

ALARj

Action learning and action research journal

Volume 23 No 1 June 2017

ALAR Journal

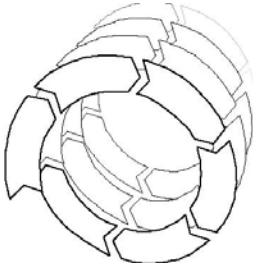
Vol 23 No 1 June 2017

ALAR Journal is published by the Action Learning,
Action Research Association Inc (ALARA)

Managing editor: Colin Bradley:
editor@alarassociation.org

Editorial team: Dr Chivonne Algeo, Dr Gina
Blackberry, Colin Bradley, Dr
Susan Goff, Dr Ernest
Hughes, Dr Cathryn Lloyd,
Dr John Molineux, A. Prof.
Hilary Whitehouse, and Prof.
Ortrun Zuber-Skerritt

Editorial inquiries:
The Editor, *ALAR Journal*
ALARA Inc
PO Box 162
Greenslopes, Qld 4120
Australia



ALAR Journal

Volume 23 No 1

June 2017

ISSN 1326-964X (Print)
ISSN 2206-611X (Online)

CONTENTS

Editorial	3
Colin Bradley	
Education for sustainability: teachers conceptualize their new role by participatory action research	7
Noa Avriel-Avni	
The application of ALAR to facilitate the adult learning experiences of Indonesian international students in an Australian university	35
Barry Elsey and Amina Omarova	
Reflections for postgraduate students on writing an action research thesis	61
Stephen Smith	
Using action research in practice: Useful insights and outcomes	77
Stephen Duffield	

Work-Applied Learning for organisational change: 125
A comparative assessment against other change
approaches

Natalie Holyoake

ALARA membership information and article 158
submissions

Colin Bradley

© 2017. ALARA Inc. and the author(s) jointly hold the copyright of
ALAR Journal articles.

Editorial

Colin Bradley

I started to prepare this first issue of the *ALARj* for 2017 with an expected theme of Action Learning and Action Research in education and personal development. As I find so often, the underlying theme of the articles is about change.

Noa Avriel-Avni describes the impact of creating a new curriculum for an environmental education program using a participatory action research approach (PAR) involving the teachers of the program. Avriel-Avni points out that focusing on *activity* is one of the reasons for new definitions of environmental education. Such education requires developing critical thinking, value awareness, problem-solving skills and initiative thinking, and consequently, the need to change the educational approach. However, simply exposing students to knowledge is not sufficient to develop them with the drive and skills to act for a sustainable future. The students began to demand an integral role in the PAR. However, empowering students requires the teachers to give up power, thus producing a significant impact on the teachers' perception of their role as environmental educators.

The change in teachers' perception of their role coincided with students' perception of the activities... a prolonged process of change in classroom management took place. The customary hierarchical structure changed to a collaborative learning process of both students and teachers. The new structure of relationship between teachers and students was triggered by the students' claim for authority. The teachers' and students' mutual learning was made possible through the PAR reflection meetings. (p. 26)

Our second article is from Barry Elsey and Amina Omarova, who describe a partnership between Insitut Pertanian Bogor (IPB), an agricultural university in Indonesian Java, and the University of Adelaide. The project involved education of Indonesian public

servants, using an Action Learning and Action Research (ALAR) approach. Elsey and Omarova wrote this article as there appears to be no research-based studies about ALAR in relation to individual adult learning within the wider context of international education.

The students commenced their studies for a double Masters degree in Indonesia, and then completed the program in South Australia. The students were likely to be familiar with the positivist-empiricist research knowledge paradigm, but not the interpretive one. The ALAR approach was an additional challenge to them. They had to undertake these studies in an international and unknown environment, in a method that was very unfamiliar to them as they completed a research assignment. The unfamiliarity of the approach – ALAR – was in marked contrast to their earlier studies.

The use of a simple eLearning Diary, an assessable part of the whole programme, proved to be a very effective tool for communication and reflection, and thus learning.

Avriel-Arni had found that the students wanted more input as a consequence to becoming self-directed, while Elsey and Omarova found the 'ALAR provided just the right amount of structured guidance, while placing responsibility on the adult students to be self-directed' (p. 58).

In the third article, Stephen Smith offers seven personal reflections grounded in the experience of writing two doctoral theses to ignite creativity and evoke discussion on what may be helpful to student researchers using an action research approach, and thus on improve practice in action research. These reflections include accepting the 'messiness' of Action Research, using storytelling and group sensemaking as means to develop knowledge and choosing a suitable framework for reflection, which harks back to Elsey and Omarova's use of eLearning Diaries. Smith encourages elements such as triangulation and multiple cycles of member checking to validate the research and demonstrate the clarity of purpose, rigour and process.

He emphasises that

[w]hile the ultimate test of validity may be the usefulness of the findings, the onus remains on the student to provide evidence that the research process meets the quality standards benchmarked across all academic disciplines. (p. 72).

Stephen Duffield, in the fourth article, describes the issues and challenges encountered during three action research projects that were researching the application of a conceptual model, termed the Systemic Lessons Learned Knowledge model (Syllk) model. His doctoral research program proposed that reconceptualising organisational knowledge and lessons learned through the Syllk model can influence organisation learning, although this article focuses on the general methodological issues and problems of action research experienced during these projects.

He uses a double, integrated Action Research cycle process, one focusing on the organisational problem solving activity, while the other is the research activity, generating new knowledge. Action Research supports research within a complex learning social organisation and benefits both the organisation and the project management body of knowledge. He also notes the differences between researching and consulting, particularly as consultants are required to produce empirical results within tight time and dollar budgets. As with Smith, Duffield mentions the need for triangulation and cycles of data collection. He then describes each of the three projects, apologising for the repetition of some aspects, but which are important to understand the projects and the actions within the research. He finishes with insights into the role of the researcher, implications of the dual cycle (parallel) process, importance of reflection, external constraints, ethics and project size.

Duffield's research focused around business change management, organisational learning and project management. In the final article, Natalie Holyoake has analysed a wide range of literature to establish the desired features of successful change management methodologies or approaches. She then analysed a variety of approaches for those important features. Her research is very

important in establishing that each approach has strong aspects, but few have strong emphasis across all features.

The seven areas considered important to success in change, as identified in the literature reviewed, are assessment, planning, action, observation, reflection, evaluation and validation. There are two broad types of change methodologies; planned and emergent. Each of these types has strengths and weaknesses. There are also methodologies that exhibit characteristics of both: planned-emergent change, which the approaches in which tend to have some strength in all areas compensating for the weaknesses in either of the other two types. Examples of the approaches in the planned-emergent type are Six Sigma, Lean and Work-Applied Learning, with the latter being strongest in all seven aspects of successful change.

ALARA is seeking additional reviewers and co-editors for the *ALARj*.

The *ALARj* aims to be of the highest standard of writing from the field to extend the boundaries of theorisation of the practice, as well as the boundaries of its application.

ALARA requires the assistance of many reviewers to achieve this goal for the *ALARj*. We also encourage experienced practitioners and scholars to consider being a member of our editorial panel or a guest editor.

If you would like to assist ALARA, please contact Colin via editor@alarassociation.org or the Secretary via secretary@alarassociation.org.

You will find more information about ALARA from page 158 or at www.alarassociation.org.

Education for sustainability: teachers conceptualize their new role by participatory action research

Noa Avriel-Avni

Abstract

Education for sustainability calls for a change in the frame of reference towards the world and therefore a profound change of the conventional education approach is required. This article presents a process of change in teachers' paradigmatic conception of their role: from knowledge-agents to moderators who encourage learning processes in their classroom, by developing an action research based curriculum. Analyzing teachers' reflection meetings and the transcripts of the lessons, revealed the introspection process teachers went through. It highlights the unique contribution of the participatory action research approach to position the person as an integral part of the social-ecological system; a conception which is a foundation of education for sustainability. It also emphasizes the need to pay more attention to teachers' professional development and the challenges they face when using AR approach to developing social and environmental activism among their students.

Key words: Sustainability; participatory action research; teachers' education; professional development.

Introduction

Awareness of the growing environmental crisis has led education systems around the world to develop environmental education programs since the 1960s. The initial approach of environmental education, to stimulate environmental responsibility by fostering empathy for nature, mainly affected those who were already

convinced. Therefore, it was necessary to promote other topics that encourage environmental involvement. Environmental quality, sustainability and environmental justice, which have evolved over time, are examples of such themes (Mihaylov and Perkins, 2015). Accordingly, a new curriculum was developed, using an urban social-ecological system as the arena for education for sustainability (Avriel-Avni, 2004). The curriculum was developed with a participatory action research approach (PAR), along with the teachers at the school. However, as the research progressed, an interesting and unique situation emerged when the students demanded to become an integral part of the PAR. A closer look at the recorded teachers' reflection meetings revealed the significant impact on the teachers' perception of their role as environmental educators. This article focuses on these changes and their causes.

Like PAR, Education for Sustainability (EfS) aims to develop students' conception of themselves as an integral part of the social-ecological coupled system (Plummer, 2010; Tidbel and Kresny, 2011). It is also an attempt to foster awareness of the complex and dynamic nature of environmental dilemmas and the major role humans play in them (Robottom and Hart, 1993; McKeown and Hopkins, 2003; Tilbury and Wortman, 2004; Chapman, 2000; Delgado, 2015). Accordingly, EfS aims to nurture responsibility of the learners in their choices on how to act in the local and the global environment (UNESCO 2005b; UNESCO, 2007).

The concept of sustainable development is the result of the growing awareness of the complexity and the dynamic nature of global environmental problems. It strongly links ecological integrity (Müller, 2005) and socio-economic issues such as lack of fresh water, rapid population growth, poverty and inequality, food shortage, depletion of tropical forests, loss of biodiversity, pollution and desertification (Kettlhoilwe, 2008). This perspective of the world could be defined as a new paradigm of the relationship between humans and their environment (Pickatt, Koasa and Jones, 1994; Berkes and Folke, 2000; Turner, Georgiou, and Fisher, 2008).

In terms of education, the emphasis of this new paradigm is the role of humans in the social-ecological systems (Plummer and

Armitage, 2007; Krasny, Lundholm and Plummer, 2010) and is related to the perception of being an integral part of the system, which is fundamental to PAR (Elliott, 2006; Whitehead, 2012; Zuber-Skerritt, 2012; Burns and Worsley, 2015). The original inspiration for environmental education was the desire to protect or conserve the natural environment from human threats; this was the main motivation for many people (Smyth, 2006). This kind of goal expresses a positivistic worldview which regards human beings as outsiders of the natural system (Keiny, 2002; Cutter-Mackenzie, Clarke, Smith and Su, 2006). Education for sustainability (EfS), on the other hand, regards humans as integral components of their ecosystems whose actions influence their entire environment. Due to these interpretive approaches (Robottom and Hart, 1993) or ecological thinking (Keiny, 2002), EfS does not focus on solving human-made 'environmental problems' but instead encourages people to become an active part of their environment in a way that will make it a healthy system (Smyth, 2006). Thus, EfS aspires to equip students with knowledge, skills and a desire to act responsibly toward the environment (Fien and Tillbury, 1996; Tilbury and Wortman, 2004; Berkowitz, Ford and Brewer, 2005; UNESCO, 2005a).

Education for environmental citizenship

Focusing on *activity* is one of the reasons for new definitions of environmental education as education for "environmental" or "ecological" citizenship (Dobson, 2003). Many see it as a call for deep change of the entire educational system (Wals and Van der Leij, 1997; Keiny, 2002; Tilbury and Wortman, 2004; Smyth, 2006; Sherren, 2008; Krasny, Lundholm and Plummer, 2010). Promoting environmental and active citizenship should be achieved by developing critical thinking, value awareness, problem solving skills and initiative thinking, instead of teaching environmental behaviours such as recycling or not littering (Wals and Van der Leij, 1997; Whitehead, 2012; Wood and Govender, 2013). These goals emphasize the need to change the educational approach. Exposing students to knowledge is essential but not sufficient for fostering citizens who have the drive and skills to act for a

sustainable future (Berkowitz, Ford and Brewer, 2005). One of the implications is that when empowering students, as one of the major principals of sustainable development, someone else has to give up that power (Smyth, 2006; Burns and Worsley, 2015). It means questioning the traditional division of authority between teachers and students and requires a new definition of the teacher's role (Keiny, 2002).

Action research as an appropriate approach to EfS curriculum development

Wals and Alblas (1997) suggest Participatory Action Research (PAR), a research tradition that combines inquiry with action, as an appropriate means to develop an environmental education curriculum, due to the local nature of environmental dilemmas and the need to enable the residents to deal with questions that are relevant for them. PAR can also be used in order to develop environmental education programs, especially in the context of civic science, to meet the needs of scientists as well as the needs of EE educators and their students (Krasny and Bonney, 2005; Ballard and Belsky, 2010). As an educational approach, PAR has been approved as a way to develop ecological literacy (Krasny and Bonney, 2005) and environmental values in students (Avriel-Avni, 2004; Ardoin, Castrechini, and Hofstedt, 2014). Personal Action Research (AR) is often recommended as a method for pre-service training for teachers of EfS (Kethoilwe, 2008; Duenkel and Pratt, 2013) and for professionalization of teachers in service (Carr and Kemmis, 2003). Elliott (1991) stressed the coupling between curriculum development by AR and teachers' professional development, and Whitehead (2012) stressed the importance of developing a living educational theory in a turbulent world. At the same time, Zuber-Skerritt (2012), together with the various authors in her book, brings diverse stories that demonstrate the contribution of conducting PAR to social-ecological problem solving, in a in an uncertain world. Burns and Worsley (2015) take the use of PAR one step forward and demonstrate the contribution of participatory approach to community education and to solving social and environmental problems in an international context.

Accordingly, recently there have been growing calls for the integration of PAR into environmental education and EfS in the urban arena (Delgado, 2015) and as means of developing leadership and environmental activism (Bywater, 2014; Smith, Beck, Bernstein and Dashtguard, 2014).

As a research tradition, the PAR approach is deeply anchored in a holistic and constructivist worldview whereby humans are an integral part of their environment (Burns and Worsley, 2015). Thus, it is particularly suitable for the development of curriculum and for professional development in EfS (Keiny, 2002).

This paper is based on a three-year PAR project carried out by a group of teachers led by an academic researcher. While the original purpose of the study was to formulate the principles of sustainability education based on "Ecological Thinking" (Keiny, 2002, Avriel-Avni, 2004), looking back to the old materials of the teachers' reflection meetings and the transcripts of the lessons, enables us to detect changes in teachers' conceptions of their role and to identify a transition towards a more adequate approach to EfS.

Methodology and methods

The PAR was held in a junior high school in the town of Mitzpe Ramon. The town has 5,000 residents and is located in the Negev desert of Israel. The town is situated 80 kilometres (50 miles) from the nearest city and is surrounded by a wide nature preserve. This location has observation points offering spectacular views. All essential resources: water, energy (electricity and gas), food, as well as social and cultural services, must be brought to the town from a considerable distance. The population consists of immigrants from different countries and diverse social-economic status. Because of the limited size of the town, its residents have inadequate health services and limited job opportunities. In addition, the educational and cultural possibilities are limited. As a result of these limitations, there is a great deal of mobility among the residents, including that of teachers. The PAR manifested goal was to construct an inquiry-learning based curriculum termed 'The

Town as an Ecosystem'. Although initiated by a researcher, the study was led by the school principal, who was inspired to develop inquiry learning in the school. In the first year, the student population consisted of a 10th grade class, selected by the school principle. In the next two years, the participation in the program was voluntary, instead of following their usual "inquiry learning" lesson. A group of 25 students aged 14-15 participated in the project, in different cohorts each year.

A team of school teachers, including one of the researchers, participated in the PAR and served as the study population. Participation in the group was voluntary. Notably, most of the participants were enthused by the idea of developing inquiry learning and not necessarily by EfS development.

In the first year, the team consisted of four teachers: a physics teacher, the homeroom teacher who was also a geography teacher, a history teacher and a photography teacher. The researcher herself holds a biology teaching certificate although has not actually been taught. In the following two years, the history teacher and the photography teacher left the team. In their place, two new participants joined the team: a tourism expert and a literature teacher. Three other staff members, the principal of the junior high school, the art teacher and the computer teacher, participated on a casual basis.

In accordance with the PAR principles (Carr and Kemmis, 2003) the teachers' team met weekly for two hours, for reflection on their last week's classroom activity and for planning the next one. Prior to the meeting teachers received transcripts of the classroom activity and the last reflection meeting, both were recorded and transcribed by the researcher. The transcripts were used as a basis for discussion on the activity: what was successful; what should be changed; and what are the current questions for the PAR.

All teachers' meetings were recorded and transcribed. In addition, private conversations between the researcher and members of the teachers' team were documented in her research logbook, alongside her observations.

During the last two years of study, when students' participation was on a voluntary basis, the students asked to become real partners in developing the program. As a result, we started recording the classroom activity. The transcriptions were available for students in the school library and were often used as a basis for classroom conversation and for making joint decisions about the group operation. For the current research, the students' voice was added to the research data and allowed us to analyse the emergence of a new fabric of teacher-student relationship.

In order to follow the changes of the teachers' conceptions during the PAR process, we used the "thick description" approach (Geertz, 1975). Rereading of the materials allowed a full report of events and behaviours as well as the roots of action. Content analysis of the transcripts of the teachers' reflection-meetings and the classroom activity, as well as the research logbook, served as references for the description. Teachers' comments about the process, which were included in the reflection scripts, in addition to their direct references, served as validation of our interpretation.

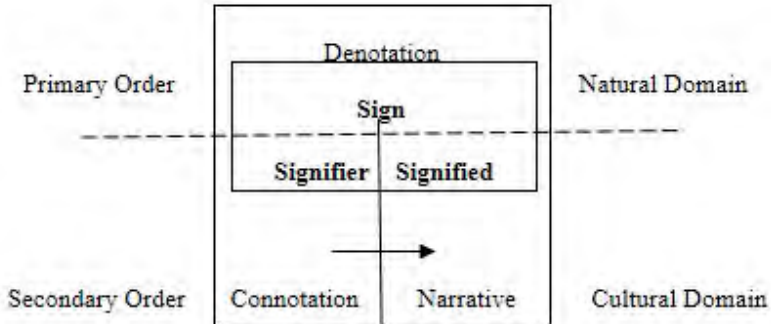
Semiotic analysis (Kim, 1996) was employed to follow up the teachers' change of key concepts that emerged from the rereading of materials. Semiotics analysis is a research approach which examines the creation of signs and the connotations and meanings given to them, beyond the dictionary or their usual meaning.

In such analysis, a sign consists of three elements: Sign = Signifier + Signified.

The signified is a mental, abstract concept arising in the mind, where the signifier is the vehicle, an image that came from the outside world. The connection people make between the signifier and the signified reflects their perception and the cultural context (Saussure, 1983). In this respect, the signifier has no natural connection with the signified. Accordingly, there is a gap between the formal dictionary definition of sign (word, in our case) and the personal perception and interpretation of it. Text analysis using the semiotic approach, or looking for the meaning of signs, is actually

an inquiry into ones' conception or narrative and knowledge development.

Kim (1996, p. 108) suggests the following diagram to illustrate this process.



For example, the signifier of the sign: "environment" can be a picture of (or talk about) a natural forest, which points to a narrative of the environment as places that are not affected by humans. In contrast, one can talk about the long supply lines that provide resources for the city. This spider-like shaped signifier, signifies the environment as a social-ecological system.

In order to analyse the discourse and understand the narrative related to a particular concept, we had to find sentences in the text that illustrate the connotations participants have about this concept. This method allowed us to follow changes in the teachers' narrative over the study period.

The context of the study is essential to understand the process that the teachers underwent, and therefore cannot be concealed. For this reason, it is impossible to mask the identification of the teachers. To overcome this problem, we requested and acquired the teachers' permission to publish the analysis. However, the analysis is of the discourse changes, rather than personal transformation. Therefore, there was no need to refer specifically to the teachers.

Results

Changes in the perception of the role of teachers throughout the action research

The first year of the AR opened with the question: How to promote students' system thinking and understanding of themselves as an integral part of their town ecosystem? Although this question may express ecological thinking, the data show a more complex picture as demonstrated below.

Inductive vs. deductive teaching

Arousing the students' interest to study their local municipal system was a real challenge. In a series of personal interviews held before the beginning of this project, students articulated a negative opinion of the town. Phrases like 'This is a boring town, suitable for seniors only' or 'The moment we are old enough we shall fly away', were frequently expressed. In light of this, the teachers' team decided to begin the study by encouraging students to ask questions that stem from their reality. Inductive learning, i.e. learning through experience, was declared as an objective of the teachers at the beginning of the process. The idea was to encourage the development of system thinking by promoting authentic research questions, which reflected the students' understanding of themselves as a part of the ecosystem. To their great surprise, the students' reaction was of sheer reluctance, claiming 'We know everything about the town where we were born and raised -- no point in researching the known'.

The reaction of the teachers to this resistance was reflected in their weekly meetings:

I look at our town in order to understand it as a system. But they [the students] do not see it this way. They sit in the class and see us giving them many new concepts and telling them to begin to explore these concepts and find out some general ideas such as a system. But they don't know what 'system' is because they have no background!

(October 27, 1999)

A month later, the teachers decided to reverse their teaching from an inductive to a deductive mode and to start from the abstract rather than the concrete; to teach 'urban ecosystems' theoretically:

[We need] 2-4 theoretical lessons in order to explain ... the basic concepts, to introduce the concepts into their lexicon in a sort of 'brainwashing', only then they can begin to experience the system.

(November 29, 1999)

Later that year, one of the teachers worded it more explicitly:

... I am also not sure that we have to work by this [inductive] way. I mean we can, in some manner, 'spoon feed' them. Whenever we do it in an informal lecture, we still do what we desired to do.

(May 29, 2000)

The beginning of the action research was characterised, therefore, by relatively fast departure from the idea of *inductive* learning and back to the familiar and safe pattern of *deductive* teaching. The transferring knowledge approach was also reflected in the setting of the lessons.

Collaborative learning vs. hierarchically teaching

Faithful to the idea of exploring the real questions *with* the students, the teachers decided to sit in the classroom among the students. This decision reflected a collaboration attitude which is consistent with ecological thinking. Yet, teachers had difficulty to give up their power in classroom. For example, the next excerpt taken from the teacher-student activity in the classroom demonstrates that despite the new setting, the relationship between the teachers and the students continued to be based on hierarchy:

Teacher: We will split the meeting today into two parts. I shall open the first part by some general remarks and in the second part we will pay attention to the learning activity that was today. I don't mean to develop a discussion about it but I want to ask short question and to hear some answers. [He writes on the blackboard: "embarrassment"; "confusion". Is it bad?]

Student 1: Depends.

Student 2: It is very bad.

Teacher [asking another student]: What do you have to say?

Student 3: It depends on the situation.

Teacher: Why do you think it is not necessarily bad?

Student 3: Because confusion can also lead to positive things.

Teacher: Good. It means that confusion can induce beautiful ideas. Are you confused because of our project?

(September 8, 1999)

In this typical script, one teacher led the discussion by the traditional "ping pong" manner, in which the teacher posed questions and the students supplied answers. The three other teachers sat passively among the students and their voices were not heard. Despite the declared intention of collaboration, it seems that the teachers tended to stick to the usual top-down relationships between students and teachers. Moreover, in private interviews, students told the researcher that the location of the teachers among them in the class only made them nervous because they felt more controlled.

The teachers' concern of losing control came up in their reflective meetings:

Today I felt that we reached an egalitarian condition. I mean, students can say: I have the same right to vote as you, so who said you know better than me? Who said you can decide for me? This for me is a very difficult situation.

(November 29, 1999)

A participatory approach, which is essential for EfS, proved to be a challenge for teachers at the beginning of the process.

From teaching to supervising

The summer vacation was used for deep reflection on the teachers' teaching activities. The lesson learned was that the students have no interest in studying their town and that they conceive the entire

curriculum as an extra burden. For this reason, the second year of the AR cycle opened with the following question: 'How to motivate students to study their own town ecosystem?' The proposed solution was to design a meaningful experience that later got the name "Unfreezing Experience". The idea was to start the curriculum with a three-day excursion around the town in order to observe and to experience the town from unusual points of view, to meet different people in the area and listen to their narratives and to overnight in special nearby tourist sites; an experience that would give the students a new perspective of their own town. Responsibility becomes a key concept in the teachers' meeting. It was seen as an expression of the students' perception of themselves as part of ecosystems. In order to develop students' responsibility, it was decided to let the students organize all the food for the trek with minimal help from the teachers.

Examining the teachers' reaction to the tour in their meeting and in the following classroom activities reveals profound effects on the teachers' conception of their role. These deep influences can also be described as an "Unfreezing Experience".

As a result of heated discussions with students, teachers began doubting the traditional division of authority between teachers and students. It seemed that the small step of giving the student the responsibility to organize the food generated a flood of claims about authority and responsibility. Essential questions such as: 'Whose authority and whose duty is it to keep to the schedule of the journey?' were discussed in depth. In a discussion that dealt with the problem of students arriving late to class, the students claimed that 'If you want us to be on time, we want to take part in the scheduling process'. Some students insisted that 'You have to trust us that this program is important for us like it is important for you [the teachers], so we should be trusted as responsible people who have a good reason for coming late'.

The changes in the students' conception of their role in the learning process demanded similar changes in the teachers' conception of their role.

However, the new, shared authority between students and teachers was not easily accepted by the teachers. Their ambivalence is clearly expressed in the following excerpts. On the one hand, they said: 'Developing the students' responsibility is the main goal of the curriculum.'

On the other hand, there were worries about the students achievements, or as one of the teachers worded it: '... we need to put more emphasis on the outcomes of the curriculum'. (November 26, 2001).

Description of classroom activities reveals that when students demanded shared responsibility for their action, the teachers tended to stick to their traditional role.

The first lesson after the three-day trek made it clear that the students had a very meaningful experience. They spoke excitedly about it but when they were asked to list inquiry questions about the town, teachers found out that they have new roles:

1. To help students translate their emotional experience into a subject for inquiry.
2. To help students define a researchable question.
3. To help create research teams around common questions.

The result was more than 60 questions suggested by the 20 students, saying that they found it difficult to choose only one question for their inquiry.

An interesting outcome of this process was that the students insisted on inquiry learning that involved actions for improving the town ecosystem. Instead of asking about the system, students formulated questions such as 'How can I adapt the landscaping style of the town to the desert conditions?' 'How can I help to reduce the impact of the town on the environment?' As a result, some of the research projects combined action and gradually teachers began to understand their role as supervisors of students' AR.

Partial concession of the teachers' authority

Alongside students' inquiry projects in the small teams, the whole group had a weekly plenary meeting where the inquiry teams had the opportunity to present their progress, to share knowledge and to ask for help from the other teams. Occasionally, teachers brought new subjects for the group's discussions and gradually the students began to perceive the town as a system.

Analysis of the conversations indicates a change from the "Ping Pong" pattern of the first year. Instead of the lesson being led by one teacher who pre-determines the direction as well as the output, the lessons were much more open and cooperative. Teachers let the students lead parts of the meetings and the conversation became more like a network structure. The next excerpt shows part of a discussion that developed from an article brought by one of the teachers about the September 11 attack. His aim was to develop a discussion about how fragile the reliance of modern human ecosystems on artificial facilities is, but soon one of the students (S1) took the lead, directing the conversation to a new venue:

S1: I wanted to share with you some of my thoughts. If there is evil in the world, it is in humans. There is violence in animals, but animals are not directed by evil or bitterness and such things like us. They kill to survive and not as a cause of evil. They have no natural evil like we have.

S2: I have something to say. This is natural, because we are more developed.

S3: I wish we weren't.

S2: I didn't say no but this is natural. Maybe animals do not have the ability to be evil.

S4: It is true that there are good and bad feelings, but animals do not understand anything. They know just that they have to eat and continue the generations. We know that we have to leave something behind us so that the next generations will know that we have been here. We have to develop and build our place to make it better for them.

S5: Yes, but who will pay the bill?

S6: I agree. Who will pay the bill?

S4: That's it. This is our mistake when we think we can survive 'on the house'.

S7: We survive 'on the house' on all the animals and actually, the whole world and we never

(September 16, 2001)

The discussion began to deal with hatred directed by humanity and at this point, the teacher stopped the conversation since it seemed to veer far away from the original subject. It demonstrates another new role of the teachers: keeping the time and subject matter framework robust yet flexible enough to allow sidetracking from time to time. This excerpt also shows alternating roles in the discussion between students and teachers. The new roles and skills that were required from the teachers and formulated in their reflective meetings are listed in Table 1.

One more interesting contribution to this list can be seen in the students' response to the co-facilitation of two or more teachers, saying that it encouraged them to voice unpopular ideas and thus understand that often there is no one 'true solution'. That was due to the fact that the teachers allowed themselves to argue in front the students, something they would not dare to do before.

Table 1: Teachers' new role, as formulated in their reflective meetings

	Roles	Skills and orientation
New questions	<ul style="list-style-type: none">• Initiate provocative learning experiences that cause a fresh look on the environment and trigger new questions• Help students focus and express their emotional experience in researchable questions	Broad environmental knowledge Creative thinking Identification of complex environmental dilemmas

	Roles	Skills and orientation
New knowledge	<ul style="list-style-type: none"> • Contribute relevant knowledge to the learning process • Contribute their learning skills to the collective learning process • Focus on the process rather than on outcomes 	<p>Well-versed in many subjects Open minded</p> <p>Learning instead of teaching</p>
System thinking	<ul style="list-style-type: none"> • Extend the context of the inquiry • Expose inter-relations between different inquiry questions • Help students conceptualize system principals out of their inquiry experience 	System thinking
Critical thinking	<ul style="list-style-type: none"> • Question students who are quick to jump to conclusion • Suggest alternative solutions • Disclose the students' underlying values • Encourage diversity 	Critical thinking
Class management	<ul style="list-style-type: none"> • Help individuals word their own ideas in the team and develop collaborative assemblages of aspirations • Collaborative learning • Keep elastic framework of time and subject matter that is robust enough to allow flexibility without losing direction. 	<p>Time flexibility Co-moderation skills Self confidence</p>

Semiotic evolution of "students' responsibility" as an indicator for conceptual change

References to the word *responsibility* appeared from the very beginning of the AR in teachers' reflection meetings. Analysis (Kim, 1996) of *students' responsibility* as signifier indicates semiotic evolution of this key concept. One month before launching the program it came up:

In principle, this is a group of teachers that learn together with their students. ...once we split the class into groups, every one of the teachers will have a responsibility to conduct one field of knowledge.

