

Collaborative Action Research (CAR)

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Introduction

Collaborative Action Research (CAR) is a core element for working to improve educational and public services and is a core component of a model for improvement for Scotland's Public Services. (Chapman et al. 2012, Chapman, C and Hadfield, M 2010, Donaldson 2012, Ainscow et al., 2012, OFSTED, 2000; Harris et al, 2005, Harrison, C. Hofstein, A. Eylon, B.S. & Simon, S. 2008) Sometimes the term 'Collaborative Enquiry' is also used. It uses focused systematic practitioner research to critically examine current arrangements, make changes based on evidence, monitor the impact of these changes and refine and adapt them as appropriate. CAR can be seen as an overarching framework that can draw on a range of methods such as lesson study and instructional rounds. Importantly, effective CAR involves a team of practitioners and, where appropriate, partner service colleagues working to plan and co-ordinate research activities. CAR has particular value for practitioners in order to research focused questions designed to help close the attainment gap.

CAR has the potential to contribute to:

- Improving student learning
- Improving individual professional practice
- Wider professional development
- Combating professional isolation.

CAR is used worldwide as an effective means of lifting the burden of improvement from the shoulders of unsupported individual teachers and enabling them to tap into the collective knowledge and experience of a broader group of practitioners. It enables free and open discussion of what works, what hasn't worked and what needs to be improved and is a highly effective form of professional development with immediate practical relevance.

The effectiveness of collaborative research has been recognised for many years and has been reflected in many major partnership and collaborative programmes in which groups of schools worked with each other, and with other key agencies, to tackle specific issues. This form of joint working is considered to have the potential to address the under-achievement of disadvantaged groups, allowing schools and teachers to explore the impact of different methods and approaches that have been tailored to cater for the unique mix of students in their own classrooms. Key elements in the collaboration are the careful use of performance and contextual data and access to expert advice and support from local authorities and university researchers.

For the individual in the classroom, CAR bridges the 'gulf' between theory and practice. It converts academic concepts of 'best practice' into practical ways of improving outcomes with real students in real classrooms. It is what happens when schools and teachers research the changes they are implementing as they happen and it gives teachers the chance to 'flesh out' and adapt the solutions proposed by researchers so that they can work in real, specific situations. CAR also gives academic research a personal dimension that enables teachers to reflect on ideas in practice and create their own solutions.

Key Facts

CAR as part of a model for improvement for Scotland's public services

CAR is an integral part of a broader three-step model designed to support delivery of interventions that have a positive impact on inequity and attainment. The three steps can be summed up in three questions:

- What are we trying to accomplish?
- How will we know that a change is an improvement?
- What change can we then make that will result in improvement?

This is, however, not just a simple three step/full-stop process. Each trio of steps can be viewed as one of a series – a single stage in a progressive cycle of change in which these three questions are repeatedly asked and, for each revolution, reviewed in order to establish

- What works?
and
- What needs to be changed and how?

The model requires engagement in a constant process of PLAN, DO, STUDY, ACT

As with any research initiative or programme, it should be considered and applied in the context of *Six Key Questions* that are crucial in the delivery of any change programme.

Six Key Questions:

- Is there an agreed AIM that is understood by everyone in the system?
- Are we using all our knowledge to find the RIGHT CHANGES and prioritise those likely to have the biggest impact in relation to our aim?
- Does everyone UNDERSTAND THE METHODS we will use to improve the system?
- Can we MEASURE and report progress on our improvement aim?
- Are PEOPLE and RESOURCES deployed and developed in the best possible way to support improvement?
- Do we have clear plans for INNOVATING, TESTING, IMPLEMENTING and SHARING LEARNING so we can translate and apply the improvement more widely?

What does CAR look like?

CAR looks different in different circumstances but is characterised by these activities, linked here to three key phases:

Phase 1: Preparing the ground

- Analysis of context (Where are we now?)
- Agreeing research questions (What are our agreed key aims and concerns?)
- Agreeing purposes (Can we measure progress and impact? What would success look like?)

Essential elements of this first step are to question what is often taken for granted and to begin looking at existing knowledge about what works

Phase 2: Exploring the evidence:

- Using the available expertise (how do we exploit internal and external knowledge?)
- Collecting data (what further evidence do we need?)
- Making sense of the evidence (what new insights do we have?)

