D E V E L O P M E N T   A N D   E N Q U I R Y   P R O G R A M M E S
T E A C H E R   R E S E A R C H E R S

Knowledge Management and Action Research
Mark Hadfield

Networked Learning Communities

learning from each other | learning with each other | learning on behalf of each other

Knowledge management and action research: can it un-stick the stickiest forms of knowledge?

When I was asked to write this think piece I was a little unsure why we should be talking about knowledge management in the context of action research. This was because, for me, action research is primarily about generating change and improvement, not knowledge. Also, knowledge management has become a rather in vogue term recently and I was rather unsure about why it was suddenly being applied to action research. Anyway, unperturbed by this, but with a slightly cynical air, I began to look at how knowledge management ideas were being applied to various initiatives in education. I began to consider how they might complement the ideas of those of us who are committed to the role of inquiry and reflection in our work.

On first reading, there are obvious areas of overlap between inquiry and knowledge management as much of the literature tends to deal with the issue of how to exchange good practice within and across teams and groups in organisations. The major learning point for those of us involved in inquiry and research is the emphasis the literature places on the transfer and utility of knowledge on a broad scale – a key issue if we recognise that inquiry is unlikely to be taken up by all staff in a school.

So how do we make the knowledge and insights gained via inquiry available to staff who have not been directly involved?

After reading through a number of sources from different writers, three themes of potential relevance to action researchers became apparent:

1. sticky knowledge
2. boundaries and brokerage
3. the SECI (Socialisation, Externalisation, Combination, Internalisation) model

Their relevance is not so much that they provide action researchers with any startlingly new insights, but they could provide us with additional and novel models and metaphors. These we could use when we think about our work, how we discuss it with others, and how we face up to the challenge of getting teachers to engage with the changes that arise from our inquiries.
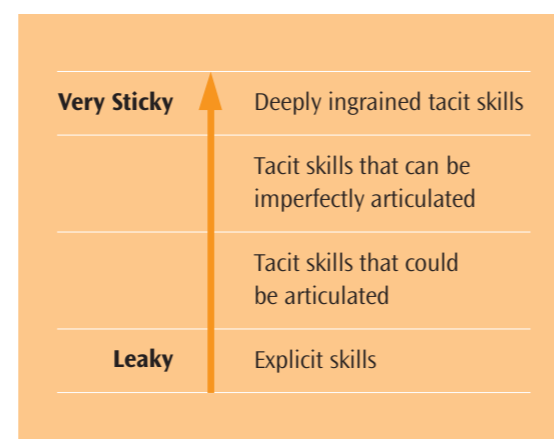
Sticky knowledge

I liked the idea of 'sticky knowledge' even before I knew what it really meant. Why? Because its such a simple but intriguing metaphor. The idea that the difficulty of moving knowledge around is related to its stickiness intrigued me.

'To solve a problem the necessary knowledge and problem solving capabilities must be brought together at a single point. When this knowledge is costly to acquire, transfer and use it is termed 'sticky'.'

Von Hippel, 1994

It was this definition which made me think about the work of action researchers, as we generally set out to solve problems and, in doing so, we have to bring together knowledge and problem solving skills. So what makes knowledge sticky? Here we start to come into more familiar territory.

The cost of acquiring knowledge is related to how tacit or implicit it is. The more tacit the knowledge the greater the degree of stickiness, the more explicit the more able it is to leak out into other peoples' spaces, groups and practices.

Very Sticky	Deeply ingrained tacit skills
	Tacit skills that can be imperfectly articulated
	Tacit skills that could be articulated
Leaky	Explicit skills

The cost of transfer relates to two big issues. The first is how far and how wide you want to transfer it. As I discuss in the next section, the more boundaries the knowledge has to cross, the greater the amount of time the action researcher has to act as a broker. The other transfer cost is the amount of knowledge and practice that has to be moved. Now this is where we have to be careful about what we mean by transfer. It's important not to get too literal with this notion of transfer, treating knowledge as if it can be put in buckets and carried from one place to another. Knowledge exists in very specific contexts owned and created by particular people. Sometimes it's a kind of 'sacred' knowledge, in that it's hard earned and not really being created to be passed on. Other times, teachers only have part of the knowledge and understanding operating in a context and so this has to be pieced together. In other situations, the practices and knowledge that is to be transferred is highly nested.

