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Academics and teachers: a complex relationship

Stuart Bevins and Gareth Price

Abstract

Collaboration between academics and teachers has become increasingly prevalent over recent years. Whether its aim is joint research or continuing professional development for teachers, collaboration seems to offer a realistic opportunity for reducing the perceived gap between theory and practice. However, collaboration is not merely academics and teachers working together on a common project. It is complex in nature and involves a range of requirements which must be satisfied in order to maximise the potential of the relationship. In this paper we will theorise on the nature of academics and teachers working together and suggest that a working relationship between academic researchers and teachers can either be one of three models: client-supplier, a coercive relationship or a collaborative one. We identify and unpack specific factors that underpin collaboration and suggest a number of concrete actions to establish it between academics and teachers. We draw heavily from existing literature and our own reflections on two collaborative projects which we have recently been involved with. We use data from these projects to provide a number of anecdotes from the teachers who participated to support our own reflections. Finally, we suggest that further research should investigate the different ways attempts to collaborate fail to build a more complete sense of the problems and potential of this special relationship.

Key Words:

Collaboration; CPD; Action Research; Science Teachers;

Introduction

Since the publication, in 2000, of *Professional Development: Support for Teaching and Learning* by the Department for Education and Employment in England responsibility for Continuing Professional Development (CPD) has sat with classroom teachers and schools. Prior to this teachers were often viewed as clients of CPD with university and external professionals perceived as the producers and deliverers of knowledge who know what teachers should learn to inform their professional development. This conforms to a technical rationality approach which identifies university and/or external deliverers as the 'experts' and teachers as the 'appliers' (Lopez-Pastor, et al, 2003). This approach has received some criticism as a top-down model which rarely takes the views and needs of teachers in to consideration and is primarily about increasing efficiency rather than developing self-evaluation processes (Leitch and Day, 2000).

We believe this approach to be untenable and support the increased use of action research, within the education community, as an effective approach to teacher professional development. We agree with Cochran-Smith and Lytle who suggest (1990) little attention has been paid to how teachers may play an important role in contributing to the knowledge base rather than being relegated to consumers of generated knowledge. They argue that teachers have extensive expertise and an obvious stake in improving practice but have few, if any, formalised ways of adding their knowledge to the literature on teaching.

Current literature which reports on action research and teacher CPD supports the notion that teachers' production of knowledge should enjoy equal value with knowledge produced by academics (Meirink, et al, 2010; Vescio, et al, 2008). Many reported uses of action research involve active collaborations between academics and teachers which indicate that co-production of knowledge, where teachers work with academics as colleagues and not subjects of research, is widely accepted within the education community (Butler, et al, 2004; Cordingly, et al, 2003; Ponte, et al, 2004; Borko and Putnam, 1998).

However, the nature and extent of collaborations between academics and classroom teachers is rarely reported in detail with favour given instead to reporting the positive outcomes incurred by such collaborations. It is worth pointing out here that we view

'collaboration' as both a reciprocal and recursive venture where individuals work together to achieve a shared aim through sharing the learning experience, knowledge and expertise. We view this as more than a simple intersection of common objectives which is so often the aim of cooperative activity between academics and teachers (Friend & Cook, 1992). Central to this richer notion of collaboration is a process of reflection whereby participants are able to learn within a shared environment and to develop professionally.

In this paper we theorise on the nature of academics and teachers working together, drawing from existing literature and our own experience of, and reflections on, two collaborative action research projects. We draw particularly from the work of Kamini and Figg (2011) who identified three factors common to all approaches which underpin successful collaboration. The factors are: time to engage and collaborate, workload, and group dynamics. We unpack these factors to create a model of collaboration which, in turn, leads to suggestions for concrete actions by academics and teachers to ensure effective and productive collaboration.

Addressing academic-teacher collaboration

While action research may well be an effective approach to teacher professional development it is important to ask whether or not there are specific models of action research which are better suited to fostering effective collaboration between academics and teachers than others. This is not an easy task as a wide range of definitions currently exist (Whitehead and McNiff, 2006; Berg, 2001; Rearick and Feldman, 1999; Cochran-Smith and Lytle, 1993). For example, McNiff and Whitehead (2006) explain a concept of 'living theory' whereby individuals describe influences on their own practices and that of others by continually asking 'how do I improve what I'm doing?' They use action reflection cycles to stimulate explanations of individual concerns in relation to values.

