# Too hard, too soft or just about right: paradigms in music teachers' action research

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*This article considers some paradigms of educational research, and their relation to teachers' action research in their classrooms or studios. The positivist/scientific paradigm and the interpretive/naturalist paradigm are examined, with reference to two cases of music teachers' action research studies. These studies are found to be flawed because the paradigms underpinning them are inappropriate for classroom-based action research. The critical theory approach is also discussed but only briefly, because no instances of music teachers' action research in this paradigm have been found. The participatory paradigm is explained, with reference to a third case of music teachers' action research. The article argues that, for teachers' classroom-based action research, this paradigm is more appropriate than others. It suggests that music teachers' action research in the participatory paradigm: (a) includes self-study, (b) involves students, (c) considers the influence of context, (d) involves more than one turn of the action research cycle, and (e) engages with, and contributes to, the development of theory.*

## Introduction

In general, educational research is not highly esteemed. Pring (2000) explains why: unlike (say) medical research, educational research does not address questions that policy makers and practitioners ask, it is fragmented and not very rigorous, and it is often politically motivated, thus alienating people with political views that are different from those of the researchers. Pring (2000) identifies two problematic tendencies in educational research: the attempt to be inappropriately scientific on the one hand, and the tendency to question notions such as truth, knowledge and objectivity, in favour of 'multiple realities', on the other. He explains that these tendencies are often presented as competing paradigms (Pring, 2000, pp. 44–56), 'paradigms' being sets of basic beliefs and assumptions which underpin the way in which people understand the world. He finds both tendencies inadequate and argues for a middle way, endorsing 'the central position of the teacher as researcher' (p. 161).

This article develops the aspect of Pring's argument which is outlined above, and extends it to music teachers' action research. It demonstrates that teacher-researchers can, like educational researchers more generally, adopt inappropriate paradigms for researching their classrooms and studios. It explains a more appropriate paradigm, and illustrates the argument with cases of music teachers' published action research. It aims to develop the

theory and practice of music teachers' action research. In writing it, I have drawn on my own experience, undertaking action research and supporting action research, undertaken by others (Cain *et al.*, 2007; Cain, 2008, 2010, 2011*a*, 2011*b*; Cain & Milovic, 2010). My position is therefore informed by several years of sustained reflection on reading, researching, writing and teaching.

### Educational action research

Pring (2000) was not the first author to question whether traditional research methods were appropriate to social practices such as education. Thirty years ago, Schön (1983) admitted that some problems can be addressed by scientific approaches to research but argued that these were not the most important ones:

> In the varied topography of professional practice, there is a high, hard ground where practitioners can make effective use of research-based theory and technique, and there is a swampy lowland where situations are confusing "messes" incapable of technical solution. [. . .] the problems of the high ground, however great their technical interest, are often relatively unimportant to clients or to the larger society, while in the swamp are the problems of greatest human concern. (Schön, 1983, p. 42)

Schön (1983) was one of several authors to promote alternative approaches to educational inquiry, some of which come under the umbrella heading, 'action research'. (The terms 'practitioner research' and 'teacher research' are sometimes used synonymously with action research; for a description of the versions and variants of these terms, see Cochran-Smith & Lytle, 2007.) Fundamentally, action research involves a process in which practitioners (including teachers) examine an aspect of their own work in order to improve it. The process is usually described as a recurring cycle: after an examination of the existing situation, the researchers plan and implement interventions, monitor the intended and unintended consequences of the interventions and reflect on these consequences. They use their reflections to plan further interventions, thus starting the cycle again (Elliott, 1991; Stringer, 2007).

The general process can be seen as similar to rehearsing music (Cain, 2010) and more generally, reflective practice (Dewey, 1933; Schön, 1983). However, whilst reflective practice is usually conceptualised as continual, private, experiential and largely unarticulated, action research is generally thought of as consisting of specific projects and is more occasional, public and collaborative (Tripp, 2003). Also, action research differs from reflective practice because it involves the specific collection and interpretation of data, is published to an audience beyond the research participants and, like all research, generates knowledge. Different writers emphasise different aspects of action research. For some, its main purpose is to generate practical changes (Elliott, 1991). Other authors emphasise collaboration, and the way in which an action research project can bring people together to change an aspect of their working practice (Kemmis & DiChiro, 1987). Some writers emphasise personal transformation and see action research as a process of aligning practice with individual and group values (McNiff with Whitehead, 2002). Others emphasise the political and emancipatory aspects of action research (Carr & Kemmis, 1986) while others discuss the knowledge that action research generates (Heron & Reason, 1997).

'Action research' is therefore not a single entity; it is a broad term, embracing many types of aims, processes and outcomes. Nevertheless, there are important differences between action research and other types of research, and some of these are fundamental. When music teachers and their supporting university tutors adopt inappropriate paradigms for action research, the results can sometimes be untrustworthy and of little value.

## Why some paradigms provide poor foundations for classroom-based action research

Educational research is often conceptualised as underpinned by one of three paradigms: positivist/scientific, interpretive/naturalistic and critical theory (Cohen *et al.*, 2007). The first of these is usually associated with quantitative methods and the latter two with qualitative ones, although some qualitative research is undertaken within a positivist paradigm, and there is a growing tendency towards mixed methods. (See Kettley, 2010, who critiques mixed methods and also argues that the positivist/interpretive distinction represents an oversimplification of a complex reality.) Teachers' action research can sometimes be undertaken within one of these paradigms but for the most part it does not easily fit any of them; the reasons why are explained below.

