

# Using an action research to investigate professional development: improving the use of ICT in higher education

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## ABSTRACT

The paper reports on an Action Research (AR) studying into how teachers of foreign languages in a Thai university engaged with a Professional Development (PD) in developing a course website for their own courses. The AR in this PD offered by the researcher to six foreign language teachers was used to investigate (1) how teachers perceived the impact of such technology on their domain, (2) how they engaged with the PD activities in the learning environment, and (3) how they integrated the knowledge in their online course materials which is the focus of this paper. The findings reiterate the value of action research experienced by a practitioner inquiring into her own practice. In this paper, I suggest how vicarious knowledge arises in a context where the researcher works closely with practitioners and that action and understanding are unseparated. The paper examines how the innovative use of this AR cycles has brought about significant improvements to aspects of teaching. The discussion covers limitations and advantages of the AR in this research. The lessons advocate that AR-developed knowledge can be valuable in other contexts other than those where it is developed if it is to be transferred under these following conditions: 1) having genuine understanding of the background and factors in the situation where the investigation took place, 2) analysing the new context where the knowledge is to be applied, and 3) assessing the two contexts.

**Key words:** Action Research, ICT, foreign language teaching, professional development, teacher identity, culture, university teacher, course web site

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Dararat Khampusaen spent six years in the Department of Foreign Languages, in the Faculty of Humanities and Social Sciences, at the Khon Kaen University, Thailand, before starting her PhD at University of South Australia. She completed her PhD study in March 2010. Her academic interests involve strategies in professional development with regard to using Information and communication technology (ICT) in foreign language teaching. She is particularly interested in engagement and adoption of educational technology by university lecturers and the resulting changes to the teaching and learning process; the incentives and barriers to integrating technology; and methods for evaluating the outcomes of integration.

## I. INTRODUCTION

The purpose of this paper is to reiterate the value of action research experienced by a practitioner inquiring into her own practice. In this paper, I suggest how vicarious knowledge arises in a context where the researcher works closely with practitioners and that action and understanding are unseparated. My standpoint is that of a language teacher and teacher educator in a higher education setting who has become a researcher of teaching in the process of becoming an academic. Throughout this paper I present my

beliefs concerning the research theories, which guided me to know what I know. The following section defines factors that determine my roles and responsibilities generated by the overall institutional context that surrounds it.

## II. UNDERSTANDING PROFESSIONAL CONTEXT

In this section I explain how AR was employed to understand the participation patterns in course website developing professional development (PD) and also the factors shaping those patterns, the core of my research. It arose from my role as a university teacher working in the context of the educational reform. I am a lecturer in the Department of Foreign Languages directly involved with implementing ICT in teaching and assisting fellow teachers to use them. My research began with my work in the Department of Foreign Languages, Khon Kaen University (KKU), Thailand where I became fascinated with technologies, especially the internet and computer as my teaching tools. However, I experienced that the rate of ICT use in teaching and learning activities in classrooms did not respond to the National and institutional policy. Furthermore I found I needed to provide specific advice, programmes and materials to enable my colleagues to teach using ICT, because they had difficulty in learning to use it as a teaching tool, just as they had previously helped me with other teaching related issues. I became eager to achieve a deeper understanding of how teachers engaged with a PD project, which involved ICT.

As I was driven by my involvement as a teacher with technology, the research question governing this work was therefore based on my genuine experience and a further review of the literature on teachers in their participation in course website developing PD. I believed that probing a small group of teachers' experiences in using ICT in a PD program would offer insightful data.

The focus of this study was to discover how teachers engage with ICT and what factors in PD make a difference to teachers' uptake of ICT and course website developing PD. In order to get the answer to my research questions, I needed to assist these teachers in developing their own practice of using ICT. There are two areas of research interest that I wanted to explore:

- The PD experiences that are important to participants and help them to engage
- The factors contributing to change development and to differences in change.

As seen above, the research concentrated on the analysis on the particular institutional arrangements that influence a set of results that have been observed by a practitioner. I now describe why and how action research (AR) became a main part in this investigation.

## III. SELECTING A RESEARCH METHODOLOGY

Given a large interest in teachers' engagement with PD, I chose a qualitative research approach to address the research questions, using a series of Action Research Cycles to make the research approach effective.

As the researcher I regarded myself as a practitioner who was undertaking research to understand other people so as to improve practice, theirs and my own. My study's purpose was to investigate collaborative activity among colleagues for ways to improve instruction. As well as studying how teachers responded to course website developing PD, I wanted to try out ways of providing PD more effectively. The research question was positioned within a small scale undertaking of course website developing PD with my colleagues in the teaching of foreign languages. Consequently, my research design increasingly came to involve action research.

