

Networking practitioner research in networked learning communities



Summary:

Networking practitioner research is an approach to school improvement and teacher continuing professional development. It emphasises action research being done by schools and networking among schools. It positions teachers as researchers and teachers as collaborators. In science education, networking practitioner research has been identified as important in building the skills and knowledge of science teachers across the three science subjects. In the UK many science teachers are expected to teach science subjects which are not their area of specific expertise. This best practice was captured by the South London Networked Learning Community as part of a UK government funded Networked Learning Communities (NLC) programme conducted between 2002 and 2006.

Aims:

To provide a model of teacher-led action research that takes place through collaboration and networking with colleagues across multiple schools according to the following purposes:

1. Purposes of practitioner research:
 - Teachers' professional development—collaborative practitioner research that involves individual teachers in critically examining their own practices
 - School improvement—schools engaging in research in order to enhance teaching and learning
 - Knowledge creation—schools carrying out research in order to contribute to validated public knowledge about good practice
2. Purposes of school networking:
 - Mutual support and sharing of ideas

- Engagement in joint research—e.g. several schools testing solutions to shared problems; several schools testing innovations in different contexts; several schools involved in randomised controlled trial
3. Sharing of good practice/innovation transfer—dissemination of research findings into good practice has been resistant to solution—best practice has to be demonstrated, not just explained, and must be practised through trial and error, through the creative adaptation of the innovation to be transferred

Main activities:

Teacher-led action research on their own practice in science teaching. Networking between science teachers in different school sites.

Narrative:

Networked practitioner research assumes that teachers are researchers of their own practice--self-inquiring practitioners continually and continuously engaged in reflexive and critical evaluation of their own theories and practices—within networks of schools, research and teacher education institutions. In the South London Networked Learning Community, teachers from across different institutions teamed up to explore shared classroom interests and problems in science teaching and learning. These areas for teacher-led action research included "independent learning by reflection in science," "students' self-perceptions in science," "organisational structures for thinking in science," and "higher-order thinking skills in science." Participating teachers in the South London NLC articulated the benefit of the approach as: "action research as enquiry," "evidence-based reflective practice," "engendering a culture of enquiry in the schools," "constructive criticality," and "creating a culture of innovation, creativity, and risk-taking."

Based on the case study of best practice in networked

practitioner research at the South London NLC, as well as partner networks in the national programme, the project findings offer a model of Research, Enquiry and Professional Learning which is based on a four-stage, cyclic model of:

1. posing questions
2. taking action
3. collecting evidence
4. reflecting—and re-posing questions

In order to enable cycles of professional inquiry, the educational institutions and their wider networks in the project had to have:

- a commitment to systematic questioning of one's own teaching
- the commitment and skills to study one's own teaching
- the concern to question and test theory in practice

A more detailed breakdown of how to promote inquiry amongst trainee teachers working within school-based networks is as follows:

1. Developing and sustaining supportive and invigorating relationships—information sharing and psychological support; openness and mutual trust; respect for diversity of contributions drawing on teachers' existing knowledge and experiences
2. Determining clear purposes and strong commitment to the work—developing common core values and beliefs; establishing shared understandings of purpose, relevance, ownership & accountability
3. Ensuring voluntary participation—variety of activities and structures for members to work flexibly and in a range of ways, with different levels of commitment, to suit professional and personal needs
4. Engaging and maintaining commitment of school leadership
5. Building effective and flexible communication strategies—systems to support members;

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recognise importance of discussing practices and shared issues; provide means of disseminating work in ways which are useful in different contexts

- Learning from alternative perspectives within and beyond schools—drawing on knowledge and experiences of range of members, including students; involving other institutions, such as universities, to provide training on research

methods, theory and longer-term critical challenges to the network's development

- Maintaining resources in terms of time & energy—ensuring sufficient resources to get the network started and sustained; recognising time required for teachers to build relationships, take risks and find creative solutions to shared problems.