Berg (2001) suggested three modes of action research:

1. technical/scientific/ collaborative
2. practical/mutual collaborative/deliberative
3. emancipating/enhancing/critical science.

Each mode has a specific goal. The technical/scientific/collaborative mode sets out to test an intervention based on a prescribed theory or framework. The practical/mutual

collaborative/deliberative mode attempt to improve practice, while the emancipating/enhancing/critical science aims to support practitioners as they seek to better understand specific complexities and problems within their practice. Rearick and Feldman (1999) attempted to clarify what action research is and developed a framework composed of three dimensions: theoretical orientation, purpose and type of reflective process. Their framework enabled them to analyse various approaches to action research and to gain an understanding of the nuances of each approach.

Cochran-Smith and Lytle (1993) emphasised the legitimacy and importance of teacher research. In identifying varying types of teacher research (studies of classroom and school-based issues; journals and oral inquiries) they were able to highlight the importance of collaborative reflection, widen the notion of what teacher research can be, and argue that teachers are best placed to develop their ideas of practice and implement actions based on their local conditions.

From these few examples it is clear that there are many interpretations of action research and approaches to its use. While we acknowledge these different interpretations it would seem to us that it is the purpose and processes of the approach chosen that can have the greatest impact on collaboration between academics and teachers. Processes such as reflection and continuous dialogue are constant within all approaches to action research and it is these processes which lend themselves well to fostering effective collaboration between academics and teachers.

Supporters of action research are keen to emphasise a number of different features which contribute to the effectiveness of the approach for collaborative CPD and/or classroom inquiry. O'Grady (2008) suggests that action research can reduce the theory-practice divide because of its shared emphasis on action and research. The explicit valuing of action also helps to support the development of theory specifically to inform practice which is contextual. Ponte, et al, (2004) state that a fundamental component of action research, which is not a condition of most other approaches to inquiry, is constant dialogue between those who participate. This has the potential to produce effective, open sharing of aims, agenda, ideas and knowledge. This exchange is also promoted through the cyclical nature of action research. This is echoed by Curry (2012) who draws upon two collaborative studies with K-12 teachers. She suggests that reciprocity is critical in collaborative action research and places an obligation on

academics to include teachers in all aspects of data gathering and analysis. This is further highlighted in a review of literature on the impact of professional learning communities on teaching practice and student learning conducted by Vescio *et al* (2008). They report that existing research indicates that successful collaborative efforts include strategies that open practice in ways that encourage sharing, reflecting and taking risks necessary for change (p.84).

However, while the above strategies and features are important in establishing an effective approach to collaboration, Gore and Gitlin (2012) point out that the material conditions of work (p.36) of both academics and teachers can promote differences in roles and expectations. For example, teachers work within an environment which is specifically organised and regulated to achieve the aims of their profession, often related to raising students' grades and examination pass rates, which places them in a strong culture of accountability with potential for much short term and purely utilitarian thinking. Issues of time and workload of teachers have been reported (Otienoh, 2009; Farrell, 2004) and indicate that a change in school culture is often required to support the development of effective collaborations. These studies state that school Senior Management Teams (SMT) need to provide release time for teachers and structures which would enable them to engage more thoroughly with classroom inquiry through collaborative action research.

In contrast to this, the university environment is typically less structured, affording academics more flexibility in the use of their time and the choice of the work they carry out. The outcome of this can endorse differing views and aims of inquiry with teachers focused on situation-specific issues with short-term benefits while academics seek to produce more generalisable knowledge over a longer timescale.