### Positivist action research: Johnson (2004)

Some researchers have argued that, unlike story-telling or gossip, research can and should be objective. This idea is fundamental to what has become known as the positivist, scientific paradigm, which assumes that the world can be known objectively, and that knowledge can be obtained empirically and logically by examining phenomena and their causes. Thus,

> . . . many contemporary positivists assume that any social science researcher, provided that they follow the correct methodological procedures which derive from those used in the natural sciences, can neutrally collect data from an independent social reality so as to empirically test causal predictions deduced from a priori theory. (Cassell & Johnson 2006, p. 787)

According to this view, data samples should be large and representative, hypotheses should consist of unambiguous statements, data should be expressed numerically (quantitatively) and should be subjected to statistical analysis. Methods should strive for validity and reliability, and findings should confirm or refute hypotheses to a stated degree of certainty. Gage (1989) listed large-scale surveys, achievement tests and structured observations as typical of this approach to educational research which, he stated, has its disciplinary roots in psychology.

It is problematic for teachers to take a positivist approach to doing action research in their classrooms or studios, as can be illustrated by an exploration of one such study. Noting that her third-grade (Year 4) students were not retaining a basic music vocabulary, including note and rest names and values, Johnson (2004) examined their understanding of note and rest values, after implementing a new strategy for teaching music composition. Johnson (2004) hypothesised that an 'integrated, transformative approach' to teaching composition

would produce a greater increase in student understanding of note and rest values than a 'nonintegrated, mimetic approach'. Her study was implemented over a two-year period:

> During the first year, the nonintegrated projects had many limitations that potentially stifled creativity. The students completed the compositions without peer interaction and conceptual context provided by the teacher. The projects in the second year of the study varied in the concepts taught and the type of organizational setting. Project design included integration across the three categories of musical interaction (performing, listening, and creating) and allowance for multiple solutions, requiring students to make choices and decisions based on their current musical schemas. The implementation of these changes provided opportunities for students to develop deeper conceptual understanding. (Johnson, 2004, p. 18)

The students who were in the third grade during the first year of the project became the control group, and those in the third grade during the second year became the experimental group. Students in both groups completed tests on their knowledge of note and rest names and values in the September of their third grade year, repeating the process in May. To chart progress over the period of the research, the researcher compared the mode, median, and mean of each group, on both the pre-test and post-test.

Results showed a slightly higher post-test median and mean score for the experimental group, and this group also had more students whose post-test scores were in the highest quartile, but the differences between the groups were statistically insignificant. Indeed, the data showed that student post-test scores in the control group increased by a greater percentage than the scores of students in the experimental group, even when compared with students whose pre-test scores were from the same quartile. (There was a 25.33% difference in the mean of the pre-test scores.) However, the researcher noted that her integrated, transformative approach did not result in a lowering of student understanding of note and rest values, even though less time was spent doing teacher-led, lower-order cognitive drills. She informally observed greater satisfaction and sense of ownership amongst the students during composition project time in the second year. Taking these factors into account, the report recommended, 'the continuance of an integrated, transformative approach' (p. 39).

Although this study makes good use of social science research methods, it is seriously flawed. The samples are small, not randomised and not representative – for teachers, researching in their own classrooms, this problem is almost unavoidable. Johnson's two classes will have had distinct group personalities, based on factors such as the relationships between the children, and the nature of the strongest characters in each class. Ideally, all variables would have stayed constant except for the 'treatments' ('integrative, transformative' or 'nonintegrated, mimetic') but this was not possible. For instance, as Johnson acknowledged,

> Class time for the control group was between 8:30–10:10 a.m.; class time for the experimental group was between 12:50–2:30 p.m. – a time containing more conflicts (assemblies, early dismissal days) that may have affected the amount of time students received instruction. (p. 38)

Further, the two treatments were complex, and it is not possible to separate a teacher's approach from the teacher herself because a lot depends on factors such as enthusiasm and

motivation (her own and her children's). Finally, there are ethical problems when teachers teach one group of children in a way that they suspect is inferior, for research purposes. Such problems are not unique to Johnson (2004) but can arise whenever teachers research in their own classrooms in an experimental way, using a positivist, scientific paradigm.

### Interpretive action research: Rusinek (2007)

The interpretive, naturalistic paradigm has been presented as an alternative to the positivist, scientific paradigm as critics have argued, repeatedly and effectively, that the social world is not like the natural world. Arguing that people (the object of study) interpret their worlds in individual ways, and that there is no objective standpoint from which we might view others, 'qualitative' researchers study lived experiences; subjective understandings that are uncovered more by interviews than questionnaires, and by observations in 'real-life' settings rather than controlled environments. The interpretative view resonates with another important idea in education – the idea that knowledge is constructed by individual minds, in unique ways. Whereas the paradigmatic research design of positivist research is the randomised, controlled trial, that of interpretive research is often the ethnographic case study; 'thick description' (Geertz 1973) being preferred to quantitative data; triangulation and member checks increasing trustworthiness, rather than ensuring validity (Bassey 1999). Gage (1989) located the disciplinary roots of this approach in anthropology.