By nested I mean it's set within the long term developments in a school, the work over several years of a teacher and their relationship with a particular class or group of teachers. All of which mean that the transfer of this kind of knowledge requires more than a lot of buckets.

The idea of there being a cost of use is an interesting one. It's not often discussed in action research, unless obliquely by reference to the emotional cost or by the difficulty of 'emancipating' teachers from existing sets of beliefs, but certain forms of knowledge are not 'user friendly' as they place increasing demands on teachers, challenge orthodoxies and can be hard to integrate into other aspects of their practice.

Taken together, these three aspects – acquiring, transferring and using – define how 'sticky' knowledge and new practices are. The idea of sticky knowledge raises questions for those involved in inquiry.

Key resource one

Almost any recent book on knowledge management will discuss sticky knowledge, but you could check out the original article quoted in many of them, which is interestingly about sticky information rather than knowledge:

Von Hippel E, 1994, *"Sticky Information" and the Locus of Problem Solving: Implications for Innovation*, Management Science, Vol 40, No 4, April

Key resource two

For a book about tacit knowledge try:

Snowden D, 2003, *Complex acts of knowing: paradox and descriptive self-awareness*, Special Edition Journal of Knowledge Management, Vol 6, No 2, May

Pause for thought…

1. What role can inquiry play in acquiring, transferring and using new knowledge and practices in a school or network?
2. How good is inquiry in dealing with these three aspects of knowledge management?
3. Have we traditionally, in inquiry, tended to concentrate upon one aspect more than another?
4. What other processes need to be integrated with inquiry to really un-stick knowledge?

Boundaries and Brokerage

Another useful metaphor from the knowledge management literature is the idea of boundaries and brokerage. As mentioned in the previous section, the cost of transferring knowledge relates to the number of boundaries it has to cross, but what do we mean by boundaries? This idea is not a new one but reminds us that when practitioners work together they quickly create small groups which gives them a sense of shared values and a place they feel comfortable in. These groups can be a positive or a negative within a school. We have all probably worked in schools with cliques that rebuff any new ways of working, as well as those where there are dynamic departments and working groups who develop new ideas. These groups create boundaries around themselves which define who is a member and who is not, what counts as acceptable and what is worthwhile. These boundaries are based on shared practices and ideas and they can act as barriers to the transfer of new knowledge.

Even within a school there could be numerous boundaries with some more resistant than others. Multiply this by the number that could be involved in a network of schools and the cost of transfer could get very high indeed. One response to this problem has been the idea of cross-school inquiry teams, drawing individuals from as many groups as possible. I would also suggest that at least one staff room cynic be included in such a team. If they changed their practice due to being involved in a piece of inquiry it is generally worth more than any number of feedback sessions or reports in terms of convincing other staff to try the change for themselves. Some networks have scaled up to network-wide inquiry groups, but the scope of networks means that there is very little chance of even covering the major groups within a school in such a group. So how do we cross these boundaries? Well we need two things, people and processes. We need **'brokers'** and **'boundary objects'**.

So what does the broker do?

They are outsiders to a group but have the skills and presence to enter them, be listened to and get them to consider whether the new ideas and practices developed outside their group can be translated into their way of working. This is not an easy tight rope to walk as they move between being non-members and members.

'Brokers must often avoid two opposite tendencies: being pulled in to become full members and being rejected as intruders. Indeed, their contributions lie precisely in being neither in nor out. Brokering therefore requires an ability to manage carefully the coexistence of membership and non-membership, yielding enough distance to bring a different perspective, but also enough legitimacy to be listened to.'

Wenger, 1998

Boundary objects

To act as brokers they need processes and tools to help them bring in these different perspectives, and these have been called 'boundary objects'. This is an object which is designed by one group with the intention of it being picked up and used by another; it is intended to cross boundaries. They do this by creating processes that cross boundaries and allow connections to be made.

'The boundary object does not in itself achieve the connection across boundaries, it enables the participative action that will enable the connection to take place.'