(August 31, 1999)

This excerpt clarifies that at the beginning of the AR project the teachers felt they must lead the program namely 'to deliver knowledge'. "Students' responsibility" was signified by 'doing what the teachers told them':

... They forgot about the task we gave them and today I told them that because of that their trip is postponed. I told them that the responsibility [for progress] is theirs, not only ours.

(February 7, 2000)

This attitude began to change following the tour around the town. The next excerpt was taken from one of the teachers' reflection meeting, a short time after:

We are trying to lead a process that is totally opposed to what the [school's] system believes in; yet we still use [school] system's tools like "schedule", which is something they know how to deal with. They know how to shirk and to give excuses. They know how to avoid any difficulty. **If we want to develop 'self responsibility', we can't use means of control.**

(February 5, 2001)

The signifier: *students' responsibility* began to be signified by: 'self managed learning' and 'productive participation in the inquiry team', as worded in the next citation:

For me, the results are less significant. I am looking on the process they [the students] have undergone these last

months **Taking responsibility for the inquiry groups, the mutual learning, asking questions and learning to doubt answers, learning how to get help from others and how to help them** . This is the great process of development they have gone through. In my opinion, this is the basis for learning.

(February 5, 2001)

A few months later, *students' responsibility* acquired yet another new meaning: 'to initiate action to improve the environment' as one of the teachers said:

I am speaking about some thing bigger, about the ways to **encourage them to take responsibility for actions or for the community**.

And another teacher added:

Even if this is not the declared goal of the program, it looks to me that the idea of observing the relationships between humans and the place where they live, and then to combine it with some practical project; the by-product of this program will be **strengthening of self-responsibility and empowering the student as someone who can improve one's life**.

(September 26, 2002)

Using our approach to discourse analysis, we understood the alterations in the connotations to responsibility (as a signifier) as indicators that reflect the deep change in teachers' conceptions of their role and of their desired relationships with students.

Self-reflection as a participant and a researcher

As one of the participants in the AR as well as a researcher, I used my self-experience as another source of information that can illuminate the process of the teachers' conceptual change. I believe that authentic and open self-reflection enhances the researcher's insight to something that could not be gained by observing others. Analysis of the data clarified some unexpected aspects of my behavior as a teacher. First was my commitment to the 'formal schedules' and to an imaginary 'external framework' that in many occasions directed my reactions as a teacher in a classroom. This

commitment, which I believe is the outcome of a long-term relationship with the educational system, in this case contradicts the idea of a flexible framework that supports the students' learning. Another aspect was my difficulty to participate and to share the emotional aspects of being environmental activists with the students, in spite of my awareness of the importance of affective experiences for fostering intellectual curiosity and the significance of modeling activism for nurturing environmental citizenship. This, I suppose, was the result of my training as a teacher and the tendency to keep a distance from students. I can guess that such restraints have prevented other teachers from bringing themselves as whole person, teacher and activist, to the educational arena.

Discussion

The teachers' perception of their role in EfS was the focus of this research. The PAR in Mitzpe Ramon (Avriel-Avni, 2004) was used by a group of teachers and the researcher to develop EfS inquiry-learning curriculum aimed to understand the town as an social-ecological system (Pickett, Koasa and Jones, 2003), to develop a perception of the students as an integral part of their system and as such, responsible for the results of their actions. Unusually for such processes, the students became real partners in the design of the program and insisted that their voice be heard in its design. In this situation, the challenge to the traditional role of the teachers was particularly high. Back to the transcripts and analysis of the process indicates transformation in teachers' perception of their role, from 'knowledge agents' towards partners of meaningful learning, while maintaining a flexible classroom framework (Table 1).

Though the initial enthusiasm of the teachers' team was to develop skills of inquiry learning, as the PAR advanced, additional aims rose: to develop practical wisdom, habits of thinking and the ability to put one's civic and ecological knowledge into an action that supports the celebration of being part of the social-ecological system (Berkowitz *et al.*, 2005; Delgado, 2015). Redefinition of goals

and the teachers' role created more congruence between the content taught and the way of teaching (Whitehead, 2012). The change in teachers' perception of their role coincided with students' perception of the activities. The three-day trek, the "unfreezing experience" of students, symbolized the beginning of the teachers' change and led them to cast doubt on the present teaching methods and on the desirable relationships between teachers and students. As a consequence, a prolonged process of change in classroom management took place. The customary hierarchical structure changed to a collaborative learning process of both students and teachers. The new structure of relationship between teachers and students was triggered by the students' claim for authority. The teachers' and students' mutual learning was made possible through the PAR reflection meetings, as was found also in the study of Sales, Travera, and García (2011). It was termed the "grandfather clock metaphor" after Keiny, (2002). Unlike the conventional clock, the mechanism of the grandfather clock is exposed, revealing a set of cogwheels that rotate one another. By using this metaphor, we can relate the clock system to the educational system, where each cogwheel represents a subsystem (e.g. students, teachers, researchers, policy makers, etc.). Each subsystem is thus actively rotating while being rotated by the other subsystems. The students' learning process is rotated by the teachers' cogwheel. Yet at the same time, it rotates the teachers' understanding of how to orchestrate the learning classroom (ibid).

This process of perception change was neither continuous nor consistent. Throughout the PAR project, teachers expressed ambivalence about their roles. Despite understanding the importance of delegating responsibilities for developing environmental citizenship, they had great difficulty in giving up their authority and implementing their insights in the classroom. Cutter-Mackenzie and Smith (2003) identified that in-service professional learning of environmental education had a significantly greater influence on teachers' environmental education practices than pre-service learning. The challenges that teachers face in environmental education has been clearly explained in the past by Posch (1994). For example, the need to

develop critical and systemic thinking rather than to provide agreed knowledge. The call to develop youth social and environmental activism by PAR approach (Bywater, 2014; Delgado, 2015; Smith *et al.*, 2014) greatly increases the challenge because it contests teachers' traditional role. Analyzing our case study strengthens this point and demonstrates the significance of involving the teachers in PAR. The effectiveness of the change was due to teachers' confrontation with their role conception, both as teachers and as citizens, as well as their conscious and critical reflections on their function in the classroom. By inquiring into their teaching behavior (theories in use) and confronting it with their explicit goals (exposed theories), they were able to realize the gaps between the two and change their teaching behavior (Schön, 1983; Keiny, 2002).

Table 1 clearly illustrates the teachers' new role, attitudes, skills and teaching methods, namely inquiry learning. Developing these skills can contribute to teachers in all disciplines (Keiny, 2002) but is critical for EfS due to the local and dynamic nature of environmental issues (Posch, 1994, Tidball and Krasny, 2011; Whitehead, 2012) and thus lacks a canon of knowledge (Sherren, 2008). The list, which emerged from the teachers' own process of learning, closely matches the pre-requirements for the 'ideal educator for sustainability' (Fien and Tilbury, 1996 after Wilke, Peyton and Hungerford, 1987; UNESCO 2005a). The effective EfS teachers, according to this definition, should be competent to take positive environmental action and be able to investigate environmental issues, evaluate alternative solutions and develop, select and/or implement curricular materials and strategies which will develop similar competencies in their students (*ibid.*). The ability to lead positive environmental activity was advocated, as well as the ability to deal with multi-disciplinary environmental issues, value awareness, critical thinking and with a constructivist approach for learning (Ketlhoilwe, 2008). The skills listed in Table 1 include awareness of the significant aspect of students' conceptual change and its impact on the students' ability to express their emotional experience in researchable questions. These insights indicate an experiential conceptual change (Keiny, 2007)

and an identity change which goes beyond a cognitive change (Wenger, 1998).

The locality and the uniqueness of every educational experience were emphasized by environmental education theorists (UNESCO, 2005b). This was evident in our three-year research. Each year was characterized by a new cohort of students as well as different social-environmental conditions. Such differences prevented a direct simple transformation of the new teaching methods that were developed, demanding us instead to continually adapt the teaching methods to the changing reality (Sherrin, 2008). This flexibility, we believe, was gained due to the teachers' involvement in PAR. In becoming critical and reflective, teachers are able to conceptualize themselves as integral parts of their reality and have the confidence and authority to incorporate their own understanding in order to improve their performance (Whitehead, 2012). Similar results were found in studies of teachers that took part in PAR in other fields (Magos, 2007; Sales, Traver, and García, 2011; Duenkel and Pratt, 2013). Elliott (2006) pointed out the connection between action research and the democratic way of life. We see the new role that teachers have undertaken as an indication of perception of themselves as an integral part of their environment, classroom and socio-ecological system. This highlights the ability of PAR, when used to develop the EfS curriculum, to lead to greater coherence between the educational activity and the philosophy of sustainability. But it also highlights the need to pay more attention and resources to teachers' professional development and the challenges they face when using PAR approach to developing environmental activism among their students.

References

- Ardoin, N. M., Castrechini, S. and Hofstedt, M. K. (2014). Youth community university partnerships and sense of place: two case studies of youth participatory action research. *Children's Geographies*, 12(4), pp. 479-496.

- Avriel-Avni, N. (2004). *Ecological Thinking as a Basis for Environmental Education*. PhD thesis, Ben Gurion University, Beer Sheva (Hebrew).
- Ballard, H. L. and Belsky, J. M. (2010). Participatory action research and environmental learning: implications for resilient forests and communities. *Environmental Education Research*, 16 (5-6), pp. 611-627.
- Berkes, F. and Folke, C. (2000). Linking social and ecological systems for resilience and sustainability. F. Berkes, C. Folke and J. Colding (Eds), *Linking Social and Ecological Systems: Management Practices and Social Mechanisms for Building Resilience*. Cambridge University Press, Cambridge, pp. 1-26.
<http://www.google.co.il/books?id=XixuNvX2zLwC>.
- Berkowitz, A. R., Ford, M., and Brewer, C. A. (2005). A framework for integrating ecological literacy and environmental citizenship in environmental education. E. Johnson and M. Mappin (Eds), *Environmental Education and Advocacy: Changing Perspective of Ecology and Education*. Cambridge: University Press, pp. 227-266.
- Burns, D. and Worsley, S. (2015). *Navigating Complexity in International Development*. Rugby, UK: Practical Action Publishing,
<http://dx.doi.org/10.3362/97817800448510>
- Bywater, K. (2014). Investigating the benefits of participatory action research for environmental education. *Policy Futures in Education*, 12 (7), pp. 920-932.
<http://journals.sagepub.com/doi/pdf/10.2304/pfie.2014.12.7.920>
- Carr, W. and Kemmis, S. (2003). *Becoming Critical: Education Knowledge and Action Research*. London, Routledge.
- Chapman, D. (2000). Education for sustainability. Looking for directions. S. Bhokari, I. Björneloo and E. Nyberg (Eds), *Drivers and Barriers for Education for Sustainable Development in Pre-School, School and Teacher Education*. Paris: UNESCO (manuskript).
- Cutter-Mackenzie, A., Clarke, B., Smith, P. and Su, J. (2006). Showcasing excellence: professional teacher standards and learning in environmental education. *Sharing Wisdom for our Future. Environmental Education in Action: Proceedings of the National Conference of the Australian Association for Environmental Education*. pp. 131-139.
- Cutter-Mackenzie, A., and Smith, R. (2003). Ecological literacy: The "missing" paradigm in environmental education (Part One). *Environmental Education Research*, 9, pp. 497-524.
- Delgado, M. (2015). *Community Practice and Urban Youth: Social Justice Service-Learning and Civic Engagement*. New York: Routledge.

- Dobson, A. (2003). *Citizenship and the Environment*. Oxford: Open University Press.
- Duenkel, N., and Pratt, J. (2013). Ecological education and action research: A transformative blend for formal and nonformal educators. *Action Research*, 11, pp. 125-141.
- Elliott, J. (1991). *Action Research for Educational Change*. Buckingham: Open University Press.
- Elliott, J. (2006). Educational research as a form of democratic rationality. *Journal of Philosophy of Education*, 40 (2), pp. 169- 185.
<http://onlinelibrary.wiley.com/doi/10.1111/j.1467-9752.2006.00510.x/epdf>
- Fien, J. and Tillbury, D. (1996). *Learning for a Sustainability Environment: An Agenda for Teacher Education in Asia and the Pacific*. Bangkok: UNESCO Principal Regional Office for Asia and the Pacific.
- Geertz, C. (1975). *The Interpretation of Cultures: Selected Essays*. London: Hutchinson.
- Keiny, S. (2002). *Ecological Thinking. A New Approach to Educational Change*. Lanham, MD: University Press of America.
- Keiny, S. (2007). Conceptual change as both revolutionary and evolutionary process. *Teachers and Teaching: Theory and Practice*, 14, pp. 61-72.
- Kethoilwe, M. J. (2008). *Supporting Environmental Education and Education for Sustainable Development in Higher Education Institutions in Southern Africa*. Howick: SADC Regional Environmental Education Programme.
- Kim, K. L. (1996). *Caged in our Signs: A Book about Semiotics*. New Jersey: Albex Publishing Corporation.
- Krasny, M. E. and Bonney, R. (2005). Environmental education through citizen science and participatory action research. *Environmental Education and Advocacy: Changing Perspectives of Ecology and Education*. Cambridge University Press: Cambridge, pp. 292-320.
- Krasny, M., Lundholm, E. C. and Plummer, R. (2010). Resilience in social ecological systems: the roles of learning and education. *Environmental Education Research*, 16, pp. 463-474.
- Magos, K. (2007). The contribution of action-research to training teachers in intercultural education: a research in the field of Greek minority education. *Teaching and Teacher Education*, 23, pp. 1102-1112
- McKeown, R. and Hopkins, C. (2003). EE ≠ ESD.? *Environmental Education Research*, 9, pp. 117-128.

- Mihaylov, N. L. and Perkins, D. D. (2015). Local environmental grassroots activism: contributions from environmental psychology, sociology and politics. *Behavioral Sciences*, 5 (1), pp. 121-153.
- Müller, F. (2005). Indicating ecosystem and landscape organisation. *Ecological Indicators*, 5 (4), pp. 280-294.
- Plummer, R. (2010). Social-ecological resilience and environmental education: Synopsis, application, implications. *Environmental Education Research*, 16 (5-6), pp. 493-509.
- Plummer, R. and Armitage, D. (2007). A resilience-based framework for evaluating adaptive co-management: linking ecology, economics and society in a complex world. *Ecological Economics*, 61, pp. 62-74.
- Pickett, S. T. A., Koasa, J. and Jones, C. G. (1994). *Ecological Understanding. The Nature of Theory and the Theory of Nature*. San Diego: Academic Press.
- Posch, P. (1994). Changes in the culture of teaching and learning and implications for action research. *Educational Action Research*, 2, pp. 153-161.
- Robottom, I. and Hart, P. (1993). *Research in Environmental Education: Engaging the Debate*. The Deakin-Griffith Environmental Education Project, Deakin University, Australia.
- Sales, A., Traver, J. A. and García, R. (2011). Action research as a school-based strategy in intercultural professional development for teachers. *Teaching and Teacher Education*. 27, pp. 911-919
- Saussure, F. D. (1983). *Course in General Linguistics*. C. Bally and A. Sechehaye (Eds), in collaboration with A. Riedlinger. Trans. and annotated by R. Harris. La Salle, IL: Open Court.
- Schön, D.A. (1983). *The Reflective Practitioner*. London: Temple Smith.
- Sherren, K. (2008). A history of the future of higher education for sustainable development. *Environmental Education Research*, <http://www.informaworld.com/smpp/title~content=t713416156~db=all~tab=issueslist~branches=14-v14> 14, pp. 238-256.
- Smith, L., Beck, K., Bernstein, E. and Dashtguard, P. (2014). Youth participatory action research and school counseling practice: A school-wide framework for student well-being. *Journal of School Counseling*, 12 (21), n21. <http://files.eric.ed.gov/fulltext/EJ1034747.pdf>
- Smyth, J. C. (2006). Environment and education: a view of a changing scene. *Environmental Education Research*, 12, pp. 247-264.

- Tidball, K. G., and Krasny, M. E. (2011). Toward an ecology of environmental education and learning. *Ecosphere*, 2, pp. 2-17.
- Tilbury, D. and Wortman, D. (2004). *Engaging People in Sustainability Commission on Education and Communication*, Gland, Switzerland and Cambridge, UK: IUCN.
- Turner, R. K., Georgiou, S. and Fisher, B. (2008). *Valuing Ecosystem Services: The Case of Multi-functional Wetlands*. London: Earthscan.
<http://books.google.co.il/books?id=ZacCAWBKHW8C>.
- UNESCO (2005a). *United Nations Decade of Education for Sustainable Development 2005-2014*. International Implementation Scheme UNESCO, Paris.
- UNESCO (2005b). *Guidelines and Recommendations for Reorienting Teacher Education to Address Sustainability*. UNESCO Education for Sustainable Development in Action. Technical Paper No. 2.
- UNESCO (2007). The Ahmedabad declaration 2007: A call for action. *Education for Life: Life through Education*. The 4th International Conference on Environmental Education. Ahmedabad, India, 24-28, November, 2007.
- Wals, A. E. J. and Alblas, A.H. (1997). School based research and development of environmental education: a case study. *Environmental Education Research*, 3, pp. 253-267.
- Wals A. E. J. and Van der Leij, T. (1997). Alternatives to National Standards for environmental education: Process-based quality assessment. *Canadian Journal of Environmental Education*, 2, pp. 7-27.
- Wenger, E. (1998). *Communities of Practice: Learning, Meaning and Identity*. Cambridge, UK: Cambridge University Press.
- Whitehead, J. (2012). Living educational theories for action research in turbulent world. O. Zuber-Skerritt (Ed.), *Action Research for Sustainable Development in a Turbulent World*. UK: Emerald Group Publishing Limited, pp. 69-86.
- Wilke, R. J., Peyton, R. B. and Hungerford, H. R. (1987). Strategies for the training of teachers in environmental education. In *Environmental Education Series* (No. 25). UNESCO. Division of Science Technical and Vocational Education.
- Wood, L. and Govender, B. (2013). 'You learn from going through the process': The perceptions of South African school leaders about action research. *Action Research*, 11 (2), pp. 176 193.

Zuber-Skerritt, O. (2012). Conclusion from action research for sustainable development in a turbulent world. O. Zuber-Skerritt (Ed.), *Action Research for Sustainable Development in a Turbulent World*. UK: Emerald Group Publishing Limited, pp. 207-222.

Biography

Noa Avriel-Avni

Dead Sea and Arava Science Center.

Tel: +972-8-6588985

Fax: +972-8-6586369

E-mail: noa@adssc.org



As an environmental education researcher, my expertise is in ecology and education. During my doctoral studies, I developed an approach to urban-environmental education based on ecological thinking and participatory action research. Since 2006, I have been teaching courses on sustainability and environmental citizenship at Ben Gurion University and Seminar Kibutzim Teacher College. In addition to teaching, I work as researcher at the "Dead Sea and Arava Science Center" where I engage in field research of social-ecological coupled systems, sense of place, and empowerment of marginalized groups through participatory action research.



ALARA is pleased to advise that the

**10th Action Learning and Action Research
and
14th Participative Action Research
World Congress**

will be held at Norwich University
in Northfield, Vermont, USA
17 – 20 June 2018

**The Action Learning and Action Research Legacy for
Transforming Social Change:**

*Individuals, Professionals, and Communities' Developments,
Organizational Advancements and Global Initiatives*

More information on the ALARA website –
www.alarassociation.org/

The application of ALAR to facilitate the adult learning experiences of Indonesian international students in an Australian university

Barry Elsey and Amina Omarova

Abstract

There is a clear challenge to ensure that the learning experiences of international students are significant as well as successful. Generally, they have to adapt to different ways of thinking and learning, with greater emphasis placed on self-direction and personal empowerment. This was the case with a cohort of early-career Indonesian public servants employed by the Ministry of Industry. This paper reports the findings of an action research project that was undertaken to support Indonesian post-graduate students' learning in an Australian university. The paper concentrates on the application of Action Learning Action Research (ALAR) to structure students' new learning experience while doing the applied research assignment. During the process, their learning experiences were documented through an interpretive investigation. Their positive learning outcomes underlined the value of ALAR as a tool for facilitating both group and individual learning. ALAR emerged as an effective means of enabling international students to competently manage a new learning environment. In particular, two hallmarks of andragogy, self-direction and personal empowerment, were evidenced in students' reflections.

Key words: action learning, action research, adult continuing education, international students, double-degree Master's programme, eLearning Diary

Introduction

The paper reports on Action Learning Action Research (ALAR) as an approach for facilitating adult learning. In particular, we focus on the application of ALAR to facilitate and structure a key aspect of international students' learning experiences in an Australian higher education and socio-cultural environment. The adults, in this case, were a cohort of international students who were undertaking a double-degree Master's programme. The programme was partnered by the Insitut Pertanian Bogor (IPB), an agricultural university in Indonesian Java, and the University of Adelaide (UofA) in Australia.

The students came to Australia in the second half of the course. Transitioning to study in a foreign country presented some challenges for the students. From an adult and continuing education (ACE) perspective, the Indonesian students provided an ideal opportunity to link theory to practice by introducing them to new and challenging learning experiences. This was done in three main ways. First, the students were exposed to what might reasonably be described as the challenges of being international students living and studying in a different cultural context than Indonesia. Second, they were required to quickly and successfully adapt to a different learning environment, especially thinking independently and critically, asking questions and largely taking part in open discourse with academics and student peers. Third, they had to manage a small-scale, applied research assignment (on downstream product development of Indonesian agricultural goods and services) based on a case study approach and within the interpretive knowledge paradigm. All three experiences provided big challenges to thinking and communication habits and to their ways and means of adult learning.

The whole research assignment was new to the students and they had to deal with several challenges to their competence and self-confidence. It was therefore important that proper attention was paid to ensuring their learning experiences were actively supported. The research assignment itself was modelled on a

classic adult education process, based on leading andragogy principles (Knowles, Holton and Swanson, 2014). Particular emphasis was placed on developing confidence and competence in becoming a self-directed learner, one of the hallmarks of andragogy. Our focus, though, is how ALAR was applied to facilitate the research learning process. The ALAR approach was deliberately intended to provide a strong structure to support their learning by combining the *action* part with ample *reflection* and *planning*. The customised design of a web-based *eLearning Diary* complemented the continuous experience of managing small-scale, case study research within the interpretive paradigm.

There appears to be no research-based studies about ALAR in relation to *individual* adult learning within the wider context of international education and the role of universities in adult continuing education and professional/workforce development. The paper generally brings together ideas from adult continuing education (ACE) with emerging ones about workforce development, with particular connection to the professional learning of Indonesians undertaking higher degree studies in an overseas university with everyday exposure to a different socio-cultural environment from their native country.

The structure of the paper

Attention is first paid to generally describing the double-degree Master's programme. Some background details about the IPB students is given, notably because they were not just international students but employees of the Indonesian Ministry of Industry with particular career expectations to meet during their Master's level studies. This is followed with more information about the ideas behind the research assignment, which is where ALAR was applied to facilitate student learning. Short explanations about the meaning and nature of ALAR and Andragogy follow. This reaches the heart of the paper in which detailed attention is paid to how ALAR was applied to facilitate the individual and group learning of the Indonesian student cohort. Extensive use is made of visual models to simplify what would be a complicated explanation in

words. The observations arising from this process draws on comments made by the students about their learning experiences and what impact it had on them in various ways. The paper concludes with some general remarks about the application of ALAR to facilitate adult learning for a cohort of early-career, young professional workers as international students in an Australian university.

Context: describing the double-degree programme and IPB students

The Ministry of Industry in Indonesia strategically decided that their early-career agricultural scientists (the student cohort) needed a broader higher education and continuing professional development experience. The long-term thinking was to prepare these early-career public servants for changing leadership and management roles in the future with greater exposure to the cross-cultural currents of a global communication environment. In that sense, the entire research project might be regarded as an illustrative case study in workforce development, reported elsewhere (Elsey, Omarova and Grill, 2016).

A competitive selection process which tested 60 candidates was conducted from which 7 females and 11 males were selected. All students had a Bachelor degree, generally in engineering or sciences and they were aged between 23 and 33. The students came from different Indonesian regions: 12 from Java, 4 from Central Java and 2 from East Java, which generally represents the population of Java.

The selected students enrolled in Masters level courses, undertaking study in both their homeland, Indonesia, and cross culturally at the University of Adelaide, South Australia. A research assignment was a core feature of the second half of the programme, Master in Applied Innovation and Entrepreneurship (MAIE) provided by UofA. This was seen to complement their studies in IPB on technology and science aspects of agricultural development.

With regard to the Indonesian international students, especially government employees on a contractual scholarship, the pressing imperative and future vision is to successfully complete a demanding higher degree programme and return to the family, neighbourhood, employer and country with heads held high. This is the story of most international students in western universities, irrespective of being employees with contractual obligations (Kinnell, 1990, Harman, 2005).

The research assignment on downstream product development

Students selected an applied research topic for research six months before they departed to Australia (early- to mid-2014). The applied research assignment enabled both IPB and Entrepreneurship, Commercialisation and Innovation Centre (ECIC) academics to collaborate as co-supervisors. The decision was made to focus attention on doing small-scale, case study type research with a qualitative and interpretive emphasis. It was deliberately intended to be a **new learning experience** on the grounds that the IPB students would be familiar with the positivist-empiricist research knowledge paradigm but not the interpretive one. ALAR was chosen as the method for conducting the research assignment. The application of ALAR as an interventionist organisational change management strategy in different contexts has been widely reported over many years. Moreover, the literature about ALAR underlines the point that it has been understood and used in other ways than change in business organisations (Smith and O'Neil, 2003). As a tool of change, research has shown that at the organisational, group or team level, ALAR is a useful method for making things happen. We provide an overview of the ALAR approach later.

We considered it sensible to ask the students to locate their research topic, which was first and foremost chosen by them, with some assistance from IPB academics, on the Indonesian agricultural economy in general and focus in particular on 'upstream' to 'downstream' product development of a range of

commodities. Some students chose other topics, such as the performance of government supported and agriculture related research and development services. Rather than adversely affect personal motivation it was decided to allow these topics to go ahead. Some of the research topics were:

- Designing the strategy to improve productivity and effectiveness in ministry of industry's research centers: a case study of the best practice
- Downstream product development of cocoa industry: the role of SMEs and government
- An analysis of innovation network performance on palm oil industry in North Sumatera.

An indication of the research topics is shown below:

- Topics include seaweed, fruit chips, cocoa, coffee, sting-ray leather, and crumb rubber, dairy and other downstream products. Other topics included waste-management; lowering non-tariff barriers, better servicing industry by agricultural research bodies, supply chain improvement and other strategy/ policy-practice ideas.
- Frequent concepts used included 'value-adding', management 'mindset', 'bottom up' change, industry-government collaboration, innovation-adoption, social network analysis, action learning as a change strategy, sustainable 'clean and green' strategy implementation and other leading ideas.
- With every topic, the emphasis was first on describing *what is going on?* (WIGO) as the basis for analysis by seeking information and insights from three main types of informant: (1) owner-managers or professional managers at the operational level, (2) industry consultants and advisors (which in the Indonesian context seemed to be confined to university academics) and (3) government officials (like the students at IPB, employees of the Ministry of Industry). The initial WIGO focus was on identifying a problem of

organisational performance and seeking ways and means, both through the subjective interpretations of the three kinds of players noted above and the academic, research-based literature, of improving business and management outcomes. This approach was given the term 'seeking room for improvement'. An underlying assumption was that many Indonesian downstream products could be upgraded to add value and eventually enter the international marketplace on a competitive basis.

Research assignment was a challenging self-managed task as the students were required to devise a research idea located in Indonesia and focused on SMEs, one way or another involved in downstream product development of local agricultural produce. They had to start the research assignment in the six months prior to leaving for study overseas, return to Indonesia a few months later to collect data, mainly from interviews with SME owner-managers, government officials and industry consultants. Upon returning to Adelaide, they spent the final six months processing and analysing data and producing a minor dissertation as the template for a journal publication later, after formal academic assessment.

In addition, there were the usual academic tasks associated with desk research; finding comparable, 'need to know' literature sources, comprehending and incorporating them into a review, describing the contextual background of the downstream product and the SMEs involved, and applying concepts, models and theories to provide a 'big picture' explanation of their case study findings.

The assignment project management together with the explanation and justification of the research methodology, as well as various written iterations of the final report as a minor academic dissertation, had to be presented to peers and facilitators on a regular basis through visual slides and written handouts. All of these presentations were delivered in their second language of English and defended through questions and answer discussion. Over the entire programme in the UofA setting, they presented at

least twenty times. This was what was meant as taking responsibility and ownership of their largely self-directed learning. This effort was supported through the regular research-based forums as well as distance learning support from IPB academics plus UofA staff on a tutorial basis.

Below we discuss literature on ALAR and Andragogy as well as its application to the research assignment of the double-degree programme.

Literature review: ALAR and adult learning approaches

A short note about ALAR and its application

Historically, Action Research preceded Action Learning but to a large extent the two ideas are overlapping, hence ALAR as a shorthand expression. There are plenty of textbooks and papers defining and describing ALAR separately and together (for example, Raelin, 2008; McMurray, Pace and Scott, 2004; Zuber-Skerritt, 2002; Gill and Johnson, 2010; Burns, 1994). We simply identify some key features of ALAR that influenced our approach to facilitating the learning of the Indonesian student group engaging with the research assignment.