Action research is sometimes placed within an interpretive paradigm; indeed, Bresler (1995/2006) explicitly placed action research alongside ethnography and phenomenology, within this paradigm. However, this is also problematic. Rusinek (2007) analysed a teacher research project from within the interpretive paradigm, as he 'sought to understand the significance a group of students attributed to learning when they were challenged with an aesthetic problem' (p. 323) i.e. to compose, in groups, a piece of music at least two minutes long, using a variety of school instruments, for a competition. Data collection included non-participant observation (including unmanned video recordings) of lessons, in which,

> As a researcher, I tried not to intervene in the groups' social and creative dynamics; as a teacher I intervened slightly if they got stuck because of a lack of musical skills (such as writing rhythms). (p. 325)

This presented some problems to overcome:

> Although the Principal did not like the idea of the students being without a teacher's supervision part of the time ... in the end she accepted the idea, and eventually admitted that there were benefits to the project in promoting learning autonomy and self-control. (p. 325)

Rusinek (2007) provides a rich account of how some of his students worked on the task, whilst others refused to work. In particular, there are detailed vignettes which show how these school music lessons were experienced by particular students. However, as a model for classroom-based action research, it is problematic. Teachers cannot study their students as if in some natural state because in the classroom, any natural state the students might be presumed to have is influenced by the teacher. Teachers are expected to influence students

to change their thinking; this is their job. Perhaps because his students were preparing for a competition, Rusinek was able to intervene only slightly but he was still their teacher, so we cannot assume that he had no influence over them. For example, in attempting (or refusing) the aesthetic task presented by Rusinek, his students were also trying (or not) to understand what he wanted, probably drawing on previous experiences of being taught by him. Their response to the task was also influenced by their relationship with him (e.g. wanting to please him or not), with teachers in general, and with their particular notions of school tasks. As Rusinek (personal communication) expressed it, '. . . the situations were 'created' by the students within frames of interaction designed by myself as a teacher'. Teachers who adopt an interpretive position will find, like Rusinek, that their research reports present accounts of situations which are, at least to some extent, both created and interpreted by themselves. Interpretive researchers recognise that researchers influence the phenomena under study even when conducting non-participant observation, in what is known as the researcher effect (Hammersley & Atkinson, 1995). However, such influence is often minimal; the contrary is true for teachers in their classrooms or studios.

### Critical theory

The interpretative view has, in its turn, been criticised. Carr and Kemmis (1986) pointed out that people's understandings of the world can be contaminated by ideologies that impose a distorted view of reality on them. Instead of aiming to understand people's viewpoints, they argued that research can enable people to join together in critiquing the ideologies which affect their views of the world, acting together to change their views. In so doing, in the language of Carr and Kemmis (1986 – drawing on Habermas), they become 'emancipated' – able to make free choices, according to their own needs and aspirations, and not those of others. Carr and Kemmis (1986) allied this 'critical' view of the social world with educational action research.

I have been unable to find an example of music educational action research that is explicitly critical in this sense but I suspect that, when undertaken by a teacher in a classroom, action research can be critical only to a limited extent. Because, in their classrooms, teachers are both 'in authority' and 'an authority' (Hammersley, 1993) teachers can reduce power differentials but cannot responsibly relinquish power, if only to ensure their students' physical and emotional safety. Thus, whilst 'The self-critical community of action researchers undertakes to practice values of rationality in communication, justice and democratic participation in decision-making' (Carr & Kemmis 1986, p. 197), this can be achieved in the classroom only within limits, and the teacher's role ensures that she has the 'casting vote' in determining these limits. This might help to explain why the critical theory approach to action research can sit uncomfortably with teachers, who are required to exercise power and authority in their classrooms and in school generally.

## The participatory paradigm

A more satisfactory basis for teachers' action research is what Heron and Reason (1997) call 'the participatory paradigm'. In contrast to the positivist/scientific paradigm (in which the world is as it is – if you view something differently from me, one of us must be wrong)

and the interpretive/naturalistic paradigm (in which we all construct our worlds differently), Heron and Reason's participatory paradigm holds that there is a real world 'out there' but we can know it only partially, from our own perspectives. In fact, 'perspective' is probably misleading; we do not know our world by viewing it as if from outside, but by participating in it. This is because, 'To experience anything is to participate in it, and to participate is both to mould (i.e. construct) and to encounter (i.e. meet)' (Heron & Reason, 1997, p. 278). What we understand as reality is the result of an interplay between our minds and the world beyond:

> There is a given cosmos, a primordial reality in which the mind actively participates. Mind and the given cosmos are engaged in a co-creative dance, so that what emerges as reality is the fruit of an interaction of the given cosmos and the way mind engages with it. (Heron & Reason, 1997, p. 279)

(Although Heron and Reason refer to 'the mind' I don't think this contradicts the belief that we know with our bodies.)

