One-on-One Inservice


The inservice problem for integrating tool use of computers into the curriculum is relatively easy to understand.

1. Given initial situation: Computers are a very useful aid to problem solving throughout every academic discipline and in real-world applications of these disciplines. Relatively few teachers understand the roles of computers as an aid to solving the types of problems that occur in the disciplines they teach. Few students are learning to make effective use of computer as tool in solving the types of problems they study in school.

2. Goal: If a computer is a cost effective aid to solving or helping to solve a type of problem that students are studying in school, then they should be learning how to effectively use a computer to help solve that type of problem.

3. Resources (empowerment): We understand the types of resources that can be used to help achieve the goal, and reasonable amounts of these resources are available. To reach the goal requires computer facilities, teacher training, and instructional materials. Of these, the teacher training is by far the most difficult to obtain and is in the shortest supply. It is not readily mass-produced.

4. Ownership: As with many problems, this is a key issue. Who really cares about attempting to reach the goal? Is it the people who would most benefit by reaching the goal (the students)? Is it the people who provide money that can help acquire the needed resources (tax payers and school board members)? Is it the people who would need to implement major changes in the curriculum (the teachers)?

There are many ways to attack the computer-as-tool problem. Inservice education is one approach. It is my personal belief that this is the most important approach. (Others believe that if we could just buy enough hardware and software, the problem would be solved.)

In last month's Editor's Message I talked about large group inservice. I briefly outlined some of what is known about the design and implementation of an effective large group inservice. This month I want to talk about one-on-one or very small group inservice. Research suggests that this is a highly effective approach to inservice that leads to change in teachers.

I want you to imagine yourself as being Teacher A in the conversation below. Teacher B teaches a non-computer subject such as history, art, science, music, dance, or journalism.

Teacher A: "Hello Teacher B. I need a little help from you. Have you got a minute?"

Teacher B: "Sure, if it won't take too long. I've got 10 minutes before my next class."

Teacher A: "Thanks. That will be more than enough. I have just been reading an editorial in a computer education magazine. This guy Moursund says that each discipline is essentially defined by the types of problems that it attempts to solve. He says that each discipline has special
vocabulary and notation for talking about and representing its problems. He says that a discipline can be thought of in terms of the problems that it knows how to solve, the problems that it is working to solve, and the methodologies that it has developed to solve its problems.

That seems rather strange to me. So, I'm checking it out with different teachers. How do Moursund's ideas fit with your field? Is it possible to think about your field in terms of problem solving?

Teacher B: "Sure. I teach problem solving in my classes. I don't teach solving math story problems, but there are other types of problems." (Teacher B goes on to explain the nature of problems in his or her discipline, and what students learn about solving these types of problems.)

Teacher A: "Wow, I never thought about it that way before. So you teach problem solving. I wonder if computers can help solve the types of problems you are talking about? Moursund says that computers are a useful aid to problem solving in every discipline. Now that I think about it, I can see a couple of real important uses of computers for the types of problems you named.

Well, I see that our time is up. However, I'd sure like to talk to you some more and learn more about the types of problems you are talking about. Also, I'd like to show you a piece of software that can help solve a number of these problems. Can we get together for a few minutes later today or early tomorrow? I think that it won't take more than 20 minutes or so.

That conversation illustrates a one-on-one inservice. Teacher A did careful preparation in advance of the "accidental" encounter with Teacher B. A brief outline of key ideas in this inservice follows:

1. Needs assessment: The most general part of the needs assessment is having a thorough understanding of the computer-as-tool problem discussed at the beginning of this article. Additional needs assessment comes from having an understanding of the types of problems that Teacher B's discipline addresses and the types of tool software available to help solve these types of problems. Finally, Teacher B's discussion of problems in his or her discipline provides additional input to the inservice provider.

2. Preparation: Teacher A did careful preparation for this one-on-one inservice. This may have required talking to other teachers in Teacher B's discipline, talking to Teacher B to build a working relationship, and studying some of the texts that Teacher B uses in the classroom.

3. The actual inservice: Notice that it was low keyed, casual, nonthreatening, and very brief. Teacher B may well have done more than half of the talking. The initial part of the inservice focused on Teacher B's discipline and problem solving in that discipline. This increased Teacher B's awareness that problem solving is an important part of the discipline and that students do learn to solve problems in that discipline. There is a good chance that Teacher B will place increased emphasis on problem solving in the next class that she or he teaches. It was only at the end of the conversation that Teacher A "set the hook" by noting that computers can help solve these same problems.

4. Follow-up: There is no guarantee that Teacher B will agree to a subsequent meeting. However, the 10 minutes was well spent even if it does not lead to
an immediate follow-up meeting. If Teacher B does agree to a follow-up
meeting, this is a major inservice success!

Research suggests that the typical computer-using teacher uses just a very small number of
different pieces of software. With today's "user-friendly" computer hardware and software
systems, it may take only a few minutes to gain an initial, useful level of knowledge about a
particular piece of software. If a half hour of one-on-one inservice leads to a teacher beginning to
use a new piece of software, this is highly cost effective.

Besides being cost effective, one-on-one inservice makes a major contribution to
professionalism in education. Every teacher has knowledge and skills that could be shared with
other teachers. Every teacher learns new content and pedagogy that can serve as a basis for one-
on-one inservice. The teaching of one's fellow teachers is a type of professionalism. All teachers
should be engaged in this professional activity. All teachers of teachers should work to increase
this type of professionalism.