Phase 3: Testing change

- Deciding on actions to be taken (What changes do we need to make?)
- Implementing a strategy (How do we lever and embed change?)
- Monitoring outcomes. (How do we know we have made a difference?)

Reporting on activity and results is a key activity at every stage and findings need to be produced in a form that can be accessed and shared with other practitioners. These findings are the basis of on-going reflection on action that, in turn, informs future planning and the refinement of problem identification and activity.

Phase 1: Preparing the ground

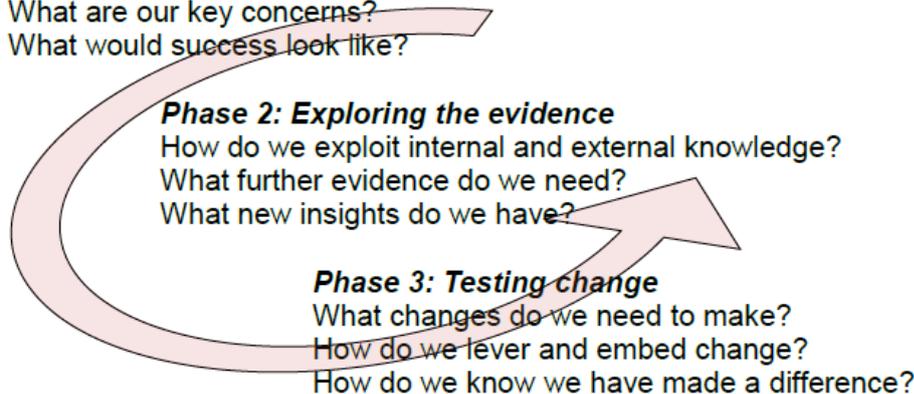
Where are we now?
What are our key concerns?
What would success look like?

Phase 2: Exploring the evidence

How do we exploit internal and external knowledge?
What further evidence do we need?
What new insights do we have?

Phase 3: Testing change

What changes do we need to make?
How do we lever and embed change?
How do we know we have made a difference?



There are **nine** action steps that can be used to guide and plan CAR and it is important to recognise that they are likely to overlap. Consequently, the implementation of the plan that is developed will involve a set of interconnected actions. Many will occur in parallel and it is likely you will move back and forth between phases and action steps. You will revisit ideas and refine understanding and actions. Taking a more detailed look at each specific action step in turn:

Action Step 1. Analysis of context- This involves generating an overview of the current situation and defining a focus for the enquiry. Teachers involved in the school's collaborative research will need to think about what they already know about the situation- What their 'hunches' are and what evidence is readily available. What further evidence is required to enable them to develop a set of enquiry questions? Many of the proposals focus on this phase of activity.

Action Step 2. Agreeing enquiry questions- Strategic questions are crucial in adopting an enquiry-based approach. They determine what information is needed and how it should be collected. These questions must be generated by practitioners themselves. This ensures the focus is on 'real world' issues and that the findings of the investigations will be meaningful and relevant. This is why it is so helpful to have members involved in the school's collaborative research team who have different perspectives on the life of the school (teaching and non-teaching, perhaps even students). The questions should be refined to ensure they are specific to a particular cohort/ group of learners and focus on the relationship between socio-economic disadvantage and low educational achievement.

Action Step 3. Agreeing purposes- At this step it is important to clarify the school's collaborative research team's shared understanding of the questions and issues in hand before checking them out with a broader group. This involves reflecting on what the initial 'hunches' and considering what analysis of the existing evidence suggests. Discussions include priorities for action and thinking about who needs to be involved. At this stage the school's collaborative research team may decide additional evidence is required. This phase is about generating a wider constituency and ensuring the issues the collaborative research team is raising resonate more widely across the school and partnership.

Action Step 4. Making use of available expertise- Here the collaborative research team will need to identify what expertise exists within their group, the school, partnership, the wider programme and beyond? What are the gaps in the expertise? And from where/ how can these gaps be filled? It is at this action step that specific methodologies such as Lesson Study, Learning Walk-Throughs etc. might be employed to support partnership working.