My initial concern was what influenced teachers to use ICT in their teaching. I wanted to better understand their teaching context and how it interacted with their use of ICT. I was convinced that action research would allow me to discover and examine the PD factors which influenced the participants' learning and use of ICT in their teaching as well as my own (Tynan *et al.* 2008). Because of this, besides case study which allowed me to study their uptake of ICT, I planned an intervention, that is, action

research, in which I would establish a PD situation which was intended to support teachers to develop ICT skills that were required by the institution (Khon Kaen University). I designed action research to show the impact of PD on teachers' uptake of ICT. This involved me making observations of the intervention as a teacher-educator and reflections on it as a researcher (Spitz 2001). As I had in my mind both understanding of the problem and a desire to address it, I thought action research would help me theorise my practice with real people in real situations.

Action research involves cycles in investigating a concern or issue, for example, a cultural phenomenon. It is a useful tool to study the area of PD (Ferrance 2000). This method supports the study of change through directly aiming to change participants' behaviours (Banister et al. 1994). Action research is typically carried out after a problem is identified through well-planned steps taken to address it. The actions taken are observed, their effectiveness is evaluated and then plans are made for follow-up action in further action research cycles. Action research can also involve cycles within cycles (List 2006).

One particular reason that convinced me to use action research as a method was that it is widely used in the area of PD. McNiff and colleagues (1996), for example, consider action research a valuable tool which facilitates the involvement of teachers in PD in their own setting. Teacher-researchers, such as myself, are able to develop skills relating to their own workplace settings rather than acquire unrelated knowledge. Therefore, action research can emphasise an individual's improvement and the reflection process in action research enhances teachers' growth and confidence in their work. Moreover, it can increase communication, networking and collaboration within organisations. This was important for me as a researcher in my own workplace.

Since I believed an action research approach would provide useful skills as well as being appropriate to understanding the context of investigating teacher PD at the study site – my own university, I adopted the action research (AR) Cycles presented in **Error! Reference source not found.**

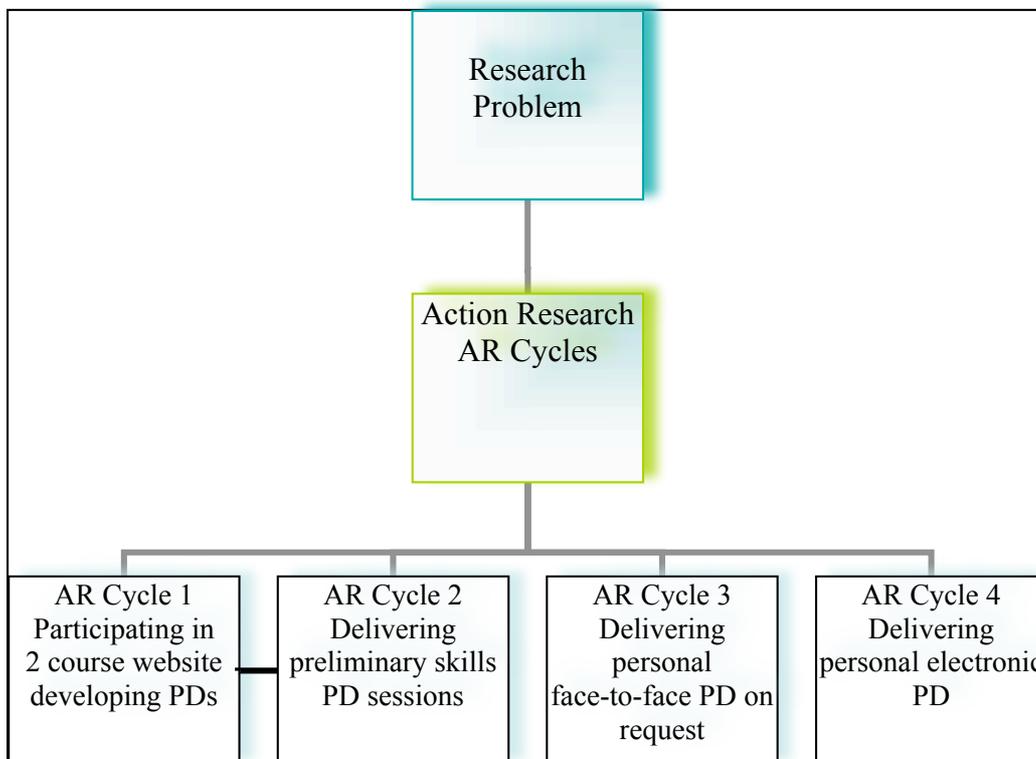


Figure 1. Action research cycles

#### IV. FINDING 'ACTION' IN THE RESEARCH

Accordingly, in this study, action research became a journey employed to respond to problems and issues arising in the practical experience of living (Elliott 1998). An action research journey involves self-

