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# Action research as an effective way of developing educational policy

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## Abstract

*This paper considers the successful implementation of the results of an action research project concerned with technology education in Russia. The history of action research in Russia is not very long and the area of research was mainly concentrated on improving methods of teaching and programmes of study. Traditionally, the main paradigm within methodology of educational research was positivism, with a strong belief that it leads to scientific and justified knowledge.*

*As with any other educational reform in Russia, the development of technology education curricula was done from the centre on the assumption that change will be applied in all schools and will be seen as an innovation. Schools were seen as targets for change, and teachers as consumers of new ideas and products. It is therefore assumed that schools will adopt solutions prepared at the system level. This approach did not work, particularly in the context of big socio-economic change.*

*The case study that is analysed in this paper exemplifies the use of action research for the development of a new program within a new epistemological paradigm. Use of the design-based approach for development of technology education curriculum within 'Technology and Enterprise Education in Russia' is an example of successful action research. Educators' perceptions of the transfer process is presented on the basis of interviews and private conversations. This data is analysed and conclusions drawn.*

Keywords: educational change, research paradigms, action research, cultural differences, design-based approach, educators' attitude

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## Introduction

All over the world technology education is an area in which research is most welcome. Different approaches to educational research show different understandings of educational change, which embody a variety of assumptions about the involvement of teachers in the process of research.

In Russia, traditional methodology of educational research, which mostly excludes teachers from research, causes a lot of problems in developing curriculum for new study areas in the light of recent reforms. The authors identified an urgent request for new effective ways of conducting research in technology education and chose action research as an appropriate way of solving this problem.

The case study that is analysed in this paper exemplifies the successful use of action research in technology education in Russia and considers several issues related to this.

## Educational research in the former Soviet Union

Sutherland (1998) describes educational research in the former Soviet Union. The main research agency was the Academy of Pedagogical Sciences. It was a highly prestigious and influential institution involved in discussions of all educational issues. Among the aims of the Academy were scientific analysis of the problems of general and special pedagogy, the history of pedagogy, methods of teaching, training educational researchers, dissemination of pedagogical knowledge among the population. It also controlled the publishing of periodicals.

The Academy consisted of several institutes, one of which dealt with labour training, the precursor of technology. These institutes carried out research projects with a belief that educational practices could be improved by the treatment of its different parts. The Academy had a monopoly on educational research. Universities were more teaching institutions than researching. Hierarchical bureaucratic control of the social relations within the system of education existed. This approach to research preserved a gap between theory and practice. The roles of researcher-theorist and the practitioner (teacher) were separated. An instrumental form of reasoning (means – ends) was employed, and the model of change was research-development-diffusion. Curriculum development legitimated and sustained the separation between research and practice. Educational research employed theories of change that brought teachers' practice into line with theorists' theories. Everything started from theory. If a problem occurred the theorists tried to solve it by developing a new theory. The Academy maintained a number of experimental schools for testing new methods of teaching, textbooks, equipment and furniture, visual aids.

Applied research was carried out by academics to gather data about educational practices. The main paradigm within the methodology of educational research was positivism with a strong belief that it leads to scientific and justified knowledge. The main aim of inquiry was to develop generalisations and to find relationships between measured variables. Thus it was possible to control and manipulate human behaviour, because the causal relationship between two measured variables are known. Empirical-analytical research was viewed as a base of improving the effectiveness and efficiency of education. These academics asked teachers to work on externally formulated questions, which were not based on the practical concerns of the teachers, and were conducted to test the applicability of theories developed in the Academy. Typical research started with a hypothesis, several variables were chosen to test, experimental and control groups were established, new methods of teaching (or whatever) were tried, the results compared, the conclusion made. Such typical experimental research was based on 'scientific method'. Thus all educational reforms in the Soviet Union were from the 'top down'. Changes to the educational system were aimed at keeping society stable. Educational institutions were among the first to react to stagnation in Soviet society. However, the reforms of 1984 and 1988

had little impact. By the end of 1980s the need for more radical educational reform became evident.

### **Educational policy of Russia in the period of transition**

The first stirrings of a new approach to reform that appeared through the movement 'Pedagogy of Co-operation' (Sutherland, 1998). Progressive teachers from all over the Soviet Union met on several occasions to develop the principles of a 'new pedagogy'. Their main ideas were: include the student into the process of learning (not just to transfer knowledge to them); go with the student to the subject rather than with the subject to the student; develop personality, not just the intellectual abilities; and protect individuality from the pressures of collective education. These ideas grew from the practice of those teachers, but unfortunately, practice was not always transferable. Research was needed to find ways of implementing these principles and develop guidelines for educational reform.

In 1992 these principles became state policy. They included the 'humanisation' and 'humanitarianisation' of education, decentralisation, school diversification, and reform of teachers' training (Yeltsin, 1992).

Responsibility for curriculum was now shared between federal, regional and local bodies. The teacher received more freedom in carrying out her/his practice. Regional and school-based components of the curriculum were seen as a resource for this freedom, and one of the main advantages of the changes. The Federal (compulsory) component of the curriculum was defined by 'standards' (Ministry of Education, 1996a&b).