What gives ALAR distinctiveness is the emphasis placed on developing practical knowledge in a systematic way through learning-by-doing, with the intention to improve desired outcomes. These can embrace organisational goals through to empowering groups and individuals. Our interest is with the application of ALAR to personal change, not with organisational development. Another key feature of ALAR is the idea of change occurring through progressive cycles in which learning is synchronised with planning, action and reflection. In other words, learning rarely occurs in one leap but is more likely to naturally develop in small steps. This idea is relevant to doing research and writing results into a five chapter dissertation. Moreover, ALAR usually takes place through group activity. Whether it has natural or managed leadership, the group or team is expected to be self-

motivated and to largely autonomously learn, act and review through the various stages of a change process. A third feature of ALAR, implied in the emphasis on group learning, is the value placed on active participation by all those involved; not just the shakers and movers, but ordinary workers and community members. In our study, participatory action means the learning experiences of the early-career students developing Master's level competencies through doing the applied research assignment. From an adult learning perspective, participatory action equates with the idea of personal empowerment. More about this theme emerges later.

Taking these key ALAR features together, we made practical use of the leading ideas of experiential, learning-by-doing; the natural learning cycles of *plan-act-reflect-revise and continue*, the importance of questioning (in the case of more reserved Indonesians at least answering questions), the value of reflective thought arising from action, the importance of group learning and sharing, and other well-known aspects of ALAR. We did not set out to engage with theory building but simply followed a pragmatic course of practical application for a specific purpose. Among the various authors writing about ALAR, we found one systematic model for progressing through the cycles useful for our purpose useful as a general guide (Zuber-Skerritt, 2002). However, in keeping with the spirit of ALAR, we largely fashioned our own approach.

For our purpose, ALAR is generally regarded as an interventionist strategy, purposely to bring about change of one kind or another. In the context of organisational change management, the common imperatives are about the need to survive and adapt, usually translated into programmes to improve effectiveness and performance, often to stay in business in a constantly changing competitive environment (Senior, 2002; Elsey and Leung, 2004; Elsey and Suek, 2007; Elsey and Tse, 2007).

Our interest in ALAR was about group and individual adult learning, not directly with organisational development. What is clear is that ALAR is applicable to both kinds of change

management process with a high learning content. That is our core assumption driving the paper.

Where ALAR relates closely to the particular cohort of Indonesian international students, notably their employee status in the Ministry of Industry is expressed in several ways. First, as Indonesians, there was the expectation they would be good ambassadors for the country and competent future nation-builders. Second, they were also expected to learn competencies associated with higher degree studies and demonstrate the capability for continuing professional development and key management and leadership positions in the future. These expectations weighed on the minds of the Master's students and although they had already been through a demanding selection and performance process in IPB, they were aware of the challenges to be faced in adapting to Australian higher education and a different socio-cultural context.

All things considered, these motivational imperatives prepared the ground for new learning endeavours in Adelaide. As a cohort of young, early-career Indonesians, they naturally formed a continuing learning and support group. They understood that the applied research assignment was entering new learning territory, with different knowledge and skill competencies to be learned doing small-scale, case study research within the interpretive-qualitative domain. All this amounted to a new learning experience.

In ALAR parlance, they intuitively understood the expectations about being active learners, especially researchers, both as an entire group and individually. As they were dealing with new learning experiences, it was necessary for them to plan carefully and reflect often upon what they were doing with regard to managing a small-scale research assignment through all the iterative stages of development, from an initial idea through to completion.

None of the students knew anything about ALAR before embarking on the research assignment, nor were they given any

instruction in connection with the research assignment. Instead, they were guided into the ALAR process by the facilitators through the way the learning was organised. The application of ALAR to the management of the research assignment emerged as a practical way to provide the students with a structured as well as an empowering learning experience. The remainder of the paper concentrates on explaining how this learning experience was designed and implemented, with discussion about outcomes in the conclusion.

A note about andragogy as an approach to adult learning

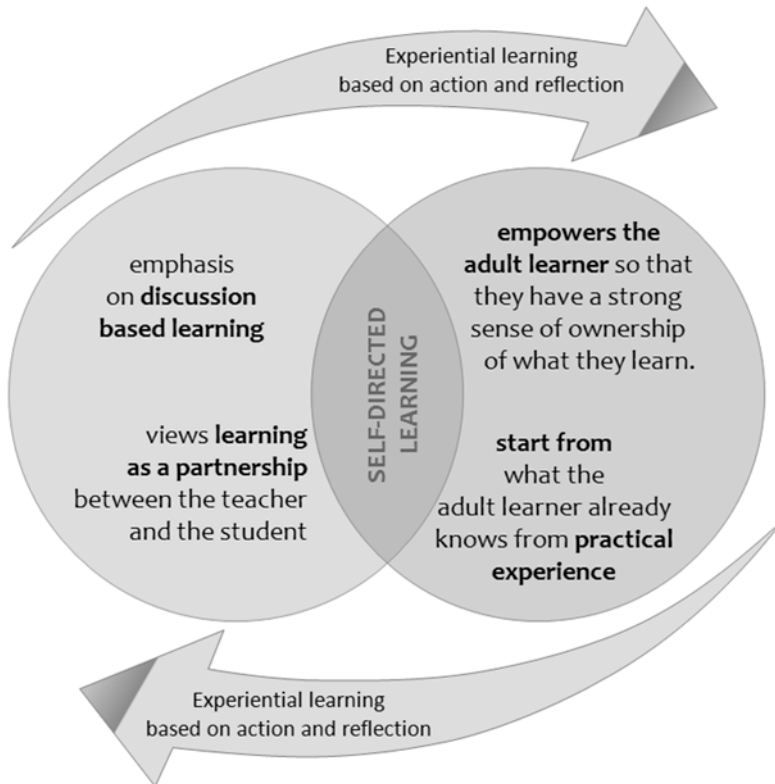
An inherent part of the ALAR approach is principles of adult learning known as andragogy. Andragogy is recognised as a serious attempt to theorise about adult learning, essentially searching for ways that dovetail with experiential learning and what they already know from engagement with their everyday life and times. Andragogy is considered different in kind from the education of children (Knowles *et al.*, 2014, Brookfield, 1986). It has been written about and debated endlessly. Without going too far into the background of the theory, it is sufficient to note some leading characteristics, explained briefly below. The point is that the theory represents an approach to adult learning that recognizes some important aspects of being an adult and a learner. It also represents a set of assumptions that comprise an effective approach to facilitating adult learning. These are the key features, with comment about the relevance to the Indonesian students (Figure 1):

- The adult learning approach has its origins in European thought but largely championed in the USA and UK. Generally, this learner-centred approach is not practiced much in Indonesia, which is mainly more teacher-centred than process orientated.
- Adults do new learning by connecting to what they know through lived experience. They learn new things from an experiential foundation, which means that learning is regarded as a mix of action followed by reflection. The IPB

students were science trained agriculturalists and well-disciplined in their work and study habits. They were encouraged to connect the research assignment to existing work-related knowledge and experience.

- Adults are curious to answer why, what, how, who, where and when questions if they see the relevance to them. They like to address 'need to know' real-life problems. This is not so often the case with more socio-culturally reserved Indonesians but they understood that was a new learning behaviour expectation in Australian universities and the wider society.
- Adults like to be self-directed and autonomous. This was also a new learning experience and a key rationale for the research assignment.
- The motives to learn are a mix of intrinsic worth and self-development, including instrumental ones like career advancement. The IPB students were clearly career motivated but were encouraged to use the learning experience for personal development.
- The teacher or learning facilitator is appreciated as a 'guide, philosopher and friend' in an equal partnership. Generally, this was another new learning experience, although relations with their Indonesian academics appeared comfortable. Our approach was to help them relax into the new learning culture by encouraging them to offer opinions and seek informal support as required.
- The leading ideas are represented in the model below. However, it needs to be emphasised that they were applied as a general guide to designing and facilitating the learning experience, not as some kind of dogmatic belief about how adults learn best or better.

Figure 1: Andragogy principles



In the context of the research assignment, no attempt was made to debate adult learning theories and which are more effective. Our approach was to simply adopt some of the main assumptions about the nature of adult learning, essentially shifting the central responsibility from the teacher to the learner.

In that regard, we followed the usual core assumptions of what might be termed the Andragogy school of thought. These were that the Indonesian students as well as early-career professional workers would benefit from an adult learning experience with an open spirit of inquiry that encouraged and supported question and answer type discussion, required a great deal of library based or

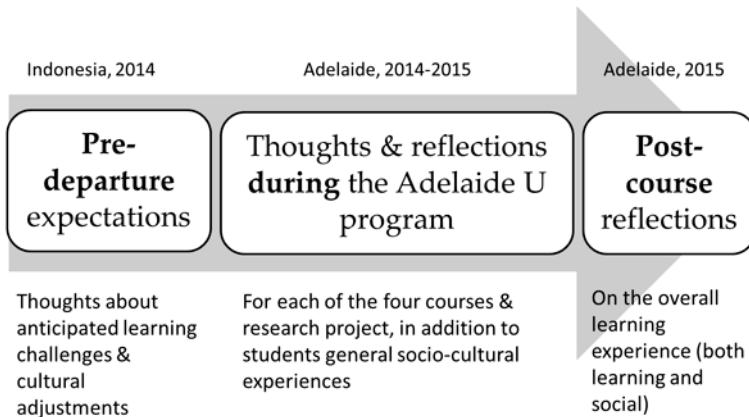
desk research to find useful conceptual ideas to underpin the fieldwork findings and integrate theory with practice. The students were obliged to largely self-direct their studies, with tutorial support in IPB and UofA. We drew upon their existing knowledge as agricultural scientists by focusing the research on Indonesian upstream and downstream products, which they selected as the assignment topic. Finally, they were required to continuously report on progress by giving seminar style presentations and respond to feedback through the *eLearning Diary*.

What was in mind was an approach to learning that differed from the didactic traditions of Indonesian universities. More than that, it was driven by the idea that at the level of a Master higher degree, with a significant research component, what should be mastered was the competency of independent, self-directed learning. To reach that level of independence, it was important to foster a climate in which students were required to take responsibility and ownership of the research assignment.

Research methodology

The main focus of the research project was to study students' learning experiences from near the halfway stage of the double degree program and transfer of their studies to another country (Figure 2):

Figure 2. Research project design



We use research findings to demonstrate applicability of ALAR to facilitate the adult learning experience in the case of Indonesian international students within an Australian university.

How ALAR worked in practice

The ALAR model followed a well-known pattern of five main cycles with minor ones embedded with each on the same sequence: *initiate, plan, act, reflect and continue (act again)*. The programme had five main learning cycles that were connected to each other through the reflection on the learning process leading to the adjustment of the research topics. Moreover, each of five cycles was built in such a way that it included its own ALAR cycle with own feedback, or reflection, loop that allowed students to continuously progress and improve their work. The whole five cycle ALAR process, both major and minor cycles, is shown below as a visual representation (Figure 3). We also describe each cycle separately.

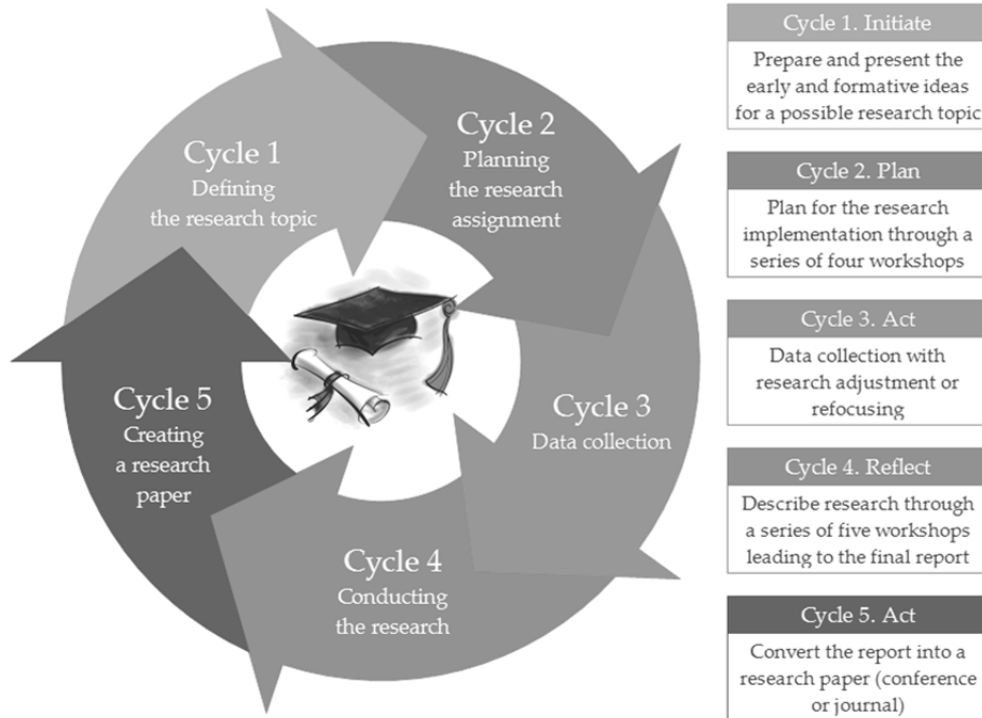


Figure 3.
ALAR major
cycles:
IPB/UofA
double-
degree
programme

1. **Cycle 1:** Initiate, the start-up cycle defining and developing the research assignment topic over a period of at least six months with the guidance of UofA and IPB academic staff before departing to Australia in mid-2014. This formative cycle concentrated on identifying a researchable topic in collaboration with IPB academic staff and endorsed by UofA visiting academic through student presentations to the whole group. The reflection part of the initial cycle was done through the formative presentation of the research ideas to UofA supervisors leading to recommendations for the research topic modification.
2. **Cycle 2: Planning** the research assignment during the first few weeks on campus at UofA through regular workshop presentations. The cohort of 18 students were divided into two groups and met with UofA academic facilitators to present and discuss the proposed research design and methodology. Altogether four workshops were held; two for each group. This was important to ensure that data could be collected upon returning to Indonesia for the fieldwork stage over a two-month period. The practicalities of data collection were discussed with IPB academics via distance learning. The *eLearning Diary* was used through this cycle to encourage students to reflect on their presentations and the feedback given during the workshops. Details on the *eLearning Diary* follows below.
3. **Cycle 3: Action**, which involved returning to Indonesia and conducting the data collection fieldwork by undertaking visits to SMEs, interviewing owners and managers as well as with industry consultants and government officials over a two-month period. Regular contact with IPB academics enabled some running adjustments to be made to the research in some cases. The students used the *eLearning Diary* to enter their personal reflections on progress with the fieldwork stage and other thoughts about their learning experiences.

4. **Cycle 4: Reflection**, which began in earnest upon returning to UofA and resuming the research workshops. This was the longest of the 5 cycles and was organised around a five chapter model for producing the mini-dissertation (between 8-10,000 words), that is, introduction, literature review, research methodology, data findings and analysis, discussion and conclusion. Each chapter used two group meetings with presentations on explaining and justifying what was to be written. Again, the *eLearning Diary* was an indispensable part of the learning process as each student had to reflect on feedback given in the workshops dealing with any deficiencies in composing the relevant chapters.
5. **Cycle 5: Action**, in which the IPB academics came to Adelaide in order to conduct formal assessment (with UofA academics) during an intensive week toward the end of the programme in UofA. This involved the students in writing the final mini-dissertation, taking account of editorial remarks as well as feedback from UofA tutors in advance of the IPB staff arrival. In the final cycle, the students had to prepare a paper for an upcoming conference in Indonesia and afterwards convert the mini-dissertation into a paper for journal publication. This was done after they left Adelaide and before the Master's programme concluded.

Reflective part - eLearning Diary

The more significant development was to design the research assignment around an electronic diary (*eLearning Diary*), which was used via the Internet and university email to make regular contact with the students on an exclusive basis. The *eLearning Diary* is a private website; access was given only to the students, their supervisors and the research team. The *eLearning Diary* was given the status of an assessable part of the whole MIAE programme so students had to show due diligence and complete it regularly.

The simple design of the *eLearning Diary* not only provided a means of communicating updates about the learning programmes, including instructions relating to the research project in particular,

but also an easy way to ask the students to answer reflective questions about their learning experiences across the whole range of courses. Our academic team was also able to periodically ask them questions about their socio-cultural experiences as they adjusted into living in the city of Adelaide and Australian culture generally. By such means, it was also possible to keep track on any practical difficulties they were experiencing and to inform the university about them. Therefore, the *eLearning Diary* somewhat blurred the line between a vehicle for information exchange, giving explanations and instructions related to the research assignment, as well as an open line for asking questions about their learning and other experiences.

Research results: Student reflections on their learning experiences

A thematic analysis of data identified the main aspects of the international student's experience as well as challenges they faced.

The double-degree Master's programme was a 'first' for both universities, and the members of the partnership had practical things to learn about how the programme worked. It was certainly a new undertaking for the cohort of 18 IPB students that qualified to spend study time in Australia. For these reasons, it was decided to research how they perceived and experienced their learning journey.

Academic outcomes were excellent with high grades given to the students for their research assignment. The reporting on the student learning experience doing the applied research assignment comes from their own written observations, which was a prominent feature of a larger investigation of their overall learning experiences. The research findings have been extensively reported elsewhere (Elsey, Omarova, Grill and Arkeman, 2015). Our attention is focused on the students reflecting about their learning experiences doing the applied research assignment:

- We pay particular attention to writing the introduction to the research assignment to demonstrate typical example of their learning struggles with the other four chapters.
- In addition, we also sought their reflections on learning to be self-directed in managing the research assignment process. We do this by condensing comments they made related to the five chapter model that formed the centrepiece of the ALAR process (Cycle 4, reflections on writing the research assignment). The point to note is that in keeping with ALAR theory and good practice, there was a close and interactive relationship between reflection, further planning and action throughout cycle 4, (writing the five chapter mini-dissertation). In other words, planning, action and reflection were an integrated and continuous feature of the learning process in doing the research assignment throughout all five chapters.

Chapter 1 – Introduction - students’ reflections on key aspects of the introduction

- **Research assignment title:** The importance of a precisely worded title was understood as representing a ‘road map’ for the research assignment.
- **Contextual background:** The students confirmed that their local and industry-specific (Indonesian) knowledge made it quite easy to write about the contextual background compared with everything else.
- **Problem statement and ‘room for improvement’ theme:** The importance of actually meeting owner-managers and others ‘on site’ provided a better understanding of the problems and challenges experienced by practitioners. This preceded the long struggle to express the problem statement in writing.
- **Research questions (RQs):** Everyone commented on the difficulty of crafting the research questions with precision and in plain English. Like many other aspects of thinking

and writing, the process involved several iterations before everybody agreed the RQs were right. The next difficulty was to then translate the formal language of research questions into interview ones, and into the Indonesian language.

Other aspects of the five chapters that presented challenges

- ***Finding the knowledge 'gap' and reviewing the literature:*** Connecting the relevant literature to their topic was a constant challenge with several iterations required. Many had difficulty dealing with recent publications and incorporating them into partly written draft chapters. They learned that research-based writing is not a linear process. One student commented: *"The background and key concept are already clear but I should read more especially from the literature that is similar to my own."*
- ***Using key concepts, models and theories:*** Students understood the importance of 'big picture' generalisation of their micro-level data and the care needed to connect abstract ideas with concrete findings. One student claimed: *"I already find the key concepts and model that I intend to use during the research. But I still have to gain more literature review to support my research"*.
- ***Research methodology and limitations:*** There was a great deal of learning becoming familiar with case study and interpretive research with the additional need to overcome ingrained doubts that genuine knowledge could be obtained from these non-positivist methods. One student explained: *"I have defined the limitations in my research that need to be considered to make the reader understand the essence of my research"*.
- ***Data-set analysis:*** This chapter presented difficulties in analysing interview data and linking the findings to the conceptual field for generalising results.

- ***Discussion and conclusion:*** Like the previous four chapters, the final one challenged them in writing in a discursive way and being confident to reach beyond their science trained minds to generalise findings, especially to frankly suggest 'room for improvement' for the SMEs involved in their case studies.

The above summary of highlighted issues associated with new learning experiences is somewhat at the expense of under-estimating the considerable academic effort required to master the research assignment tasks in a competent way. What assisted the long learning process was the ALAR structure, which continuously engaged the students in facing challenges in a systematic way and gaining self-confidence as they progressed towards formal submission and examination by UofA and IPB staff.

Other big challenges: Becoming a self-directed learner and taking 'ownership' of the research assignment

Selected quotations drawn from student written comments about these key aspects of their learning experiences is appropriate, such as:

Self-directing research, which means I must count on my own strength and ability and believe I can make it through

while another added:

Logical thinking, organised work, self-direction, time management and frequent communication

and in similar vein:

In my research project the content was all my own learning. The supervisors provided guidance to keep the research doable and logical but I had to keep exploring and refining my ideas to improve the final product.

For some, self-direction meant more than the learning assignment:

The independence and self-responsibility to achieve better outcomes from the resources that I have. I think it will make

me more vocal about the problems that I will face in the workplace and not being a passive employee anymore.

Finally, the following comment expressed the views of several others:

The transfer from directed learning where I was always being told what to do to self-directed learning with the lecturers only guiding me made me take decisions and to be responsible for my work. It was difficult.

These comments comprised a core feature of the research into their learning experiences, before, during and after they had completed the UofA programme just before returning to Indonesia.

All three aspects of the students' learning experience were researched in-depth, resulting in a report to both universities and the Ministry of Industry in Jakarta (Elsey *et al.*, 2015).

Conclusion

As a deliberate strategy, we decided to apply ALAR principles and processes to focus and structure student learning, specifically related to doing the research assignment, which was a new experience for them. The systematic nature of ALAR, especially in the formal education environment of a Master's university programme, means that the process follows a clear pathway progressively leading to the completion of an applied research assignment, complete with academic assessment. Moreover, the fact that the students had to manage a complicated fieldwork process involving face-to-face interviews with Indonesian SME owners and managers, together with industry consultants and government officials, placed considerable responsibility on them to conduct the research effectively. There was no room for failure for the students, the programme facilitators and the joint partnership between two universities which represented quite different learning cultures. ALAR was an important method for arraigning a process to conduct research assignment. The research assignment could have been organised in a less structured way. However, the students were on a tight time schedule to complete the task before

the formal assessment deadline. Therefore, the ALAR approach provided an ideal foundation for good project management practice for everyone.

ALAR provided just the right amount of structured guidance, while placing responsibility on the adult students to be self-directed. The balance is a fine line between the structure and control of the former and the independent, discovery-based learning associated with andragogy as an approach to adult learning. We believe the right balance was achieved and for that assertion we rely on the testimony of the students, who wrote openly and enthusiastically about such experiences as becoming a self-directed learner and taking proper ownership of their research assignment. Coming from a culture that on the whole is largely embedded in a teacher-centred approach, the students learned a quite different practical approach and a deeper philosophy about the role on adult continuing education in nurturing personal empowerment.

References

- Brookfield, S. D. (1986). *Understanding and Facilitating Adult Learning*. Milton Keynes, UK: Open University Press.
- Burns, R. B. (1994). *Introduction to Research Methods*. Australia: Longman.
- Else, B. and Leung, J. S. (2004). Changing the work behaviour of Chinese employees using organisational learning. *The Journal of Workplace Learning*, 16, pp. 167-178.
- Else, B., Omarova, A. and Grill, R. (2016). The learning experiences of early-career Indonesian Government employees: A case study in cross-cultural workforce development based in a university environment. *International Journal of Training Research*, 14 (2), pp. 104-118.
- Else, B., Omarova, A., Grill, R. and Arkeman, Y. (2015). *The Learning Experiences of Early-career Indonesian Government Employees undertaking a Double Degree Master's Program: A Case Study at the University of Adelaide in Partnership with the Institut Pertanian, Bogor (2014-2015)*. The University of Adelaide, ECIC publication.
- Else, B. and Suek, C. C. K. (2007). Managing organizational innovation for sustaining the product life span using action research: a case study of a karaoke box in Hong Kong. *ALAR Journal*, 12 (2), pp. 3-29.

- Elsey, B., and Tse, R. (2007). Changing the behaviour of traditional bakers in a Chinese multi-family owned food-company through workplace action learning in Hong Kong. *The Journal of Workplace Learning*, 19, pp. 511-525.
- Gill, J. and Johnson, P. (2010). *Action Research. Research Methods for Managers*. UK: SAGE.
- Harman, G. (2005). Internationalization of Australian higher education: A critical review of literature and research,. In P. Ninnes and M. Hellstén (Eds) *Internationalizing Higher Education*. Netherlands: Springer.
- Kinnell, M. (Ed.). (1990). *The Learning Experiences of Overseas Students*, UK: Buckingham.
- Knowles, M. S., Holton, E. F. and Swanson, R. A. (2014). *The Adult Learner: The Definitive Classic in Adult Education and Human Resource Development*. USA: Routledge.
- McMurray, A. J., Pace, R. W. and Scott, D. (2004). Action research: An integrative approach. *Research: A Commonsense Approach*. Australia: Thomson Social Science Press.
- Raelin, J. A. (2008). *Work-Based Learning*. San Francisco, Jossey-Bass.
- Senior, B. (2002). *Organisational Change*. (2 ed.) UK: Prentice Hall.
- Smith, P. A. C. and O'Neil, J. (2003). A review of action learning literature 1994-2000: Part 1- bibliography and comments. *The Journal of Workplace Learning*, 15, pp. 63-69.
- Zuber-Skerritt, O. (2002). A model for designing action learning and action research programs. *The Learning Organization*, 9, pp. 143-149.

Biography

Dr Barry Elsey, Senior Doctoral Research Advisor

ECIC, The University of Adelaide, Adelaide, Australia

+61 417 887 636, barry.elsey@adelaide.edu.au

Currently senior doctoral research advisor at the University of Adelaide (Entrepreneurship, Commercialisation and Innovation Centre), his 71st research-based higher degree (PhD, DBA and MPhil) graduated recently (2016). Knowledge and experience in facilitating higher degree research draws on an extensive background in adult continuing education acquired in two leading

British universities in Liverpool and Nottingham in what was called 'The Great Tradition' of liberal-humanist education. Upon migrating to Australia in the late 1980s, it was clear that the best way to practice good adult learning principles (following in the footsteps of the American adult educator, Malcolm Knowles) was to focus on workplace change management and organisational learning generally. Adult learning practice in the world of work and business management led to engagement with PhD and DBA programmes, most of them located in South East Asia and their changing economic landscapes. Both the universities of South Australia and Adelaide have provided rich personal learning through various doctoral business education programmes. This is especially the case with cross-cultural learning and intelligence arising from working closely with Asian business leaders, which continues. Barry Elsey has published widely in many different kinds of adult learning contexts.

Dr Amina Omarova

ECIC, The University of Adelaide, Adelaide, Australia

+61 403 439 676, amina.omarova@adelaide.edu.au

Dr Amina Omarova was trained in a top-flight university in Moscow in aeronautical engineering with a special interest in rocket launch systems. Before migrating to Australia seven years ago, Amina was employed by leading companies such as Boeing and General Electric both in Russia and the USA. Her PhD focused on complex systems analysis in the Australian Army and before that completed the Master of Project Management at the University of Adelaide. Her project management experience is linked to a number of industries such as engineering, an electrical design and construction, bespoke software development and implementation, and education. Amina has a sound grasp of applied research and experience of teaching on the project management program.

Reflections for postgraduate students on writing an action research thesis

Stephen Smith

Abstract

The prospect of conducting action research as part of formal academic study can seem quite daunting for many. The academy, often dominated by a positivist approach, does not always appreciate the value and quality of research that is qualitative, action-oriented and involves participants as co-inquirers.

In this article, the concept of 'messiness' in action research is introduced and the author shares seven insights gleaned through the process of writing two doctoral theses in different institutions using participatory action research. The intent is to share this knowledge in the hope it may be useful to other researchers starting their learning journey.

Key words: action research, validity, sensemaking, action reflection, tacit knowledge

'Remember, you're researching the action'

–Ian Hughes, University of Sydney

The process of action learning and action research (ALAR), when part of formal study, is intertwined with the process of thesis writing. When this occurs, there are two projects happening at once: ALAR and thesis writing. As Ian Hughes once simplified, 'The difference between action learning and action research – is that in action research you write it down'. Action research within the academy can be particularly challenging when the time comes to write a thesis that has to meet the quality standards required by

a university faculty that may not understand, or appreciate, some qualitative methods, including action research.

This paper offers seven personal reflections grounded in the experience of writing two doctoral theses (Smith 2003; 2012). No claim is made that these insights are universally transferable or applicable to others in their contexts. However, they are shared to ignite creativity and evoke discussion on what may be helpful to student researchers using an action research approach.

It is noted that others have written in helpful ways on this topic (Davis, 2007; Dick, 1993; McNiff, Lomax and Whitehead, 1996; Perry, 1998; Zuber-Skerritt and Perry, 2002) and this paper seeks to make a contribution to the ongoing discussion on improving practice in action research.

Reflection 1. *Remember, if it is not useful – it is not valid*

At the heart of most participatory action research projects is a question that usually starts with something like, 'How can I (or we) improve...?'. The research question may be broad, loosely bounded and designed to accommodate emerging perspectives, but it still has three intertwined purposes: action research engages participants as co-inquirers to (1) initiate action designed for professional, organisational and community change, (2) inspire reflective learning by the researcher, and (3) make a unique contribution to the body of knowledge (Reason and Bradbury, 2001; Wimpenny, 2010, pp. 89–99; Smith, 2012).

Action research cannot be neatly put into a box, as it is a 'family of approaches' (Reason and Bradbury, 2001, p. xxii) and has its roots in sociology, social psychology, psychology, organisational studies and education (Hart and Bond, 1995, p. 37). There is wide support in the literature for this cyclical process of action and reflection leading to further inquiry and action for change (e.g., Burns, 2000; Kolb, 1984; Parkin, 2009; Revans, 1982; Wadsworth, 2010). Rapoport (1970) described it as follows: 'Action research aims to contribute both to the practical concerns of people in an immediate problematic situation and to the goals of social science by joint

collaboration within a mutually acceptable ethical framework' (p. 499).

Wadsworth (1998) describes the effectiveness of the approach as follows:

Participatory action research is not just research which it is hoped will be followed by action. It is action which is researched, changed and re-researched, within the research process by participants' (p. 23).