reflective inquiry, which is undertaken in order to improve the productivity, rationality and justice of the researcher's social and educational practices, as well as the understanding of these practices and the situations in which the practices are carried out (Kemmis & McTaggart 1988). Action research procedures tend to work in a cycle of planning followed by acting, observing and then reflecting. The AR Cycles employed in this study aimed to solve problems and improve practice through enhancing understanding (Nunan 1997). The PD in this study was designed in cycles of action research so that I could study the patterns and factors in teachers' participation. According to my plan, the second, main AR Cycle would be a collaborative form of PD in which all participants developed a course website together, and shared and exchanged their experiences.

The first AR Cycle involved developing a plan of action to improve teachers' course website developing PD through my own experiences as a participant in the course website developing PD provided at Khon Kaen University. Feedback and reflections on these experiences were used to design and implement my own course website developing PD that enabled me to observe the effects of action in the context in which it occurs, and reflect on these effects as a basis for further planning, and subsequent further action (see Cohen & Manion 1994, on cumulative successive cycles).

The succession of cycles became complicated however when put into practice. Cycles did not move straightforwardly from one to another. Until I had carried out the actions and collected the data, I couldn't think in detail about the next cycle. The data in each cycle was analysed and the analysis then affected the planning and implementation of the next cycle. Only when I had carried out every stage of a cycle was I able to think about moving on to the next cycle. Thus, each AR Cycle was influenced, dominated, or shaped by the previous cycles. In other words, there were small cycles of action research associated with or within the main cycle. Thus action research is not only one cycle but may involve cycles within cycles or a series of cycles connected in a range of ways. Each stage of action research, for example, may lead to another cycle of action research which links to the main intervention and inquiry. On some occasions, cycles can be repeated to investigate deeper understanding prior to the implementation of the next cycle.

#### *A. AR Cycle 1: Participating in 2 course website developing PDs*

In AR Cycle 1, my purpose was to understand the existing PD provisions for teachers of Khon Kaen University, and DFL in particular, and to identify potential problem areas for teachers in coming to grips with ICT and how they could use it in their teaching. Data in these AR Cycles were collected in the form of a researcher journal, researcher field notes (Newbury 2001), and reflections through observation and personal conversations with other participants and IT technicians. The findings were used to help design the PD activities and pedagogy in subsequent AR Cycles.

#### *B. AR Cycle 2: Delivering preliminary skills PD sessions*

Building on the first Cycle, AR Cycle 2 offered a collective PD program to create a course website for participants. It included various actions and activities from my own course website developing PD experiences that I had assessed, and decided to keep or adapt. Participants were assisted to complete the introductory section by a PD technician and myself, as the PD facilitator. In this AR Cycle, I took two different roles - as PD facilitator and as a researcher. These roles provided me with different lenses to see the problems and moments of participants' engagement with course website developing PD.

#### *C. AR Cycle 3: Delivering personal face-to-face PD on request*

The findings from AR Cycle 2 were analysed and I reflected on their use in designing the next stage. Further observation was needed of the participants' engagement at different, later stages of their learning and also for other types of support. In AR Cycle 3, the PD activities involved onsite follow-up support to all participants in their offices. At this stage, participants were individually supported face-to-face. This AR Cycle provided different types of data, such as the researcher's observations of the participants' production

of PD artefacts. Day-to-day reflections based on the observations were used to improve the PD activities offered.

#### D. AR Cycle 4: Delivering personal electronic PD

The focus of this final cycle was placed on how the participants used ICT independently in their real situations. PD support was offered through electronic means (emails, chatting and telephone). Data from this AR Cycle were collected from emails and calls made between the participants, the PD technician and the PD facilitator.

### V. LIMITATIONS OF AR

Although action research was a valuable method, I found there were some limitations. One was the fact that the reflection relies largely on my professional philosophy and my role in the university. I took a practitioner's view who understood the context of the professional setting. In so doing, I had to make sure before any actions were implemented that I was acting on evidence, not my belief according to my previous knowledge. I learnt to accept that even though my knowledge of the context could help me guess what might be possible explanations, I could not be so sure that I could rely on my prediction based on that experience. I decided to give myself a fresh eye on the familiar social situation, that is, to gain more understanding about the use of ICT for teaching by engaging myself as a participant, to understand and improve the actions within. I had to discipline myself as an action researcher by keeping a research journal and interpreting my thoughts and observations as soon as possible after my new PD experience in ICT. Further actions were strictly related to the evidence from the previous action, that is, I evaluated results and clarified whether there was improvement, based on supporting evidence. If there was no improvement, I considered how to change my actions to elicit better results (Ferrance 2000).

