change as the inquiry proceeds (Checkland, 1985). When undertaking inquiry within social settings, it is of fundamental importance to accept that “achieving credibility, consensus and coherence does not make a ‘truth claim’ as strong as that derived from replicability of results independent of time, place and researcher” (Checkland and Holwell, 1998).

In practical real-world situations, there is often a need to establish the relevance of learning outcomes from a collaborative inquiry process among a wider group than those physically involved in the inquiry. For example, in our field of interest, that of IS design, although collaborative design approaches such as Participatory Design (Beyer and Holtzblatt, 1998; Kensing and Blomberg, 1998), ETHICS (Mumford, 1995), Multiview2 (Avison et al, 1998), and Client-Led Design (Stowell and West, 1994) all aim for participation of those involved, the simple factors of cost and time often prevent all those implicated by a new design from taking part. Establishing the relevance of learning outcomes from a group inquiry process among an audience wider than physical participants, then, despite the difficulty, appears to be a desirable aim.

Checkland (1983, 1985) argues that to make sense of complex human social situations, it is useful to consider the inquiry process as being a *system in itself*. This approach “transfers systemicity from the world to the process of inquiry into the world” (Checkland, 1983, p. 672). That is not to argue that the inquiry *is* a system, only that “it may be described as a system” (Checkland, 1983). Checkland (1983, p. 671) also argues that there can never be a “once and for all publicly testable systemic description of human activity, only descriptions valid for a particular world view.” It is the latter point that makes validating research into socially constructed situations so challenging.

The ideas we present here extend the ideas of Checkland (1983) concerning systemic inquiry and build on the experiences and learning accumulated through various Action Research projects that we, the authors, have undertaken (Champion, 2000, 2001; Champion and Stowell, 2002; Stowell, 2000; Stowell and Champion, 2000, 2002; Stowell and West, 1994; Stowell *et al.*, 1997). We suggest a practical systemic approach to supporting individuals making judgments concerning the authenticity of an inquiry, according to their own values and beliefs. This approach is offered explicitly from within an interpretivist, phenomenological approach to inquiry. We consider PEArL to be an intellectual device based on systems ideas that can be employed to support anyone interested in appraising a collaborative inquiry process and judging its authenticity and credibility. By supporting planning for and, crucially, also reflection upon the inquiry process among participants, and a wider audience of concerned individuals, a public perception of validity, or otherwise, emerges.

6. AUTHENTICITY

Establishing the “validity” of a collaborative inquiry process is only partially achieved through the characteristic elements of Action Research (participation and local practical outcomes) as we have discussed above. We suggest that a concept of authenticity is helpful when reflecting upon an Action Research inquiry process and can promote public acknowledgment of the wider relevance of the learning. The word ‘*authentic*’ is defined in the *Oxford English Dictionary* (1998) as

possessing original, or inherent authority; [...] entitled to acceptance, or belief; of established credit.

The philosophers Heidegger (1962) and Sartre (1966) both used the word ‘*authenticity*’ to mean the ability of an individual to act with free choice and integrity within life situations. Burchfield (1998), in *The New Fowler’s Modern English Usage*, regards both *authentic* and *genuine* to mean “entitled to acceptance or belief.” He suggests that both words can be applied to defining a painting as being a genuine, or authentic, Van Gogh, for instance. But he argues that *authenticity* as a word is also concerned with judging that an experience or a complex series of events “is convincing, one that can be believed” (Burchfield, 1998, p. 79). If the learning outcomes of a process of unrepeatable social inquiry are to be judged as being “worthy of belief” (Burchfield, 1998), certain elements of that inquiry will need to be laid open to public scrutiny. In Champion and Stowell (2001, p. 7) we argued that establishing the *authenticity* of an inquiry process involves

an exposition to those involved in and implicated by an inquiry that the results of a collaborative learning process are pertinent to the situation of focus and acceptable to those concerned.