This 'given cosmos', particularly the social world, is constantly changing. School teaching involves students who change enormously during compulsory schooling so, 'That the present is different from the past is one of the safest of generalisations . . . what we carefully observed yesterday will certainly be different tomorrow' (Winter, 1989, p. 49). One implication of this is that, in continuously adapting to changing relationships and social environments, students are constantly learning. Teachers cannot cause learning in the sense of bringing learning into being, but can only influence its focus, speed, longevity and perhaps, its significance for students. Also, although we like to compartmentalise phenomena, thinking of classrooms, lessons, school subjects and so on as discrete entities, the boundaries between them are constructed, not given. We divide students into 'classes' to be taught 'subjects' in 'lessons', and these divisions give us an appearance of clarity and control. But the divisions are artificial and, to some extent, arbitrary constructions. As Whitehead and Rayner (2009) say,

> It is very easy for us to develop a hard-line logic of discontinuity between 'something' and 'nothing', to reinforce this in our language and mathematics, and thence to embed it deep in the foundations of our theories and practices of science, theology, education and governance. We come to assume that every distinguishable form must have a boundary limit where it stops and something or somewhere else begins. By the same token, we are forced to assume that everything must originate from some kind of 'start point' and . . . disappear into some 'end point'. Convenient, communicable and incontrovertible as the resultant hard-line separation and quantification of material objects from their spatial context may appear to be, it is the source of profound paradox and conflict. (p. 3)

Thus what happens in a school classroom in one lesson, influences and is influenced by, what happens in other classrooms, in the school more generally and in the world beyond the school. In summary, the social world in which teachers participate is fluid, constantly changing, without fixed boundaries and only partially knowable, from individual perspectives.

Nevertheless, teachers do operate in this complex world and it is by participating in it that they come to know it. Heron and Reason (1997) describe a 'radical empiricism'

in which all conscious interactions generate the first-hand, experiential knowledge which is the basis for other types of knowledge. Heron and Reason (1997) describe four, interdependent and overlapping types of knowledge: experiential, presentational, propositional and practical knowing. *Experiential knowing,* as the ground of all other forms of knowing, is, 'direct encounter, face-to-face meeting . . . knowing through participative, empathic resonance with a being, so that as knower I feel both attuned with it and distinct from it' (pp. 280–281). Bertrand Russell (1912) called this, 'knowledge by acquaintance'; such knowledge is tacit (Polanyi & Prosch, 1975). *Presentational knowing* is rooted in experiential knowing and is both captured in, and expressed through, symbolic media. It combines experiential knowing of the media and of some aspect of the world – for example, a songwriter, expressing an understanding of the world, in song. Heron and Reason (2009) suggest that it is often embodied in narratives, but that words are not necessary to presentational knowing, which can be expressed in artistic or technological forms. Thus, Beethoven's *Fifth Symphony* and the *iPhone* are expressions of knowledge no less than the statement, *Force = mass × acceleration.* In the classroom, presentational knowing might be embodied in songbooks, worksheets, musical arrangements or other resources. *Propositional knowing,* 'is expressed in propositions, statements which use language to assert facts . . . laws that make generalizations about facts and theories that organise the laws' (Heron & Reason, 2009, pp. 373–374). Propositional knowledge (such as *Force = mass × acceleration)* sometimes appears in the 'findings' section of journal articles. *Practical knowing* means knowing how to do something, and is demonstrated in skilful actions, such as teaching a class or playing a violin. Heron and Reason (1997) argue that 'practical knowledge is in an important sense primary' because, 'It fulfils the three prior forms of knowing [and] brings them to fruition in purposive deeds' (p. 281).

According to Heron and Reason (1997) knowledge can be tested and refined by 'critical subjectivity':

> . . . we do not suppress our primary subjective experience [i.e. experiential knowing] but accept that it is our experiential articulation of being in a world, and as such is the ground of all our knowing. At the same time . . . we attend to it with a critical consciousness, seeking to bring it into aware relation with the other three ways of knowing [presentational, propositional and practical knowing], so that they clarify and refine and elevate it at the same time as being more adequately grounded in it. (p. 282)

Critical subjectivity implies reflexivity, understood as 'the process of reflecting critically on the self as researcher' (Guba & Lincoln, 2005, p. 210) which implies an exploration of teachers' values – of what they see as intrinsically worthwhile.

In arguing for the primacy of practical knowledge, Heron and Reason (1997) imply that other types of knowledge are useful only when they are skillfully used and that valid knowledge, used ineptly, is not actually helpful. This view of knowledge is appropriate for teaching and explains why some teachers with a wide knowledge of educational theory can nevertheless fail to teach well: knowledge of theory is inadequate unless it is supported by acquaintance knowledge (particularly of students), the knowledge embedded in appropriate educational resources, self-knowledge and, above all, practical teaching skills.

### The participatory paradigm and the classroom

The participatory paradigm is distinctive because it sees understanding as intimately connected with doing: doing and reflecting, action and research. In the participatory paradigm there is no audience of uninvolved spectators, researching life from the sidelines. Neither can we choose to act or not; our actions can be more or less thoughtful but we cannot avoid doing things. In my view the participatory paradigm is complex and sophisticated and it is particularly appropriate for researching situations in which the researcher is closely involved.

The participatory paradigm better describes the reality I experience, as a teacher. As Elliott (2001) says, 'Teaching is an intentional activity directed towards bringing about learning outcomes for pupils' (p. 558). A teacher's purpose, inasmuch as she is teaching, is to motivate, inspire, direct or otherwise encourage learners to develop how they think, and what they do. Such development is usually incremental and specific to disciplines such as music, and teachers also teach matters around socially acceptable behaviour. This purpose places teachers in a leadership role within their classrooms, with a mandate to influence their students. They are both 'in authority' and 'an authority'. Accountable to various stakeholders for their teaching (e.g. school managers, parents, local and national governments) teachers nevertheless exercise professional judgements about how local and national policies are interpreted and operationalised in their classrooms. Teaching is therefore suffused with values – the teacher's, informed by (or perhaps sometimes, in resistance to) others in the immediate and wider social milieu.