Educational research was not specified as an important part of reform or educational policy, either in 1992 or 1996 (Tkachenko, 1996). It was not considered as an essential part of the change process: resources for research became more and more limited every year.

### **Action research as a tool for educational reform**

Kemmis (1988) describes how different approaches to educational research have different perspectives on how reform relates to research. 'Different approaches to educational research have different theories of educational change which underpin them. These theories of educational change

embody different assumptions about the control of education' (Kemmis, 1988: 48). The Soviet view of educational change was predicated firmly on a centrally-driven strategy, based on systemic initiatives. Dalin and Rolff (1995) identify three characteristics of such an approach:

- change is *applied* in all schools and seen as an innovation. Knowledge which exists at the central level is applied, taking into account the varied conditions of individual schools.
- it is possible to *manage change*, to establish rational goals, to arrive at a consensus understood and accepted throughout the system, and to provide the necessary qualified support for the change process and develop commitment to the desired policy changes
- schools are seen as *targets* for change, and teachers as consumers of new ideas and products. Basically the school is seen as a delivery mechanism. It is therefore assumed that schools will adopt solutions prepared at the system level.

Action research starts from a different set of assumptions. Dalin (1978) identifies three main components of this process: ownership, change capacity and leadership. Teachers have to develop a sense of ownership of the ideas and the process of change. They have to master the new practice. They have to integrate the formal leadership with the informal leadership.

Kemmis and McTaggart (1988) see action research as 'a form of collective self-reflective inquiry undertaken by participants in social situations in order to improve the rationality and justice of their own social or educational practices, as well as their understanding of these practices and the situations in which these practices are carried out' (Kemmis and McTaggart, 1988: 5). It is '...a concrete and practical process which helps those involved to build a critique of schooling, form the perspective of education, and to improve education in schools' (op. Cit.: 27).

Kemmis (1988) argues that it is common for 'outsiders' to be involved in action research providing material, organisational, emotional, and intellectual support for practitioners (Kemmis, 1988: 47). He further defines three different ways of interrelation between outsider and the group. He argues that historically a shift from technical to practical to 'emancipatory' action research took place from the late 1940s to early 1980s. 'Emancipatory action research, by contrast, shifts responsibility

for practice and the action research process to the participant group. In this case, the group takes joint responsibility for action and reflection ... Here outsiders are unnecessary; where they do participate in the work of the group, they do so on the basis that they share responsibility equally with other members' (op. cit.: 47).

In IDATER 2001, Barlex and Pitt (2001) analyse how new professional knowledge is created, and highlight the work of Hargreaves (1998) who argues that teachers involved in such knowledge creation will engage in four activities:

- investigating the state of their intellectual capital
- managing the process of creating new professional knowledge
- validating the professional knowledge created
- disseminating the created professional knowledge.

### **The case of technology education – teachers as active participants in the process of change within the programme Technology and Enterprise Education in Russia**

The introduction of technology education into the Russian school curriculum in 1993 caused chaos among educators. The problem of combining the old version of the subject (labour training) with new trends became particularly difficult. Educational policy in technology education was not clearly formulated. Concept, structure, rationale did not exist. Even the traditional way of introducing something new into practice did not exist in this particular case: ideas were not conceptualised and theory was not developed. There were no guidelines on how to change practice. Indeed the development of the concept of technology as a school subject remained one of the main problems, as technology is so vast, variable and changeable an area that it was difficult to find the most appropriate approach to structure the knowledge, to select topics and necessary skills. The lack of research was obvious in the case of curriculum development of technology education in Russia. The only way to solve this problem was to involve teachers.

The programme 'Technology and Enterprise Education in Russia' was the first to start the development of teacher-based research. It was established as a 'bottom-up' movement. This began with stimulating interest among teachers in changing their old practice of teaching within the

perspective of a new situation in society and educational reform. A group of 15 teachers in St Petersburg decided to work together with one of the authors, to change their teaching practice. The plan of action consisting of meetings, training sessions, 'open classes' (observation and the following discussions of the presented lesson), notebooks, video and tape recording. This plan was flexible and changed on the basis of real and immediate needs. Emphasis was on teachers' learning from their own experience. The teachers' were concerned about their own practice, and together they explored what others thought and what it might be possible to do. Their central concern was how to develop the students as active, critical thinkers by the means of technology education, and the chosen method was active learning via projects. British experience was introduced. Seminars were organised to present a design-based approach to teachers, with the aim of asking them to try these ideas in practice. To succeed with change the teacher had to have new competencies.

In the process of implementing this design-based or 'project approach' it became clear that the British model had to be adapted to Russian reality. Russian teachers picked up the core idea of the British approach – development of the child through active engagement in the process of design. It was impossible to use the British model as it stood, so the need for research was crucial. Action research became a key part of the programme.