We also argued that “by ‘implicated’ and ‘concerned’ we mean those who are affected by, or concerned with, the results of the inquiry, whether they were involved in the learning process, or not.” Individuals involved in and implicated by any intervention into organizational settings are more likely to accept the learning outcomes of inquiry as being useful and relevant to their situation if they can judge the inquiry to have been an *authentic*, or genuine, attempt at learning about the situation. Such a perception can lead to the learning outcomes of an inquiry being considered to be credible, or “worthy of belief” (Burchfield, 1998; OED, 1998). Individuals who were not actually involved in the inquiry process also need to be facilitated in making such judgments. Participants and nonparticipants alike need to consider how an inquiry was conducted, who was involved and why, who was excluded and why, and any constraints that operated during the inquiry.

Considering such issues at the beginning of an inquiry is extremely difficult, as the results cannot be conceived at the start, and the pertinence, or otherwise, of

the learning is unknown. For example, it is not possible to judge at the beginning of a process of IS design who the eventual “users” of the intended IS may be. It is often possible to make an “educated guess,” but we can never be certain. We suggest that it may be possible, however, to make evident the *authenticity* and *credibility* of any knowledge created, through a systemic learning process by reflecting upon, and if necessary making a record of, certain crucial elements of the inquiry as it unfolds. To support people in such an endeavor, we offer the PEArL mnemonic as an intellectual device to guide inquiry and reflection on these issues.

7. PEArL: AN INTELLECTUAL DEVICE

7.1. Participants

As discussed above, the participation of those within the problem situation with the inquiry process is considered essential to the character of Action Research. However, the nature of human social interaction and learning will often result in people being affected by the outcomes of an inquiry who were not included, perhaps because the direction of the learning was unknown at the start, or for other reasons. For example, when undertaking IS design, including all the potential “users” of a computerized IS may be prohibitive because of cost or shift work or due to the high overturn of personnel. As iterations of the learning cycle are undertaken, proposals for intervention may implicate people who are unable to take part, perhaps due to illness or maternity leave, or who, for some other reason, are not included. The reasons for noninvolvement are as important to consider as are the reasons for participation when considering the *authenticity* of inquiry. The choice of participants, the criteria for inclusion, and the reasons for noninvolvement, or exclusion, are all matters that can be considered in advance, and this sets a boundary, which may alter as the inquiry proceeds. If these details are recorded in some manner, then interested individuals not involved in the inquiry process can gain an appreciation of why certain individuals participated and others did not. It is perhaps worth reiterating at this point that PEArL is not intended to direct, or suggest, criteria for the decisions made concerning the selection of participants; decisions of this nature are made by those involved in the inquiry process. PEArL is intended to support reflection on the inquiry, enabling individual judgments to be made concerning the *authenticity* of the inquiry. An interested individual may judge that the participants were only of managerial status and so not representative of the workforce. Or perhaps insufficient details concerning who participated were made available. In these situations, this individual may judge that the *authenticity* and *credibility* of the project have not been made evident and so this person does not contribute to a public perception of validity of the inquiry. Indeed, this individual may contribute to a public perception of a *lack* of credibility emerging from the project.

7.2. Engagement

Engaging people within a collaborative inquiry process and achieving commitment to the purposes of an inquiry process are no easy undertaking. Within our field of IS, the methods of design employed can require considerable technical expertise and so some participants may be excluded from those phases of inquiry simply due to a lack of knowledge. Spaul (1997) argues that “a communicative process is one in which any knowledge claim on the part of an ‘expert’ is open to challenge,” but such approaches assume that all participants will feel sufficiently confident and articulate enough to be politically active within a debate. We suggest that a reliance on a process of debate bringing about change to the power structures in a situation, as suggested by Clarke and Lehane (1999) and Spaul (1997), does not provide any means to support the less confident and more isolated participants. By making evident the methods and tools employed to engage people in the learning process, interested individuals can reflect upon the environment in which the learning took place. The methods of engagement also reflect other constraints on the inquiry process, such as the time permitted, the resources made available, or when meetings were held. For example, if the inquiry was held immediately after a workday had ended, this might have excluded parents with children who needed to return home or the five-a-side football team who practiced that day; we can, however, ask, Were the participants asked when would be a suitable time to meet? Or perhaps spreadsheets were used to consider various alternatives during the inquiry, and this resulted in the company’s accountants being the main advocates of the learning outcomes. Any judgment will of necessity be different for each individual and for each different inquiry. In any situation the restrictions and constraints may become apparent only as the inquiry is under way or may change during the course of the investigation. Again, we state the elements within PEARL are intended to guide the interested individual in reflecting upon the elements of an inquiry that will help that person make a judgment concerning authenticity and also the credibility of any learning outcomes.