There might have been a time when teaching was largely a matter of imparting information but not now:

> A shift has taken place from a technical, rationalistic view of teaching as mastery of subject knowledge and discrete pedagogical skills to one which recognizes that teaching is a relatively unpredictable and cognitively complex activity, characterized by decision making, negotiation for meaning and reflection in action. (Crasborn *et al.*, 2008, p. 501)

Thus the direction of influence is not unidirectional, from teacher to students; rather, the teacher listens attentively and observes perceptively, altering her teaching, in the interests of achieving better mutual understanding. Teachers sometimes stand back to observe their students, to give them independence, to allow them to learn from each other or to learn from making (safe) mistakes, but such standing back is always constrained, to a greater or lesser extent, by the teacher's responsibility to influence. (Standing back to observe is essential to teachers' research, but cannot compromise their responsibility to influence, which is an ethical priority.) Teachers' roles are thus co-constructed, in a dialectic of mutual influence with their students.

In a classroom, there is a web of meanings associated with the teacher's attempts to influence. How students answer a teacher's question is not only affected by their understanding of that question. It is also affected by their understanding of the teacher's intentions (e.g. to check understanding, to prompt, to embarrass) by their understandings of how the teacher might respond to their answers (e.g. with praise, encouragement, sarcasm) and by how they expect their peers to understand their answer (e.g. as seeking approval,

flaunting knowledge, flouting authority). Such understandings are heavily influenced by personal histories and previous experiences.

### The participatory paradigm and classroom-based action research

Adopting the participatory paradigm for classroom-based action research has at least five consequences. First, because the researcher is central to the situation under study, the paradigm implies an element of self-study, including consideration of the researchers' aims and values – what they were attempting through the research, and how these intentions were rooted in their theories, beliefs and values. Ideally, the research involves a self-critical examination of the researchers' actions and motives, documenting new insights and changes in perspective, and being honest about relevant personal or professional limitations. Second, because in the participatory paradigm teachers co-construct lessons with their students, teacher-researchers should involve their students, including them in decisions about the research aims, planning, processes and ownership. (Action research in this paradigm is also strengthened through collaboration with colleagues.) Ethical issues, which include but are not limited to teacher–student relationships, are always important in educational research; they come into sharp focus in teachers' research because of the teacher's necessarily leading and influencing role – it is all too easy for teachers to claim to have instigated successful changes without reference to the voices of their students, who might think otherwise. Third, because action is shaped and influenced by specific contexts, it is necessary to consider relevant contextual aspects – broadly, the historical, political and social contexts which significantly influence the situation under study. Fourth, to achieve depth to the research, research action should be sustained over a period of time; this implies more than one cycle of planning, acting, evaluating and reflecting. Finally, like all research, teacher research contributes to the building of theory through the generation of knowledge. 'Theory' broadly defined, can include not only formal theory-building but also what Handal and Lauvas (1987) term 'practical theory' i.e. 'a person's private, integrated but ever-changing system of knowledge, experience and values which is relevant to teaching practice at any particular time' (p. 9). In reflecting on the research, teacher-researchers can consider how the different types of knowledge they have gained contribute to knowledge more generally – linking with, and building on, knowledge that is reported elsewhere. This involves a shift from statements like, 'we have made this successful change' to, 'through making this change we have learned matters which extend what we and others already knew'.

The action research process is commonly expressed in diagrams, showing a planning, acting, evaluating and reflecting spiral. Figure 1 (below) offers a more comprehensive diagram of action research in the classroom: the action research cycles 'drill down' into matters of teaching and learning which involve the teacher's self and the students. These happen in an institutional and societal context, and the research is both influenced by, and influences, theory.

### Participatory action research: Ward (2009)

The following section describes and analyses an action research study that appears congruent with the participatory paradigm. Ward (2009) reported on an action research
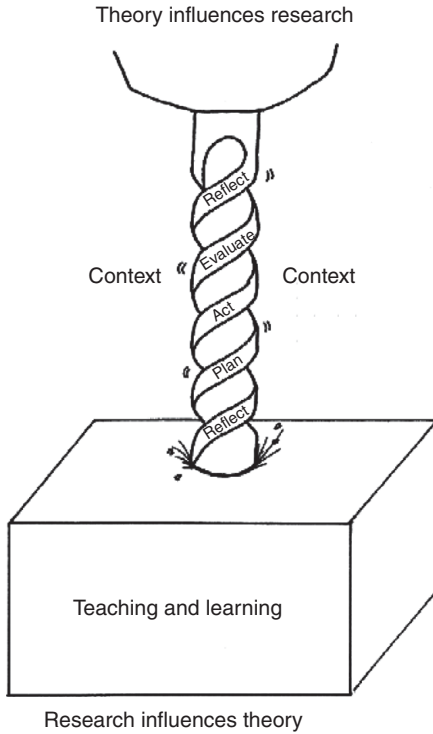
Fig. 1   Teachers' classroom-based action research

project, involving 189 of his school students, aged 11–16. The study aimed to enable the students to, '. . . enjoy creating original and distinctive musical pieces using the potential and advantages of ICT'. 'Original and distinctive' meant 'within a 3-dimensional soundscape . . . where tonal, notational and other boundaries are dissolved' (p. 157). Ward consciously created an informal class atmosphere in which his students created analogue multi-tracked recordings, used MIDI and audio sounds to underscore a movie clip and manipulated imported and created samples (including dishwasher and motorcycle sounds). The students also experienced a workshop with Trevor Wishart, a notable electro-acoustic composer.