In an attempt to extol the virtue of academic-teacher collaboration a number of studies have lauded the role academics can play in effective collaborations with teachers citing research expertise, acting as reflective partners and coaching as particular skills which academics can bring to the collaborative process (Harwell, et, al, 2001; Cordingley, et, al, 2003; Admiraal and Wubbles, 2005). This is supported by McLaughlin (2007) who suggests that teachers value the involvement of academics in collaborative processes and the skills and knowledge that they offer. However, existing research collectively agrees that it is not the skills which any one party brings to collaboration but the contributions made by all that shape successful collaborative action research projects (Platteel, et, al, 2010). This collective contribution is of fundamental importance in

identifying whether or not activity carried out by and between academics and teachers is indeed collaborative or client-supplier in nature or even benign coercion.

Conditions for successful collaboration

Platteel, et al (2010) report on a collaborative action research project in which 14 teachers, three college instructors and an academic researcher formed a partnership to design Language 1 in education in the Netherlands. They note the complexity of such collaborations and suggest that collaborations can manifest in different ways, particularly with regard to the academic's role. They highlight three such approaches: academics as facilitators who support teachers' action research, academics as critical friends with the aim of tightening the foci of identified problems under investigation, and academics as consultants who contribute their skills and knowledge to the collaborative process. Their observations are supported by a range of existing studies (Day and Townsend, 2007; McNiff and Whitehead, 2006; Hall, 2001) and provide a useful understanding of the varying range of inputs that academics can contribute to when engaging in a working relationship with teachers.

In addressing issues previously highlighted, Kamini and Figg (2011) offer useful insight into what specific factors should be considered in planning for an action research collaboration. They studied eight action research teams of university academics and teachers in Ontario, Canada and identify three distinct collaborative action research approaches. These can be distinguished by the nature of the question selected for research (whether classroom-focussed or devoted to wider whole school issues) and the action plan (whether to inform and change practice within a single school or across multiple schools). They also describe differences between the various approaches in terms of the mechanics of the way the research teams operated (how and when people met, the use of digital media, how the insights were implemented in the schools etc.) but identify three factors which underpin success in all three approaches: time to engage and collaborate, workload and group dynamics. They conclude that action research collaborations between academics and teachers must involve strategies that enable time and workload issues to be addressed and that group dynamics must involve collaborative decision making and, therefore, reciprocity.

We attempt to further unpack these factors in Fig 1 with group dynamics broken down into three more factors: Skill Set, Mutuality, and Cohesion which, taken together, constitute what we have termed 'team support'. Time to engage and collaborate and

workload we view as 'task support' whereby participants are supported to engage in the collaborative process by eliminating potential issues that may arise through the material conditions of their work.

Fig 1 approx here

Within the Team Support factor we identify 'Skill Set' as a measure of the interpersonal communication and team skills that keep the team functional rather than the research or technical skills relating to the topic under investigation. These team skills include drawing people into the collaboration, supporting teachers who may be unfamiliar with the, sometimes combative, nature of academic discussion and offering validation for insights that may, at first, be half-formed or apparently counter-intuitive. Teachers may well be very task-orientated because of the nature of their work and academics may need to help them to play with ideas and suspend judgement without feeling the process has descended into fluffy, unproductive talking. Equally, teachers may need to gently remind their academic colleagues of the reality of their day-to-day world with all the pressures of timetables, examinations, league tables and behaviour problems to root the research in reality. These team skills help to form the nature of the discussions rather than simply providing technical support.

'Mutuality' is a measure of the relative status of the team members. In settings with good mutuality no single person, or group, has control of the agenda. Good mutuality does not require all partners to be equally skilled in every area, for example an academic might have greater understanding of research procedures but this knowledge is made available to the team to access as desired rather than being the driving factor that mandates all decisions to the exclusion of other perceptions or requirements.

'Cohesion' we view as a measure of the value the members give to the team experience. Groups that exhibit good cohesion enjoy the process of working together and seek opportunities for new collaborations after a particular project is complete.

Models of failure

The model shown in Figure 1 is useful because it allows us to explore what happens when the degree of support for team or task is mismatched. Figure 2 shows four

possible situations with three types of failure and one success. In the optimum condition the collaboration is complete, the project succeeds and the members seek new ways to work together.