7.3. Authority

Avison *et al.* (2001) broach the subject of authority in their paper “*Controlling Action Research Projects.*” They suggest the use of “action warrants [to] define the authority under which action may be taken” and that the source of such warrants can reveal a great deal about a particular situation. This seems a good idea, though it is important to be aware that the concept of authority is much more complex than can be expressed within an “action warrant.” Authority may be financial, intellectual, physical, or even personal or social in nature. For example, when undertaking an Action Research project as part of a Ph.D., the authority for the project may include intellectual guidelines set by the research supervisor and

physical guidelines for access to a company office, for example, financial controls and time guidelines set out at the start of a project. The authority for the different aspects of the inquiry may thus be given by different people, or groups, and will influence the degree of “self-governance” of those participating in the inquiry. Reflecting upon who authorized, or supported, which elements of the inquiry, and for what purpose, is essential if concerned individuals are to make a judgment concerning the *authenticity* of the inquiry. A high level of autonomy or “self-governance” of participants does not necessarily result in learning outcomes that are pertinent to the situation of focus. Even if those involved considered that some local improvement had been achieved during an inquiry, the wider effects of an intervention may be detrimental (Dash, 1999). Judging the success of the inquiry will include an evaluation of these wider effects. An interested individual, perhaps suffering detrimental effects within the wider environment, might reflect upon what authority the participants within the inquiry perceived themselves to wield or who had authorized the intervention without a full consideration of the possible aftereffects. “Authority” is then a complex element that pervades group situations. Reflecting upon and recording the various aspects of permissions and assumptions will facilitate anyone interested in gaining an appreciation of the reasons for certain decisions. It is unlikely that all aspects of “authority” will be contained within an “action warrant” and some thought will need to be given to making the different aspects of the “authority” for the project transparent to interested individuals.

One final point on the subject of “authority” is the notion of “agnostic inquiry” (Checkland, 1981; Susman and Evered, 1978). The fundamental importance of not directing the learning outcomes cannot be understated. Although certain permissions and authorities, both formal and informal, are required for undertaking any inquiry process within a social situation, attempting to *control* a process of collaborative inquiry is likely to be counterproductive. Learning outcomes from any process of inquiry within a complex social situation do not have some *preexistence* awaiting only to be discovered (Boland, 1985). During a social inquiry the learning outcomes are created by those involved as they find a way through their dilemma. The Action Researcher’s role will be to *navigate* and manage the learning process so as to create some learning outcomes that are acknowledged to be valid (Champion, 2001). The elements of PEARL aid planning for the inquiry process and reflection upon the way that the inquiry was managed, that is, on the emergent character of that inquiry process.

7.4. relationships

We perceive the “relationships” element of the PEARL mnemonic as being of *prime* importance when reflecting on the character of the inquiry. We have designated the “r” as being lowercase, to bring attention to this element and to reflect a “soft” interpretivist approach to the issue of power within a situation.