Methods of learning/training:

Blended in-school training

End user:

Teachers

Involved actors:

researchers and national body for school improvement (NCSL)

Location:

In school continuing professional development programmes

Languages available:

English

Where to find the application:

McLaughlin, C, Black-Hawkins, K, McIntyre, D & Townsend, A (2008) Networking Practitioner Research (Abingdon: Routledge)

Evaluation parameters:

The Best Practice was part of the UK government funded Networked Learning Communities (NLC) programme conducted between 2002 and 2006. More than 134 school networks took part, involving approximately 35,000 staff and over 675,000 pupils. Best practices were studied and evaluated in detail by a team from the University of Cambridge school of education. For the evaluation, six NLC networks were studied, each one consisting of a cluster of schools which acted together to identify and carry out research on an area of school improvement. The research team carried out interviews with participating teachers, collected documentation and observed network sessions and lessons intended to demonstrate the effects of practitioner research. A questionnaire was completed by 651 teachers participating in the networking practitioner research programme.

Duration:

Open-ended. The South London NLC programme continued for 3 years with funding.

Optimum number of participants:

In year one of the programme, 12 teachers participated across 6 schools; in year two this scaled up to 24 teachers in 6 schools; and in the third year of the programme 48 teachers participated across the cluster of 6 schools.

Additional information or resources:

A substantial databank of resources from the entire NLC programme is available at: www.nationalcollege.org.uk/index/about-us/national-college-initiatives/previous-initiatives/networked-learning.htm
Please include high quality photos: not available

Teachers' Competencies

1	subject matter/content knowledge	x
2	nature of science	
3	Multidisciplinary	x
4	knowledge of contemporary science	
5	variety of (especially student-centred) instructional strategies	x
6	lifelong learning	
7	self-reflection	x
8	teaching/ learning processes within the domain	x
9	using laboratories, experiments, projects	
10	common sense knowledge and learning difficulties	
11	use of ICTs	
12	knowledge, planning and use of curricular materials	x
13	Information and Communication Technologies with Technological Pedagogical Content Knowledge	

Mapping best practices with main principles



1. Building interest in natural science phenomena and explanations:

The South London NLC emphasized the importance of practitioner-led action research which focuses on students' own perceptions of themselves as science learners, and exploring strategies to build their curiosity and independent motivation for learning in science.

2. Building up informed citizens: Students understanding the nature of Science & Science in society:

The South London NLC emphasized the importance of science learners developing their own independent capacity for drawing conclusions based on secure evidence and rigorous argumentation. This research supports the research showing that science learning needs to take place in the context of students' understandings of societal issues and problems, and that science is for all rather than just for future science specialists.

4. Understanding students' concepts and learning style about of science phenomena:

The South West London NLC focused on exploring students' self-perceptions and attitudes towards science education, in particular by focusing on their capacity for independent reflection on their own learning and their learning styles.

6. Understanding science as a process not as stable facts. Using up to date information of science and education:

The South London NLC has emphasized students learning science through independent thinking. This is in line with the stress on science as a human activity and on the crucial connection between the social production of scientific knowledge and the rigor and reliability of scientific evidence and its facticity.

8. Doing science: experimenting, analyzing, interpreting, redefining explanations:

The South London NLC highlights the importance of students' mental activity in science education—their ability to draw independent conclusions from systematic collation and evaluation of data, to use organizational thinking structures to model the process of argumentation. It suggests using organizational structures for critical thinking, and modeling questioning processes which can scaffold complex thinking.

9. Assessment: formative ~ of students' learning and the summative ~ of their progress:

Teachers involved in the South London NLC used the results of their action research to inform their ongoing feedback to students. Teachers sought to collect evidence of impact, particularly any evidence of students' improvement in thinking skills. Teachers also reflected critically on their own practice, modelling the practice of self-assessment in their own action research techniques.

10. Cooperation among teachers and with experts:

The South London NLC demonstrates the importance of science teachers collaborating to research and understand shared classroom interests and problems. It involves cooperation between teachers and research mentors. Higher education departments were a crucial source of technical expertise and knowledge for science teachers in the network. The research particularly demonstrates the importance of collaboration for teachers who are expected to teach outside of their subject specialist area.