A central research question evolved – how to combine the old and new trends – to develop the systematic approach to technology education based on combining active learning, with training skills and transmission of knowledge. The research aimed to improve curriculum and policy development process in the area of technology education. Teachers tried out ideas in practice as a means of accumulating the knowledge about the possible approaches to technology education in Russian schools. Compared with the dominant approach that separated theory and practice, this programme established links between them. The school-based component of the curriculum and professional awareness among teachers became important factors in supporting this approach. The dialectic of action and understanding was seen as a personal process of critical self-reflection.

A study visit to England in 1997 was an important point in the research planning for the next cycle

of the spiral. Comparison of their own practice with the experience of British schools gave the teachers much to think about. Back in Russia, they tried out new teaching methods. The results were that students learned actively and creatively, rather than passively or without comprehension. The following changes were identified:

the teacher as information giver teacher controlled learning content-centred learning	the teacher as a facilitator of learning a teacher learner partnership student-centred learning
a materials based organisation of activity training skills oriented	need + material based activity learning process centred
internationally oriented	socially contextualised

On the basis of their praxis, a concept of technology education was clarified. The teachers' research involved theorising on practice. As a result, a handbook for teachers was produced with a rationale for practice (Pavlova and Pitt, 1997). This action research started off small, with teachers from one city involved, but later teachers in Nizhny Novgorod and Novgorod the Great also started action-research projects within the framework of 'Technology and Enterprise Education in Russia'. Interest in this programme has gradually grown in different regions of the country, and is now being disseminated on a more formal basis.

### **Educators' perception of the transfer process**

The activities of the action-research teams in Nizhny Novgorod, Novgorod the Great and St Petersburg have resulted in:

- new practice in schools in these regions, in conformity with national educational objectives
- acceptance at a federal level plus the wish to disseminate, including a request for the drafting of an alternative National Curriculum for technology, based on the new pedagogy, and the winning of a World Bank competition to write teaching materials
- a national Centre for Research and Development of Technology Education has been established in Nizhny Novgorod



- 10 books of teaching materials have been published, based on the new approach, and these are in demand from all over Russia
- some of the teachers involved are now pursuing higher, research-based degrees.

The new approach has been widely accepted at a central level – it was recommended as official policy as far back as 1997 (Leontieva, 1997). This was reported in Pavlova and Pitt (2000), and Marchenko (2001). The latter refers to the College of the Ministry of Education (its highest policy forming body), which approved the new approach in June 2000.

But how far has this success been based in involving teachers on the ground? The authors carried out unstructured interviews with 20 technology teachers from six regions at a dissemination seminar in May 2001. We asked whether they thought this approach had been accepted, and if so, why? Most respondents perceived teachers' involvement as a key ingredient in the change process, but said that more support from the top would be welcome. However, they did not see their activity as research! We also interviewed the senior official responsible for technology education in the Russian Academy of Education, and the Ministry of Education official responsible for educational development. The former acknowledged the importance of action-research in these changes. The latter, whilst acknowledging that teachers' inputs had been vital, analysed the change in terms of a 'top-down' paradigm – after all it was the Ministry that had requested the programme, issued orders to provide it with an official underpinning, and helped to raise financial support from British sources. It was his view that the whole process could not be classified as 'research': it was not located within a recognised research institute, nor did it follow a positivist paradigm.

## Discussion and conclusions

The mastering of new practice is vital for teachers' motivation and for the success of the learning process. The renewal process is often a process of trial and error. The old, Soviet paradigm of centrally-driven change based on positivist research, characterised by Dalin and Rolff (1995) did not allow for teachers to take initiative in curriculum development. The approach developed within the programme 'Technology and Enterprise Education in Russia' has had a different framework. The emphasis on action-reflection-action,

as described by Kemmis and McTaggart (1988) has not only 'emancipated' the teachers as they have become increasingly independent of outside support (c.f. Kemmis, 1988): it has given them ownership of the ideas and process of change (c.f. Dalin, 1978). Crucially, it has led to quality outcomes forged in the classroom, which have had a profound influence on educational policy at a national level (c.f. Pitt and Pavlova, 2000, Marchenko, 2001). It has led to new professional knowledge in which teachers investigated their intellectual capital, managed the process of creating new knowledge, validated it and are now disseminating it (c.f. Hargreaves, 1998; Barlex and Pitt, 2001).

Kemmis and McTaggart (1988) identified four essential steps of action research: develop a plan, act to implement it, observe the effects and reflect on these effects as the basis for further planning. In Russia, one more important stage had to be added – the developing of the group itself at the beginning of the process. This is connected with the absence of collaborative techniques among the teachers. They were ready to participate in 'technical' or 'practical' action research trying to implement the ideas of outsider, but the command experience did not allow them to make the decisions by their own. They were waiting for the directions of an outsider. The authors of this paper had to work really hard to build self-esteem and proactivity among the teachers. Our view is that in doing so, a new research paradigm has been established, even if its grip on the Russian research 'establishment' is tiny, and despite the fact that, for many Russians, it is not even viewed as research!

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