Within any collaborative inquiry process, there will be undeclared assumptions and beliefs operating, causing conflict and misunderstanding and, also, synergy and acceptance. An intervention in an organizational setting will almost always result in some change to the relationships within the situation of focus, perhaps creating new ones, or dissolving or changing old relationships, or simply creating goodwill or resentment between different groups. These relationships will include those between researchers and participants, and some reflection on the changing boundaries between these two groups will be necessary. An examination of the developing and planned relationships during any inquiry process may be useful in questioning any undeclared worldviews (or Weltanschauungen) held by participants. Such reflection may provide insight into how the issues of individual power and control have been dealt with by participants during the inquiry. Stowell (1989) suggested regarding power as a commodity, and Checkland and Scholes (1999) take up this suggestion in Soft Systems Methodology (SSM), Mode 2. Applying this metaphor enables individuals to ask how power has been expressed within the situation and how these “commodities” may be used and maintained. The metaphor also facilitates the recognition of any potential beneficiaries or victims of the intervention. An appreciation of the consequences of intervention may help to identify potential areas of conflict and to acknowledge accommodations that have been made by those involved. Reflecting on the relationship of the whole intervention with the environment is a useful activity in considering the wider implications of the learning outcomes of the inquiry. If decisions made locally do result in wider disruption, perhaps those affected by those wider effects may be more understanding in their judgment if the perplexities of the original decision are made obvious, or perhaps the same mistakes can be avoided in the future. By using interpretivist modeling methods that can help in the exposition of ideas (Champion, 2000, 2001; Champion and Stowell, 2002; Stowell, 2000), the intended relationships to be maintained between individuals and their environment can be exposed and considered. Such models can then be used to support debate among participants and also reflection by interested nonparticipants, to facilitate these individuals in making a judgment on whether or not they perceive the inquiry to be *authentic* and credible.

7.5. Learning

The very notion of “collaborative” inquiry involves a group of people meeting together, and an investigation may continue over a period of days or months. Eden and Huxham (1991, p. 81) argue that “a high degree of method and orderliness is required in reflecting about and holding onto the emerging research content of each episode of involvement in the organisation.” Recording any agreed intervention (or nonintervention) into the situation of concern and the progress toward that decision by the participants will reflect the transformation that has occurred

due to the process of inquiry and so is a crucial element when considering *authenticity*. This element within PEARL is, of course, already widely accepted as a necessary constituent of Action Research. When undertaking inquiry within an organizational setting guided by SSM (Checkland and Scholes, 1999), various models can be constructed to support debate among participants. Other methods used to support interpretive inquiry are AIM (West, 1995) and navigational devices including conversation models (Champion, 2001; Champion and Stowell, 2002). Those involved may or may not choose to implement the ideas expressed by such models, but in either case, the intellectual effort in constructing the models and the debate that occurs will move the learning process forward. The intellectual devices employed can be considered to be direct outcomes of the learning. Such models can also act as debating tools and to support reflection among interested individuals who were not present at the time of the original inquiry and so help foster an appreciation of the learning outcomes among a wider audience. Indeed it is important within interpretivist approaches to retain the idea that learning is undertaken in an iterative cycle and is ideally never-ending. There will be immediate learning and also knowledge that accumulates after action has been taken, during the reflection process. Evaluation by interested individuals of the intended and unintended consequences of intervention (or nonintervention) into the situation of concern will be supported by some record of the learning outcomes of the inquiry.

Participants in the learning will have gained awareness of the perspective of others and the active process of engaging in discussion may engender an appreciation of the possibilities and constraints within a situation. However, debate alone cannot be considered a sufficiently inclusive method of achieving an appreciation of the situation. By recording the learning outcomes and also the other elements within PEARL in some manner, individuals not involved, or who did not participate in the actual discussion, may be quietly supported in making their own judgments concerning the *authenticity* of the inquiry process.

