

**Action Research  
Position Paper for  
TDSB Family of Schools Supervisory Officers**

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The Instruction Office in collaboration with the District-Wide Coordinator of Science and Technology, and in cooperation with the Imperial Oil Centre for Studies in Science, Mathematics and Technology (OISE/UT), is proposing a new Professional Development plan for elementary teachers who want to enhance their teaching skills and their knowledge of Science and Technology. The plan combines teachers, facilitators, and researchers in an Action Research modality involving the Toronto District School Board and the Ontario Institute for Studies in Education/University of Toronto.

## **Past Practices**

### **Curriculum Development as PD**

Curriculum Development has been successfully used as a model of professional development in this school board for some time. Usually, a small group of teachers, in cooperation with a 'centrally assigned' consultant will participate in the production of some materials that will be distributed to teachers throughout the system. The strength of this type of model is that the resulting materials are generally high quality and of a uniform nature. However as a professional development model, it is less successful since few teachers are involved and the distribution of the completed materials is inevitably difficult to manage. The costs to the system are high, with few teachers experiencing lasting changes to their practice.

### **Workshop PD**

As those who have been intimately involved in 'workshop' style PD will freely express, teachers are appreciative of the assistance that is available at a workshop but this style of PD rarely causes lasting changes in teaching methodologies or knowledge. Workshops, unfortunately, are short term investments, both by the presenters and the attendees, but they also involve little in the way of commitment to change the learning context in the classroom. Follow-up is extremely difficult and is often ineffective.

### **Resource Pack PD**

The current focus of curriculum development in TDSB Science and Technology has been on producing replacements for the traditional 'science kits', called Resource Packs. The Resource Packs consist of 'second-generation' curriculum documents, outlining a series of classroom activities matched to the Ontario Curriculum expectations, and the resource materials necessary to carry out those activities.

While last year's field test of the Resource Packs was mostly very successful, teachers focussed on the immediate benefits of the project: classrooms ready activities, materials delivered to the classroom, and the resulting decrease in anxiety due to unfamiliarity with the new curriculum. A recent report, Van Oostveen (2000), has shown that other aspects of the Resource Packs, namely the constructivist models of curriculum development, and the models of inquiry and design, have been largely misunderstood or ignored. While this is not unexpected, it points out that centrally designed and centrally implemented programs cannot significantly change teacher practice.

## **Alternative Practice**

### **Action Research as PD**

Teachers with busy lives need to be involved in professional development that will benefit them quickly and effectively. Effective professional development is personal professional development that takes the existing practices and knowledge of teachers and enhances them in ways that are exciting and vibrant. Teachers are not the only beneficiaries of the program. Students will experience changes in the classroom and other teachers can rely on the expertise of those who have participated in the program. The Action Research proposal presented here features small groups of teacher volunteers from a family of schools working collaboratively with a facilitator over several months. The teachers will work together through a process designed to identify issues of significance in their own teaching, attempt to make changes in their teaching, and then discuss their experience before trying the next change. This process is Action Research in essence. Action Research is a technique that has been successful in different situations around the world where teachers were struggling to make a difference for their students. Succinctly stated, Action Research "is a disciplined process of inquiry conducted by and for those taking the action. The primary reason for engaging in action research is to assist the "actor" in improving and/or refining his or her actions." (Sagor, 2000)

### **Characteristics of Action Research**

Action Research primarily aims to improve teacher practice rather than to produce knowledge or curriculum guides. This aim requires a continuing process of reflection by practitioners directed toward understanding of the values held by the practitioner. The kind of reflection involved in Action Research is about choosing a course of action in a particular set of circumstances, to realize one's values and to define a personal practical philosophy. Action Research is designed to improve "practice by developing the practitioner's capacity for discrimination and judgement in particular, complex, human situations." (Elliott, 1992) Elliott states that "the improvement of teaching is not so much a matter of becoming better at implementing an externally designed curriculum, but of developing one: whether it is self-initiated or initiated by outsiders."