We suggest that the three ways of failing are different. Where support for team or task is poor almost nothing happens. In these circumstances blame is usually not given to members within the group, for example if teachers were not given enough time off timetable to meet they can hardly be blamed if the project falters. Similarly if academics have workload issues created by university management they cannot be blamed for project failure. Typically there is also little real activity so there is little sense of time wasted.

Figure 2 approx here

However, if task support is good and team support is poor the project is likely to fail and, this time, the blame is likely to be apportioned within the team. For example, team members may perceive issues of poor team working and power discrepancies being caused by individuals. In this case the team might see the project being inadvertently, or consciously, sabotaged by other team members. The task support may have allowed some work to be completed further increasing the feeling of frustration when the project eventually fails.

If team support is good but task support is poor the group spends time talking and planning but fails to deliver which, ultimately, leads to a failure. In this case the sabotage is perceived to have been provided by the management's unwillingness to support the initiative with time or resources. Participants may well have invested some energy to try to make progress so increasing the feelings of frustration when the project finally collapses. Both of these factors (management disinterest and wasted commitment by project participants) could reduce the willingness to engage when the next project is mooted.

We suggest that the latter failure modes will have a much more destructive effect on future collaborative efforts. It will also be difficult to rescue one of these failures by adding the missing support after even a short time as the cooperation of the team members is likely to have been damaged. For groups seeking to develop collaboration

this means that unless both task and team support can be delivered it would be more beneficial to opt for a different model of working that does not require collaboration with its exacting requirements.

Table 1: Possible combinations of support across academic/teacher collaborations

Academic		Teacher							
Task	Team	Task	Team	Task	Team	Task	Team	Task	Team
		+	+	+	-	-	+	-	-
+	+	++++		+++-		+---		+-+-	
+	-	++++		++--		+---		+---	
-	+	-+++		-+-		---+		--+-	
-	-	-+++		-+--		--+-		----	

Table 1 shows the possible interactions between academic and teacher task/team support (+ = good support, - = support weak). While the table does not indicate the statistical likelihood of the combinations it is worth noting that in only one combination (++++) from the 16 possible is the good support available across both factors amongst both participants. All other 15 combinations describe some degree of 'failure'. The source of the 'failure' (lack of team or task support for academic or teacher) is important.

An academic with strong task and team support could opt to work with a school which is weak in these areas by involving the school in research as a 'laboratory' or data-collector. In this instance the relationship is more of a client-supplier relationship where the supplier (the school) has made available some facilities for the academic team.

Where a school is strong but the academic team is weak a client-supplier relationship is again useful but in this case the client is the school which commissions, from the academic team, support for particular purposes, as defined by the school's needs and

plans. The academic team is tasked with supplied specific advice / insights but has limited or no control over the direction of the project.

If both the academic and the school departments have poor task and team support this is a coercion model. The only reason for engaging in this activity at all is that both parties have been instructed to do it. Neither of them has control or resources to match the task. One option here might be to organise ‘events’ that create a limited strain on the weak support structures in both parties rather than attempt to develop a collaborative approach involving action research. It is important to note here that taught courses, online toolkits and similar delivery-focussed approaches to CPD are well-established and often valued by teachers and should not be regarded as ‘second best’ option. They are arguably a better fit to the real conditions in some schools than attempting a collaborative action research project.

By characterising the different modes of cooperation between schools and academics as collaboration, client-supplier, or coercion and selecting an appropriate programme to match the identified purposes it is possible to avoid the danger of engaging on a cooperative venture that is not only likely to fail but also makes future joint projects less likely. In the context of CPD this leads to three approaches summarised in Table 2:

Table 2 Approaches to Cooperation

Support conditions	Approach
Good across both parties and both factors	This is a collaborative relationship where mutuality is enshrined and cohesion develops. Collaborative action research would be an appropriate and productive CPD strategy.
Good support on academic side but weak on teacher side.	This is a client-supplier relationship where the school is the ‘client’ in the sense of ‘client state’. They will be the recipients of, and dependent upon, support from the academic team (the more powerful sponsor). A more directive role for the academic will be appropriate here using their team skills to keep teachers involved and their task support to take on some of the work. This might occur when a team, including academics, is drafted in to solve a specific problem for a school where the problem is identified by outside agencies.