“Quiet” private judgment alone will not result in the emergence of a “public” perception of the *authenticity* of the inquiry. We argue that the elements within the PEARL mnemonic are able to support interested individuals in scrutinizing the manner in which the inquiry was undertaken. Such reflection supports these individuals in making a judgment on whether the inquiry was carried out in an appropriate and credible manner, that is, Is it an authentic piece of research, worthy of belief? The contribution of PEARL, however, is that if these elements of an Action Research project are made public, it is possible for individuals from the wider environment, who did not actually participate in the learning, to reflect upon the inquiry process, facilitating a wider *public* perception of “validity” to evolve. Such public acknowledgment (or denouncement) of the outcomes of collaborative inquiry can occur only after time has passed, as the wider implications of the transformation achieved will take time to become evident. Too often, the finer

detail of field studies are glossed over, a situation not permitted in other fields of research. PEARL supports individuals in making these judgments of *authenticity*, whether or not they were participants, and we suggest that it is a “conceptual maneuver” (Dash, 1999) of this nature that is required to establish the validity of research undertaken within an Action Research framework.

8. SUMMARY

Undertaking Action Research is immensely difficult and establishing the validity of such endeavors is time-consuming and challenging. The notion of “recoverability” (Checkland and Holwell, 1998) requiring a declaration in advance of the framework of ideas, methodology, and area of concern is essential but still evades issues concerning the manner in which the inquiry was undertaken. “Action warrants” (Avison *et al.*, 2001), although useful, will not provide sufficient information to participants and nonparticipants interested in the authenticity and credibility of the learning outcomes. The credibility of any piece of Action Research (a prerequisite for a perception of validity emerging within the public arena) will then rest upon what aspects of the inquiry process are made accessible within the public domain. It is rare to find fully published accounts of field studies within the academic literature that provide sufficient detail on which to make a judgment concerning the credibility of the outcomes, due partly to the difficulty of writing such studies for academic journals. It is our suggestion that to make the character of the inquiry process accessible to other researchers, Action Researchers will need to make obvious how they managed the elements of the inquiry emphasized within the mnemonic PEARL. The elements of Participation, Engagement, Authority, relationships, and Learning outcomes create a sense of the character, or authenticity, of the inquiry process and so interested individuals can make judgments on whether or not they consider the learning outcomes to be credible (worthy of belief). A public sense of valid research outcomes (or otherwise) will emerge from a consideration of the credibility of any learning outcomes and a sense of the character, or authenticity, of the inquiry process.

REFERENCES

- Audi, R. (1998). *Epistemology: A Contemporary Introduction to the Theory of Knowledge*, Routledge, London.
- Avison, D. E., Wood-Harper, A. T., Vidgen, R. T., and Wood, J. R. G. (1998). A further exploration into information systems development: The evolution of Multiview2. *Inform. Technol. People* **11**(2), 124–139.
- Avison, D., Baskerville, R., and Myers, M. (2001). Controlling action research projects. *Inform. Technol. People* **14**(1), 28–45.
- Bargal, D., Gold, M., and Lewin, M. (1992). Introduction: The heritage of Kurt Lewin. *J. Soc. Issues* **48**(2), 3–13.