Theories developed using the action research approach are not validated independently and then applied to practice; rather, they are validated through practice (Burns, 2000, p. 346). The core validity of an action research project is found in its usefulness to improving practice, as Hughes, Ndonko, Ouedraogo, Ngum and Popp (2004) write:

... the key test of validity for action research is not whether research procedures conform to rules established by academics and professional researchers, but whether the knowledge works in practice. Until the knowledge gained in action research is tested in practice, we do not know whether the action research is valid or not. Practical action research projects are not fully completed until the research findings are applied in practice. (p. 4)

Lewin's expression 'there is nothing so practical as a good theory', is still used as a guide by action researchers (Cunningham, 1995, p. 516).

Reflection 2. *Embrace the 'messiness' of action research*

John Law (2004) asserts that traditional academic methods of inquiry do not capture the 'mess, the confusion, the relative disorder' (p. 58) of the research contexts being studied and that a researcher has a responsibility to fairly represent these contexts. He acknowledges the dilemma of recognising this 'messiness', as it may result in the research method appearing 'messy', or poorly done. He finds that, in general, researchers want to create the illusion of quantifiable certainty, but in reality, if the world is

complex and messy, we occasionally need to give up our desire for simplistic thinking.

Capturing this 'messiness' and harnessing it as valid knowledge means learning how to improve our methods of sensemaking, ultimately discovering innovative ways to search for new knowledge in the social science arena. Dadds and Hart (2001) refer to this as 'methodological inventiveness' (p. 169) for the purpose of improving professional practice within the research context. This reflects the messiness of humanity, as the people are constantly adapting. As Mackay (2008) writes:

Human relationships are inherently messy because they are driven more by emotional than rational factors – and thank goodness for that ... Because relationships are unpredictable and ultimately impossible to control, so are families, communities and organisations ... We need to shift our focus from control to participation and engagement; from resistance to adaptation; from an unhealthy utopianism to a more realistic acceptance of life's disorderliness, its irrationalities, its unpredictability, its disenchantments, as well as its joys, its gratifications and even its occasional small triumphs. (p. 14)

This often messy, complex process does not imply 'messy research' (Davis, 2007, p. 184), but rather an innovative way of capturing the depth and colour of the research experience. The challenge is to present this as a thesis in an academic format with clear exposition, rational argument and evidence-based conclusions.

The action research thesis has been described as a 'messy text' (Davis, 2007, p. 184), more like a 'collage' (Winter, 1996), a 'quilt or montage' (Denzin and Lincoln, 2011), with the thesis having a 'story-like quality' (Davis, 2007), more of a 'portrayal' (Lincoln, 1998) than a technical report. Davis (2007), finds that the action research thesis demands

alternative ways of writing to account for the fact that action research is a continuously changing inquiry, with the understandings that are generated and the actions that are created always being provisional (p. 187).

In an action research thesis, the researcher has the opportunity

to craft compelling narratives which give outsiders a vicarious experience of the community and which give insiders both a deeper understanding of themselves, and the power to act' (Lincoln, 1998, p. 19).

Reflection 3. *Use story as an effective tool to capture knowledge*

One powerful way to capture meaningful data amid the 'messiness' of a human system is through the stories of participants. Stories, a form of narrative inquiry, can gather collections of deep pain, common struggles, interesting challenges, personal triumphs and great joys. Lave and Wenger (1991) describe stories as 'packages of situated knowledge' (p. 108), citing examples of their power in Alcoholics Anonymous, saying that 'talk is a central medium of transformation' (p. 85). Through telling stories, participants are able to develop 'pedagogical content knowledge' (Gudmundsdottir, 1995 p. 24), which helps with problem definition (Goodson and Walker, 1995) and aids in providing reflection and insight into the issues emerging in the organisation (Burchell and Dyson, 2000).

Capturing stories for learning is a valuable way for action researchers to gather in-depth knowledge from a specific context because 'action research is fundamentally about telling the story as it happens' (Coghlan, 2002, p. 63). This process of capturing stories is not uncommon for action research, as McNiff *et al.* (1996) write:

People do research on themselves rather than on others; they do research with others in order to understand and improve their social practices. People offer stories of their own improved understanding as outcomes. They share these stories, not competitively but collaboratively. This shared learning leads to the construction of collective knowledge. (p. 106)

It is in the sifting of stories by participants that group sensemaking occurs. In group work, common themes emerge; shared experiences that form common 'archetypal' stories or what Boyce

(1995) describes as 'touchstone stories' (p. 115) that capture the essence of the actions taking place within an organisation or community. Cherry (1999) maintains that through multiple cycles of interaction, the wisdom of participants can be engaged and developed:

The value of collective and interactive research cycling is that the individual's own learning can be fully drawn out and acknowledged; shared and put side-by-side, with the 'knowing' of others, so that individual meaning is enriched, enhanced and extended by interaction with others; and evaluated and constructively challenged by others. This concept is fundamental to the process of action learning. (p. 85)

Reflection 4. Use group sensemaking to create knowledge

The role of stories in sensemaking has been given considerable attention by researchers (Weick, 1995, p. 127). Sensemaking is a well-established theoretical framework (Gioia and Chittipeddi, 1991; Patriotta, 2003), whereby people give meaning to experience, and it is a way to deal with ambiguity and uncertainty. In our personal lives, we all do it intuitively every day. To become an effective method for formal learning, it must be intentional and explicit. Weick and Sutcliffe (2001) find that 'to deal with ambiguity interdependent people search for meaning, settle for plausibility, and move on. These are moments of sensemaking' (p. 419). Sensemaking occurs both individually and in groups. Conversation is a powerful way of creating shared understanding because 'sensemaking is a way station on the road to a consensually constructed, coordinated system of action' (Taylor and Van Every, 2000, p. 275). In sensemaking, we talk mutual understanding into existence. Effective sensemaking is built on certain foundations (adapted from Weick, 1995):

- *Always seeking plausibility.* Sensemaking seeks plausibility more than accuracy – a workable, useful level of understanding to guide action rather than a search for an empirical universal truth. As Weick (1995) writes,

‘in an equivocal, postmodern world, infused with the politics of interpretation and conflicting interests and inhabited by people with multiple shifting identities, an obsession with accuracy seems fruitless, and not of much practical help, either’ (p. 61).

- *Grounded in self-identity and world view.* Who people think they are (self-awareness) in their context shapes how they interpret events and choose to act. Their general orientation projects themselves into their environment. People notice and extract cues from the environment and interpret those cues in light of values, beliefs, experiences, narratives and mental models. Our thoughts follow familiar patterns that shape what we notice to comply with our wider framework for understanding our world. Who we are is revealed in what and how we think – and what we think is revealed in who we are.
- *Continuous and building on past assumptions.* Individuals simultaneously shape, and are shaped by, the relational forces around them: Our dialogue is ongoing, emerges over time, competes for attention, is reflected upon in hindsight and is subject to change. How we view the present is shaped by our past thoughts, feelings and experiences: To learn what we think, we look back on the patterns of thinking, feeling and acting in the past.
- *Acquiring knowledge for action.* The role of conversation, stories and social processes are vital to the process of discovery. Shared meaning is created through shared narrative based on shared experience. People weigh up, assess and give weight to their construction of reality through the use of recalled stories in dialogue. We select our narrative to reveal perceived reality as we construct it.

Reflection 5: *Identify the kind of knowledge you are seeking to find*

Knowledge can be tacit or explicit. Knowledge that involves tactile experiences, intuition, values, emotions, rules of thumb or

unarticulated mental models is described as *tacit*. Polanyi (1966, p. 4) used the term *tacit* with the assertion 'we can know more than we can tell'. **Tacit knowledge** is not usually consciously accessible; it can be highly personalised and experience-based. Therefore, it is difficult to communicate to others. Tacit knowledge is the art, insight and craft that is perhaps captured best in the term 'know-how'. As Nonaka (1991, p. 4) describes: 'Tacit knowledge has an important cognitive dimension. It consists of mental models, beliefs and perspectives so ingrained that we take them for granted, and therefore cannot easily articulate them'.

Explicit knowledge can be spoken, structured in sentences and captured in writing or drawings. It can be easily communicated and shared in the form of a database, scientific formula, recipe, manual or product specification. It is accessible, transferable and systematic. An example of the difference between explicit and tacit knowledge is cooking a meal. Explicit knowledge is the recipe, the instructions that can be written down or captured in a video. Tacit knowledge is the intuitive understanding of the master chef – the look, taste, smells, touch, timing and techniques that only come with years of hands-on experience. Effective individual and group learning requires a continuous interplay between tacit and explicit knowledge (Nonaka and Takeuchi, 1995), as seen in these four dimensions of knowledge creation and sharing:

- Creating knowledge: *from tacit to explicit* – the process of developing images, models, frameworks, recipes and examples to articulate tacit knowledge in a form that can be captured and shared.
- Creating knowledge: *from explicit to explicit* – the process of organising and integrating knowledge to fit with other parcels of captured knowledge, recognising patterns and building new systems of knowledge, in modes that can be published and easily shared.
- Creating knowledge: *from tacit to tacit* – the process of face-to-face interaction (for example, conversations, meetings, brainstorming, sharing experience, living together,

apprenticeship and hands-on experience) in sharing deeply known, difficult to express, personal knowledge.

- Creating knowledge: *from explicit to tacit* – the process of individuals receiving captured knowledge and, through action and reflection, internalising the experience to be a deeply personal, subconscious understanding or expertise that cannot always be articulated.

The cyclic nature of action research is perfectly suited to creating and sharing useful knowledge; however, it is not a discrete linear process. The emergence of new knowledge acts, yeast-like, in ways that are impromptu and expressive to diffuse useful *information* (know-what), *knowledge* (know-how), and *wisdom* (know-why) into the research process (Ackoff, 1989; Zeleny, 1987), continuing to inform and form useful findings of value to improving practice.

Reflection 6. Choose a suitable framework for 'reflection'

Too often in academic writing, the idea of *reflection* is used imprecisely. While asking a research participant to reflect on their experience provides a broad body of qualitative data, there can often be too much of it and it can be difficult to code and theme. Also, the researcher, in providing personal reflection may fall into the trap of broad, sweeping statements with little structure or clear research value. It may be more useful to be specific in the kind of reflection that is sought. The following three approaches could provide helpful examples of reflective frameworks for thesis writing:

- Schön (1983), in describing the value of reflective practice, drew a distinction between *reflection-on-action* (focused in the past) and *reflection-in-action* (focused in the present). Later, Killion and Todnem (1991) added the future focus with the concept of *reflection-for-action*.
- Mezirow (1991) took a different approach, seeing useful approaches to reflection being focused on content, process or premise. *Content reflection* is focused on what is happening. *Process reflection* is focused on how things are being done.

Premise reflection is focused on critiquing underlying assumptions.

- The author (Smith, 2012) used a four-lenses approach to learning through reflective questions:
 - What do I *observe* happening? (a focus on data)
 - What do I *feel* about it? (a focus on emotional response)
 - What do I *think* is going on? (a focus on cognitive analysis)
 - What do I *want* to be different? (a focus on action for improved practice).

Targeted reflection may be more useful to some researchers to help them dig *deeper*, rather than *broader*, and to make sense of useful narrative data. A clear framework for reflection could help the researcher frame tacit insights in a structured and easily accessible way.

Reflection 7. *Ensure you can articulate a clear quality framework*

The traditional criteria for research, *validity* and *reliability*, may have limited applicability in action research (Greenwood and Levin, 2005). In contrast, Lincoln and Guba (1989) suggest that *trustworthiness* and *authenticity* are more appropriate tests of the real value of a research project. Given the dominance of the positivist approach in most research circles, it is important that action researchers can clearly articulate the framework they are using to establish the integrity of their process and the quality of their findings.

The author (Smith, 2012) adapted the work of Herr and Anderson (2005) to develop the following quality framework to provide evidence that: (1) the research process is rigorous and ethically sound, (2) the findings are authentic and trustworthy, (3) the action outcomes were useful in improving professional practice, and (4) contribute to the academy through testing theory:

- *Knowledge quality* (new knowledge is generated)
- *Outcome quality* (action-oriented outcomes are achieved)
- *Change quality* (the researcher, participants and organisation are transformed)
- *Practice quality* (the usefulness of the research is tested by participants in the organisation)
- *Democratic quality* (co-creation and sharing of knowledge is owned by stakeholders)
- *Process quality* (rigorous and appropriate research methods are confirmed)

Regardless of the exact quality framework selected by the researcher, there are some elements that, when included in thesis writing, will strengthen the case that the research is valid and demonstrates clarity in purpose, rigour and process. With reference to the work of John Creswell (2012) and Lincoln and Guba (1989), these elements might include:

- *Triangulation*. Using multiple sources of information, multiple methods of gathering data, multiple participant perspectives and the use of multiple theoretical frameworks for analysis (Denzin, 1978; Patton, 2001). This ensures the quality of knowledge gathered is comprehensive and rich (Geertz, 1973, pp. 3–30).
- *Negative case analysis*. Testing and refining hypotheses by seeking disconfirming evidence and analysing data using different theoretical (or cross-disciplinary) approaches.
- *Multiple cycles of member checking*. Regularly seeking feedback from informants to ensure the accuracy and credibility of the data collected. This ‘member checking’ is where participants’ stories, responses and reflections are shared for review by others to ensure validity (Glesne and Peshkin, 1992; Lincoln and Guba, 1985) regarded as ‘the single most crucial technique in establishing credibility’ (Lincoln and Guba, 1989, p. 239).

- *Identified researcher positionality and bias.* Researchers making their position in the research process clear: Inside-the-system or outside-the-system, identifying and clarifying issues of ethics, power and bias.
- *Tested assumptions with external consultation.* The research learning circle (or learning set) remaining an outstanding feature of the action research approach.

Some students may be tempted to shortcut the above principles as they may not be requirements of formal study. However, they are crucial for a participatory action research thesis because of validity and quality of research and learning outcomes. For example, as to the last principle, regular connection with other researchers across disciplines can significantly sharpen the depth and integrity of the research process.

Summary

While much has been written for students on the process of action learning and research, the academy remains stubborn in its refusal to accept the rigour and quality of some action research methodology. While the ultimate test of validity may be the usefulness of the findings, the onus remains on the student to provide evidence that the research process meets the quality standards benchmarked across all academic disciplines. It is hoped that these seven reflections may prove useful to those postgraduate students seeking to successfully complete an action research thesis and to academics and other researchers attempting to be accepted in traditional publications and grant proposals.

References

- Ackoff, R. (1989). From data to wisdom. *Journal of Applied Systems Analysis*, 16 (1), pp. 3-9.
- Boyce, M. (1995). Collective centering and collective sense-making in the stories and storytelling of one organisation. *Organisation Studies*, 16 (1), pp. 107-137.

- Burchell, H. and Dyson, J. (2000). Just a little story: The use of stories to aid reflection on teaching in higher education. *Educational Action Research*, 8 (3), pp. 435–450.
- Burns, R. (2000). *Introduction to Research Methods*. Sydney: Addison Wesley Longman.
- Cherry, N. (1999). *Action research: A Pathway to Action, Knowledge and Learning*. Melbourne: RMIT University Press.
- Coghlan, D. (2002). Putting research back into OD and action research: A call to OD practitioners. *Organisational Development Journal*, 20 (1), pp. 62–66.
- Creswell, J. (2012). *Qualitative Inquiry and Research Design: Choosing Among Five Traditions*. Thousand Oaks, CA: Sage.
- Cunningham, J. B. (1995). Strategic considerations in using action research for improving personnel practices. *Public Personnel Management*, 24 (3), pp. 515–529.
- Dadds, M. and Hart, S. (2001). *Doing Practitioner Research Differently*. London: Routledge.
- Davis, J. (2007). Rethinking the architecture: An action researcher's resolution to writing and presenting their thesis. *Action Research*, 5 (2), pp. 181–198.
- Denzin, N. and Lincoln, Y. (Eds). (2011). *The Sage Handbook of Qualitative Research* (5th ed.). London: Sage.
- Denzin, N. (1978). *Sociological Methods*. New York: McGraw-Hill.
- Dick, B. (1993). *You Want to do an Action Research Thesis?* Brisbane: Interchange.
- Geertz, C. (1973). *The Interpretation of Cultures: Selected Essays*. New York: Basic Books.
- Gioia, D. A. and Chittipeddi, K. (1991). Sensemaking and sensegiving in strategic change initiation. *Strategic Management Journal*, 12 (4), pp. 433–448.
- Glesne, C. and Peshkin, A. (1992). *Becoming Qualitative Researchers*. New York: Longman.
- Goodson, I. and Walker, R. (1995). Telling tales. In H. McEwan and K. Egan (Eds), *Narrative in Teaching and Research*. New York: Teachers College Press, pp. 184–194.
- Greenwood, D. and Levin, M. (2005). Reform of the social sciences and the universities through action research. In N. Denzin and Y. Lincoln

- (Eds), *The Sage Handbook of Qualitative Research* (3rd ed.). London: Sage, pp. 43–64.
- Gudmundsdottir, S. (1995). The narrative nature of pedagogical content knowledge. In H. McEwan and K. Egan (Eds), *Narrative in Teaching, Learning, and Research*. New York: Teachers College Press, pp. 24–38.
- Hart, E. and Bond, M. (1995). *Action Research for Health and Social Care: A Guide to Practice*. Buckingham: Open University Press.
- Herr, K. and Anderson, G. (2005). *The Action Research Dissertation: A Guide for Students and Faculty*. London: Sage.
- Hughes, I., Ndonko, F., Ouedraogo, B., Ngum, J. and Popp, D. (2004). International education for action research: The Bamenda model. *Action Research e-Reports*, 020. Retrieved from www.scribd.com/doc/15494711/International-Education-for-Action-Research-The-Bamenda-Model
- Killion, J. and Todnem, G. (1991). A process of personal theory building. *Educational Leadership*, 48 (6), pp. 14–17.
- Kolb, D. (1984). *Experiential Learning*. New Jersey: Prentice Hall.
- Lave, J. and Wenger, E. (1991). *Situated Learning: Legitimate Peripheral Participation*. Cambridge: Cambridge University Press.
- Law, J. (2004). *After Method: Mess in Social Science Research*. New York: Routledge.
- Lincoln, Y. (1998). From understanding to action: New imperatives, new criteria, new methods for interpretative researchers. *Theory and Research in Social Education*, 26 (1), pp. 12–29.
- Lincoln, Y. and Guba, E. (1985). *Naturalistic Inquiry*. Thousand Oaks, CA: Sage.
- Lincoln, Y. and Guba, E. (1989). *Fourth Generation Evaluation*. London: Sage.
- Mackay, H. (2008, 13 December). Keynote address: Australian Psychological Society's annual oration. *Sydney Morning Herald*, p. 14.
- McNiff, J., Lomax, P. and Whitehead, J. (1996). *You and Your Action Research Project*. London: Routledge.
- Mezirow, J. (1991). *Transformative Dimensions of Adult Learning*. San Francisco: Jossey Bass.
- Nonaka, I. (1991). The knowledge-creating company. *Harvard Business Review*, November/December, pp. 2–9.

- Nonaka, I. and Takeuchi, H. (1995). *The Knowledge-Creating Company*. New York: Oxford University Press.
- Parkin, P. (2009). *Managing Change in Healthcare using Action Research*. London: Sage.
- Patriotta, G. (2003). Sensemaking on the shop floor: Narratives of knowledge in organizations. *Journal of Management Studies*, 40 (2), pp. 349–376.
- Patton, M.Q. (2001). *Qualitative Evaluation and Research Methods* (2nd ed.). Thousand Oaks, CA: Sage Publications.
- Perry, C. (1998). A structured approach for presenting research theses. *Australasian Marketing Journal*, 6 (1), pp. 63–86.
- Polanyi, M. (1966). *The Tacit Dimension*. Chicago: University of Chicago Press.
- Rapoport, R. N. (1970). Three dilemmas in action research. *Human Relations*, 23, pp. 499–513.
- Reason, P. and Bradbury, H. (2001). *Handbook of Action Research* (Concise paperback edition). London: Sage.
- Revans, R. (1982). *Action Learning*. Bromley: Chartwell Bratt.
- Schön, D. (1983). *The Reflective Practitioner: How Professionals Think in Action*. Cambridge: Basic Books.
- Smith, S. (2003). *Connecting People: Improving Knowledge Sharing and Collaboration*. Doctoral thesis. Southern Cross University, Lismore Australia and International Management Centres, Edinburgh.
- Smith, S. (2012). *Savouring Life: The Leader's Journey to Health and Effectiveness*. Doctoral thesis. Faculty of Health Sciences, University of Sydney.
- Taylor, J. and Van Every, E. (2000). *The Emergent Organization*. New Jersey: Lawrence Erlbaum Associates.
- Wadsworth, Y. (1998). What is participatory action research? *Action Research International*, Paper 2. Retrieved from <http://www.aral.com.au/ari/p-ywadsworth98.html>
- Wadsworth, Y. (2010). *Building in Research and Evaluation: Human Inquiry for Living Systems*. Sydney: Allen & Unwin.
- Weick, K. (1995). *Sensemaking in Organizations*. London: Sage.
- Weick, K. and Sutcliffe, K. (2001). *Managing the Unexpected*. San Francisco: Jossey-Bass.

- Wimpenny, K. (2010). Participatory action research: An integrated approach towards practice development. In M. Savin-Baden and C. Major (Eds), *New Approaches to Qualitative Research: Wisdom and Uncertainty*. London: Routledge, pp. 89-99.
- Winter, R. (1996). Some principles and procedures for the conduct of action research. In O. Zuber-Skerritt (Ed.). *New Directions in Action Research*. Bristol: Falmer Press, pp. 13-27.
- Zeleny, M. (1987). Management support systems: Toward integrated knowledge management. *Human Systems Management*, 7 (1), pp. 59-70.
- Zuber-Skerritt, O. and Perry, C. (2002). Action research within organisations and university thesis writing. *The Learning Organization*, 9 (4), pp. 171-179.

Biography

Stephen Smith is a principal consultant with Robertson and Chang a boutique consulting firm specialising in the design and implementation of practical learning solutions to complex business challenges. He also serves as the CEO of the Australian College of Ministries, a higher education provider that has featured action-reflection as its core pedagogy for over twenty years.

Using action research in practice: Useful insights and outcomes

Stephen Duffield

Abstract:

The aim of this paper is to describe a direct and personal account of the issues and challenges that occurred in three action research projects that were part of a doctoral research program. The action research cases were carried out in various government organisations and were researching the application of a Systemic Lessons Learned Knowledge (Syllk) conceptual model. The focus of the paper is on the general methodological issues and problems of action research. The author hopes that readers will benefit from the direct and transparent account of the practical problems encountered in the studies.

Key words: Action research, action research cycles, action research projects, Syllk model

Introduction

The aim of this paper is to describe a direct and personal account of the issues and challenges that were encountered during three action research projects that were studied as part of a doctoral research program. The action research cases were carried out in federal and state government organisations and were researching the application of a conceptual model, hereafter referred to as the Systemic Lessons Learned Knowledge model (Syllk) model (Duffield, 2016; Duffield and Whitty, 2015; 2016a; 2016b). The doctoral research program proposed that reconceptualising organisational knowledge and lessons learned through the Syllk model can influence organisation learning. The focus of the paper is not on the Syllk model, but on the general methodological issues

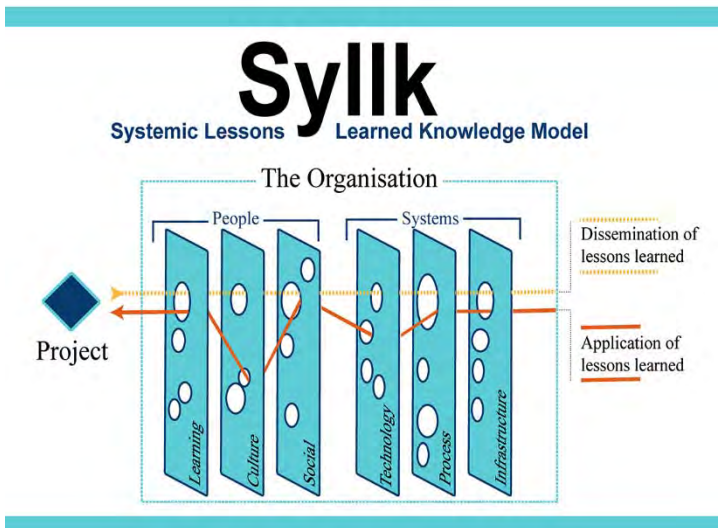
and problems of action research. The paper begins with a background on the Syllk model, a discussion on the context of the research projects followed by a discussion on the action research methodology. The methodology challenges and issues will be examined, and the action research methodology application for each project will be discussed in detail, followed by discussion and conclusion that provides useful insights for action researchers and reflective practitioners.

Syllk model background

The doctoral research program proposed that the Syllk model (see Figure 1) enables management to conceptualise how organisational know-how is wired (distributed) across various people and system elements of an organisation (Duffield and Whitty, 2015). The research program outcomes have established that the alignment of the Syllk model elements (learning, culture, social, technology, process and infrastructure) can positively influence an organisation learning (Duffield, 2016; Duffield and Whitty, 2012; Duffield and Whitty, 2015; 2016a; 2016b).

In line with complex adaptive systems theory, the Syllk model represents the various organisational systems or functions (in terms of elements) that collectively drive the overall behaviour of the organisation (Duffield and Whitty, 2012; Duffield and Whitty, 2015). Conceptually it is an adaptation of the Swiss cheese model; the various elements or structures in the model represent the various modes of social and cultural learning, along with the organisational processes, infrastructure and technology that support them (Duffield and Whitty, 2012; Duffield and Whitty, 2015). The model replaces Reason's (1997) defence barrier layers (person, workplace, organisation factors (policies and procedures), and defences (technology, training and regulations)) with the organisational elements of learning, culture, social, technology, process and infrastructure. The reverse relationship refers to the fact that the open holes (facilitators) in each element represent the various facilitators ('lessons learned' practices) within each of those elements that need to be aligned to enable the effective

Figure 1: The Systemic Lessons Learned Knowledge (Syllk) model



Source: (Duffield and Whitty, 2015)

dissemination and application of the lessons. Negative impediments (barriers) need to be overcome for effective lessons learned (Collison, 2006; Riege, 2005), and the Syllk model can assist in identifying these (Duffield, 2016; Duffield and Whitty, 2012; Duffield and Whitty, 2015; Leal-Rodríguez, Roldán, Ariza-Montes and Leal-Millán, 2014; Virolainen, 2014).

Leal-Rodríguez *et al.*, (2014) have indicated how an earlier version of the Syllk model (Duffield and Whitty, 2012) supports the construct of information sharing and knowledge integration where information and knowledge are exchanged between an organisation and its suppliers, customers and partners. Virolainen (2014) highlighted that the Syllk model elements of people and culture play an important role in learning from projects. Duffield and Whitty (2016b) have shown that the alignment of the people and system elements can positively influence an organisation's capability for storytelling, and therefore learn lessons and

accumulate from stories of past project experiences. Hedman, Pählman and Törnby (2015) explain how the Syllk model shows that for organisations to learn, people and systems (processes and technology) need to be aligned, and that this combination is the best way of organisational learning.

Research project context

The doctoral research program consisted of applying action research to three research projects known as Project A, Project B and Project C. Alias names for the organisations will be used in this paper to protect the confidentiality of the participants (Walker and Haslett, 2005).

Project A took place at a Branch of a large division of an Australian government organisation. The Branch consists of the design and build infrastructure, asset and property services, and portfolio and investment units and has approximately 160 staff. The Branch manages a sizable number of projects. The most significant and complex are approximately 200 capital projects with project budgets ranging from approximately \$1 million to \$1.7 billion. Currently, there is no consistent knowledge management (KM) framework utilised to manage the knowledge gathered during the planning, design and delivery of these capital projects, including lessons learned. This lack of a consistent framework extends across all Branch projects. The business improvement director of the Branch approached the researcher (the researcher was not a member of the Branch) to apply the Syllk model and assist the Branch (through research) in the implementation of a KM project to develop and implement a KM framework. The '(Branch) KM project' was endorsed by executive management in June 2013. The overall duration of the research and KM project was two years and four months (February 2013 to June 2015) (Duffield, 2015; Duffield and Whitty, 2016a).

Project B took place at a large division of an Australian government organisation. The division identified a commitment plan to develop productive partnerships, share learnings and project knowledge. A change management program (Champions

of Change program) was implemented with a focus on storytelling (Storytelling Project - Project B) embracing improvement while thinking laterally and trialling new methods. The division identified that the intervention and implementation of the Syllk model would benefit the organisation, and consequently, the action research study was endorsed by executive management in September 2013. The storytelling project duration was for 12 months (Duffield and Whitty, 2016b).

Project C took place in an Australian government organisation. The organisation's KM steering committee approved the trial of an online Community of Practice (CoP) as part of a (2014-2018) KM strategy. The trial online CoP was approved to operate in a controlled environment to assess the viability of online CoPs within the organisation and the practical applicability of the proposed online CoP governance framework. The trial was to provide a safe, trusted and collaborative digital workspace that aligns with organisational policies and procedures so that staff can communicate and share knowledge with one another. The organisation identified that the intervention and implementation of the Syllk model would benefit the trial online CoP, and subsequently, the action research study was endorsed by the KM steering committee and executive management in November 2014. The trial online CoP project duration was for nine months.

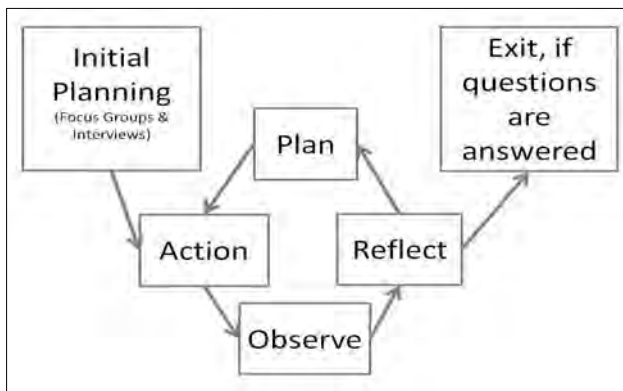
The action research methodology

The term action research was pioneered by Kurt Lewin in 1946 toward social research that combined the generation of theory with changing the social system through the researcher acting on or in the social system. It is a way of both changing the system and generating critical knowledge about the system through a continuous cycle of planning, acting, observing and reflecting (Lewin, 1946). Action research is a methodology that provides an effective way of delivering a conscious change in a partly controlled surrounding. Put simply, the action researcher enters a situation and attempts to deliver change and monitors the results (Collis and Hussey, 2009; Lewin, 1946).