Data were collected during lessons, 'as part of my regular practice' (p. 157). These were mainly qualitative: questionnaires with open questions, students' evaluations of their own and others' work, video interviews with students and a colleague (critical friend), students' work and 'informal monitoring' (participant observation). Ward kept 'lesson logs' to record his own perceptions after every lesson; he also used a small amount of quantitative data – Standard Attainment Tests and the results of internal school exams were interrogated, 'to provide a benchmark of pupil aptitude' (p. 158). In the project's final phase, with one Year 9 class, students' responses to three questions (relating to progress to date, problems and future goals) were video-recorded in each lesson.

Ward (2009) exemplifies the characteristics, outlined above, which are important to action research in the participatory paradigm: (a) it included an exploration of his own beliefs and practices, (b) it *involved* his students – he researched *with* them, not *on* them, (c) he considered the context of his research, (d) his research design included several cycles of planning, acting, evaluating and reflecting, and (e) it contributed to theory. Each characteristic is explored, below.

### (a) Self-study

Ward articulated some of the values that gave purpose to his project:

> As a music teacher, I believe that music-making transcends theory, appraisal and even performance in the classroom. In order to access this innate creative skill, my pupils needed to adopt the value system that allowed them to create without boundaries, unencumbered by stylistic and social constraints. Miles Davis (1989) said, 'Do not fear mistakes, there are none', and my pupils needed to realize that there were no 'wrong' answers to their work, just different ones. (p. 155)

He articulated his beliefs about teaching with technology, writing, '... we must deepen our understanding of it, integrate it into our ways of working, and use it as a tool, not a toy' (p. 156). At the start of the project, he reflected, 'Regarding my own teaching situation, I perceived a need for change' (p. 156). He considered a potential conflict between his teaching and researching roles. His regular lesson logs captured his perceptions and, 'enabled my practice to progress'. The project generated gains in self-knowledge; for instance, his Year 7 pupils thought that he talked too fast and this was confirmed by video data. Also,

> My teaching practice benefited ... from my new awareness of my multi-faceted roles in class; I was able to justify elements of my practice that I had hitherto accepted by instinct. (p. 163)

### (b) Involving students

Ward involved his students by giving them questionnaires and video interviews. This was not simply a matter of collecting data; he shared his planning with them: 'I outlined the project plan and invited pupils' suggestions for improvement. The idea for the video interviews came from here' (p. 158). The questions he asked his students were sometimes relevant to the research (such as 'How can ICT be used in a music lesson to compose?') and sometimes relevant to the students' experience of his teaching (such as, 'Did you enjoy the scheme' and 'How can I improve it?') The students also evaluated their own and others' performances so that they could identify skills to build on. The report includes some of the students' own voices, for example:

> I've learned how to break conventional methods of making music and create something completely experimental. I think it was a good skill to have, because it makes you think differently about music and the creation process. (Eamonn, Year 11, p. 160)

By observing and consulting with his students, Ward learned about them, and sometimes integrated his learning into his teaching: 'For example, one pupil combined and synchronized video to his Remix piece unbidden. I have integrated this idea into my present schemes' (p. 164). As a result, Ward (2009) records a change in his relationship with his students:

> I relied upon the pupils as thinkers in themselves, acted on their advice, and worked with them to fix technical problems. This dissolved the traditional barriers . . . as the class and I became a team. (p. 163)

### (c) Research context

Ward (2009) explained aspects of his context – his curriculum complied with the National Curriculum orders and the Edexcel GCSE specification. He described some of the context in the school: the fact that his students used electronic keyboards with automated accompaniments and an emphasis on tonal styles, the scarcity of work that focused on contemporary classical music, and the under-use of ICT, despite its accessibility. He also referred to contexts beyond the school:

> Such is the pace of technological change that equipment is becoming easier to use and more intuitive, as manufacturers learn lessons from experience and from game companies such as Nintendo who have no problem in holding the attention of youngsters for extended periods of time . . . The increasing use of ICT with the internet is pluralizing music as worldwide influences affect it. As stylistic boundaries are dissolved and music becomes ever more multi-faceted and ubiquitous, the challenge in the classroom is to capitalize on the potential of these influences. (p. 165)

### (d) Cyclic design

Ward (2009) described four stages – the first two containing 'planning–doing–monitoring cycles', the third one being an evaluative stage, with no pupil data collected, whilst the fourth stage focused on one Year 9 class, taking into account conclusions drawn from the earlier cycles. This allowed for greater depth than a single cycle would have done.

### (e) Contribution to theory

Ward's research interacted with, and contributed to, theory, particularly linking with Loveless (2002) – a review of the literature around education, creativity and new technologies. As part of this review, Loveless (2002) had asked, 'How are people using digital technologies creatively?' finding, 'Creative activities with new technologies can include developing ideas, making connections, creating and making, collaboration, communication and evaluation' (p. 15). Ward's contribution is to show how technologies can enable such activities in music lessons. He provides one answer to the question, 'How can ICT be used to enable students to be musically creative?' Ward explains that, for him, 'creative' involves 'independent exploration' and 'acting from within your own 'self' but not making something 'out of nothing', nor 'pastiche' (p. 162). He provides a theory that others

might use: unlocking creativity can be achieved by providing certain sorts of stimulus (e.g. sampled sounds) and certain ways of working (e.g. in a 'semi-supervised atmosphere').