Weak support on academic side but good on teacher side.	In this approach academics can be used as consultants acting under the direction of the stronger teacher team responding to their requests in particular areas. Here the school is the client in the sense of a customer who is able to buy services to match their requirements. Academics are now in the role of deliverer, as opposed to manager, with the power in the hands of the school team. In this instance the academic team have been called in to contribute to the solution of a problem identified by the school and can be dismissed at any point if their contribution is not useful to the school's plan.
Weak support on both sides.	This is a coercion approach. The only reason for engaging in this activity at all is that both parties have been instructed to do it. Neither of them has control or resources to match the task. The best option here might be to organise 'events' that create a limited strain on the weak support structures in both parties. This can occur when teachers are required to respond to government-sponsored changes in the curriculum.

It is tempting to accept the *status quo* when looking at possible cooperative ventures and so aim only to use models which do not strain team and task support availability. This could reduce development by lowering expectations. It is also tempting to imagine that task and team support is conveniently binary, good or bad, while experience confirms that support comes in continuous 'levels of support'. Table 3 is offered as a way to start to subvert the given parameters in any potential cooperative by identifying strategies that could stretch 'poor' support into 'good'. This approach should encourage development and lead towards more truly collaborative activities supported by strong underlying support rather than simply a desire to 'collaborate' on the part of teachers and academics.

Table 3: Planning for collaborative working

Domain	Factor	Academics ...	Teachers ...
TASK	Time to collaborate / meet	<ul style="list-style-type: none"> • Book in time • Agree time with university • Be flexible / sensitive about time of day for meetings 	<ul style="list-style-type: none"> • Book in time • Agree time with school SMT • Be flexible / sensitive about time of day for meetings
	Workload	<ul style="list-style-type: none"> • As above, and find / agree funding 	<ul style="list-style-type: none"> • As above, and find / agree funding
TEAM	Skill set	<ul style="list-style-type: none"> • Research teaching context • Develop 'team skills' 	<ul style="list-style-type: none"> • Develop 'research skills'
	Mutuality	<ul style="list-style-type: none"> • Agree to meet at school • Agree joint publication • Develop agreed roles • Give work sufficient priority 	<ul style="list-style-type: none"> • Develop agreed roles • Give work sufficient priority
	Cohesion	<ul style="list-style-type: none"> • Use appropriate communication technologies (e.g. phone, email, bulletin boards, skype etc.) • Meet off-task occassionally? 	<ul style="list-style-type: none"> • Use appropriate communication technologies (e.g. phone, email, bulletin boards, skype etc.) • Meet off-task occassionally?

Reflections on two action research collaborations

To further explicate our argument we describe our reflections on two CPD projects intended as collaborative action research. The Teacher Action Research Cluster (TARC) and the Digital Futures project were designed to enhance teachers' professional development through an action research approach to classroom and wider school inquiry. Both projects engaged the participating teachers in inquiry through teams, pairs or as individuals. Table 4 shows the focus and mode of the action research process taken for each programme:

Table 4: Focus and Mode of Approach

Mode	Topic	Programme
Team of four	pupil voice and curriculum planning	TARC
Pair	enhanced practical skills in psychology	TARC
Individual	video analysis of STEM lessons to identify good practice	TARC
Individual	enhancing boys' literacy through STEM activities	TARC
Individual	Active learning in physics	TARC
Team of four	Constructing a learning platform for A-level science	Digital Futures
Team of four	Construction of a blog to promote communication between school and parents	Digital Futures

The academic researchers (the lead author was involved in both programmes while the second author led the Digital Futures programme) gathered data in order to elicit participating teachers' views of the action research process they engaged in and the reflective tools they used. Interviews and/or reflective discussions were undertaken with all participating teachers. **Systematic coding of transcribed interviews and notes made during reflective discussions led to the development of enabled members of analytic categories that illustrate the teachers' views. Analysis of data was completed** inductively based on open coding (Cohen and Manion 1994). Text units were arranged from the notes and emerging codes were then organised into themes based on converging responses from teachers, which led to the identification of common patterns.