Action research model

The action research model and method proposed for the doctoral research program research projects consisted of multiple spiral *action research* cycles of the 4 stage process (plan, action, observe (collect data) and reflect (analyse and interpret data)) adapted from Zubert-Skerritt in Altrichter, Kemmis, McTaggart and Zuber-Skerritt (2002), McKay and Marshall (2001), McNiff and Whitehead (2011) and shown in Figure 2.

Figure 2: The Action Research Cycle



Adapted from: Zubert-Skerritt, cited in Altrichter *et al.*, (2002), McKay and Marshall (2001), McNiff and Whitehead (2011)

The dual cycle (parallel) process of action research proposed by McKay and Marshall (2001) and Marshall, de Salas and McKay (2006) as shown in Figure 3, was also adapted. The action research cycles were applied to both the organisational problem solving activity (*problem-solving activity interest* - (a) in Figure 3a) and the research activity of the Syllk model (*research interest* - (b) in Figure 3b). The custodian of the research interest is the researcher, and the custodian of the problem-solving interest is the organisation in the study (Marshall, Wilson, de Salas and McKay, 2010)

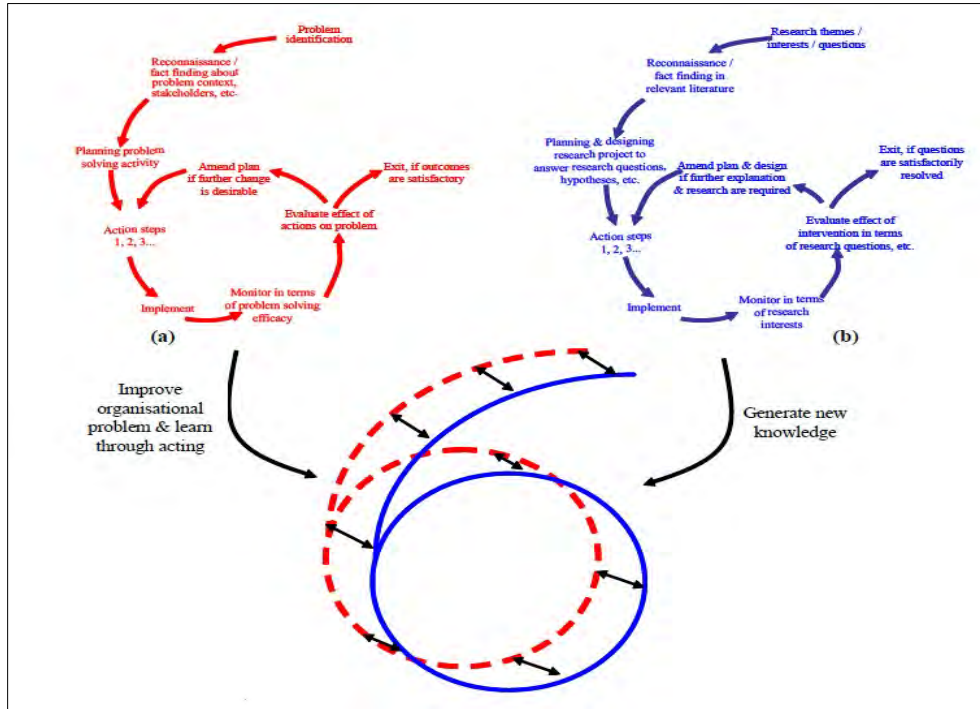


Figure 3: The Dual Imperatives of Action Research

(Source: Marshal *et al.*, 2006, p. 2)

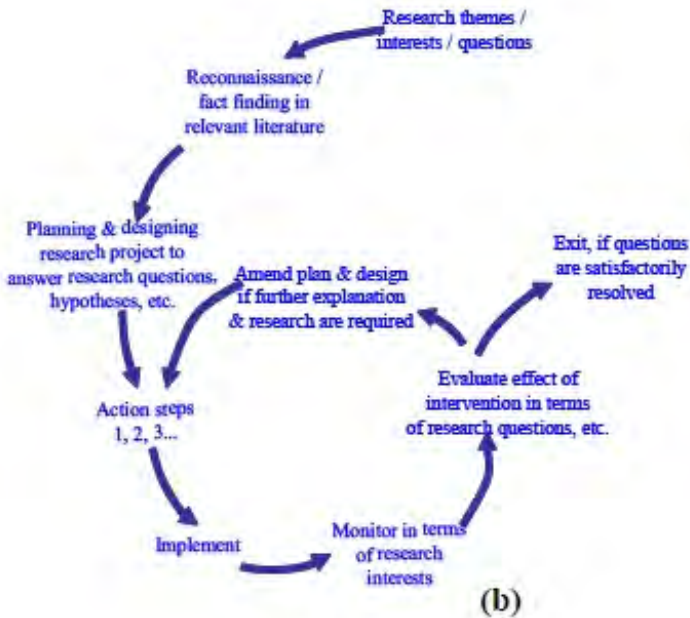
Figure 3(a): The Dual Imperatives of Action Research –
Problem-solving activity interest



Improve
organisational
problem & learn
through acting

(Source: Marshall *et al.*, 2006, p. 2)

Figure 3(b): The Dual Imperatives of Action Research –
Research interest



Generate new
knowledge

(Source: Marshall *et al.*, 2006, p. 2)

Ethics approval

Ethics approval and clearance for this doctoral research program was obtained from the University of Southern Queensland to conduct the studies. Action research issues are often faced by researchers in securing ethics approval (Sankaran, Hill and Swepson, 2006; Walker and Haslett, 2005). For this doctoral research program, the ethics application was revised to explain in

detail the action research methods, and this included a visual representation of the action research cycle methodology as shown in Figure 2.

Action research suitability to this research

Action research was the most suitable methodology to answer the doctoral research program problems as the research was focused around business change management, organisational learning and project management. Avison, Lau, Myers and Nielsen (1999) and McKay and Marshall (2001) both highlight the significant contributions that action research has had on information systems, people and organisations. Avison *et al.* (1999) suggested that action research type activities would be a useful approach when discussing articles about the lessons learned from particular projects, case studies, systems design and software engineering projects. Action research supports conducting research within a complex learning social organisation and will benefit both the organisation and the project management body of knowledge (Baskerville and Wood-Harper, 1996; Baskerville, 1999; Raelin, 1998; Susman and Evered, 1978; Zuber-Skerritt and Perry, 2002).

Action research has also been used in project management research to implement organisational change (Sankaran, Tay and Orr, 2009), and knowledge management systems (Mau, 2005; Orr, 2006; Sankaran, 2009; Sankaran, Tay and Orr, 2009; Walker, 2007; Walker and Sankaran, 2014). Orr and Sankaran (2007) recognised a direct link with project management, action research, complexity and the development of reflective practitioners in a project environment. Ragsdell (2009) highlights the adoption of action research on knowledge management studies has the potential to address and overcome knowledge sharing barriers. Kotnour and Vergopia (2005) applied action research on a NASA Kennedy Space Center lessons learned study where the approach actively engaged participants in the development and application of new knowledge.

Role of the researcher

Action researchers can adopt a variety of roles to guide the scope and environment of their relationships with project participants. Action researchers are often involved in a high percentage of project participation and learning occurs collectively between the participants and the researcher (Adams, 2010). Herr and Anderson (2005) take the view that action researchers may operate as insider(s) and outsider(s). Coughlan and Coughlan (2002, p. 227) indicate that 'action researchers are outside agents who act as facilitators of the action and reflection within an organisation'.

Table 1 shows the role of the researcher in each of the doctoral research program projects. A finding of the research in projects (A and B), was that the researcher (facilitator) role inevitably evolved throughout the action research cycle. To have done otherwise would have been unproductive and disadvantage the participants and internal researchers. The researcher role was clearly one of action research and knowledge management expertise. The researcher facilitated and co-facilitated workshop sessions, worked individually with participants and assisted in the development of data and information.

As each project progressed, participants came to understand the action research process. The researcher was needed less as an action research expert and spent more time sourcing literature that supported the projects. The researcher was able to focus more on the research findings. The participants were managing their own projects, however they relied on the researcher to pay attention to the overall picture.

Table 1. Role of the Researcher – Projects

Role of the researcher		Project A	Project B	Project C
<p><i>Participant observer</i></p> <p>Reciprocal collaboration (insider – outsider teams)</p>	<p>The action researcher negotiates levels of accessibility and membership in the participant group, a process that can limit interpretation of events and perceptions.</p>			<p>The researcher participated in all of the meetings and was the Community owner of the project team.</p> <p>The Project team managed the project problem-solving diagnosis, reflection and planning activities.</p>
<p><i>Observer participan</i></p> <p>Outsider in collaboration with insider(s)</p>	<p>The researcher does not attempt to experience the activities and events under observation but negotiates permission to make thorough and detailed notes in a fairly detached manner.</p>	<p>The researcher participated in some of the meetings. The project team managed the project problem-solving diagnosis, reflection and planning activities and occasionally sought advice from the researcher.</p>		

Adapted from: (Adams, 2010; Herr and Anderson, 2005)

Conducting research within one's organisation

Conducting research within one's organisation (Project C) requires that the researcher balances the project role they hold with the additional role of researcher. Herr and Anderson (2005) describe this in terms of insider/ outsider research, where insider refers to a person from within the project, and outsider refers to a person external to the project and who may be external to the organisation, such as a consultant.

The researcher takes on an additional role to their organisational one, which can be seen to both cause difficulties and sharpen the focus of the project activities. The difficulty is due to the challenge of ensuring that when one person has dual roles (researcher and project member (community owner)), that they have clear and visible responsibilities. With Project C, the responsibilities of the researcher and community owner were documented in all of the relevant project documentation and were made clear to the project stakeholders, sponsor and community project members. A mutually beneficial clear research arrangement was put in place with members of the organisation informed and aware of the dual work and academic nature of the project (Holian and Coghlan, 2013). The community members were invited to participate and were free to decline to be involved (Holian and Coghlan, 2013). It was clear to organisational stakeholders that the project could benefit from the researcher's overall program of work and impact on what and how the organisation learns (Coghlan, 2005).

Challenges in action research

Action research is often criticised as merely being consulting rather than research and that it lacks rigour (Baskerville and Wood-Harper, 1996; Coughlan and Coghlan, 2002). The following four factors help to differentiate between action research and consulting (Gummesson, cited in Coughlan and Coghlan, 2002, p. 237) and the need for the researcher to be strong and loyal to the research rigour:

1. Consultants who work in an AR mode are required to be more rigorous in their inquiry and documentation.

2. Researchers require theoretical justifications, while consultants require empirical justifications.
3. Consultants work under tighter time and budget constraints.
4. Consultation is frequently linear - engage, analyse, act and disengage. In contrast, AR is cyclical - gathering data, feeding it back to those concerned, analysing the data, planning action, taking action and evaluating, leading to further data gathering and so on.

Rigour in action research refers to how data is generated, gathered, explored and evaluated, and how events are questioned and interpreted through multiple action research cycles so that early interpretations can be challenged and refined (Dick and Swepson, 1994; Melrose, 2001). The dual cycle (parallel) process of action research proposed by McKay and Marshall (2001) where the action research cycles apply to both the problem-solving activity interest (organisational problem-solving activity) and the research interest (Syllk model application) was chosen for this research project to address potential consultant and rigour issues when undertaking action research process as a researcher and practitioner. McKay and Marshall (1999a, p. 602) also state that the two-action research 'cycles are not conducted independently of one another, but are highly interlinked and somewhat contingent upon one another.'

Melrose (2001) states that triangulation of data increases qualitative rigor where data is collected from multiple sources and mixed methods to establish trends and patterns as is the case with this doctoral research program projects. In projects A, B and C, data has been collected from several sources using appropriate methods from the same or different sources (for example focus groups, interviews, meeting records (hard copies and audio), project documents, diary entries and observations) and has been coded for themes and patterns. The data collected has identified changes to individuals, group practice, systems and the organisation as a result of the action research cycles. The challenge is using as much of the relevant data as is required to examine the predetermined research issues and generate meaningful

explanations, expressed in words, that will create a clear understanding of the research outcomes (Cepeda and Martin, 2005). Deliberate and conscious reflection of any interpretations is essential in action research (Dick, 1993).

There are many risks with action research. Baskerville (2000, p. 196) states that 'action researchers face risks that other scientists will challenge their underlying data and analytical techniques'. The action researcher is often criticised for analytical techniques and traditional notions of validity and reliability. Baskerville (2000) reports that action research teams often learn from first-degree outcome failures and that we should also be learning from our success. There are two main stakeholder groups in action research projects: clients and researchers (Baskerville, 2000). Clients are focused on the practical problem and researchers are focussed on the contribution to scientific theory. There is a domination risk that the researcher wants to create knowledge, and the client wants to fix their practical problem. Collaboration between the project team and researcher is critical to treat the domination risk. Baskerville (2000) concludes that an inherent risk in conducting action research is the academic research culture of publishing or perish. This doctoral research program has treated this risk in publishing peer-reviewed journal papers for each project.

Assessing the quality of the doctoral research studies

Goodness, validity, trustworthiness, credibility, and workability are all terms used to describe criteria for good quality action research (Herr and Anderson, 2005). There are many different views on how quality requirements are applied to action research. Table 2 provides a summary of the quality-related criteria associated with action research. I note that it is difficult, if not impossible, to replicate an action research study and hence to replicate its findings (McKay and Marshall, 1999b). The selected list of quality criteria was derived following an analysis of action research literature (Baskerville and Wood-Harper, 1996; Coughlan and Coughlan, 2002; Greenwood and Levin, 2007; Herr and Anderson, 2005; McNiff and Whitehead, 2011; Melrose, 2001).

Table 2: Quality summary assessment

Action taken	Validity	Reliability	Rigour	Triangulation	Workability
Research program projects addressed the problem in practice / achievement of action oriented outcomes	X		X		X
Generation of new knowledge	X		X		X
Research project teams had an open and honest communication and change culture in group meetings / workshops	X	X	X		X
Education of both researcher and participants own learning	X	X	X		X
Active value add participation of research participants empowering them with new understandings	X	X	X		X
Collaboration took place and the research outcome, solution, evaluation and reflection were relevant	X	X	X		X
Academic supervision	X		X		X
Member checks by research participants and participant debriefing	X	X	X		
Peer reviewed journal papers representing each project	X	X	X	X	X
Public testing at conference presentations with diverse audience and feedback	X	X	X		X
Validation of research findings at other organisations	X	X	X		X
A sound and appropriate research strategy and research methodology and individual action	X	X	X		

Action taken	Validity	Reliability	Rigour	Triangulation	Workability
research projects					
Literature review aligned with action research cycles	X	X	X		
Multiple data sources (QUAL+QUAN); multiple projects; multiple collection methods	X	X	X	X	X
Researchers own critical reflection	X	X	X		
Dual cycle (parallel) process	X		X		
Limited scope of each research cycle	X		X		
Sufficient number of action research cycles	X		X		
Deliberate and conscious reflection of any interpretations	X		X		
Triangulation of data collection techniques	X	X	X	X	

Possible methodological limitations and Issues

One potential methodological issue relates to workability. Where 'credibility-validity of action research knowledge is measured according to whether actions that arise from the research solve problems (workability) and increase participants' control over their situations' (Greenwood and Levin, 2007). For these doctoral research program research projects, action research was conducted in an organisational context and was occasionally met with external constraints that impacted upon the ability to resolve some of the problems being addressed. Issues with the allocation of project resources and organisational changes were often experienced in all three projects. According to Greenwood and Levin (2007), in such a situation it would be harsh to conclude the action research project lacked credibility or validity if it is shown

that learning had taken place in some form and that stakeholders were willing to accept and act on the collectively arrived at results.

The second potential methodological issue relates to conducting research in one's organisation. The experiences of Coghlan and Shani (2008) and Holian and Coghlan (2013) described earlier in this section highlight the potential problems that could occur. The risk of encountering similar problems are treated in this research in that:

- the mutually beneficial research arrangement in place highlights the project could benefit from the researchers' overall program of work and impact on what and how the organisation learns
- the executive steering committee and project stakeholders are supportive of the trial project and associated research
- the organisation has agreed to this research arrangement given the research component will not have any negative impact on the project activities
- the researcher works in a senior management role in the organisation and can manage his own time and has access to stakeholders, technical administrators and staff in the organisation
- the researcher is new to the organisation and has limited cultural pre-understanding
- the researcher does not have established links with most of the staff who are participants (community members) in the action research and project activities.

Managing an action research project

The following sections explore the action research cycles for each of the projects. Both the Theoretical Research Interest and the Real-World Problem-Solving Interest will be discussed.

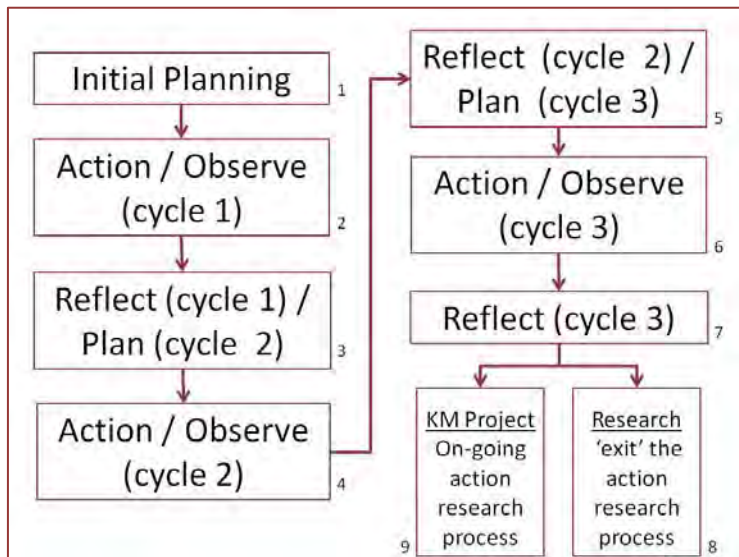
The steps of each action research cycle are based on McKay and Marshall (2001).

Given that the paper consists of multiple projects focused on the application of the Syllk mode, there is an unavoidable repetition of the presented material.

Action research cycles – Project A

Action research methodology was applied to Project A in 9 steps consisting of 3 cycles as shown in Figure 4.

Figure 4: Action research steps applied to Project A



Adapted from: Zubert-Skerritt in Altrichter et al. (2002), McKay and Marshall (2001); McNiff and Whitehead (2011)

Project A: The Theoretical Interest Cycle for Research

A-Initial planning [step 1]

- Research themes/interests/questions
- Reconnaissance/fact-finding in relevant literature
- Planning and designing research project to answer research questions, hypotheses, etc.

A-Research [step 1]

The focus on this research (theoretical interest) was to investigate how the Syllk model enables a project organisation to learn from past project experiences. What is missing from the literature is a study that clearly and simply articulates how a ‘lessons learned’ tool such as the Syllk model could be practically used by a project organisation to capture knowledge and lessons from its project work and successfully distribute this knowledge (know-how capability) across its organisational systems and people.

The initial planning stage for the research design component of the study consisted of interviews with two Branch directors followed by two focus groups of Branch project practitioners (20 participants). The interview and focus groups verified the understanding of how the Syllk model would work in the organisation (Reed and Payton, 1997). The focus groups identified the barriers and facilitators that impact the Syllk model within the Branch which formed the foundation for a KM framework.

A-Action / Observe (cycle 1) [step 2]:

- Action steps and Implement
- Monitor in terms of research interests.

A-Research [step 2]

The research interest focussed on observing and monitoring the Syllk facilitators and barriers and KM practices mapped to the Syllk elements. The researcher sought feedback from the project participants informally (verbally and via email). Researcher reflections were recorded in a research log. This monitoring presented insight into the progress of the project A in terms of answering the research question.

A-Reflect (cycle 1) / Plan (cycle 2) [step 3]

- Evaluate effect of intervention in terms of research questions, etc.
- Amend plan and design if further explanation and research are required.

A-Research [step3]

A CoP reflection meeting was held, and the participants comments were captured to reflect on the KM project (problem-solving interest) and the Syllk model (research interest). When reflecting on the research interest of the Syllk model, a CoP participant stated that

...when we did our workshop to capture the blockers [barriers]...we then further looked at the Syllk model...for our project what is becoming clear is having a system to capture [stories] and retrieve [stories], because, without that, the project was going nowhere. So for us having a platform was using the Syllk model. The technology became the critical element to get right, then working with the other elements could happen at their timeframe, but without technology, nothing gelled together.

No research planning changes were noted.

A-Action / Observe (cycle 2) [step 4]

- Action steps and Implement
- Monitor in terms of research interests.

A-Research [step 4]

The research interest focussed on observing and monitoring the Syllk facilitators and barriers, the change in the KM practices mapped to the Syllk elements and how the Syllk model supported the knowledge audit process and development of key knowledge indicators. The researcher sought feedback from the Project participants informally (verbally and via email). Researcher reflections were recorded in a research log. This monitoring presented insight into the progress of the Project A in terms of answering the research question.

A-Reflect (cycle 2) / Plan (cycle 3) [step 5]

- Evaluate effect of intervention in terms of research questions, etc.
- Amend plan and design if further explanation and research are required.

A-Research [step 5]

A CoP reflection meeting was held, and the participants comments were captured to reflect on the KM project (problem-solving interest) and the Syllk model (research interest). No research planning changes were noted.

A-Action / Observe (cycle 3) [step 6]

- Action steps and Implement
- Monitor in terms of research interests.

A-Research [step 6]

The research interest focussed on observing and monitoring the Syllk facilitators and barriers, the change in the KM practices mapped to the Syllk elements and how the Syllk model supports key knowledge indicators. The researcher sought feedback from the Project participants informally (verbally and via email). Researcher reflections were recorded in a research log. This monitoring presented insight into the progress of the project A in terms of answering the research question.

A-Reflect (cycle 3) [step 7]

- Evaluate effect of intervention in terms of research questions, etc.

A-Research [step 7]

A CoP reflection meeting was held, and the participants' comments were captured to reflect on the KM project (problem-solving interest) and the Syllk model (research interest). No research planning changes were noted.

A-Exit [step 8]

- Exit, if questions are satisfactorily resolved.

A-Research [step 8]

The research component exited the action research process as the researcher determined that there was sufficient intervention evidence to provide answers to the research question.

Project A: The real-world problem-solving interest cycle for practice

A more detailed description of the project and the outcomes can be found at Duffield (2015) and Duffield and Whitty (2016a).

A-Initial planning [step 1]

- Problem identification
- Reconnaissance/fact-finding about problem context, stakeholders etc.
- Planning problem-solving activity.

A-KM project [step 1]

As previously discussed, the Project A Real-World Problem-Solving interest focussed on a Government Branch establishing a KM project to develop and implement a KM framework. The Branch approached the researcher to apply the Syllk model and assist the Branch (through research).

The research focus groups provided input into the planning element of the problem-solving KM project.

A KM project team meeting was held to identify KM practices from the KM literature. These were then aligned with each of the Syllk elements to facilitate best learning and address the identified barriers.

The KM practices were further refined into KM interventions and initiatives to support the development of what was to be called the “IKnow(Branch) KM framework” and the implementation plan. The interventions and initiatives were developed by the (Branch) KM project team in discussion with the researcher.

A-Action / Observe (cycle 1) [step 2]

- Action steps and Implement
- Monitor in terms of problem-solving efficacy.
- A-KM Project [step 2]

The KM project interventions and initiatives formed the schedule of tasks (action steps) assigned to CoP members. They consisted of KM practices such as the development of best practice directories, lessons learned logs, storytelling and the establishment of a CoP. Various KM project CoP meetings and activities took place over a period of six months. KM interventions and initiatives were observed, monitored and evaluated against the KM project and the Syllk model.

A-Reflect (cycle 1)/ Plan (cycle 2) [step 3]

- Evaluate effect of actions on problem
- Amend plan if further change is desirable.

A-KM project [step 3]

A CoP reflection meeting was held, and the participants comments were captured to reflect on the KM project (problem-solving interest) and the Syllk model (research interest). The reflection planning activity identified some changes. From a planning perspective, some of the interventions and initiatives were not implemented (such as e-learning, mentoring/buddying and alignment to performance appraisals). Others were aligned with capabilities and resources available within the Branch (best practice directories, lessons learned project reviews and written stories).

A-Action/ Observe (cycle 2) [step 4]

- Action steps and Implement
- Monitor in terms of problem-solving efficacy.

A-KM project [step 4]

The KM interventions and initiatives formed the revised schedule of tasks (actions) assigned to the KM project CoP members. Various meetings and activities took place over a period of nine months. The interventions and initiatives of best practice directories took the form of establishing baseline project requirements. 'Lessons learned' activities consisted of project reviews and building performance evaluations (industry best

practice). Storytelling started to take shape within the Branch, and the CoP became an active 'participant' group. An attempt was made to develop an intranet portal and use available social media tools to connect, ask questions and to share knowledge and information.

A-Reflect (cycle 2) / Plan (cycle 3)[step 5]

- Evaluate effect of actions on problem
- Amend plan if further change is desirable.

A-KM project [step 5]

A CoP reflection meeting was held, and the participants' comments were captured to reflect on the KM project (problem-solving interest) and the Syllk model (research interest). The following findings came out in the reflection activity. The sub-Branch commenced using best practice directories containing defined project requirements. Building performance evaluations, lessons learned and project reviews were more evident in project meetings and stories were being shared in relevant forums.

One of the research interest outcomes of the knowledge audit was identifying knowledge, information and data enablers (facilitators) and blockers (barriers) aligned and mapped to the Syllk model. Following the reflection activity, planning for cycle 3 commenced where one initiative (Knowledge Audit) was not implemented. The remaining interventions and initiatives were further aligned with capabilities and resources available within the Branch.

A-Action / Observe (cycle 3) [step 6]

- Action steps and Implement
- Monitor in terms of problem-solving efficacy.

A-KM project [step 6]

The revised KM interventions and initiatives formed the new schedule of tasks (actions) assigned to the KM project CoP members. Various meetings and activities took place over a period of eight months with steady progress of the project activities achieved during this phase of the KM.

A-Reflect (cycle 3) [step 7]

- Evaluate effect of actions on problem.

A-KM project [step 7]

A CoP reflection meeting was held, and the participants comments were captured to reflect on the KM project (problem-solving interest) and the Syllk model (research interest. The Syllk facilitators, barriers and KM practices were reviewed and framed against the interventions and initiatives. The CoP reviewed their expectations and identified plan areas of improvement and changes for on-going cycles.

A-On-going [step 9]

- Planning problem-solving activity.

A-KM Project [step 9]

The KM project (problem-solving interest) found the action research process a valuable exercise and decided to carry on with the action research cycles as they continued with the implementation of the KM framework and associated activities.

Action research cycles – Project B

Action research methodology was applied to Project B in 6 steps consisting of 2 cycles as shown in Figure 5.

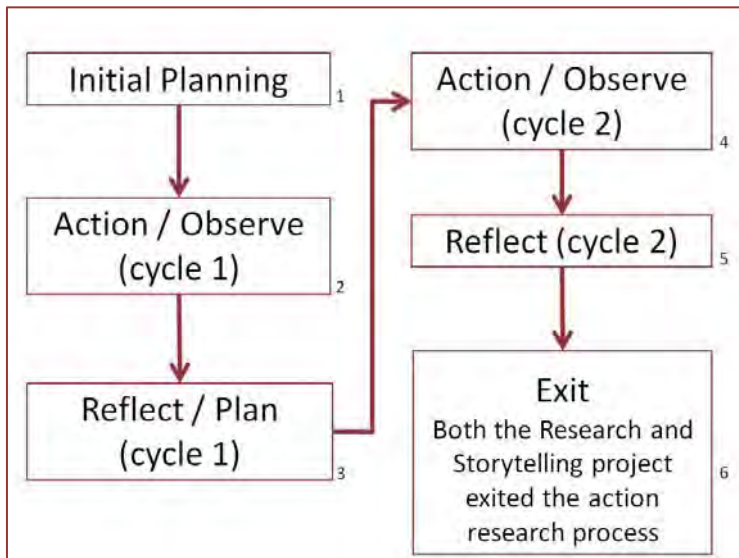
Project B: The theoretical interest cycle for research

- Research themes/interests/questions
- Reconnaissance/fact-finding in relevant literature
- Planning and designing research project to answer research questions, hypotheses, etc.

B-Research [step 1]

The focus on this research (theoretical interest) was to investigate how the Syllk model can be used by a project organisation to conceptualise (and enhance) its capability of storytelling? What is

Figure 5: Action research steps applied to Project B



Adapted from: Zubert-Skerritt in Altrichter et al., (2002); McKay and Marshall (2001); McNiff and Whitehead (2011)

missing from the literature is a conceptual model for organisations that clearly and simply articulates how lessons learned and day-to-day business activity experiences of storytelling can be distributed across organisational systems and people.

The initial planning stage for the research design component of the study consisted of an interview with two directors followed by a focus group of project practitioners (seven participants). The interview and focus groups verified the understanding of how the Syllk model would work in the organisation (Reed and Payton, 1997). The focus groups identified the barriers and facilitators that impact upon the Syllk model within the division.

KM practices identified in KM literature were then aligned with each of the Syllk elements to facilitate learning and address the identified barriers. The KM practices were further refined by the project team into storytelling interventions and initiatives to support the storytelling project plan.

B-Action/ Observe (cycle 1) [step 2]

- Action steps and Implement
- Monitor in terms of research interests.