### VI. ADVANTAGES OF AR

However, there were strong advantages in using action research. For example, as I was a facilitator of change for my colleagues (Meyer 2000), I was able to control the content of the lessons in ICT and encourage participants' engagement to become more intense. In so doing, I was using self-reflective enquiry (Carr & Kemmis 1986, p. 162) and acting upon practice (Grundy 1994).

TABLE I. RESEARCH TOOLS EMPLOYED IN ACTION RESEARCH CYCLES

Action Research Cycles	Research tools				
	Policy document	Questionnaire	Interview	Observation	Professional development artefacts
AR Cycle 1	√			√	
Between AR Cycles 1 & 2		√			
AR Cycle 2			√	√	
AR Cycle 3			√	√	√
AR Cycle 4				√	√

Using this research approach to create and evaluate PD for participants involved in a specific social situation is valid because it was grounded in real life situations (Meyer 2000, p. 178). In following the AR Cycles, I learnt through observation and reflection how my colleagues were dealing with using ICT as a teaching tool. In addition to the participants' learning, I learned how to develop further cycles of action



technician, and the researcher in the role of PD facilitator. This journal allowed the researcher to note the declining level of interaction in some participants, and thus take action to probe the problems and discover what was preventing them from further participation.

In the last AR Cycle (electronic PD), the sessions aimed at promoting independent use of ICT by the participants. Participants were assisted to use ICT to further develop and maintain their online teaching materials. This AR Cycle enabled the researcher to facilitate the course website developing PD, as well as explore wider perspectives and approaches, to maintain flexible, enthusiastic and inclusive sessions. It also enabled achievable goals to be set at an appropriate pace.

The fact that the AR Cycles were conducted over a long period of time (2005-2008), meant the PD facilitator, PD technician, and PD participants could benefit from long-term engagement and ongoing design. The data collected prior to AR Cycle 2 suggested that course website developing PD could be improved if it was ongoing and supportive. As a result, the PD activities were adjusted to address the various problems. In addition, by collecting and analysing data during each subsequent cycle, and sharing results with the PD technician, the PD facilitator gained insights that could inform and shape the ongoing PD delivery.

Being based on previous knowledge, as an insider to the culture and the institution and also from having taken part in generic course website developing PD, meant this PD could address the differences of the PD participants in various ways. Firstly, the PD team took the demographic information (for example age and national culture) of participants into consideration and tried to address individual needs. During the operation of each AR Cycle, the PD team shared results and feedback on the PD participation. Actions were then taken to improve the practice in the following sessions and cycles. For example, when cultural factors were identified, such as potential loss of face in a senior participant's preliminary skills session, it was immediately acted upon and improvements were made by the PD team, giving her more ICT assistance to save her from losing face. In regard to using ICT in teaching, it was confirmed from AR Cycle 1, that the participants had different needs and interests in using ICT. In addition, the session with that senior participant raised the need for the PD team to also address the participants according to their age and ICT skills and knowledge. Thus for AR Cycle 2, the PD team encouraged participants to design their course website based on their own needs arising from this authentic class context.

As networks are often organised around specific content areas (Peixotto & Fager 1998), this PD was likely to help these foreign language teachers to develop a network. The AR Cycles in the PD, whether conducted face-to-face or through electronic means, established networks which allowed the PD team and the participants the opportunity to exchange ideas, value the expertise of colleagues, and build learning communities. As participants, notably two participants worked collaboratively in AR Cycles 2 and 3, their social interaction changed and the learning became a partnership. An action research approach therefore facilitated the participants to talk through ideas with a listening supporter, which allowed them to act and evaluate outcomes in company with the PD team. In this sense, the AR Cycles made participants aware of the strategies they needed to improve their work, and encouraged them to become challenging and supportive critical colleagues.

### VIII. VALUES OF ACTION RESEARCH

It is not impossible to advocate that AR-developed knowledge can be valuable in other contexts other than those where it is developed. However I would rather say the generalizations can be achieved by 1) having genuine understanding of the background and factors in the situation where the investigation took place, 2) analysing the new context where the knowledge is supposed to be applied, and 3) performing an assessment of the two contexts. Moreover the researcher is required to be aware of the matter of his/her life and work, so he/she can envisage what and why he/she is doing. In relation to this research, I spent six years to clarify the kinds of values and commitments I hold. The result is truly valuable as I learn and gain

insights from the context where I work and I find ways of overcoming the problems and that I could use them towards the direction of my values.

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