Teacher Action Research Cluster

The TARC programme involved seven school science teachers and two Further Education (FE) psychology lecturers. This group split into a team of four, three individuals and one pair. Three academics completed the overall TARC collaboration. The Digital Futures programme consisted of two teams of four teachers, from a primary school and a secondary school and two academics. All six schools and the FE College are from the Yorkshire and Humber region of England.

A particular feature of the TARC project was a two-day professional training course which was delivered by the three participating academic researchers. The course provided the teachers with structured support and guidance in undertaking action research including action research cycles, action planning, data gathering and analysis, reflective processes and reporting. Teachers were then supported by one of three academic researchers through school visits and planning meetings throughout the 12 month duration (for a greater description of TARC see Bevins, et, al, 2011).

We suggest that the elements of the TARC project provided good task support and good team support. From the outset the participating teachers received effective support from their school SMT which meant that they were able to reduce potential problems of lack of time to engage and collaborate and excessive workload as the SMT helped to spread the pressure:

I was worried about the time commitment but I was really keen to get involved and the Head was really supportive and helped with finding time to do the research and meet with you (TARC primary science teacher).

As the driver for the project was the teachers' professional development, not just research outcomes, the project agenda was owned by all participants and not just the academic team. This provided strong mutuality among the group through a sharing of existing knowledge and skills, ideas and new emerging knowledge. For example, the teachers valued academic input regarding action research processes but were also keen to add to that input as the experience grew:

It was gratifying to be able to share what we had learned through our research, but to be able to suggest alternative ways of looking at and presenting data really built my confidence in doing action research and working with experienced researchers (secondary science teacher TARC).

The knowledge and skills made available by the academic team during face-to-face sessions and school visits was reciprocated by the teachers providing their unique knowledge and understanding of their school situations. The group mutuality led to a good level of cohesion which, in turn, enhanced the collaborative process. Establishing good cohesion meant that constant dialogue was sustained, ideas and knowledge were

shared consistently and that the group emerged from the collaboration with a shared identity:

I honestly feel as if we've achieved something as a team. Even though I've worked on my own project, which was different than the others, it feels like we've all been a part of producing a something that's whole, you know? Like we've got our findings and somehow they all add to one body of knowledge (primary science teacher TARC).

In reflecting on the TARC project we suggest that the essential task support was established early on through the school's willingness to encourage their teachers to participate. Additionally, the academic team had appropriate funding and time to offer good team support which enabled the participating teachers to reciprocate establishing good mutuality and cohesion. Our reflections and evidence gathered from the TARC project indicate that the project produced effective 'collaboration', was completed and further involvement in action research by the participating teachers was stimulated:

We are now planning to work with other departments in the school and take the research further (secondary science teacher TARC).

Digital Futures

In contrast, the Digital Futures project highlights failures in providing the essential levels of the particular task and team support needed to produce a real collaboration.

To begin the Digital Futures project a two hour discussion session was held at both schools which focused on highlighting action research skills and techniques, identifying an initial problem or issue to be addressed and planning. The two groups also used a planning document produced by the participating academics to support each group's strategy and to act as a stimulus tool for reflecting on their action research steps. The teachers were then supported by the academics, primarily through electronic conversations and one school visit over the six month duration. The limited time for the initial face-to-face session did not allow the academic team to share their knowledge and skills in action research adequately as expressed by one of the participating teachers:

The session was good but I'm still not sure about action research. I don't think we had enough time to really get an understanding of how to do it and what is required. We know what we want to do but not how to do it (primary teacher Digital Futures).

Even though the group were aware that follow-up meetings were planned the restricted amount of time given to the initial session did not provide adequate team support and left the teachers without an emerging sense of cohesion or mutuality. Instead, they had little or no ownership of the project and their own status within it, which in turn, did not stimulate a sense of value of the team experience. This breakdown of the team ethos also meant that some teachers were inclined to 'push on regardless' leaving others behind in an attempt to complete some meaningful work. This highlights the importance of task support in identifying time to engage and collaborate and organising workload prior to beginning the project. However, in the case of Digital Futures this was extremely difficult for the teachers involved.