B-Research [step 2]

The research interest focussed on observing and monitoring the Syllk facilitators and barriers and KM practices mapped to the Syllk elements. The researcher sought feedback from the project participants informally (verbally and via email). Researcher reflections were recorded in research reports. This monitoring presented insight into the progress of the project B in terms of answering the research question.

B-Reflect (cycle 1)/ Plan (cycle 1) [step 3]

- Evaluate effect of intervention in terms of research questions, etc
- Amend plan and design if further explanation and research are required.

B-Research [step 3]

A CoP after-action review (reflection meeting) was held, and the participants' comments were captured, reflecting on the storytelling project (problem-solving interest) and the Syllk model (research interest). No research planning changes were noted. At this stage of the action research cycle, the Syllk model had a positive influence and also confirmed the impact the identified barriers (highlighted in step 1) were having on the project outcomes.

B-Action/ Observe (cycle 2) [step 4]

- Action steps and Implement
- Monitor in terms of research interests.

B-Research [step 4]

The research interest focussed on observing and monitoring the Syllk facilitators and barriers, the change in the KM practices mapped to the Syllk elements and how the Syllk model supported

the storytelling project (Duffield and Whitty, 2016b). The researcher sought feedback from the Project participants informally (verbally and via email). Researcher reflections were recorded in research reports. This monitoring presented insight into the progress of the project B in terms of answering the research question.

B-Reflect (cycle 2) [step 5]

- Evaluate effect of intervention in terms of research questions, etc.

B-Research [step 5]

A CoP after-action review (reflection meeting) was held, and the participants' comments were captured to reflect on the storytelling project (problem-solving interest) and the Syllk model (research interest). No research planning changes were noted.

Some significant findings came out in the after-action review activity. The Syllk model had a positive influence on the organisation's capability for storytelling. The participants realised that by using the Syllk model, this helped to identify how the capability of storytelling operates and is embedded in the various systems of the organisation. One participant stated that:

When you think about a slice of cheese... and how storytelling works. ...all those barriers and infrastructure just were there still. They were not going away. ...so now you perhaps reshape your whole storytelling focus around the ones that are working. ...I can see all this stuff working. I mean, you have got top-level coverage; you have got all the support. ...you have got all the processes in place, you have got the tools in place.

B-Exit [step 6]

- Exit, if questions are satisfactorily resolved.

B-Research [step 6]

The research component exited the action research process as the researcher determined that there was sufficient intervention evidence to provide answers to the research question.

Project B: The real-world problem-solving interest cycle for practice

A more detailed description of the project and the outcomes can be found at Duffield and Whitty (2016b).

B-Initial planning [step 1]

- Problem identification
- Reconnaissance/fact-finding about problem context, stakeholders etc.
- Planning problem-solving activity.

B-Storytelling project [step 1]

As previously discussed the Project B Real-World Problem-Solving interest focussed on a Division implementing a change management program with a focus on storytelling. The division approached the researcher to apply the Syllk model and assist the division (through research).

The research focus group activity identified the barriers and facilitators that impact the Syllk model within the Division. Participants reinforced the benefit of a focus group in that the activity had "...been really insightful. It has helped us form as [a team] well..." KM practices identified in the literature were then aligned with each of the Syllk elements to facilitate the best learning and address the identified barriers. The KM practices were further refined into storytelling interventions and initiatives to support the development of a storytelling project plan. The interventions and initiatives were developed by the project team in discussion with the researcher.

B-Action/ Observe (cycle 1)[step 2]

- Action steps and Implement
- Monitor in terms of problem-solving efficacy.

B-Storytelling project [step 2]

Storytelling interventions and initiatives formed the storytelling project plan (action steps) assigned to CoP members. Various

meetings and activities took place with a focus on holding CoP team meetings, developing a process, engaging communications, presenting storytelling and holding a story month. Storytelling interventions and initiatives were observed, monitored and evaluated against the Storytelling project and the Syllk model.

B-Reflect (cycle 1) / Plan (cycle 1) [step 3]

- Evaluate effect of actions on problem
- Amend plan if further change is desirable.

B-Storytelling project [step 3]

An after-action review (reflection meeting) was held and significant evidence of participant contribution was documented to reflect on project actions. There was evidence that some interventions and initiatives expectations were partially met, and others were identified as work in progress. The systems changes consisted of the development of process tools in preparation of a website. There was some success in storytelling. However, the participants highlighted some barriers (as identified in step 1) were still causing issues and that they needed to engage with executive management to help address the barriers. New and revised actions were then planned with a significant focus on a need to engage executive officer support, the establishment of a website, and continue removal of identified barriers identified in step 1.

B-Action / Observe (cycle 2) [step 4]

- Action steps and Implement
- Monitor in terms of problem-solving efficacy.

B-Storytelling project [step 4]

The storytelling project team commenced engagement with executive officers and leaders within the division. A story template and process was established, followed by a go-live website. Storytelling skills, processes, examples of stories and storytelling were uploaded on the website. The team then focussed on the

removal of the remaining Syllk culture, technology and Infrastructure barriers highlighted in step 1.

B-Reflect (cycle 2) [step 5]

- Evaluate effect of actions on problem.

B-Storytelling project [step 5]

An after-action review (reflection meeting) was held where participants' comments were captured to reflect on both the storytelling project and the research study. The participants identified that leaders are telling stories, people hearing stories, storytelling in team meetings and understanding the importance of storytelling learning and development skills were important findings. An example of a very effective leader who uses stories was discussed and identified which led to an additional interview. Finally, the learning skills of storytelling need to be part of management development, and the website becomes more about the training courses and learnings of storytelling rather than a collection of stories. The timing of the reflection activity coincided with the end of the research activity that enabled an exit in the action research cycle.

B-Exit [step 6]

- Exit, if outcomes are satisfactory.

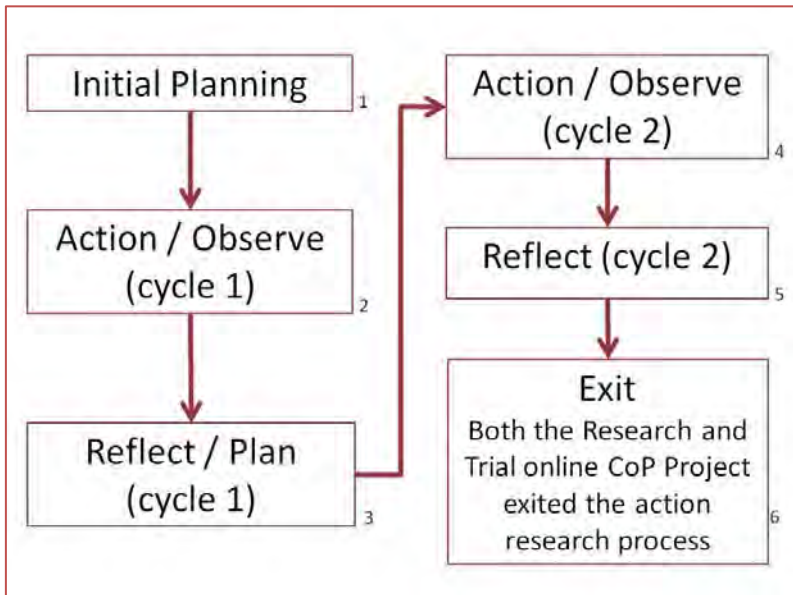
B-Storytelling project [step 6]

Exit, as outcomes are satisfactory. Following the above evaluation process, it was determined that the storytelling project has been successful.

Action research cycles – Project C

Action research methodology was applied to Project C in 9 steps consisting of 3 cycles as shown in Figure 6.

Figure 6: Action research steps applied to Project C



Adapted from: Zubert-Skerritt in Altrichter et al. (2002); McKay and Marshall (2001); McNiff and Whitehead (2011)

Project C: The theoretical interest cycle for research

C-Initial planning [step 1]

- Research themes/interests/questions
- Reconnaissance/fact-finding in relevant literature
- Planning and designing research project to answer research questions, hypotheses, etc.

C-Research [step 1]

The focus on this research (theoretical interest) was to investigate how the Syllk model can be used by a project organisation to conceptualise (and enhance) the capability of an online CoP. What is missing from the literature is a conceptual model for organisations that clearly and simply articulates how lessons

learned and day-to-day business activity experiences can be distributed across organisational systems and people.

The initial planning stage for the research design component of the study consisted of four interviews followed by two focus groups of project practitioners (12 participants). The interview and focus groups verified the understanding of how the Syllk model would work in the organisation (Reed and Payton, 1997). The focus groups identified the barriers and facilitators that impact the Syllk model within the organisation.

KM practices identified in KM literature were then aligned with each of the Syllk elements to facilitate learning and address the identified barriers. The KM practices were further refined by the project team into a trial online CoP project plan.

C-Action/ Observe (cycle 1) [step 2]

- Action steps and Implement
- Monitor in terms of research interests.

C-Research [step 2]

The research interest focussed on observing and monitoring the Syllk facilitators and barriers and KM practices mapped to the Syllk elements. The researcher sought feedback from the project participants informally (verbally and via email). Researcher reflections were recorded in research reports. This monitoring presented insight into the progress of the project C in terms of answering the research question.

C-Reflect (cycle 1)/ Plan (cycle 1) [step 3]

- Evaluate effect of intervention in terms of research questions, etc.
- Amend plan and design if further explanation and research are required.

C-Research [step 3]

A reflection meeting was held with eight participants. Comments were captured from a survey and emailed documentation to reflect

on both the study research variables and the Syllk model. No research planning changes were noted.

C-Action/ Observe (cycle 2) [step 4]

- Action steps and Implement
- Monitor in terms of research interests.

C-Research [step 4]

The research interest focussed on observing and monitoring the Syllk facilitators and barriers and KM practices mapped to the Syllk elements. The researcher sought feedback from the project participants informally (verbally and via email). Researcher reflections were recorded in research reports. This monitoring presented insight into the progress of the project C in terms of answering the research question.

C-Reflect (cycle 2) [step 5]

- Evaluate effect of intervention in terms of research questions, etc.

C-Research [step 5]

A reflection meeting was held with 10 participants. Comments were captured from a survey and emailed documentation to reflect on both the study research variables and the Syllk model. No research planning changes were noted. The Syllk model had a positive influence on the organisation capability of an online CoP. The participants emphasised that the barriers identified in step 1 be real barriers to making a CoP function. The Syllk model people elements of learning, culture and social were highlighted as the most critical elements to align and get right for this organisation.

C-Exit [step 6]

- Exit, if questions are satisfactorily resolved.

C-Research [step 6]

Exit, as research question is satisfactorily resolved: Following the above evaluation process, it was determined that there be sufficient evidence to provide answers to the research question.

Project C: The real-world problem-solving interest cycle for practice

A more detailed description of the project and the outcomes can be found at Duffield (2016).

C-Initial planning [step 1]

- Problem identification
- Reconnaissance/fact-finding about problem context, stakeholders etc.
- Planning problem-solving activity.

C-Trial online CoP project [step 1]

As previously discussed the Project C Real-World Problem-Solving interest focussed on an organisation implementing a trial online CoP. The organisation division approached the researcher to apply the Syllk model and assist the organisation (through research).

The initial planning stage commenced with the selection of an information technology (IT) platform. An existing government collaboration platform was selected, and appropriate process and infrastructure was established. A trial online CoP introduction meeting was held with 13 participants. Various meetings and activities took place with a focus on holding CoP team meetings, developing a process and engaging communications with the trial online CoP members.

C-Action/ Observe (cycle 1) [step 2]

- Action steps and Implement
- Monitor in terms of problem-solving efficacy.

C-Trial online CoP project [step 2]

Twenty participants actively participated, contributed and absorbed knowledge, creating value to the organisation by way of improving communication channels to increase staff efficiency. The initial forum posts and topics were established to help the participants understand the trial and supporting research activity. Early engagement by core participants established some technical

pages and forum topics. One relevant technical topic received twelve comments and some associated likes. Some forum topic posts highlighted the barriers identified in step 1.

C-Reflect (cycle 1) / Plan (cycle 1) [step 3]

- Evaluate effect of actions on problem
- Amend plan if further change is desirable.

C-Trial online CoP project [step 3]

A reflection meeting was held with eight participants. Comments were captured from a survey and emailed documentation to reflect on both the study research variables and the Syllk model. There was evidence that some expectations were partially met. New and revised actions were then planned with a significant focus on CoP communications, CoP benefits, new CoP topics/pages, organisational involvement, time pressures and continual removal of identified barriers identified in step 1.

C-Action / Observe (cycle 2) [step 4]

- Action steps and Implement
- Monitor in terms of problem-solving efficacy.

C-Trial online CoP project [step 4]

Twenty-five participants actively participated, contributed and absorbed knowledge, creating value to the organisation by way of improving communication channels to increase staff efficiency. Ten new forum posts and topics were established covering process, tools and techniques. An employee engagement initiative focused on lateral communication was released to the wider organisation highlighting the future establishment of CoPs across the organisation.

A survey was conducted to understand the association between Web 2.0 technologies and CoP participation. The survey highlighted that the organisation participation rates were similar with literature benchmarks. Online CoP interventions and initiatives and project actions were observed, monitored and evaluated against the project plan and the Syllk model.

C-Reflect (cycle 2) [step 5]

- Evaluate effect of actions on problem.

C-Trial online CoP project [step 5]

A reflection meeting was held with ten participants. Participants' comments were captured to reflect on the project. For the core and active participants, the capturing and sharing of knowledge was effective using the CoP forums and content pages. Overall, the significant benefits were enabling online dialogue and introducing collaborative processes. The participants felt that the online CoP struggled with providing a sense of common purpose and did not have an impact on increasing efficiency and effectiveness. The participants felt that having a face-to-face element may help in building a more efficient CoP. The literature reports on the different levels of CoP participation (Wenger, McDermott and Snyder, 2002). For this trial online CoP the levels of participation were consistent with the literature findings.

C-Exit [step 6]

- Exit, if outcomes are satisfactory.

C-Trial online CoP project [step 6]

Exit, as outcomes are satisfactory. Following the above evaluation process, it was determined that the trial online CoP project had been successful. The organisation continued to evaluate the benefits on the online CoP for expansion across the organisation.

Discussion

The experience of using the adapted Zubert-Skerritt in Altrichter *et al.* (2002), McKay and Marshall (2001) and McNiff and Whitehead (2011) approach has been a positive experience for the researcher in this program. The adapted literature have addressed many of the practical issues that the researcher will come across to assist in the implementation of the AR methodology and associated methods. Table 3 provides a summary of the following useful insights and outcomes for action researchers.

The *role of researcher* as discussed in this paper was a significant challenge in all three research projects. The participant status of the researcher needs to be acknowledged by all stakeholders to the research activities. The action researcher needs to know how to be the friendly outsider, open up lines of discussion and be able to make clear the knowledge that guides the project. As each project progressed, participants learned more about the action research process. The researcher was needed less to assist with the AR process and spent more time sourcing literature that supported the projects. In project C, the dual roles became blurred and there was a need to often reflect on both roles. The researcher had to make it clear to the participants that this project was not a management exercise.

The *dual cycle* aspect of the McKay and Marshall (2001) approach has proven to be invaluable for this research program. The dual focus aspect helped to resolve issues where the researcher and project practitioners had quite different interests in the research project and the approach still met both needs. There is an absence of a set of guidelines, and literature case examples of the dual focus approach and this gave the researcher the opportunity to interpret the meaning of the AR steps. My experience on all three AR projects was that we were not always synchronised with the AR steps, with the exception of the reflection step. The *reflection* activity was always a joint step, where the benefits of the after-action review significantly assisted both the researcher and project practitioners. Another area that helped the researcher was the AR cycle steps assisted the researcher to gather data, feeding it back to those concerned, analysing the data, planning action, taking action and evaluating, leading to further data gathering and so on. This process addresses the validity, credibility, workability and consultancy concerns that are often raised on AR projects.

Action research was conducted in an organisational context and was occasionally met with *external constraints* that impacted on the ability to resolve some of the problems being addressed. Issues with the allocation of project resources and organisational changes

were often experienced in all three projects which in some cases made it difficult to deliver project milestones and outcomes.

The *ethics application* was revised to explain in detail the action research methodology and associated methods, and this included a visual representation of the action research cycle methodology. The feedback received made it clear that not all academics are across the AR methodology. Finally, the researcher needs to be mindful of *project size* and the impacts that may occur. Project A Problem-Solving project was significantly larger scope than Project B and C. Many more issues (parallel tasks) had to be resolved which impacted on both the Problem-Solving and Research Interest projects.

AR is acknowledged to have many challenges and tensions, and can be a difficult research methodology to embrace (Marshall *et al.*, 2006). McKay and Marshall's assertion that their framework would 'be invaluable to the researcher, particularly a new researcher, in helping to shape his / her research design and the subsequent conduct of the action research study', proved to be substantiated in this research program (McKay and Marshall, 1999b).

Table 3: Summary of the useful insights and outcomes for action researchers

Problem	Associated literature
Role of researcher	
The participant status of the researcher needs to be acknowledged by all stakeholders to the research activities. The action researcher needs to know how to be the friendly outsider, open up lines of discussion.	Greenwood and Levin (2007) suggest that good action researchers achieve a balance of review and support through a variety of actions, including facilitation, direct feedback, written reflections and citing cases from the literature where similar problems, opportunities or processes have occurred.

Problem	Associated literature
	The experiences of Coghlan and Shani (2008) and Holian and Coghlan (2013) highlight the potential problems that could occur.
Dual cycle (parallel) process of action research	
There is limited literature as to how to apply the AR cycle steps.	McKay and Marshall (2001) and associated literature proved to be valuable (Marshall <i>et al.</i> , 2006; Marshall <i>et al.</i> , 2010).
Reflection	
The reflection activities of the action research cycle were the most intense, where both the researcher and participants reviewed, discussed, compared and recorded the real learning.	Researcher is the facilitator of the reflection activities (Coughlan and Coghlan, 2002). The value of reflection in learning and action research has been reinforced by Walker, Anbari, Bredillet, Söderlund, Cicmil and Thomas (2008) and Dick (1993).
External constraints	
AR was conducted in an organisational context and was occasionally met with external constraints.	According to Greenwood and Levin (2007), they argue that in such a situation it would be harsh to conclude the AR project lacked credibility or validity if it is shown that learning had taken place in some form and that stakeholders were willing to accept and act on the collectively arrived at results.

Problem	Associated literature
Ethics	
The ethics application was revised to explain in detail the action research methodology.	Action research issues are often faced by researchers in securing ethics approval (Sankaran <i>et al.</i> , 2006; Walker and Haslett, 2005).
Project Size	
Project A was significantly larger scope than Project B and C. Had many more issues that had to be resolved which impacted on both AR cycles.	McNiff and Whitehead (2011) highlights the need to stay focussed on one issue, which means making sure that you understand the issues and place the others on hold.

Conclusion

This paper provides a direct and personal account of the issues and challenges that occurred in three action research projects that were part of a doctoral research program. Here I will discuss the contributions to methodology and practice, and further conclude with limitations and future research.

Contribution to methodology and practice

Since KM became a fashionable phrase in the mid-1990s, the KM practice has modest experience of experimental research methods. Most of the KM literature is descriptive or derived from best practices (Firestone and McElroy, 2003; O'Dell and Hubert, 2011). The research in this paper has been experimentation with action research methods coupled with existing methodologies practices. The action research component of reflection and intervention is fundamental to action research (Dick, 1993). The focus of the paper is on the general methodological issues and problems of action research. The insight and outcomes for action researchers were focused on the following areas: Role of the researcher; Dual cycle (parallel) process; Reflection; External constraints; Ethics and Project size.

Feedback from scholars and peers:

“The researcher has taken risks, and mitigated the risks to make the results manageable, credible, valid, authentic, and highly useful. The researcher has justified his original contribution through the insights he has proposed”

“by using Action Research the candidate executed research based practices, where questions, problems, and challenges were identified and formed by the subsequent needs of the practice and practitioners”

The PhD candidate *“demonstrated that the study was definitely worth undertaking, and the questions were valuable to ask. The outcomes demonstrated why anyone should care and why the study mattered. Although in a qualitative study limitations exist associated with generalizability, the candidate, through the Action Research method exhibits the probability that lessons learned are repeatable”*

“...the candidate demonstrates the capacity to undertake independent research that has direct impact on practice”

Limitations and future research

There are always limitations with research, and in addition to the previously mentioned action research limitations, there is a limitation that should be noted. The research in this thesis was limited to sampling of problem-solving projects that comprised of three public sector projects conducted by Australian state and federal government departments and agencies from late 2012 through to late 2015. Opportunities for providing further related research include repeating the research study with private sector projects. I came close to working with three organisations (mining information technology, health project management office, and an enterprise resource software company). The timing of the study became an issue for all three organisations.

My goal in this paper has been to discuss some of the AR challenges and tensions, as AR can be a difficult research methodology to embrace. The research has enhanced the practices within the participating organisations and linked academia with

industry in enhancing the 'dual cycle' knowledge areas of 'problem-solving and research interests.'

Acknowledgements

The research was partially funded by an Australian Government Research Training Program Scholarship.

References

- Adams, P. (2010). Action research. In Salkind (Ed.). *Encyclopedia of Research Design*. Thousand Oaks: SAGE Publications, Inc.
- Altrichter, H., Kemmis, S., McTaggart, R. and Zuber-Skerritt, O. (2002). The concept of action research. *The Learning Organization*, 9 (3), pp. 125-131.
- Avison, D., Lau, F., Myers, M. and Nielsen, P. (1999). Action research. *Communications of the ACM*, 42 (1), pp. 94-97.
- Baskerville, R. (2000). Conducting action research: High risk and high reward in theory and practice. *Qualitative Research in Information Systems*, pp. 192-218.
- Baskerville, R. and Wood-Harper, A.T. (1996). A critical perspective on action research as a method for information systems research. *Journal of Information Technology*, 11 (3), pp. 235-246.
- Baskerville, R.L. (1999). Investigating information systems with action research. *Communications of the AIS*, 2 (3es), p. 4.
- Cepeda, G. and Martin, D. (2005). A review of case studies publishing in management decision 2003-2004. *Management Decision*, 43 (6), pp. 851-876.
- Coghlan, D. (2005). Insider action research projects: Implications for practising managers. In B. Cooke and J.W. Cox (Eds), *Fundamentals of Action Research Volume II*. London: SAGE, Vol. II, Ch. 54, pp. 229-244.
- Coghlan, D. and Shani, A. (2008). Insider action research: The Dynamics of developing new capabilities. In P. Reason and H. Bradbury (Eds), *Handbook of Action Research: Participative Inquiry and Practice*. Sage, Ch. 45, pp. 643-655.
- Collis, J. and Hussey, R. (2009). *Business research : a practical guide for undergraduate and postgraduate students* (3rd ed.). Hampshire, UK ; New York, NY: Palgrave Macmillan.

- Collison, C. (2006). Avoiding the typical barriers to effective KM. *KM Review*, 9 (4), pp. 16-19.
- Coughlan, P. and Coughlan, D. (2002) Action research for operations management. *International Journal of Operations and Production Management*, 22 (2), pp. 220-240.
- Dick, B. (1993). *You Want to do an Action Research Thesis?* Viewed 14 November 2016, <http://www.aral.com.au/resources/artthesis.html>.
- Dick, B. and Swepson, P. (1994). Appropriate validity and its attainment within action research: An illustration using soft systems methodology. *AEROL*, <http://www.aral.com.au/resources/sofsys2.html>.
- Duffield, S. (2015) Application of a systemic lessons learned knowledge model for organisational learning through projects. In *Australian Institute of Project Management National 2015 Conference, AIPM*, 978-0-646-93699-4, Hobart, pp. 56-69.
- Duffield, S. (2016) Application of the Syllk model wiring an organisation for the capability of an online Community of Practice. *VINE Journal of Information and Knowledge Management Systems*, 46 (2), pp. 267-294.
- Duffield, S. and Whitty, S.J. (2012) A systemic lessons learned and captured knowledge (SLLCK) model for project organizations. In *9th Project Management Australia Conference (PMOz 2012)*, Eventcorp Pty Ltd, Melbourne, Australia.
- Duffield, S. and Whitty, S.J. (2015). Developing a systemic lessons learned knowledge model for organisational learning through projects. *International Journal of Project Management*, 33 (2), pp. 311-324.
- Duffield, S. and Whitty, S.J. (2016a). Application of the systemic lessons learned knowledge model for organisational learning through projects. *International Journal of Project Management*, 34 (7), pp. 1280-1293.
- Duffield, S. and Whitty, S.J. (2016b). How to apply the systemic lessons learned knowledge model to wire an organisation for the capability of storytelling. *International Journal of Project Management*, 34 (3), pp. 429-443.
- Firestone, J. and McElroy, M. (2003). *Key Issues in New Knowledge Management*. Burlington, MA: Elsevier Science.
- Greenwood, D. and Levin, M. (2007). *An Epistemological Foundation for Action Research: Introduction to Action Research*. Thousand Oaks, CA: SAGE Publications, Inc.

- Hedman, S., Pålman, L. and Törnby, A. (2015). *The Production of Comfort - How Financial Auditors Experience that they Become Comfortable with IT-auditors*. Uppsala University.
- Herr, K. and Anderson, G.L. (2005). *The Action Research Dissertation: A Guide for Students and Faculty*. Sage Publications.
- Holian, R. and Coghlan, D. (2013). Ethical issues and role duality in insider action research: Challenges for action research degree programmes. *Systemic Practice and Action Research*, 26 (5), pp. 399-415.
- Kotnour, T. and Vergopia, C. (2005). Learning-based project reviews: Observations and lessons learned from the Kennedy Space Center. *Engineering Management Journal*, 17 (4), pp. 30-38.
- Leal-Rodríguez, A.L., Roldán, J.L., Ariza-Montes, J.A. and Leal-Millán, A. (2014). From potential absorptive capacity to innovation outcomes in project teams: The conditional mediating role of the realized absorptive capacity in a relational learning context. *International Journal of Project Management*, 32 (6), pp. 894-907.
- Lewin, K. (1946). Action research and minority problems, *Journal of Social Issues*, 2 (4), pp. 34-46.
- Marshall, P., de Salas, K. and McKay, J. (2006). Action research in practice: balancing the dual imperatives. *ACIS 2006 Proceedings*, p. 10.
- Marshall, P., Wilson, P., de Salas, K. and McKay, J. (2010). Action research in practice: issues and challenges in a financial services case study. *The Qualitative Report*, 15 (1), pp. 76-93.
- Mau, M. (2005). Action research: Connecting knowledge in the Australian public sector organization. *actKM Online Journal of Knowledge Management*, 2 (1), pp. 58-69.
- McKay, J. and Marshall, P. (1999a). $2 \times 6 = 12$, or does it equal Action Research? In *Australasian Conference on Information Systems*. Wellington: Citeseer.
- McKay, J. and Marshall, P. (1999b). A framework for rigour in action research. In *Americas Conference on Information Systems (AMCIS)*.
- McKay, J. and Marshall, P. (2001). The dual imperatives of action research. *Information Technology & People*, 14 (1), pp. 46-59.
- McNiff, J. and Whitehead, J. (2011). *All You Need to Know about Action Research* (2nd ed.). London: SAGE.
- Melrose, M.J. (2001). Maximizing the rigor of action research: Why would you want to? How could you? *Field Methods*, 13 (2), pp. 160-180.

- O'Dell, C. and Hubert, C. (2011). *The New Edge in Knowledge : How Knowledge Management is Changing the Way We Do Business*. New Jersey: John Wiley & Sons.
- Orr, M. (2006). *The Implementation of Electronic Health Knowledge Management Systems*. Lismore: Southern Cross University Press.
- Orr, M. and Sankaran, S. (2007). Mutual empathy, ambiguity, and the implementation of electronic knowledge management within the complex health system. *Emergence: Complexity & Organization*, 9 (1-2), pp. 44-55.
- Raelin, J.A. (1998). Work-based learning in practice. *Journal of Workplace Learning*, 10 (6/7), pp. 280-283.
- Ragsdell, G. (2009). Participatory action research: a winning strategy for KM. *Journal of Knowledge Management*, 13 (6), pp. 564-576.
- Reason, J. (1997). *Managing the Risks of Organizational Accidents*. Aldershot, England; Brookfield, Vt., USA: Ashgate.
- Reed, J. and Payton, V.R. (1997). Focus groups: issues of analysis and interpretation. *Journal of Advanced Nursing*, 26 (4), pp. 765-771.
- Riege, A. (2005). 'Three-dozen knowledge-sharing barriers managers must consider. *Journal of Knowledge Management*, 9 (3), pp. 18-35.
- Sankaran, S. (2009). Applying action research to conduct practitioner research in knowledge management. In J. Xu (Ed.). *Enhancing Organisational Capability through Knowledge Management*. Lismore: Southern Cross University Press, pp. 23-40.
- Sankaran, S., Hill, G. and Swepson, P. (2006). Should Australian AR theses be examined using a developmental approach adopted by US universities? *ALAR: Action Learning and Action Research Journal*, 11 (2), p. 28-48.
- Sankaran, S., Tay, B.T. and Orr, M. (2009). Managing organizational change by using soft systems thinking in action research projects. *International Journal of Managing Projects in Business*, 2 (2), pp. 179-197.
- Susman, G.I. and Evered, R.D. (1978). An assessment of the scientific merits of action research. *Administrative Science Quarterly*, 23 (4), pp. 582-603.
- Virolainen, T. (2014). *Learning from Projects: A Qualitative Metasummary*. Lappeenranta University of Technology.
- Walker, B. and Haslett, T. (2005). Action research in management: Ethical dilemmas. In B. Cooke and J.W. Cox (Eds). *Fundamentals of Action Research Volume II*. London: SAGE, Vol. II, Ch 57, pp. 287-298.