Action Step 5. Collecting data- There is a wide range of evidence available to those involved in school collaborative enquiry. (This may include observations, interviews, focus groups surveys, Lesson Study etc). It is also likely to include statistical material that is readily available within the school and across partnerships of schools, such as attendance and performance data. This gives a general picture of what is happening in the school in relation to the issues under consideration. What is then needed is a much more specific analysis of the local situation, using qualitative data, probably including evidence provided by the students. Previous work has shown that such evidence can provide a powerful means of moving schools forward, not least because it may provide 'surprises' that challenge the assumptions of staff as to what happens within their classrooms. In so doing, it may also draw attention to students who are being overlooked.

Action Step 6. Making sense of the evidence- Each school collaborative enquiry team will need to analyse the evidence and orchestrate a widespread discussion within their schools. It is here that involving representatives from partner schools in these discussions, not least because 'outsiders' can helpfully ask questions and spot issues, trends and themes that 'insiders' may

overlook. Where this is well led, it is a means of drawing people together around a common sense of purpose. Other projects note this process is a particularly effective means of encouraging innovation and experimentation. Clearly, the most important role of the collaborative research team is to coordinate and stimulate this analytical process.

Action Step 7. Deciding action to be taken- Having established areas for development, it will be necessary for the collaborative research team to formulate strategies for involving the school community to move forward. Here, the overall approach is based on the assumption that *schools know more than they use*. Therefore, the logical starting point for development is with a detailed analysis of existing ways of working. This allows the best practices to be identified and shared, whilst, at the same time, drawing attention to ways of working that may be creating barriers to the learning of some students. One of the most important aspects of formulating the strategy is moving beyond the spreading of accepted best practice by innovating new practices. This requires injecting new ideas, and evidence from other sources. At this point it is helpful to remember the old adage, *educational change is technically simple but socially complex*. In other words, planning the actions that are needed is likely to be relatively straight forward; the challenge for the team is to find ways of getting everybody involved to implement them.

Action Step 8. Implementing a strategy- The school collaborative research team will need a plan for implementing the intervention they have developed as a result of their analysis of the situation. This will involve identifying the resources required to support the change, a plan of action which moves from initiation to implementation through to embedding the change so it becomes an established norm or way of working which is sustainable in the longer term.

Action Step 9. Monitoring impact- As the collaborative research team moves forward with its plans, it is necessary for the changes implemented to be carefully and frequently monitored. Gathering evidence about what is happening as developments progress is crucial. This will determine their impact on the experiences of students and other associated outcomes. Examples include informal comments made by staff or students, or video recordings of meetings or activities. Whilst the work of the collaborative research team is key in coordinating this, senior and middle managers must also be involved in order to encourage an 'inquiring stance' throughout the school. This phase is supported by the collection of a diverse range of evidence of impact to offer a 'fuller picture' than can be provided by relying on accounts or statistics alone. As the school's collaborative research team comes to the end of this part of the process they will be in a position to analyse the new context they have created and thereby enter the next spiral of the cycle.

Example – Raising attainment in P5 mathematics with a focus on gender, EAL and SIMD

Phase 1 – As part of a local and national initiative, two primary schools in the same local authority collaborated to raise attainment in maths – particularly for boys and learners from minority ethnic backgrounds. Their project draws on the experiences of teachers involved with courses and professional learning and development provided by Dr. Lio Moscardini of the University of Strathclyde. Dr. Moscardini provided the teachers at both Crookfur and Thornliebank Primary Schools with three staff development sessions on CGI in September/October 2014¹. He supervised one teacher who completed an introductory class on CGI in December 2013 and who was focusing on CGI and Lesson Study for a Masters thesis undertaken at the University of Strathclyde. He also tutored two teachers, one from each school, on the same University of Strathclyde

¹ CPD dates which took place in Crookfur Primary also attended by staff from Thornliebank Primary - 30 teachers in total: (3 x 2 hour twilight sessions); 10th September 2014; 1st October 2014; 10th October 2014.