In summary, Ward (2009) is a detailed and trustworthy action research study, apparently within a participatory paradigm. Ward's treatment of both himself and his students enabled him to consider multiple perspectives and generated a detailed description which does justice to the complexity of the classroom. His treatment of relevant contexts situates the study politically, historically and socially. The longitudinal aspect, described in his four stages, allowed him to study change over time, and his explicit engagement with theory enabled links with what was already known.

### Conclusion

The past 30 years or more have seen a considerable growth of teachers' action research in many fields, including music education. However, many teachers' action research studies have failed to generate trustworthy new knowledge. Some of the reasons for this are undoubtedly practical: it is difficult for teachers to find time and energy to research as well as teach, and money is rarely available to support them. Teacher research tends to be done as part of a higher degree; those teachers with research training who continue to research, tend to migrate to universities and to engage in other types of research so teacher research often reflects a lack of experience in research.

But there are also problems with the paradigms that teachers use, consciously or not, in classroom-based action research. Teacher-researchers can be 'unable to distance themselves from their preconceived views about effective practice' (Foster, 1999, p. 394–395). They can provide 'insufficient evidence . . . to support key claims' (Foster, 1999, p. 388). Findings are 'not always based on rigorous evidence' (Furlong & Salisbury, 2005, p. 69). Teacher research can have 'an under-developed use of research conventions, including systematic data collection' (Bartlett & Burton, 2006, p. 403). In the field of music education, action research studies are often not cyclical, do not deal with contexts beyond the classroom, and there is little focus on reflexivity and the role of the self (Cain, 2008).

Taken together, these findings suggest that teacher-researchers sometimes use approaches based on inappropriate research paradigms. Such paradigms are sometimes too 'hard', leaning on scientific research techniques which have more in common with medical research than with classroom teaching. As Schön (1983) suggested, the 'high, hard ground' can be a good place from which to research large-scale patterns; there are well-developed techniques to do this, and a scientific paradigm makes sense. Music teachers can use this paradigm at the school level – for instance, interrogating data to see whether students who take part in extra-curricular music are more, or less, likely to achieve good results in public examinations. But the classroom, as a research site, has more in common with Schön's 'swamp', where the fine details of human interpretation and interaction are highly visible, and the positivist paradigm is not tenable for a teacher-researcher. In Schön's 'swamp', it can be tempting to sit back and observe these fine details. This is tenable when teachers research other people's classrooms but, in their own classrooms, such an approach is too 'soft' because teachers have an ethical imperative to act and interact more or less constantly, and to be 'in authority' and 'an authority'.

The 'just about right' paradigm is one which acknowledges the complexity of the teacher-researcher's position in her own classroom. However, adopting it is challenging. Data collection is difficult because the amount of possible data is immense; the data that are collected have to be strictly limited. (Ward, 2009 listed 11 types of data in addition to the data his critical friend provided; this may have been more than enough!) The temptation is to simplify matters by ignoring the role of the self and contextual factors, by treating students as research subjects, by using a one–turn design or not engaging with theory. However, when such temptations are resisted, when teachers choose an important aspect of their work and take a principled and systematic approach to investigating and improving it within a participatory paradigm, their teaching can become invigorated and they can become more open to the possibilities offered by new ideas. Teacher–student relationships can be transformed as teachers become, quite explicitly, learners: learning about, with and from, their students.

The chief beneficiaries of teachers' action research are the teachers and students involved in the project. (Teachers need not belittle their research on this account; many educational research studies benefit fewer people!) When theory is engaged with and significant new knowledge is gained, teachers' action research is worth publishing beyond the community of those engaged in the research. The potential audience for teacher research is probably other teachers and student teachers who might use action research reports to influence, and perhaps research, improvements in their own practice. Many publications offer advice to teachers about teaching but few are both well researched and by teachers; action research offers one way of filling this gap. And, as Ward (2009) demonstrates, action research by music teachers is challenging but not impossible.

### References

BARTLETT, S. & BURTON, D. (2006) Practitioner research or descriptions of classroom practice? A discussion of teachers investigating their classrooms. *Educational Action Research*, **14**, 395–405.

BASSEY, M. (1999) *Case Study Research in Educational Settings*. Buckingham: Open University Press.

BRESLER, L. (1995/2006) Ethnography, phenomenology and action research in music education. *Visions of Research in Music Education*, **8**. www.rider.edu/~vrme.

CAIN, T. (2008) The characteristics of action research in music education. *British Journal of Music Education*, **25**, 283–313.

CAIN, T. (2010) Music teachers' action research and the development of big K knowledge. *International Journal of Music Education*, **28**, 1–17.

CAIN, T. (2011a) How trainee music teachers learn about teaching by talking to each other: an action research study. *International Journal of Music Education*, **29** (2), 1–14.

CAIN, T. (2011b) Teachers' classroom-based action research. *International Journal of Research and Method in Education*, **34** (1), 3–16.

CAIN, T. & MILOVIC, S. (2010) Action research as a tool of professional development of advisers and teachers in Croatia. *European Journal of Teacher Education*, **33** (1), 19–30.