It hasn't been easy to find time to come together and share ideas and plan. Its easier for me, with my role as Advanced Skills Teacher (AST)...Im expected to do this sort of thing, but for the others...they have full timetables (secondary science teacher Digital Futures).

Although the Digital Futures programme was driven by the needs of the teachers, as identified by them, they still could not commit adequate time to developing their involvement. While the SMT of each school were generally supportive the fact that this project did not have sufficient funding to resource teacher cover was a major factor in the teachers' ability to address issues of task support:

If we had funding to pay cover costs it would have been easier to have more planning meetings (secondary science teacher Digital Futures).

Based on our reflections and evidence gathered during the Digital Futures project we would suggest that the project failed—it was a 'non-starter', only a partial product was completed and the experience has been evanescent. However, both the teachers and the academic team have recognised the value of the failure as a learning experience particularly in terms of task support needed to initiate a project:

The project has made us think about our involvement in CPD approaches like this and what we need to do to make it happen. Finding time is always a problem but at least we know that we need to do something about that (secondary science teacher Digital Futures).

In reflecting on these two projects and current literature we believe our thinking has enabled us to identify key strategies and factors which will inform future action research collaborations with teachers that we engage in. We now consider the reasoning behind thinking about alternative approaches which may influence how academics and teachers plan potential collaborations.

Thinking about alternative approaches

We have shown that collaboration is a demanding target and that merely espousing it as a valuable and productive strategy is not enough. Team and task support must be good and, if either fails, the chances of future collaborations are reduced. This is not a zero sum game - a bungled attempt at collaboration has the potential to drive development backwards not merely maintain the, inactive, *status quo*.

However, we recognise that in straightened economic circumstances task support is difficult. Team support is also demanding in terms of time and skills and can often be dismissed as less important than just 'getting on with it'. Time and energy spent developing the team can be perceived, when everyone is busy and time-stressed, as merely a waste. So, what approaches to academic-teacher cooperation are viable where what we view as collaboration is not possible?

Specifically this might mean opting for a different approach to academic-teacher cooperation that matches better the available support. We feel that looking at a facilitation model might be appropriate where an academic has task and team support but the teachers are limited in terms of team support. In this instance the academic would be responsible for driving the cooperative venture and supporting where required. If the situation was reversed and a strong team of teachers with good task support was partnered with an academic with limited support in those areas the academics could act as an expert offering technical input under the control of the strong teacher team. It is tempting to see these approaches as less authentic than the collaboration we have described earlier. However, they have the significant advantage that they are more likely to succeed than attempting a collaborative approach with limited resources and are unlikely to produce the inhibitory effects of failed attempts at collaboration we have identified. We suggest that these alternative approaches would

benefit from further research to produce a palette of cooperative models that could be deployed to better meet the resources available for a particular project.

Conclusion

Our learning from existing literature and from our own reflections on the TARC and Digital Futures projects has enabled us to develop our thinking and inform the way we will view and participate in future collaborations with teachers. It is clear to us that detailed initial planning is needed to identify and address the specific task support and team support needed for both teachers and academics to engage in effective collaboration. Where the required conditions cannot be met we will seek alternative, more suitable, approaches such as a client-supplier approach or facilitation approach. However, while we recognise there are competing or alternative approaches we do not advocate choosing the simplest one. Instead, we suggest that initial planning, through open dialogue between all participants, should take account of all the necessary variables which would then allow the correct matching of strategies and approaches with the desired aims of the cooperation. In this way we feel it is possible to avoid later realisation that the intended cooperation is doomed to failure, not through incompetence, but in not recognising fundamental conditions needed to allow all participants to engage thoroughly.

We suggest that it is important that future research seeks to gather evidence of the different failure modes and their ongoing effects by interviewing team members who have been involved in cooperative ventures that did not succeed. We suspect that findings would reveal recognition by team members of the gaps in support (team or task) and how their learning will inform their future thinking. We feel that such research would add to the growing body of knowledge on cooperation and collaboration, which in turn would provide support for the argument for collaboration between academics and teachers.

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