Masters module that provided an introduction to CGI which they completed in December 2014. This is the only such module in the UK. Dr. Moscardini also provided an opportunity for the teachers from both schools to engage with an active and international online CGI discussion forum he had established and the teachers were invited to attend the face-to-face University of Strathclyde CGI Network meetings that Dr. Moscardini hosts for teachers in Scotland. Dr. Moscardini's work was independent of the SIPP project run by ROC and was contracted directly with the University of Strathclyde by the schools. The ROC team supported teachers to develop a CAR approach that would help them assess the impact of their SIPP project approach that was informed by their CGI course work and professional development.

Dr. Moscardini notes that CGI is complex and its development requires time, noting that it takes at least three years, with support, of teachers working with CGI in their classrooms to develop a good understanding of CGI and longer, usually at least five years with further study before leading its professional development with colleagues. Dr Moscardini also noted that some of the work distributed by the schools evidenced teachers' misunderstandings about important aspects of children's mathematical thinking which would affect children's learning. This was not unusual given the limited experience of CGI of the teachers leading discussions.

Teachers in the East Renfrewshire Partnership have drawn on their learning from Dr. Moscardini's CGI course to develop pedagogical approaches adapted to the needs of their learners and the local context. The teachers involved believe that their CAR activity is demonstrating that these approaches have demonstrated positive learning outcomes.

The project involved staff from both schools, including 'Maths Champions', working closely with the headteachers, the Quality Improvement Manager and Quality Improvement Officer. The focus of the research was agreed on the basis of a full analysis of students' attainment in maths across both schools. This was also used to identify similar groups in both schools.

Phase 2 – The teams agreed that CGI would inform their innovative pedagogy and a series of lessons were planned using a problem-based approach. The partnership's project also used the Lesson Study approach to help develop, evaluate and refine their innovative pedagogical approaches. Other evaluative resources were developed across this partnership, including baseline and follow-up:

- Centre for Evaluation and Monitoring (C.E.M) tests (Primary)
- Bespoke scale created to measure distance travelled by each student
- Myself As a Learner questionnaire (MAL) for students
- Student focus groups
- Parent events and surveys
- Surveys and focus groups with colleagues
- Analysis of the activity included:
 - The establishment of teacher reading groups to reflect on and discuss the various Lesson Study and CGI – related texts.
- Teachers have worked with other agencies, such as the Local Authority, to 'drill-down' into school level data on inequality so that it can be used to shape provision to meet students' needs and to track impact on individual students. The Local Authority's psychological

services have also helped interpret data so that it informs practice for specific groups of students.

- Work with the University of Glasgow on an overall evaluation approach and support with analysis. Phase 3 – Initial analysis was conducted and demonstrated a positive impact on primary students' mathematics:
- Students are more confident and have a more 'can do' attitude to problem solving.
- Children are developing their own strategies and exploring their learning through discussion and questioning.
- Students see themselves as problem solvers.
- Students are more engaged in the sessions and most students choose more challenging questions
- Students increasingly explaining findings both orally and in writing in pair, group and class situations.
- All students are highly motivated - teachers identified that this is not always the case in other areas of the curriculum.
- Teacher questioning is being used effectively to identify all students' understanding

The partnership's learning and teaching intervention was evaluated as effective and expanded across the two pilot schools at a pace that suited the school context. The support of the Local Authority has eased the inclusion of its development in School Improvement Plans. Colleagues from other Local Authorities have taken ideas from this pilot project and adapted them for their own contexts.

Outcomes from this work are being reported in diverse formal and informal ways – through increased use of social media, including Strathclyde University's CGI Network and CGI Scotland Facebook page administered by Dr Moscardini, so that teachers can increasingly share experiences and ideas using this medium and through the Local Authority's facilitation of time for reflection and knowledge sharing. A report was presented at the authority's headteacher conference and the authority is looking at scaling up the approach to other schools. The project has also informed the work of another SIPP partnership.

Suggested reading and links

<http://cadres.pepperdine.edu/ccar/define.html>

Schneller, L. and Butler, D. (2015) Collaborative Inquiry; empowering teachers in their professional development, *Education Canada*, 54(3): 18-22. Available at <http://www.cea-ace.ca/education-canada/article/collaborative-inquiry> accessed 4 May 2015.

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