Thorpe, 2003

In the everyday life of a school there are numerous boundary objects being used to link the work of staff, from a good staff meeting or a well crafted newsletter, to a 'show and tell' session between staff. In terms of sharing and expanding the changes that result from inquiry in a network we need boundary objects that can cross multiple groups. I have seen schools give teachers the role of 'replicators'; they check-out the ideas created through inquiry and try them in their own classrooms. I have watched inquiry groups run staff meetings over a whole year to give the all the staff in a school the chance to comment and governors of schools being given the role of brokers by looking at how individual pieces of inquiry in a school could be used throughout a school.

Being a broker is not a comfortable role and devising effective boundary objects is a real skill. The overarching question in inquiry is whether we give sufficient attention to this area of knowledge management.

Key resource four

Wenger E, McDermott R, et al, 2002, *Cultivating communities of practice: a guide to managing knowledge*, Boston, Mass, Harvard Business School Press

---

Pause for thought...

1. How much are you aware of having to act as a broker across groups for your inquiry work?

2. In what ways might this role be given more attention in your network?

3. What kinds of boundary objects have you used to generate greater participation by staff with an inquiry process?

Key resource three

Wenger E, 1998, *Communities of Practice: learning, meaning and identity*, Cambridge, Cambridge University Press

The SECI model

The last idea I want to pick up from the knowledge management literature is on a different scale to the other two as it provides an overarching model for knowledge transfer. I chose this model, termed the SECI model, because it attempts to deal with the complex social nature of knowledge transfer, just as action research tries to do. It also has two other things going for it. First, a simple acronym, SECI, which helps you remember what it consists of. Second, it uses a strange term I've never come across before, 'autopoietic' (and no, I'm not sure how to pronounce it either), which has something to do with the idea of self, extended meaning and the beauty of language. I'm always a bit of a sucker for new terms.

The model can sit within the process of inquiry or can be used as a way of moving its findings around a school or network. It recognises that knowledge management is based on a combination of processes. This is where I draw on the work of one of my favourite writers on professional development, Anne Lieberman (1996). She sums up professional development quite simply as getting teachers into new relationships, giving them new roles and tools to use, and exposing them to new ideas and beliefs about teaching and learning. The devil is in the detail about how to combine these effectively.

The SECI model provides an overarching set of stages that need to be engaged in within a network if we are to learn effectively from inquiry. In particular, it raises the question of how we integrate inquiry with other powerful professional development processes. So let's look at each stage of the SECI model in this way. The following four questions should help you to do this:

1. If it's important to socialise knowledge can we use mentoring and coaching type approaches to support inquiry work being developed?

2. To what extent can you get teachers in a network to work alongside colleagues from different schools?

3. Inquiry assists the people involved to externalise their work, but what help do we give to other teachers in developing different ways of communicating what they are doing?

4. Combining knowledge into new models, case studies and materials for teachers and pupils is time consuming. How much of your resources and time have been allocated to this part of the process?

End note

I hope this think piece has been useful in terms of helping you think about inquiry in your network. I think we should always be open to play with new ideas and even if they don't stick they should help us think more critically about what we do.

So what does SECI stand for?

S	Socialisation	The socialisation of knowledge means that we need to concentrate on helping people learn from each other while they are engaged in practice, preferably joint work together.
E	Externalisation	Means helping people develop new ways of talking, writing or creating materials about what they know. This often involves the use of metaphors and analogies, something I think is particularly powerful, hence my fondness for the idea of sticky knowledge and boundaries discussed previously.
C	Combination	This is the process of making knowledge more integrated and systematically available to others. Often the goal of combination is to make a prototype or working model of the new practice you want to share. This could involve the use of case studies of inquiry or the materials developed as part of the process.
I	Internalisation	This is the process of building the knowledge into what you do. This could be through using a case study or by learning by doing – which brings us back to the process of socialisation.

Pause for thought…

1. How much support have you been given to develop new materials?

2. People need time and support to internalise new knowledge. What kinds of systems and processes are in place in your network to provide this support?

3. How will you monitor the effectiveness of any products you make and adapt them so that they can cross more and more boundaries?

4. What are your success stories for crossing difficult boundaries, for example getting across the primary-secondary boundary?

Key resource five

Nonaka I & Takeuchi H, 1995, *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation*, Oxford, The Oxford University Press

Reflective notes

Pause for thought...

Reflective notes

Pause for thought...

Reflective notes

Pause for thought...