- Walker, D.H., Anbari, F.T., Bredillet, C., Söderlund, J., Cicmil, S. and Thomas, J. (2008). Collaborative academic/practitioner research in project management: Examples and applications. *International Journal of Managing Projects in Business*, 1 (2), pp. 168-192.
- Walker, S. (2007). *What are the Major Barriers to the Successful Implementation of Knowledge Management Projects in the Telecommunications Industry? A Participatory Action Research Study*. Southern Cross University <http://books.google.com.au/books?id=2GnctgAACAAJ>.
- Walker, S. and Sankaran, S. (2014). A participatory action research study of knowledge management implementation in a large European telecommunication company in their UK office. *Gibaran Journal of Applied Management*, 6 (2), pp. 36-63.
- Wenger, E., McDermott, R.A. and Snyder, W. (2002). *Cultivating Communities of Practice: A Guide to Managing Knowledge*. Boston, Massachusetts: Harvard Business Press.
- Zuber-Skerritt, O. and Perry, C. (2002). Action research within organisations and university thesis writing. *The Learning Organization*, 9 (4), pp. 171-179.

Biography

m: +61 (0) 421 052 135

s: skype: stephen_duffield

e: sduffiel@optusnet.com.au

Stephen is a University of Southern Queensland Confirmed PhD Candidate and has a research interest in organisational knowledge and lessons learned.



Stephen has 35 years' experience with both public and private sector organisations with a major focus on program management, governance, risk management and aviation safety management.

Work-Applied Learning for organisational change: A comparative assessment against other change approaches

Natalie Holyoake

Abstract

Based on nearly three decades of consultancy and research, the Work-Applied Learning (WAL) model has been proven to be an effective change method for the development of managers and teams, while at the same time, creating organisational learning and change (Abraham, 2015).

Regardless of the proven track record the question remains, why choose Work-Applied Learning for organisational change over other change approaches? This paper moves towards answering this question, by building an assessment framework which provides a normalised approach to compare Work-Applied Learning against other change approaches. This comparison revealed that Work-Applied Learning is the most compatible change approach for organisational change based on the steps and characteristics identified by the author as being necessary for organisational change.

Key words: Work-Applied Learning, organisational change, action research, action learning, organisational learning.

Introduction

The genus of Work-Applied Learning has continued to evolve since the 1990's, and has emerged from Abraham's (2016) extensive experience with WBL and WAL management learning programs

that spans from 1981 to 2016. Four internationally recognised examples of the successful application of Work-Applied Learning are: Daton's (2007) implementation to assist the government of Papua New Guinea to improve governance and operational efficiency; Hashim's (2000) implementation to manage organisational change due to rapid growth of his RM650 million Global Carriers shipping organisation in Malaysia, and then later to survive the Asian financial crisis; Fng's (2014) development and implementation of a WAL facilitative leadership development programme for senior managers in a G7 construction company in Malaysia; and Khan's (2014) development and implementation of a work-based project management development programme for project management practitioners in Trinidad and Tobago.

Regardless of these successes, the question remains: Why choose Work-Applied Learning for organisational change over other change approaches? In order to answer this question, this paper will begin by providing an overview of Work-Applied Learning, followed by a description of the method used to perform a comparative assessment of various change approaches, and then the results of the comparative assessment.

What is the Work-Applied Learning?

Work-Applied Learning was developed and termed by Abraham (2015). Founded on Work-Based learning (WBL), Work-Applied Learning extends the WBL features beyond the individual and teams, to include '...organisational learning and change...' (Abraham, 2015, p. 4). To enable organisational learning and change to take place, the Work-Applied Learning model is '...grounded in a fused action research method and action learning process ("ARAL")' (Abraham, 2015, p. 4).

The strength of ARAL is not the independent use of action research (AR) and action learning (AL), but rather the fusion of the two (AR and AL), in a synchronised system that maximises the benefits of both. Abraham, Arnold and Oxenberry (1996, pp. 14-18) argued that this fusion of AR and AL develops '... a robust theory base and practical framework for a self discovering organisation'. The basis

of their theory is that AL and AR are mainly made up of the same common elements and have the same learning through action benefits; and that it is only the differences in the cyclical nature and the addition of research/ researcher that separates AR from AL. Regarding the cyclical differences between AR and AL, Abraham (2015, p. 6) notes that while AL can be cyclical, ‘...it is not essentially cyclical in nature like Lewin’s concept of Action Research’. In essence, the cyclical nature is a canonical feature of AR which can promote learning from the individual and team level to the organisational level and beyond. This is achieved through repeated cycles of *planning, acting, observing, reflecting, evaluating, and validating* (Abraham, 2015).

This theory was derived through the use of word formulas. Abraham *et al.* (1996, p. 17) first started with the following word formulas to determine both the common elements and the differences between AL and AR;

$$S + P + A (+F) \Rightarrow AL$$

$$G + P + A + F + C + R \Rightarrow AR$$

The meaning of these symbols has been captured in Table 1 below.

Table 1 - Description of symbols used in Word Formulas

Symbol	Description
S	This is the AL <u>set</u> comprising individuals coming together to investigate solutions to shared problems and to learn from each other. There is no requirement that the set members are from the same organisation.
P	Is the <u>problem</u> to be addressed. Both action learning and action research share this problem-focussed characteristic.
A	Stands for <u>action</u> . Both action research and action learning are action oriented. The group or set takes positive action in response to the ideas and suggestions generated through questioning and discussion.

Symbol	Description
G	Is the <u>action research group</u> . The nature of this group may be rather different to the set described in action learning, as the group will be members of an organisation/community as well as “researchers” who may be seen as an integral part of the group working in a collaborative manner for change and knowledge development.
F	This represents the <u>facilitator</u> . This term has been placed in brackets in the action learning expression to indicate the disparate views amongst the authors on whether a facilitator should be part of the set.
C	This indicates the <u>cyclical nature</u> of action research. Lewin (1946 and 1947) indicates that the spiral nature of steps was fundamental to action research. His steps started with diagnosis followed by a cycle of planning, action and reflection.
R	Represents <u>research/researcher</u> . The researcher in Lewin’s original view assisted the group. While some writers question the need for a researcher, the role of a researcher as a consultant to the group is widely supported by other authors.
AL	Is <u>action learning</u>
AR	Is <u>action research</u>

Source: Abraham *et al.* (1996, p. 17)

Within the two formulas presented above, Abraham *et al.* recognised that there are many common elements; for example, an action research Group (expressed as ‘G’) is much the same as an action learning set (expressed as ‘S’). This overlapping of common word formula symbols resulted in a simplified formula that distinguishes between the two methodologies (AL and AR) which is expressed as:

$$C + R + AL \Rightarrow AR$$

In simple terms, AR is the same as AL with the addition of research/researcher, and a cyclic nature. In understanding this

distinction between the AR and AL, Abraham *et al.* (1996) believe that the:

...action research approach can be employed to unleash action learning through self-discovery which leads to enlightened organisational transformation of not only core business but in the totality of the social dimension of the organisation as well (p. 10).

This means that AL is a subset of AR, and as such, can be fused with AR to form a distributed architecture, that uses AR to perform the research element and the continuous improvement components of change (through its cyclic nature); while using multiple AL Teams to implement solutions. This configuration, consisting of an AR Group and multiple AL Teams, provides a means to address change across whole of an organisation. The learning and change that unfolds through the AR cycles is illustrated in Figure 1.

The method used to compare change approaches

The method used to do the comparative assessment of various change approaches comprised an assessment framework that was structured around the salient steps, and the characteristics of those steps, required for organisational change, which the author has identified through a survey of literature. The steps identified being: *assessment; planning; action; observation, reflection, evaluation, and validation.*

To compare the change approaches, the author first categorised them into one of three change types, being: *planned; emergent; and planned-emergent.* The latter of these types, *planned-emergent*, is the preferred type as it can address the weaknesses inherent in the *planned* and *emergent* types when these two change types are used individually in a mutually exclusive way.

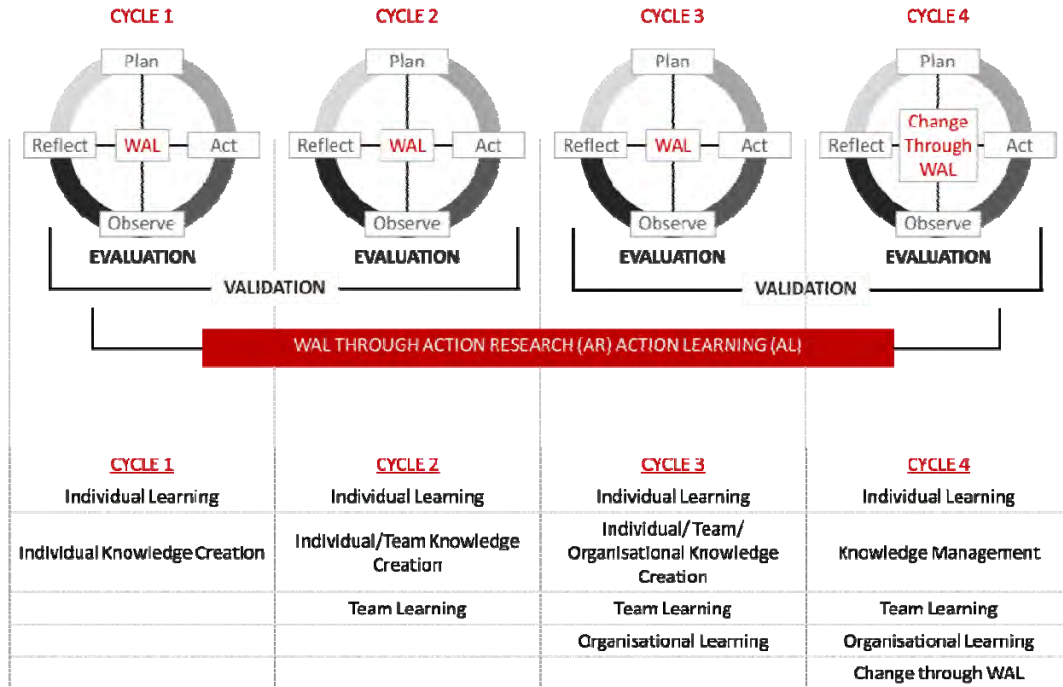


Figure 1:
Learning and Change AR Cycles

(Source: adapted from Abraham, 2016, p. 5)

After categorising various change approaches into change types, the author then performed a comparative assessment of each change approach against the salient steps (as discussed above), to determine the level of characterisation match, and plotted the outcome on radar charts. There were three radar charts produced; one for each change type category, namely: *planned*, *emergent*; and *planned-emergent*. These radar charts are shown and discussed later in this paper.

Identification of change steps required for organisational change

The first stage in developing the assessment framework was the identification of the salient steps that are necessary to effectively implement and manage the technical and people aspects of organisational change. Through a survey and syntheses of literature, the author identified these salient steps as being *assessment*, *planning*, *action*, *observation*, *reflection*, *evaluation*, and *validation* which are conducted in a *social setting* (Abraham, 1997; Allwood, 1995; Binney and Williams, 1995; Burnes, 1996; Cameron and Green, 2015; Cherry, 1999; Coghlan, 2011; Coghlan and Brannick, 2014; Collins, 1998; Creswell, 2007; Creswell, 2014; Cunningham, 1993; Daft, 1995; Daudelin, 1996; De Geus, 1997; Greenwood and Levin, 1998; Hayes, 2014; Hill and Jones, 1998; James, Slater, and Bucknam, 2012; McGregor and Cartwright, 2011; Sankaran, Dick, Passifield, and Swepson, 2001; Stringer, 1999; Trist, 1976; Wahyuni, 2012; Weinstein, 1999). The characterisation and literature that underpins these steps is summarised in Table 2.

The author also identified that these steps have specific characteristics which are also captured in Table 2. One characteristic that is held constant through all steps, but not shown in Table 2 is the socialisation of change. To maintain the socialisation constant, all change steps need to be conducted in a social setting.

Table 2 - Summary of change steps characterisation

Step	Characterisation	Discussion points from literature	Reference
Assessment	<ul style="list-style-type: none"> • Identifies and analyses change problems from multiple sources (Dialectic Method) • Examines problems through ontological research (Realism, fact finding) to understand the need for change • Establishes the success criteria of the change • Challenges current views and practices • Validates initial assessment findings with those affected by the change • Assesses change in an organisational systems context 	Problem data used for planning	Cherry (1999, p. 62) Abraham (1997, p. 108)
		Hypothetico-deductive methodology which formulates the ideas, theory, and vision for planning	Cherry (1999)
		Discovery phase	James, Slater, and Bucknam (2012)
		Defining context and purpose Constructing issues through stakeholder engagement	Coghlan and Brannick (2014)
		Triangulation to validate multiple stories	Abraham (1997)
		Recognizing the need for change and starting the change process and change diagnosis	Hayes (2014)
		Challenging discussions and trust	Creswell (2007) Abraham (1997)

Step	Characterisation	Discussion points from literature	Reference
Planning	<ul style="list-style-type: none"> • Defines goals • Establishes strategies • Develops plans to implement strategies • Provides the ability to re-plan due to emergence • Communicates strategy and plan to those effected • Establishes and provides management of stakeholders • Supports both bottom-up and top-down planning • Establishes management support early as possible • Configures plans within an organisational systems context 	Problems when change is purely based on planning	Hill and Jones (1998) Binney and Williams (1995)
		The benefits of good planning and the learning that can occur when a plan is put into action	Abraham (1997) Trist (1976)
		Hypothesis of why planning often fails, and the need to focus on future possibilities and "what if" or "memories of the future"	De Geus (1997)
		The difficulties associated with planning that does not allow for emergent outcomes, and conversely, the difficulties when planning is weak and emergent outcome dominate	Collins (1998) Burnes (1996) Cameron and Green (2015)
		Shift from linear change to emergent change as change becomes more complex	Cameron and Green (2015)
		Planning types: planning under uncertainty; top-down ivory tower planning; planning for the present as opposed to the future; and decision-making biases among managers	Hill and Jones (1998) Daft (1995)

Step	Characterisation	Discussion points from literature	Reference
		Planning and preparing for change	Hayes (2014)
		The importance of getting the right stakeholders involved in planning	Stringer (1999)
		Goal setting	Cameron and Green (2015) De Geus (1997)
Action	<ul style="list-style-type: none"> • Applies the actions defined in the planning phase • Action is conducted with the people and not on the people • Action is performed by the people affected by the change • Action is performed in an organisational systems context. • Action can be taken to solve a problem, or to diagnose a problem, or to develop a plan to solve a problem. 	Definition of action types	Allwood (1995)
		Collaboratively performing action against plans	Coghlan and Brannick (2014)
		The need to turn an idea into action and institutionalising the change	Cameron and Green (2015) Cunningham (1993) Stringer (1999)
		Action to diagnose a problem, or develop a plan to solve a problem	Rowell, Polush, Riel, and Bruewer (2015)
		Humanistic elements of action	Coghlan (2011)
		Organisational context in applying action	Collins (1998)
		Uncertainty of emergent outcomes from action	Collins (1998)
		The effect of culture and personality types on the performance of action	Cherry (1999)

Step	Characterisation	Discussion points from literature	Reference
		Action orientation characteristics	Cameron and Green (2015)
		The requirement of action for learning, and the requirement of knowledge foundation for action	Abraham (2015); Sankaran, Dick, Passfield, and Swepson (2001)
Observation	<ul style="list-style-type: none"> Records experiences, thoughts, feelings, people, events, and dates. Uses multiple sources and observation methods, such as meetings, interviews, questionnaires, phone, and corridor meetings. Uses either observer external to the group, or participant observer. Uses challenging discussion in a trusted environment to fully understand the effects of the 	Reconnaissance, fact finding	Sankaran, Dick, Passfield, and Swepson (2001); Change Management Institute (2013); Coghlan (2011); Young (2011)
		Journaling, direct observation, interviews, surveys, and informal communication	Abraham (1997)
		External observer, participant observer, and ethical considerations	Abraham (1997); Creswell (2007); Coghlan and Brannick (2014)
		Quantitative data	James, Slater, and Bucknam (2012)
		Qualitative data	Creswell (2007); Creswell (2014); Coghlan and Brannick (2014); James, Slater, and Bucknam (2012); Wahyuni (2012)

Step	Characterisation	Discussion points from literature	Reference
	action activity. <ul style="list-style-type: none"> Is performed by everyone involved in the change intervention Is performed within an organisational systems context. 	Triangulation to validate multiple stories	Abraham (1997)
		Accuracy of data and use in reflection	Creswell (2007); Creswell (2014); Coghlan and Brannick (2014); James, Slater, and Bucknam (2012)
		Challenging discussions and trust	Creswell (2007); Abraham (1997)
Reflection	<ul style="list-style-type: none"> Uses a questioning approach which is at a conscious critical level of reflection. Creates learning that lowers learning anxiety rather than increasing survival anxiety. 	Ontology in context of realism verses nominalism	Cherry (1999); Abraham (1997); Creswell (2007); Coghlan and Brannick (2014)
		Multiple realities	Creswell (2007)
	<ul style="list-style-type: none"> Uses observed results as input into reflection. Is performed by everyone involved in the change intervention. 	Reflection is performed at a level of conscious critical reflection: <ul style="list-style-type: none"> Question what we know and what we don't know. Seek views of others Explore multiple theories Links events to understand what has happened as a result of action	Cherry (1999); James, Slater, and Bucknam (2012); McGregor and Cartwright (2011)
	<ul style="list-style-type: none"> Is made in an organisational systems context. 	Learning anxiety verses survival anxiety	Cameron and Green (2015)

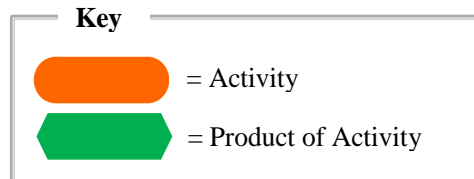
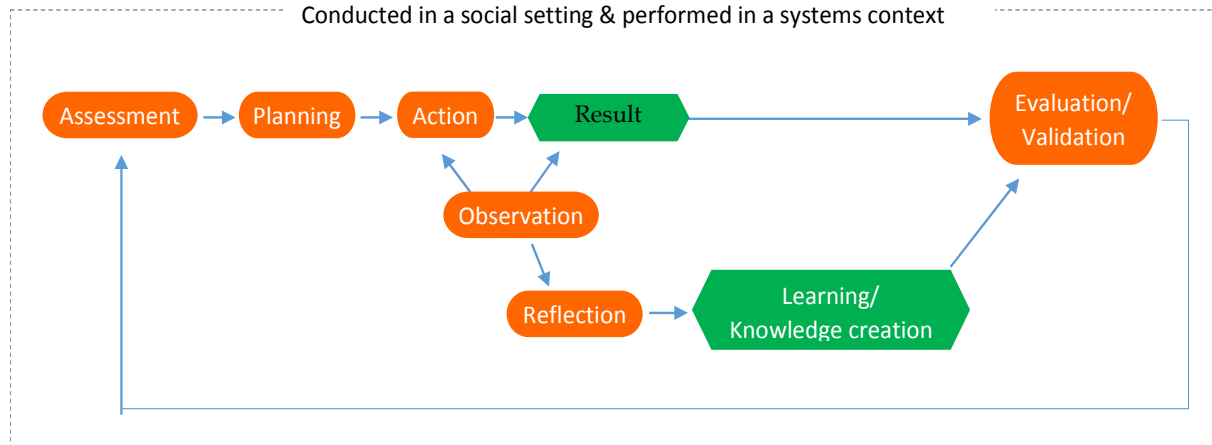
Step	Characterisation	Discussion points from literature	Reference
		Reflective practice that leads to learning through reflection of observed action	Cameron and Green (2015)
		Builds on epistemological assumptions	Abraham (1997) Cherry (1999) Weinstein (1999)
		Breadth verses depth which impacts on internal or external source of knowledge	Cherry (1999)
		Social constructivism through questioning experiences, and multiple perspectives	Greenwood and Levin (1998); Creswell (2007); McGregor and Cartwright (2011); Daudelin (1996)
Evaluation	<ul style="list-style-type: none"> • Determines the success of change against a set of success criteria. • Is performed with stakeholders affected by the problem. • Uses learning from the reflection activity as an input to evaluation. • Includes 	Examination of both intentional and unintentional results of action	Coghlan (2011)
		Meets expectation of planned activities	Zikmund, Babin, Carr, and Griffin (2013)
		Isolation of stakeholders that occurs in traditional report-based approach, written by professionals	Greenwood and Levin (1998 pp. 237-239)

Step	Characterisation	Discussion points from literature	Reference
	everyone involved in the change intervention. <ul style="list-style-type: none"> Outcomes are shared with the change sponsor, and other stakeholders outside of those involved in the change intervention. 	Participatory evaluation involving those who are affected by the change	Greenwood and Levin (1998 pp. 237-239)
	<ul style="list-style-type: none"> Is undertaken within an organisational systems context. 	Involvement of stakeholders in evaluation	Greenwood and Levin (1998)
Validation	<ul style="list-style-type: none"> Validates project outcomes with people external to the change intervention. 	External validation allows a 'critical assessment' of developed learning sequences and theories, and provides an opportunity to make adjustments if necessary	(Marquardt, Leonard, Freedman, and Hill, 2013)

Sequence of change steps

The steps identified in Table 2 are performed in a specific sequence to provide the desired change result. This sequence is captured in Figure 2, which shows how the change steps are sequenced, and where the products of the change steps occur within the sequence. Figure 2 also highlights that this entire sequence is conducted in a social setting as this is required within each of the steps. As shown in Figure 2, the steps are: *assessment*, *planning*, *action*, *observation*, *reflection*, *evaluation*, and *validation*. The products of these steps are the result of the action and learning.

Figure 1 – Synthesis of change steps sequence



The change sequence (Figure 2) begins with an *assessment* of the change requirements. This is then followed by *planning* of the *action* required to address the change requirements. The plan is then put into *action*, and at the same time as *action* takes place, the *action* is *observed*. Performing *action* produces a *result*, which is also *observed*. The completion of *action* is followed by conscious critical *reflection* of the *observed action* and *result*, which enables *learning*. The *learning* and *result* are then *evaluated* and *validated* against the initial problem that was identified in the *assessment* step, and the expected result developed in the *planning* step. The *evaluation* and *validated* outcomes are then fed back to the *assessment* step, which provides a means to re-plan due to emergent outcomes from the previous change *action*, and to start another change sequence if required. All steps in this sequence are conducted in a *social setting* to ensure inclusion of those who are affected by the change requirement.

Categorising change approaches into change types

The next stage in the assessment framework was categorising change approaches into types. Fundamentally, there are two types of change: *planned* and *emergent* (Burnes, 1996, cited in Collins, 1998, p. 60; Liebhart and Garcia-Lorenzo, 2010). This section explains the characteristics of these two types, and then, through analysis of literature, a third change type will be identified which is a combination of the two – *planned-emergent* (Burnes, 1996, cited in Collins, 1998).

Planned change type

Planned change is sequential in nature and provides specific detail of what must be changed and in what order, to bring about change at some specific time in the future. With this approach, the organisation is aligned with a *machine* metaphor, and assumes that change will occur in a series of logical steps, one following on from the other (De Geus, 1997; Collins, 1998; Burnes, 1996; Liebhart and Garcia-Lorenzo, 2010).

Collins (1998, pp. 82-99) defines *planned change* models as ‘...*n*-step guides for change...’. The ‘*n*’ is an algebraic term used to represent

the number of steps in the change process, e.g., $n =$ eight, for Kotter's Eight Step Model. Collins (1998, p. 85) is highly critical of '*n-step*' models, stating that '*n-step*' models '...are "rationalist" since they assume that the outcomes of change are predictable and lend themselves to detailed management planning...'. He goes on to say '[t]he assumption of sequentialism encourages us to assume that the change problem under consideration has a clearly definable beginning and end'. This is particularly the case for *planned change* models, and because of this, these change models are 'under-socialised' as they ignore emergent changes due to social dynamics (Collins, 1998, p. 82-99).

Duck (1993, p. 109) provides an historical reason for the sequential nature of *planned change* approaches, explaining that many change models were initially applied to physical work and as a consequence are 'mechanistic' in nature. These *mechanistic* type models are not a good fit for today's organisations which tend to be knowledge-based 'mental models'. Duck (1993) adds that the change task should manage the dynamic, but instead, change tends to manage the smaller pieces of change.

Emergent change type

Emergent change conflicts with the *planned change* process, as the direction and timing of change is affected by unexpected behaviour or the outcome of individual components within the organisation, which arise from some previous change or an emergent trend (Binney and Williams, 1995; Burnes, 1996, cited in Collins, 1998; Liebhart and Garcia-Lorenzo, 2010). Binney and Williams (1995, p. 38) explain that '...organisations are living things with personalities and histories'. They go on to say that '[t]hey are subtle systems' and that '[c]ause and effect are not linear'. Avergun and Morgan (1997, p. 146) have a similar view. Through their research and experience, they have made a number of important observations about successful change, suggesting that change is anything but sequential and requires socialisation. Their observations include the following:

- Change is non-linear

- Effective change interweaves multiple improvements
- Change is top-down and bottom-up
- Organisational change has an important personal dimension
- Measurement is key to successful and sustainable change

With these non-sequential socialisation characteristics, the organisation is aligned with an *organism* metaphor (Cameron and Green, 2015). Just like the organs in an organism, a living organisation is made up of components which take care of themselves, while contributing to the survival of the organisation as a whole. It is not unusual that emergence creates a whole new entity out of specific components that individually have no particular significance (De Geus, 1997; Binney and Williams, 1995; Cameron and Green, 2015)

Cameron and Green (2015, p. 102) add another metaphor which captures the essence of emergent change, which they have labelled *flux and transformation*. In their view:

[t]his metaphor is the only one that begins to shed some light on how change happens in a turbulent world. This view implies that managers can nudge and shape progress, but cannot ever be in control of change.

Emergent change approaches, however, are difficult to implement. Collins (1998, p. 60) believes that they are so complex in their attempt to capture the dynamics of the system that they create significant difficulties in managing the change, and as a result, this type of approach is 'messy' and difficult to implement as 'most managers are driven by expediency and operate in responsive mode' (Burnes, 1996, p. 342, cited in Collins, 1998, p. 60).

Planned-emergent change type

An alternative approach to either *planned* or *emergent* change types is an approach that is between the two (Burnes, 1996, cited in Collins, 1998). In a sense, the weakness in one type (*planned* or *emergent*) is a strength in the other type, and vice versa. This means that a change approach with the characteristic of both the *planned*

and *emergent* types could overcome the strengths and weaknesses of each type when use singularly. Hence, the author has termed this combined change type as *planned-emergent*.

To expand on this concept, the author has first summarised the strengths and weaknesses of the *planned* and *emergent* types in Table 3.

Table 3 – Analysis of strengths and weaknesses of planned and emergent change types

Change type	Characteristics	Strengths	Weaknesses
Planned	Implementation is based on a plan that captures the change initiatives in a series of steps, one after the other.	Provides initial direction and management of change.	No contingency for the non-linear cause-and-effect aspects of a change action, and as a result plans become outdated and do not reflect reality.
Emergent	Capitalises on emergent outcomes from a previous change or emergent trend, and provides contingency for unexpected outcomes.	Accepts that change is non-linear, and action has a cause-and-effect relationship, which provides a pathway for more organic change.	Due to the organic nature of change, these types lack strategic direction and planning, and are therefore difficult to manage.

As can be seen in Table 3, the strengths in one change type are weaknesses in the other. Explained in more detail, the *planned* change type has strength in being able to set the initial direction of change, but has a weakness in not providing contingency for emergent outcomes. The opposite is true for the *emergent* change type, which has strength in capitalising on emergent outcomes, but lacks the management and direction that comes from planning. With these strengths and weaknesses in mind, if change is implemented in a mutually exclusive fashion, by adopting either the *planned* change type characteristics or *emergent* change type

characteristics, but not both, then change will be hampered by the weaknesses of the chosen type. Conversely, if change is implemented in a mutually inclusive fashion, by adopting the characteristics of both change types (*planned* and *emergent*) at the same time, then weaknesses present in one change type will be bolstered by the strengths in the other change type. Therefore, change methodologies that have characteristics of both *planned* and *emergent* change types will have a better chance of success when implementing change, over approaches that exclusively fit into either the *planned* or *emergent* classification.

Categorising change methods into change types

Understanding that there are different change types enabled the author to cluster change approaches within the boundaries of the three distinct change types, being: *planned*; *emergent*; and *planned-emergent*. The analysis of this clustering has been captured in Table 4.

The author identified fifteen change approaches from change literature through online searches for suitable books, papers, and websites. The search included the following sites: EBSCO Host; Google; Google Scholar; Amazon; Priority Books; Booktopia; and Book Repository. The keywords used were: change; organisational change; change method; change model; change approach; change management; management of change; continuous improvement; organisational development; and quality. The results in Table show that only five of the fifteen change approaches assessed had both *planning* and *emergent* change features, and therefore, fit into the *planned-emergent* type. The remainder of change approaches fall into either the *planned* or *emergent* category, and, as a result, are likely to have weaknesses that are associated with the *planned* or *emergent* type when used in a mutually exclusive way.

The five approaches that fit into the *planned-emergent* type are Lean, Six Sigma, PDCA, AR, and Work-Applied Learning. The underlying principles of these approaches that place them within the *planned-emergent* type are twofold: (1) these methods have change planning; (2) they are cyclic which provides the

opportunity to resolve emergent issues from the previous cycle in the subsequent cycle.

Table 4 – Examination of change methods against planned and emergent characteristics

Key	Type	<i>Type</i> can mean either <i>planned</i> or <i>emergent</i> .
	High	The change approach being assessed, possesses most of the characteristics of the <i>type</i> .
	Medium	The change approach being assessed, possesses some of the characteristics of the <i>type</i> .
	Low	The change approach being assessed, possesses none, or marginal characteristics of the <i>type</i> .