- Baskerville, R. L., and Wood-Harper, A. T. (1996). A critical perspective on action research as a method for information systems research. *J. Inform. Technol.* **11**, 235–246.
- Baskerville, R. L., and Wood-Harper, A. T. (1998). Diversity in information systems action research methods. *Eur. J. Inform. Syst.* **7**, 90–107.
- Beyer, H., and Holtzblatt, K. (1998). *Contextual Design: Defining Customer-Centered Systems*, Morgan Kaufmann, San Francisco.
- Bødker, S. (1996). Creating conditions for participation: Conflicts and resources in systems development. *Hum. Comput. Interact.* **11**, 215–236.
- Boland, R. J. (1985). Phenomenology: A preferred approach to research on information systems. In Mumford, E., Hirschheim, R. A., Fitzgerald, G., and Wood-Harper, A. T. (eds.), *Research Methods in Information Systems*, North-Holland, Amsterdam, pp. 193–201.
- Borda, O. (2000). Participatory (action) research in social theory: Origins and challenges. In Reason, P., and Bradbury, H. (eds.), *Handbook of Action Research: Participative Inquiry and Practice*, Sage, London, pp. 27–37.
- Breu, K., and Peppard, J. (1999). Legitimising action research: The participatory paradigm. In *BIT 99*, Manchester Metropolitan University, 3–4 Nov., ISDN No. 0 905304 30 6.
- Burchfield, R. W. (1998). *The New Fowler's Modern English Usage*, Clarendon Press, Oxford.
- Burrell, G., and Morgan, G. (1979). *Sociological Paradigms and Organizational Analysis*, Heinemann Educational, London.
- Champion, D. (2000). A report on an action research field study. *Systemist* **22**(1), 60–85.
- Champion, D. (2001). *Navigating the Gap Between Purposeful Action and a Serving Information System*, Unpublished Ph.D. thesis, Department of Information Systems and Computer Sciences, De Montfort University, Milton Keynes, UK.
- Champion, D., and Stowell, F. A. (2001). PEArL: A systems approach to demonstrating authenticity in information system design. *J. Inform. Technol.* **16**, 3–12.
- Champion, D., and Stowell, F. A. (2002). Navigating the gap between action and a serving information system. *Inform. Syst. Frontiers* **4**(3), 273–285.
- Checkland, P. B. (1981). *Systems Thinking, Systems Practice*, John Wiley, Chichester.
- Checkland, P. B. (1983). O.R. and the systems movement: Mappings and conflicts. *J. Operat. Res.* **34**(8), 661–675.
- Checkland, P. B. (1985). From optimizing to learning: A development of systems thinking for the 1990's. *J. Operat. Res. Soc.* **36**(9), 757–767.
- Checkland, P. B., and Holwell, S. E. (1998). Action research: Its nature and validity. *Syst. Pract. Act. Res.* **11**, 9–21.
- Checkland, P. B., and Scholes, J. (1999). *Soft Systems Methodology in Action with a 30 Years Retrospective on SSM*, John Wiley, Chichester.
- Clarke, S., and Lehany, B. (1999). Organisational intervention and the problems of coercion. *Systemist* **21**, 40–52.
- Dash, D. P. (1999). Current debates in action research. *Syst. Pract. Act. Res.* **12**, 457–492.
- de Zeeuw, G. (1995). Values, science and the quest for demarcation. *Syst. Res.* **12**(1), 15–24.
- Dunning-Lewis, P. J. (1999). Issues in the conduct of research through intervention in real-world affairs. In Castell, A. M., Gregory, A. J., Hindle, G. A., James, M. E., and Ragsdell, G. (eds.), *Synergy Matters: Working with Systems in the 21st Century*, Plenum, New York, pp. 175–180.
- Eden, C., and Huxham, C. (1996). Action research for the study of organizations. In Clegg, S., Hardy, C. and Nord, W. (eds.), *The Handbook of Organization Studies*, Sage, Beverly Hills, CA, pp. 526–542.
- Elden, M., and Chisholm, R. F. (1993). Emerging varieties of action research: Introduction to the Special Issue. *Hum. Relat.* **46**(2), 121–142.
- Elliot, J. (1991). *Action Research for Educational Change*, Open University Press, Milton Keynes, UK.