### **Practice**

Action Research, since it relies so heavily on the characteristics and concerns of the involved individuals, is a highly idiosyncratic process. No two groups undertaking Action Research will follow

the same path or end up in the same place. However, there are several common stages that all groups of teacher-researchers will follow in a cyclical fashion:

- selecting a focus
- clarifying theories
- identifying research questions
- collecting data
- analyzing data
- reporting results
- taking informed action (Sagor, 2000)

These stages seem similar to traditional research, however since they are completed in a cyclical way; reflecting together; planning for classroom interventions; using the interventions in the classroom; noting student reactions; reflecting on the experiences; and deciding on changes to be made or planning for other types of interventions. The reflection phases will occur in small group settings where teachers can share and interact with others who have similar concerns. Facilitators will work with the teachers by providing resources and alternative views as required.

## **Proposed Action Research in TDSB Science and Technology**

### **Process**

Several small groups of teacher/researchers, each with a facilitator, will work in an initial 'field test' scenario over several months, reflecting, planning and making changes to their own teaching practice. The focus of these initial projects would involve Science and Technology, at either the elementary or secondary levels. Each team will meet together regularly to discuss their experiences and to plan for further revisions to their practice.

### **Time Frame**

10-12 meetings (2-3 hrs) will be held over a four-month period (Feb. - May 2001). Meetings will be at locations and times that are appropriate for teachers and facilitators.

### **Data Collection**

A researcher, shared by TDSB and OISE/UT, will work with the facilitators and the teacher groups gathering information about the effectiveness of the program and providing assistance to the groups as necessary. Based on favourable outcomes of the 'field test', additional groups in other subject areas could be initiated in the following school year. A preliminary report regarding the success of the project should be available by June 2001 with a further detailed report trailing in the 2001-2002 school year.

### **Benefits to students**

Students, in classes mediated by teacher-researchers, will experience a high quality science and technology teaching and learning experience that is specifically tuned to their needs and uses the enhanced skills of their teacher.

### **Benefits to teachers**

Teachers will become more effective at what they care most about - their teaching and the development of their students. (Sagor, 2000) Personal and professional growth, especially in reflective practice, is one of the most commonly noted benefits of involvement in an action research project. Other benefits accruing would include networking with others teachers who are at a similar point in their careers and the enhancement of teachers skills that may be transferred to other situations. Participation would also allow teachers to develop their emerging skills in curriculum development and leadership. The growth of those involved in educational leadership is highly correlated to personal experiences of the kind described here. These leaders would reside in local schools where they can provide a level of mentoring to others that is not readily available presently.

Besides the advantages mentioned above, teachers can receive credit for their work that can be applied to a Masters Program from OISE/UT (assuming teachers qualify for the program in the usual way). The Instruction Office commits to explore other methods of rewarding teachers for their involvement, including pursuing recognition of this program with the Ontario College of Teachers.

### **Benefits to school**

School staff can rely on teachers that have experience in curriculum and professional development that is specifically attuned to issues that are about their classroom situations. This professional development proposal is intended to build the capacity of teachers and schools by increasing teacher reflective practices and access to educational resources (personal, academic, and professional). In the long term, the effectiveness and efficiency of school staff and the viability of school programs would be enhanced through this program.

### **How to get Teachers Involved**

The Science and Technology Department of the Instruction Office is looking for teachers to participate in a Professional Development Project. Teams of four to six teachers from the same school, or adjacent schools in the same Family of Schools, will work with an Instructional Leader on individual or group projects that address issues associated with Science and Technology teaching and learning. The expertise gained through these projects can be shared in a variety of forms and formats such as academic papers, classroom activity guides, newsletter contributions or small group seminars.

### **Suggested Teacher Characteristics**

The teachers would be expected to have many of the following characteristics:

- curriculum leadership potential
- project loyalty
- strong commitment to professional development
- willingness to reflect on experiences, try their ideas out in the classroom and critique those ideas afterwards
- willingness to participate in an educational research project
- willingness to participate in collaborative group work
- experience in curriculum development

Family of Schools' Supervisory Officers should contact school principals to inform the schools regarding the nature of this initiative and to solicit the participation of individual teachers. The name of the teachers and their school should be passed on to the TDSB Project Manager, Roland van Oostveen who can be contacted at [roland.vanoostveen@tdsb.on.ca](mailto:roland.vanoostveen@tdsb.on.ca) or (Ph.) 416-396-7797, (Fax) 416-396-4292.

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