

the problems of integrating our schools and the problem of improving the learning of children in very poor districts, both of which problems are, of course, related?

Dr. MARLAND. I am going to defer to Mrs. Koontz on that.

Mrs. KOONTZ. Mr. Brademas, I believe that really the questions here are pointing up what teachers generally have been feeling. These problems are so interwoven that when we attempt to pick one thing out and say, "Show me results yesterday," what we are doing is isolating a factor of education when it is not this kind of thing.

The question you are asking has to do with attitudes of administrators as well as teachers. We are suggesting, too, that as teachers we need this inservice training. But also the people under whom we work as coordinators, as administrators, must have the same understanding that we as teachers are getting if we are to effect new programs.

These, in turn, demand that we take a look at all ways we have been doing things, such as scheduling. It demands sometimes a complete turnabout in order to use old facilities. But at the same time, it may also demand that a part of old facilities go, so walls no longer become sacred, that they can be removed, that when we find the techniques that work, that we have the flexibility within policy as well as in school functions to make the changes.

Mr. BRADEMAS. Let me interrupt to say perhaps I haven't made my question quite clear. I don't know if my rhetorical question is accurate or not, in fact.

I can well see how the people who make audiovisual equipment would have an easy time in selling such equipment to very wealthy school districts. My question is, To what extent are the audiovisual people, teachers, and school administrators like yourselves, who run school systems where you do have a lot of problems in integration and cultural disadvantage—to what extent are you getting together to say, "Look, these are really the tough, thorny, mean, difficult, politically controversial problems in American education. What can we do to use all of your equipment to solve the tough problems, not the easy problems?"

Dr. MARLAND. I will try to give you a short answer to that, Mr. Brademas. I would say that the state of the art is still quite young on the so-called teaching technology. Even television has yet some distance to go before it becomes a lively and viable tool of teaching.

Those of us in the administration of teaching, I think, look for ways very honestly to improve, to expedite and increase the productivity of teaching through these means. For example, to be specific to your question, we in Pittsburgh have recently engaged ourselves with Westinghouse Corp., with General Learning Corp., General Electric, and Time-Life for experimental work in Pittsburgh, with children, using the computer to teach.

The schools in which these installations will be installed are good, clear examples of integrated urban schools, the poor and the favored, the Negro and the white, the swift and the slow, and so on. These schools are at the leading edge, if you will, of experimenting with computer-assisted instruction.

Nothing useful will come for this for at least 4 years, maybe 5 years, maybe 6 years. It is this kind of pace that we are facing.