- Gadamer, H. G. (1989). *Truth and Method*, 2nd ed. (translated by J. Weinsheimer and D. G. Marshall), Sheed and Ward, London.
- Heidegger, M. (1962). *Being and Time* (translated by J. Macquerrrie and E. Robinson), Harper and Row, New York.
- Heron, J., and Reason, P. (2000). The practice of co-operative inquiry: Research 'with' rather than 'on' people. In Reason, P. and Bradbury, H. (eds.), *Handbook of Action Research: Participative Inquiry and Practice*, Sage, London, pp. 179–188.
- Kensing, F., and Blomberg, J. (1998). Participatory design: Issues and concerns. *Comput. Support. Coop. Work* 7, 167–185.
- Klein, H. K., and Myers, M. D. (1999). A set of principles for conducting and evaluating interpretive field studies in information systems. *MIS Q.* 23(1), 67–94.
- Maturana, H. R. (1978). Biology of language: The epistemology of reality. In Miller, G. A., and Lenneberg, E. (eds.), *Psychology and Biology of Language and Thought: Essays in Honour of Eric Lenneberg*, Academic Press, New York, pp. 27–64.
- Mumford, E. (1995). *Effective Systems Design and Requirements Analysis: The ETHICS Approach*, Macmillan, London.
- OED (1998). *The New Oxford Dictionary of English*, Pearsall, J. (ed.), Oxford University Press, Oxford.
- Park, P. (2000). Knowledge and participatory research. In Reason, P., and Bradbury, H. (eds.), *Handbook of Action Research: Participative Inquiry and Practice*, Sage, London, pp. 81–90.
- Popper, K. R. (1959). *The Logic of Scientific Discovery*, Hutchinson, London.
- Reason, P. (1993). Sitting between appreciation and disappointment: A critique of the Special Edition of *Human Relations* on action research. *Hum. Relat.* 46(11) 1253–1270.
- Reason, P., and Bradbury, H. (eds.) (2000). *Handbook of Action Research: Participative Inquiry and Practice*, Sage, London.
- Reason, P., and Rowan, J. (eds.) (1981). *Human Inquiry: A Sourcebook of New Paradigm Research*, Wiley, Chichester.
- Sartre, J. P. (1966). *Being and Nothingness*, Washington Press, New York.
- Spaul, M. (1997). Discipline and critique: The case of information systems. In Mingers, J., and Stowell, F. A., (eds.), *Information Systems: An Emerging Discipline?* McGraw–Hill, London, pp. 63–95.
- Stowell, F. A. (1989). *Change, Organizational Power and the Metaphor: Commodity*, Unpublished Ph.D. thesis, Department of Systems, University of Lancaster, Lancaster, UK.
- Stowell, F. A. (2000). Modelling information system requirements for complex systems. In Bustard, D. W., Kawalek, P., and Norris, M. T. (eds.), *Systems Modelling for Business Process Improvement*, Artech, London, pp. 171–186.
- Stowell, F. A., and Champion, D. (2000). Interpretivist modelling for information systems definition. In Henderson, P. (ed.), *Systems Engineering for Business Process Change*, Springer, London, pp. 106–116.
- Stowell, F. A., and Champion, D. (2002). A unified mechanism for information system definition in action. In Henderson, P. (ed.), *Systems Engineering for Business Process Change: New Directions*, Springer, London, pp. 138–149.
- Stowell, F. A., and West, D. (1994). *Client-Led Design: A Systemic Approach to Information Systems Definition*, McGraw–Hill, London.
- Stowell, F. A., West, D., and Stansfield, M. (1997). Action research as a framework for IS research. In Mingers, J., and Stowell, F. A. (eds.), *Information Systems: An Emerging Discipline?* McGraw–Hill, London, pp. 159–200.
- Susman, G. I., and Evered, R. D. (1978). An assessment of the scientific merits of action research. *Admin. Sci. Q.* 23(4), 582–603.
- Tsoukas, H. (1993). Analogical reasoning and knowledge generation in organization theory. *Organiz. Stud.* 14(3), 323–346.
- Weber, M. (1949). *The Methodology of the Social Sciences*, Free Press, New York.

- West, D. (1995). The appreciative inquiry method: A systemic approach to information systems requirements analysis. In Stowell, F. A. (ed.), *Information Systems Provision: The Contribution of Soft Systems Methodology*, McGraw-Hill, London, pp. 140–158.
- Whyte, W. F. (ed.) (1991). *Participatory Action Research*, Sage, Newbury Park, CA.
- Winograd, T., and Flores, F. (1987). *Understanding Computers and Cognition: A New Foundation for Design*, Addison Wesley, Reading, MA.
- Zmud, R. W. (1998). Conducting and publishing practice-driven research. In *Proceedings of International Federation for Information Processing (IFIP) Working Groups 8.2 and 8.6 Joint Working Conference on Information Systems: Current Issues and Future Changes*, Helsinki, Finland, 10–13 Dec., pp. 21–34.