CAIN, T., HOLMES, M., LARRETT, A. & MATTOCK, J. (2007) Literature-informed, one-turn action research: three cases and a commentary. *British Educational Research Journal*, **33** (1), 91–106.

CASSELL, C. & JOHNSON, P. (2006) Action research: explaining the diversity. *Human Relations*, **59**, 783–814.

CARR, W. & KEMMIS, S. (1986) *Becoming Critical: Education, Knowledge and Action Research.* London: Falmer Press.

COCHRAN-SMITH, M. & LYTLE, S. (2007) Everything's ethics: practitioner inquiry and university culture. In A. Campbell & S. Groundwater-Smith (Eds.), *An Ethical Approach to Practitioner Research*. New York: Routledge.

COHEN, L., MANION, L. & MORRISON, K. (2007) *Research Methods in Education*. London: Routledge.

CRASBORN, F., HENNISSEN, P., BROUWER, N., KORTHAGEN, F. & BERGEN, T. (2008) Promoting versatility in mentor teachers' use of supervisory skills. *Teaching and Teacher Education*, **24**, 499–514.

DEWEY, J. (1933) *How We Think: A Restatement of the Relation of Reflective Thinking to the Educative Process*. Boston: D.C. Heath.

ELLIOT, J. (1991) *Action Research for Educational Change*. Buckingham: Open University Press.

ELLIOTT, J. (2001) Making evidence-based practice educational. *British Educational Research Journal*, **27** (5), 555–574.

FOSTER, P. (1999) 'Never mind the quality, feel the impact': A methodological assessment of teacher research sponsored by the teacher training agency. *British Journal of Educational Studies*, **47**, 380–398.

FURLONG, J. & SALISBURY, J. (2005) Best practice research scholarships: an evaluation. *Research Papers in Education*, **20** (1), 45–83.

GAGE, N. L. (1989) The paradigm wars and their aftermath: a 'historical' sketch of research on teaching since 1989. *Educational Researcher*, **18** (7), 4–10.

GEERTZ, C. (1973) Thick description: toward an interpretative theory of culture. In *The Interpretation of Cultures*. New York: Basic Books.

GUBA, E. G. & LINCOLN, Y. S. (2005) Paradigmatic controversies, contradictions, and emerging confluences. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage Handbook of Qualitative Research*. 3rd edition. Thousand Oaks, CA: Sage.

HAMMERSLEY, M. (1993) On the teacher as researcher. *Educational Action Research*, **1**, 425–445.

HAMMERSLEY, M. (2004) Action research: a contradiction in terms? *Oxford Review of Education*, **30**, 165–181.

HAMMERSLEY, M. &. ATKINSON, P. (1995) *Ethnography: Principles in Practice*. 2nd edition. London: Routledge.

HANDAL, G. & LAUVAS, P. (1987) *Promoting Reflective Teaching: Supervision in Practice*. Buckingham: Open University Press.

HERON, J. & REASON, P. (1997) A participatory inquiry paradigm. *Qualitative Inquiry*, **3**, 274–294.

HERON, J. & REASON, P. (2009) Extending epistemology within a cooperative inquiry. In P. Reason & H. Bradbury (Eds.), *The Sage Handbook of Action Research: Participative Inquiry and Practice*. London: Sage.

JOHNSON, M. E. (2004) *Will Teaching Music Composition Through an Integrated, Transformative Approach or a Nonintegrated, Mimetic Approach Produce a Greater Increase in Student Understanding of Note and Rest Values?* www.eric.ed.gov/PDFS/ED494238.pdf.

KEMMIS, S. & DI CHIRO, G. (1987) Emerging and evolving issues of action research praxis: an Australian perspective. *Peabody Journal of Education*, **64** (3), 101–130.

KETTLEY, N. (2010) *Theory Building In Educational Research*. London: Continuum.

LOVELESS, A. (2002) *Literature Review in Creativity, New Technologies and Learning*. NESTA Futurelab Series Report 4. Bristol: NESTA Futurelab.

MCNIFF, J. with WHITEHEAD, J. (2002) *Action Research: Principles and Practice*. 2nd edition. London: Routledge.

POLANYI, M. & PROSCH, H. (1975) *Meaning*. Chicago: University of Chicago.

PRING, R. (2000) *Philosophy of Educational Research*. London: Continuum.

RUSINEK, G. (2007) Students' perspectives in a collaborative composition project at a Spanish secondary school. *Music Education Research*, **9**, 323–335.

RUSSELL, B. (1912) *The Problems of Philosophy*. Oxford: Oxford University Press.

SCHÖN, D. (1983) *The Reflective Practitioner: How Professionals Think in Action.* New York: Basic Books.

STRINGER, E.T. (2007) *Action Research.* 3rd Edition. London: Sage.

TRIPP, D. (2003) *Action Inquiry.* www2.fhs.usyd.edu.au/arow/arer/017.htm.

WARD, C. J. (2009) Musical exploration using ICT in the middle and secondary school classroom. *International Journal of Music Education*, **27** (2), 154–168.

WHITEHEAD, J. & RAYNER, A. (2009) *From Dialectics to Inclusionality: A Naturally Inclusive Approach to Educational Accountability.* www.jackwhitehead.com/jack/arjwdialtoIncl061109.pdf.

WINTER, R. (1989) *Learning from Experience: Principles and Practice in Action Research.* London: Falmer Press.