Change approach	Presence of <i>planned</i> change characteristics	Presence of <i>emergent</i> change characteristics
Jick's Ten-Step Model (Egan, n.d.; Mento, Jones and Dirndorfer, 2002)	High	Low
Bullock and Batten Planned Change (Cameron and Green, 2015)	High	Low
General Electric's Seven-step Change Acceleration Process (Egan n.d.; Mento, Jones and Dirndorfer, 2002)	High	Low
Kotter's Eight-Step Model (Kotter and Cohen, 2002; Cameron and Green, 2015; Egan, n.d.)	High	Low
Prosci (Hiatt and Creasey, 2003)	High	Low
Herman Kahn scenario planning (De Geus, 1997)	High	Medium
Stacey and Shaw complex responsive processes (Cameron and Green, 2015)	Low	High

Change approach	Presence of <i>planned</i> change characteristics	Presence of <i>emergent</i> change characteristics
Senge Systematic Model (Cameron and Green, 2015)	Low	High
Nadler and Tushman Congruence Model (Cameron and Green, 2015)	Low	High
Carnall change management (Carnall, 1995; Cameron and Green, 2015)	Medium	Medium
Six Sigma - Design, measure, analyse, improve, and control (DMAIC) (Caulcutt, 2001; Drake Sutterfield and Ngassam, 2008; Goh, 2012; Nauhria, Wadhwa and Pandey, 2009; Singh and Singh, 2013; Sitnikov 2012; Sunder, 2013)	High	High
Lean (Chen, Li and Shady, 2010; Liker and Morgan, 2006; Nayak 2010; Reeb and Leavengood, 2010; Swartling and Poksinska, 2013)	High	High
Plan, Do, Check, Act (PDCA) (Moen and Norman, 2010)	High	High
Action Research (Coghlan, 2011; Cunningham, 1993; James, Slater, and Bucknam, 2012; Ozanne and Saatcioglu, 2008; Powell, 2002; Reason and McKernan, 2006)	High	High
Work-Applied Learning (Abraham, 2015).	High	High

Assessment of change approaches against the change steps and characteristics

The final stage in the assessment framework was to assess the changes approaches listed in Table 4 against the steps and characteristics of those steps outlined in Table 2 in order to measure the level of characterisation match between change step characteristics, and the change approach being assessed against these characteristics. For this assessment, the author chose a numerical method normalised to the value of one, as this method allowed the author to plot the outcome of the assessment in radar charts, which provided a simple way to view comparative result. The definition of each numerical value is captured in Table 5.

Table 5 - Definition of numerical values used to assess change approaches

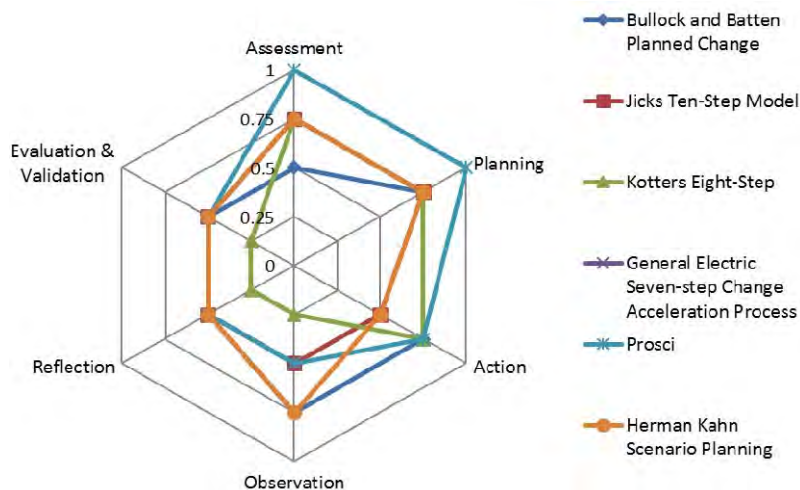
Level of characterisation match	Qualitative descriptor	Numerical value
High	Possesses all the required characteristics	1
Medium-high	Possesses most of the required characteristics	0.75
Medium	Possess some of the required characteristics	0.5
Low	Possess a few of the required characteristics	0.25
None	Possesses none of the required characteristics	0

Once the measurement criteria had been defined (as captured in Table 5) the author then measured how well each chosen change approach selected for this assessment, matched the characteristics required using the numerical values defined in Table 5.

For most of the change approaches being assessed, the author could not perform a direct one-to-one mapping between the change steps in the assessment framework (as developed by the author) to the activities defined in the change approach under assessment. This was due to either different terminology being used for the steps or activities in each change approach, or the steps not being explicitly defined. To overcome this, the author scanned the change approaches to identify if the characteristics were present first rather than looking for the specific steps as a starting point. For example, a change approach might have reflective practices but no explicitly defined 'reflection' step. If a characteristic was present, then the author reviewed the characteristic within the context of the change steps.

Planned change approaches. The *planned* change approaches assessed were: Bullock and Batten's Planned Change, Jick's Ten-Step Model, Kotter's Eight-Step Model, General Electric's Seven-step Change Acceleration Process, Prosci, and Herman Kahn Scenario Planning (Cameron and Green, 2015; Egan, n.d.; Mento, Jones and Dirndorfer, 2002; Hiatt and Creasey, 2003; De Geus, 1997). The output of this assessment is captured in Figure .

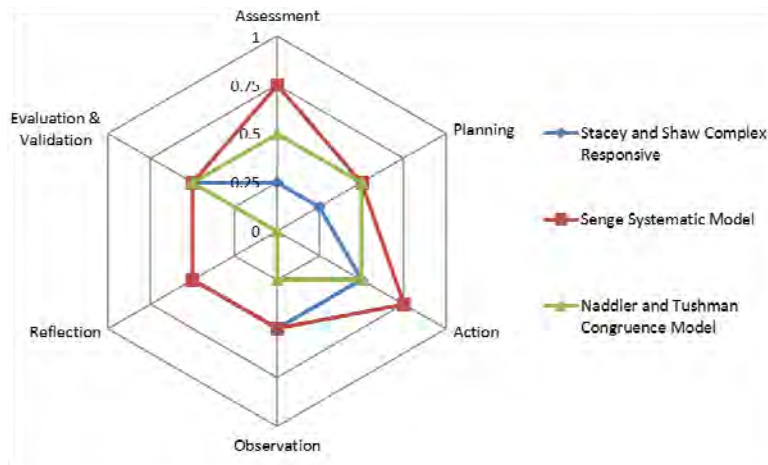
Figure 3 – Assessment outcome of planned change approaches



Consistent with the *mechanistic* metaphor, these change approaches showed strength in *planning* and *action*, and less representation in the *assessment*, *observation*, *reflection*, and *evaluation* steps. With a lower representation of *observation*, *reflection*, and *evaluation* there is a decreased opportunity for learning *from* change and *for* change.

Emergent change approaches. The emergent change approaches assessed were: Stacey and Shaw's Complex Responsive, Senge's Systematic Model, and Nadler and Tushman's Congruence Model (Cameron and Green, 2015). The output of this assessment is captured in Figure 4.

Figure 2 - Assessment outcome of emergent change approaches



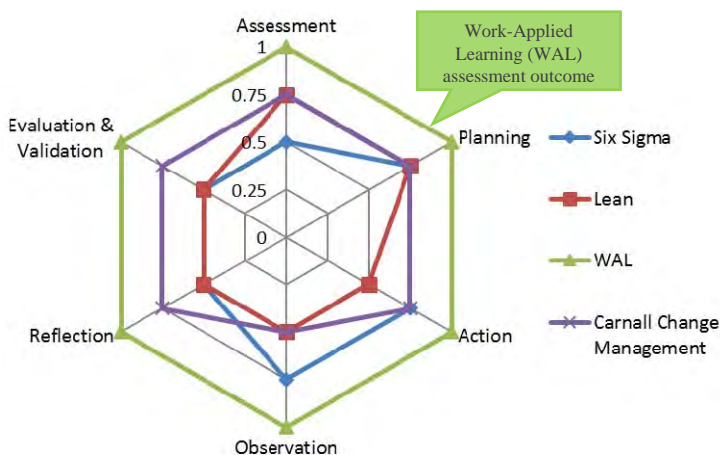
Consistent with the *organism* metaphor, these approaches are focused on providing philosophical guidance to change as it emerges, rather than facilitating change within a specific set of steps or activities. Due to this guidance approach, it was difficult to assess these change approaches against the desired change steps that the author had identified in the change literature. In this case, the author based the assessment purely around the attributes that defined the philosophy of these approaches against the

characteristics in the assessment framework, and then aligned the assessment against the characteristics with the desired change steps.

The most balanced approach that emerged from the assessment was Senge's Systematic Model, which showed strengths in *assessment* and *action*, but a lower representation of *planning*, *observation*, *reflection*, and *evaluation*.

Planned-emergent change approaches. The *planned-emergent* change approaches assessed were: Six Sigma, Lean, Work-Applied Learning, and Carnall Change Management (Abraham, 2015; Carnall, 1995; Caulcutt, 2001; Chen, Li and Shady, 2010; Drake Sutterfield and Ngassam, 2008; Goh, 2012; Liker and Morgan, 2006; Nauhria, Wadhwa and Pandey, 2009; Nayak, 2010; Reeb and Leavengood, 2010; Singh and Singh, 2013; Sitnikov, 2012; Sunder, 2013; Swartling and Poksinska, 2013). The output of this assessment is captured in Figure 3.

Figure 3 - Assessment of planned-emergent change approaches



Consistently, the *planned-emergent* change approaches assessed showed better balanced than the individual *planned* and *emergent* types; however Work-Applied Learning was the only approach

that met all assessment criteria. Conversely, Lean and Six Sigma showed a much lower presence of the *reflection* and *evaluation* characteristics, and therefore, were less balanced and the opportunity for learning *from* change and *for* change is reduced.

This analysis, demonstrated that Work-Applied Learning theoretically had all the necessary steps, and characteristics that define these steps, against what had been identified in the literature review (as discussed in this paper) as being necessary to successfully facilitate organisational change. These steps being: *assessment, planning, action, observation, reflection, evaluation, and validation*. The characteristics that defined these steps are captured in Table 2.

Conclusion

Developing an assessment framework provided a useful tool to compare change approaches against each other to reveal the comparative strengths and weaknesses of each change approach. These strengths and weaknesses were revealed by comparing each change approach against the steps, and characteristics of those steps, identified by the author as being necessary for effective organisational change. The steps identified as being necessary for organisational change resulted from a survey and synthesis of literature; the steps identified were: *assessment, planning, action, observation, reflection, evaluation, and validation* which all need to occur in a *social setting*.

Understanding the comparative strengths and weaknesses enabled the author to answer the question “why choose Work-Applied Learning for organisational change over other change approaches?” The results of the comparative assessment indicated that Work-Applied Learning is the most compatible change approach for organisational change based on the steps and characteristics identified by the author as being necessary for organisational change.

As a general observation, the other change approaches compared against the assessment framework were less congruent with the

characteristics that defined the *reflection, evaluation and validation* steps. With less *reflection, evaluation and validation*, the opportunity to learn *from* change as well as learn *for* change diminishes. The significance of learning becomes more apparent when viewed in the context of the *planned-emergent* change type which was also discussed in this paper. The premise of the *planned-emergent* change type is that change is non-linear and that change will have a cause-and-effect outcome that will require re-planning, and learning *from* change will be fundamental in planning *for* change through the re-planning activity.

The outcome of this assessment provides useful insight for anyone planning an organisational change project. It also provides a different perspective of the Work-Applied Learning approach and adds further to the body of knowledge.

Acknowledgements

I would like to thank Emeritus Professor Selva Abraham who was the founder Chairman of the Australian Institute of Business (AIB), is Chair of the Higher Education Council, and the Chair of the Global Centre for Work-Applied Learning (GCWAL). I have known Selva for many years as was my Research Supervisor for my doctoral studies and working with him collaboratively. I would also like to thank Dr Barry Ritchie and Associate Professor Paul Davidson for their valuable feedback on my doctoral thesis, upon which this paper is based.

References

- Abraham, S. (1997). *Exploratory Action Research for Manager Development*, Toowong, Australia: Action Learning, Action Research and Process Management Association (ALARPM) Inc. and Gibaran Action Research Management Institute Pty Ltd.
- Abraham, S. (2015). *Work-Applied Learning for Change: Work-Applied Learning Series*. Adelaide: AIB Publications Pty Ltd.
- Abraham, S. (2016). *Action Research Characteristics: in a Work-Applied Learning for Change Context*. Adelaide: WAL Publications Pty Ltd.

- Abraham, S., Arnold, G. and Oxenberry, R. (1996). *The self-discovering organisation: Fusing action research to the learning organisation*. Presented at the conference on *Developing a Learning Organisation Through Action Learning And Action Research*. Organised by Action Learning Action Research and Process Management Assoc. Inc. and Singapore Institute of Management, Singapore, pp. 1-29.
- Allwood, J. (1995). Theory of action. In Verschueren J., Östman, J.-O., and Blommaert J. (Ed.) *Handbook of Pragmatics*. John Benjamins Publishing Co.
- Avergun, A. and Moran J. (1997) Techniques creating lasting change. *The TQM Magazine*, Vol. 9, No. 2. MCB University Press, pp. 146-151.
- Australian Institute of Business, n.d., viewed August 2016, <http://www.aib.edu.au/>
- Binney, G. and Williams, C. (1995). *Leaning into the Future, Changing the Way People Change Organisations*. London: Nicholas Brealey Publishing.
- Burnes, B. (1996). *Managing Change: A Strategic Approach to Organisational Dynamics*. London: Pitman.
- Cameron, E. and Green, M. (2015). *Making Sense of Change Management, A Complete Guide to the Models, Tools and Techniques of Organizational Change Management*. London: Kogan Page Limited.
- Carnall, C. (1995). *Managing Change in Organizations* (2nd ed.). United Kingdom: Prentice Hall International.
- Caulcutt R. (2001). Why is six sigma so successful? *Journal of Applied Statistics*, 28 (3), pp. 301-306.
- Chen J.C., Li Y., and Shady B.D. (2010). From value stream mapping toward a lean/sigma continuous improvement process: An industrial case study. *International Journal of Production Research*, 48 (4).
- Change Management Institute. (2013) *The Effective Change Manager*. The Change Management Body of Knowledge.
- Cherry, N. (1999). *Action Research; A Pathway to Action, Knowledge and Learning*. Melbourne: RMIT Publishing.
- Coghlan, D. (2011). Action research: Exploring perspectives on a philosophy of practical knowing. *The Academy of Management Annals*, 5 (1), pp. 53-87.
- Coghlan, D. and Brannick, T. (2014). *Doing Action Research in Your Own Organization*. (4th ed.). London: SAGE Publications Ltd.
- Collins, D. (1998). *Organizational Change: Sociological Perspectives*. New York: Routledge.

- Creswell, J.W. (2007). *Qualitative Inquiry & Research Design*. (2nd ed.). Thousand Oaks: SAGE Publications Inc.
- Creswell, J.W. (2014) *A Concise Introduction to Mixed Methods Research*. USA: SAGE Publications,.
- Cunningham, J.B. (1993) *Action Research & Organisational Development*. Westport: Praeger.
- Daft, R. L. (1995). *Organisation Theory & Design*. (5th ed.). Minneapolis/St. Paul : West Publishing Company.
- Daton, A. (2007). *Restructuring a government department in the Papua New Guinea public service using the Action Research approach*. Adelaide: Gibaran Business School.
- Daudelin, M.W. (1996). Learning from experience through reflection. *Organizational Dynamics*, 24 (3), pp. 36-48.
- De Geus, A. (1997). *The Living Company, Growth, Learning and Longevity in Business*. London: Nicholas Brealey Publishing.
- Drake, D., Sutterfield, J.S. and Ngassam, C. (2008) The Revolution of six-sigma: An analysis of its theory and application. *Academy of Information and Management Sciences Journal*, 11 (1).
- Duck, J. D. (1993) Managing change: The art of balancing', *Harvard Business Review*, Nov-Dec.
- Egan, R.W. (n.d.). *Change and Resistance Help for the Practitioner of Change*. New Jersey Institute of Technology.
- Fng, A. S. (2014). *To Investigate the Development and Implement of a WAL Facilitative Leadership Development Programme (FLDP) for Senior Managers in a G7 Construction Firm in Malaysia*. Adelaide: Australian Institute of Business.
- Goh T.N. (2012). Six sigma at a crossroads. *Verslo ir teisės aktualijos/Current Issues of Business and Law*, 7 (1), pp. 17-26.
- Greenwood, D. J. and Levin, M. (1998). *Introduction to Action Research: Social Research for Social Change*. Thousand Oaks: Sage Publications.
- Hashim, D. M. (2000). *Study of the ARAL Approach in Medium Sized Bumiputra Shipping Organisation in Malaysia*. Adelaide: Gibaran Business School.
- Hayes, J. (2014). *The Theory and Practice of Change Management*. Palgrave Macmillan.
- Hiatt, J. and Creasey, T.J. (2003) *Change Management: The People Side of Change*. Prosci Learning Center Publications.

- Hill, C.W.L. and Jones, G.R. (1998). *Strategic Management Theory – An Integrated Approach*. Boston: Houghton Mifflin Company.
- James, A. E., Slater, T. and Bucknam, A. (2012). *Action Research for Business, Nonprofit, & Public Administration: A Tool for Complex Times*. Sage Publications, Inc.
- Khan J.I. (2014). *To Investigate the Development and Implementation of a Work-Based Project Management Development Programme for Project Management Practitioners in Trinidad and Tobago*. Adelaide: Australian Institute of Business.
- Kotter, J.P. and Cohen, D.S. (2002) *The Heart of Change: Real-life Stories of How People Change their Organizations*. Harvard Business Press.
- Lewin, K. (1946) Action research and minority problems. *Journal of Social Issues*, Vol. 2, pp. 34-46. In Kemmis, S. and McTaggart, R. (Eds). (1988). *The Action Research Reader* (3rd ed.). Melbourne: Deakin University Press.
- Lewin, K. (1947). Frontiers in group dynamics II. Channels of group life, social planning and action research. *Human Relations* Vol. 1, pp. 143-153.
- Liebhart, M. and Garcia-Lorenzo, L. (2010). 'Between planned and emergent change: decision maker's perceptions of managing change in organisations. *International Journal of Knowledge, Culture and Change Management*, 10 (5), pp. 214-225.
- Liker, J. and Morgan, J.M. (2006) The Toyota way in services: The case of lean product development. *Academy of Management Perspectives*, pp. 5-20.
- Marquardt, M.J., Leonard, H.S., Freedman, A.M. and Hill, C.C. (2013). *Action Learning for Developing Leaders and Organizations: Principles, Strategies, and Cases*. American Psychological Association.
- McGregor, D. and Cartwright, L. (2011). *Developing Reflective Practice*. New York: University Press.
- Mento, A.J., Jones, R.M. and Dirndorfer, W. (2002). A change management process: Grounded in both theory and practice. *Journal of Change Management*, 3 (1), pp. 45-59.
- Moen R.D. and Norman C.L. (2010). Circling back – clearing up myths about the Deming cycle and seeing how it keeps evolving. *Quality Progress*, 43 (11), pp. 22-28.

- Nauhria, Y., Wadhwa, S. and Pandey, S. (2009). ERP enabled lean six sigma: A holistic approach for competitive manufacturing. *Global Journal of Flexible Systems Management*, 10 (3), pp. 35-43.
- Nayak, B. (2010). Lean manufacturing and value management convergence of divergent tools. *SAVE International*, USA, pp. 1-18.
- Ozanne, J.L. and Saatcioglu, B. (2008). Participatory action research. *Journal of Consumer Research*, 35 (3), pp. 423-439.
- Powell, Jr., W. R. (2002). Organizational change models. *Academic Research Library*, 26 (3/4), pp. 20-45.
- Reason, P. and McKernan, J. A. (2006). Choice and quality in Action Research practice. *Journal of Management Inquiry*, 15 (2), pp. 187-208.
- Reeb, J.E. and Leavengood, S. (2010). Introduction to lean manufacturing. *Oregon State University, Extension Service*, pp. 1-7.
- Rowell, LL, Polush, EY, Riel, M, and Bruewer, A. (2015). Action researchers' perspectives about the distinguishing characteristics of action research: a Delphi and learning circles mixed-methods study. *Educational Action Research*, 23 (2), pp. 243-270.
- Sankaran, S., Dick R., Passfield, R. and Swepson, P. (Eds). (2001). *Effective Change Management Using Action Learning and Action Research*. Lismore: Southern Cross University Press.
- Singh J. and Singh H. (2013). Continuous improvement strategies: An overview. *The IUP Journal of Operations Management*, 7 (1), pp. 32-57.
- Sitnikov, C. (2012). Six sigma as a strategic tool for companies. *Young Economists Journal/Revista Tinerilor Economisti*, 9 (19), pp. 94-102.
- Stringer, E.T. (1999). *Action Research* (2nd ed.). Thousand Oaks: Sage Publications.
- Sunder, M.V. (2013). Synergies of lean six sigma. *The IUP Journal of Operation Management*, 7, pp. 21-44.
- Swartling D. and Poksinska B. (2013). Management initiation of continuous improvement from a motivational perspective. *Journal of Applied Economics and Business Research*, 3 (2), pp. 81-94.
- Trist, E. (1976). Action Research and adaptive planning. In Clark A. W. (Ed.). (1996). *Experimenting with Organisational Life - The Action Research Approach*. New York and London: Plenum Press, pp. 223-236.
- Wahyuni, D. (2012). The research design maze: Understanding paradigms, cases, methods and methodologies. *Journal of Applied Management Accounting Research*, 10 (1), pp. 69-80.

Weinstein, K. (1999). *Action Learning: A Practical Guide* (2nd ed.). Hampshire: Gower Publishing Company.

Young, M. (2011). The continuous improvement grid: An empirical investigation into the effectiveness of a systems, and Action Research, based continuous improvement intervention, for 'new' organisation development. *Royal Navy and Henley Business School*, 24, p. 453-478.

Zikmund, W., Babin, B., Carr, J. and Griffin, M. (2013). *Business Research Methods* (9th ed.). Cengage Learning.

Biography

Dr Natalie Holyoake, Adelaide, South Australia.

Natalie has worked in the technology industry for over 30 years. In the latter thirteen years of her career, she has been a Business Improvement Manager, managing cross-functional and multi-discipline change for a large global company.



It is during that time she became interested in Work-Applied Learning as an organisational learning and change approach, which formed the basis of her doctoral studies at the Australian Institute of Business.

ALARA membership information and article submissions

ALARA membership categories

Membership of ALARA takes two forms: individual and organisational.

ALARA individual membership

The *ALAR Journal* is available to members of the Action Learning, Action Research Association Inc (ALARA). Members obtain access to two issues of the ALAR Journal per year.

ALARA membership also provides information on special interest email and web based networks, discounts on conference/seminar registrations, and an on-line membership directory. The directory gives details of members around the world with information about interests as well as the ability to contact them.

ALARA organisational membership

ALARA is keen to make connections between people and activities in all the strands, streams and variants associated with our paradigm. Areas include Action Learning, Action Research, process management, collaborative inquiry facilitation, systems thinking, Indigenous research and organisational learning and development. ALARA may appeal to people working in any kind of organisational, community, workplace or other practice setting, and at all levels.

ALARA invites organisational memberships with university schools, public sector units, corporate and Medium to Small Business, and community organisations. Such memberships

include Affiliates. Details are on our membership link on our website.

Become a member of ALARA

An individual Membership Application Form is on the last page. Please see ALARA's web site for an organisational membership application form.

For more information on ALARA activities and to join

Please visit our web page:

www.alarassociation.org/pages/about-us/joining-alar

or email secretary@alarassociation.org

Journal submissions criteria and review process

The *Action Learning and Action Research Journal (ALARj)* contains substantial articles, project reports, information about activities, creative works from the Action Research and Action Learning field, reflections on seminars and conferences, short articles related to the theory and practice of Action Learning, Action Research and process management, and reviews of recent publications. *ALARj* also advertises practitioners' services for a fee.

The journal aims to be of the highest standard of writing from the field in order to extend the boundaries of theorisation of the practice, as well as the boundaries of its application. *This purpose represents a recent change in policy.*

The journal aims to be accessible for both readers and contributors while not compromising the need for sophistication that complex situations require. Where previously our commitment was to publish new practitioners as a way of developing the field, while also introducing novice practitioners presenting creative and insightful work we now encourage experienced practitioners and scholars to contribute.

Accordingly, our rate of rejection has increased. We will only receive articles that have been proof read, comply with the submission guidelines as identified on the journal's website, and that also meet the criteria that the reviewers use, also available on the journal website. We are unlikely to publish an article that describes a project simply because its methodology is drawn from our field.

The intention of the journal is to provide high quality works for practitioners and funding bodies to refer to in the commissioning of works, and the progression of and inclusion of action research and action learning concepts and practices in policy and operations.

ALARj has a substantial international panel of experienced action research and action learning scholars and practitioners who offer both double blind and transparent reviews at the request of the author.

Making your submission and developing your paper

Please send all contributions in Microsoft Word format to our Open Journal Systems access portal: <http://journal.alara.net.au>

You will need to register as an author to upload your document and work through the four electronic pages of requirements to make your submission. ALARA's Managing Editor or Issue Editor will contact you and you can track progress of your paper on the OJS page.

If you have any difficulties or inquiries about submission or any other matters to do with ALARA publications contact the Managing Editor on editor@alarassociation.org.

For the full details of submitting to the ALAR Journal, please see the submission guidelines on ALARA's web site www.alarassociation.org/pages/publications/submission-guidelines

Guidelines

The journal is devoted to the communication of the theory and practice of action research and related methodologies generally. As with all ALARA activities, all streams of work across all disciplines are welcome. These areas include action research, action learning, participatory action research, systems thinking, inquiry process-facilitation, and process management and all the associated post-modern epistemologies and methods such as rural self-appraisal, auto-ethnography, appreciative inquiry, most significant change, open space technology, etc.

Our reviewers use the following criteria, which are important for authors to consider:

1. Criterion 1: How well are the paper and its focus both aimed at and/or grounded in the world of practice?
2. Criterion 2: How well are the paper and/or its subject explicitly and actively participative: research with, for and by people rather than on people?
3. Criterion 3: How well do the paper and/or its subject draw on a wide range of ways of knowing (including intuitive, experiential, presentational as well as conceptual) and link these appropriately to form theory of and in practices (praxis)?
4. Criterion 4: How well does the paper address questions that are of significance to the flourishing of human community and the more-than-human world as related to the foreseeable future?
5. Criterion 5: How well does the paper and/or its subject aim to leave some lasting capacity amongst those involved, encompassing first, second and third person perspectives?
6. Criterion 6: How well do the paper and its subject offer critical insights into and critical reflections on the research and inquiry process?

7. Criterion 7: How well do the paper and/or its subject progress AR and AL in the field (research, community, business, education or otherwise)?
8. Criterion 8: How well is the paper written?

Article preparation

Journal submissions must be original and unpublished work suitable for an international audience and not under review by any other publisher or journal. No payment is associated with submissions. Copyright of published works remains with the author(s) shared with ALARA Inc.

While *ALARj* promotes established practice and related discourse *ALARj* also encourages unconventional approaches to reflecting on practice including poetry, artworks and other forms of creative expression that can in some instances progress the field more appropriately than academic forms of writing.

Submissions are uploaded to our Open Journal System (OJS) editing and publication site.

The reviewers use the OJS system to send you feedback within a 2-3 month period. You will receive emails at each stage of the process with feedback, and if needed, instructions included in the email about how to make revisions and resubmit.

Access to the journal

The journal is published electronically on the OJS website.

EBSCO and InformIT also publish the journal commercially for worldwide access, and pdf or printed versions can be purchased from Sydney University Press at <http://fmx01.ucc.usyd.edu.au/jspcart/cart/Category.jsp?nParentID=42>

For further information about submitting to the ALAR Journal, please see the submission guidelines on ALARA's web site <http://www.alarassociation.org/pages/publications/submission-guidelines>.



Individual Membership Application Form

This form is for the use of individuals wishing to join ALARA.
Please complete all fields.

Name			
Title	Given Name	Family Name	
Residential Address			
Street		Town / City	Postcode / Zip
Country			
Postal Address			
Street		Town / City	Postcode / Zip
State		Country	
Telephone		Mobile Telephone	
Country Code	Telephone Number	Country Code	Mobile Number
Email			
Email Address			
Experience (Please tick most relevant)		Interests (Please tick all relevant)	
<input type="checkbox"/> No experience yet		<input type="checkbox"/> Education	
<input type="checkbox"/> 1 – 5 years' experience		<input type="checkbox"/> Health	
<input type="checkbox"/> More than 5 years' experience		<input type="checkbox"/> Community / Social Justice	
		<input type="checkbox"/> Indigenous Issues	
		<input type="checkbox"/> Gender Issues	
		<input type="checkbox"/> Organizational Development	
Are you eligible for concessional membership?		Payment	
If you are a full-time student, retired or an individual earning less than AUD 20,000 per year, about USD 14,100 (please check current conversion rates), you can apply for concessional membership.		We offer a range of payment options. Details are provided on the Tax Invoice that we will send to you on receipt of your membership application.	
Do you belong to an organization that is an Organizational Member of ALARA?			
If you are a member of such an organization, you can apply for the Reduced Membership Fee. Please state the name of the Organizational Member of ALARA in the box below.			
Annual Membership Fees (Please select one)			
Full Membership		Concessional Membership	
<input type="checkbox"/> AUD 143.00	Developed Country	AUD 71.50	<input type="checkbox"/>
<input type="checkbox"/> AUD 99.00	Emerging Country	AUD 49.50	<input type="checkbox"/>
<input type="checkbox"/> AUD 55.00	Developing Country	AUD 27.50	<input type="checkbox"/>
Reduced Membership Fee,	Developed	AUD 71.50	<input type="checkbox"/>
as I belong to an Organizational	Emerging	AUD 49.50	<input type="checkbox"/>
Member of ALARA	Developing	AUD 27.50	<input type="checkbox"/>
			Organization's name
Privacy Policy			
By submitting this membership form, I acknowledge that I have read, understood and accept ALARA's Privacy Policy http://www.alarassociation.org/pages/alar-privacy-policy			
ALARA will acknowledge receipt of your application and send you an invoice or receipt of payment. You will receive an email confirming activation of your account, and details on how you can access website functions.			

ALARA is a strategic network of people interested or involved in using action learning or action research to generate collaborative learning, research and action to transform workplaces, schools, colleges, universities, communities, voluntary organisations, governments and businesses.

ALARA's vision is that action learning and action research will be widely used and publicly shared by individuals and groups creating local and global change for the achievement of a more equitable, just, joyful, productive, peaceful and sustainable society.