Where are We Going as We Leave No Child Behind? La Technique and Postman, Papert, and Palmer - Part Two

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Where are We Going as We Leave No Child Behind? La Technique and Postman, Papert, and Palmer – Part Two

By Michael T. Charles

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My paradoxical argument is that technology can support megachange in education as far-reaching as what we have seen in medicine, but it will do this through a process directly opposite to what has driven change in modern medicine. Medicine has changed by becoming more and more technical in its nature; in education, change will come by using technical means to shuck off the technical nature of School learning. (Seymour Papert, The Children’s Machine: Rethinking School in the Age of the Computer, p. 56.)

.01 Technopoly revisited (return to index)

I argued in the first part of this series [1] that the recent reauthorization of the Elementary and Secondary Education Act (ESEA), frequently referred to as No Child Left Behind (NCLB), is typical of the technical thinking that dominates our society and thus our schools today. This kind of thinking reduces education to a production task in which a standards-based curriculum furnishes the product specifications, and standardized examinations function as quality control checks. NCLB mandates certain performance levels on certain kinds of examinations that must be offered annually. According to this kind of thinking, a teacher’s job is to produce more high quality products, and NCLB insures that objective measures will be in place to identify successful and unsuccessful schools where products rise to a certain level of perceived quality.

I suggested that this conception of education is in line with the phenomenon known as la technique as described by the French social thinker Jacques Ellul in 1954 [2]. In our world, Ellul argues, all problems are increasingly conceived of as technical problems to be solved by improved technical means. Neil Postman, a contemporary
American writer, has revisited Ellul’s argument and coined the term technopoly to describe this monopoly of technical thinking [3]. Postman believes that the uncontrolled growth of technology destroys the vital sources of our humanity. In the first part of this article I restated this argument to say that the fundamentally human character of education is being increasingly invaded by the same sort of technical thinking that dominates our culture, and that NCLB is an exemplar of that kind of thinking.

If an ideology can be described as “a set of assumptions of which we are barely conscious but which nonetheless directs our efforts to give shape and coherence to the world,” [4], then technopoly is the functioning ideology of our time. Others have noted deficiencies in the ability of technical thinking to address educational issues, though stated their concern more moderately. For example Jan Hawkins pointed out that “Perfecting and replicating a product has not been an adequate conceptual framework for shaping change in this arena” when discussing school reform [5]. Whether it threatens to destroy the vital sources of our humanity or is simply inadequate to solve our problems, technical thinking certainly has flaws that advocates of NCLB do not seem to recognize.

I also argued that Postman’s critique of technopoly was flawed—that Postman has confused the technical artifact with the technical phenomenon. Ellul argued that while technological machines such as the computer are the embodiment of technical thinking, it is technical thinking that comes first. More importantly it is technical thinking that is invading every sphere of human activity long before machines do so. “Research on rational and efficient methods is expressed not only in constructions of material devices–machines. It covers and has gradually come to encompass all human activities” [6].

Thus if one is concerned about the invasion of technopoly into education, then the critical thing to oppose is not, for example, the use of computers in K-12 education or the possibility that computers will one day replace teachers in schools. The thing to oppose is the kind of technical thinking embodied in legislation like NCLB which suggests that improved school productivity is synonymous with better student learning. Postman is particularly skilled in arguing against a “sleepwalking attitude” against using computers in the schools in ways that might “distract us from more important things” [7]. What I am suggesting is that we need to guard against this same sleepwalking attitude regarding the larger invasion of technical thinking into how we help students learn. The triumph of technical thinking is best embodied in the mechanism of NCLB and not in the presence of computers in classrooms.

Ironically, the person that I have found most helpful in doing this kind of critical thinking is one who is often described as a techno-utopian [8]: Seymour Papert, the inventor of the children’s computer language Logo and a “seminal thinker in the ways that computers can change learning” [9].

02. Seymour Papert—a critic of technical thinking in schools (return to index)

Seymour Papert is perhaps best known as the leader of the team at the MIT Media Lab who created the computer language Logo. In the debates that took place in the early 1980’s about how computers should be used in schools, Papert famously argued that children should program computers, instead of having children programmed by computers. He opposed the typical computer-assisted instruction of the time and developed instead ways for using computers to make powerful ideas accessible to students. He describes himself as a constructionist, his own particular “build” of constructivism which “attaches special importance to the role of constructions in the world as a support for those in the head” [10].

Postman has directly discussed Papert’s work in his own writing. He notes that Papert has a unique and valuable perspective, but Postman remains unconvinced of the value of computers in the schools:

Seymour Papert for example, wishes students to be epistemologists, to think critically, and to learn how to create knowledge. In his book Mindstorms, he gives the impression that his computer program known as Logo now makes this possible. But good teachers have been doing this for centuries without the benefit of Logo. I do not say
that Logo, when used properly by a skilled teacher, will not help, but I doubt that it can do better than pencil and paper, or speech itself, when used properly by a skilled teacher. [11]

In another article he is more complimentary of Papert’s work, but still questions the value of computers in education per se:

Seymour Papert’s *The Children’s Machine* is an imaginative example of how computers have been used to promote social cohesion, although, as I have had occasion to say to him, the same effects can be achieved without computers. Naturally, he disagrees. [12]

Postman does not oppose Papert’s educational ends of developing student’s critical thinking and promoting social cohesion. But he does oppose the means that Papert uses. Postman does not believe that computers can provide any real additional value for helping students learn. Yet I contend that Papert better understands the larger threat of technical thinking in the schools than Postman, the author of *Technopoly*.

In his book *The Children’s Machine* (1993) Papert summarizes the problem of technopoly in the schools particularly well in his discussion of the potential for megachange (or massive change) in school. Papert begins with a critique of the institution of School:

I would agree that learning is a natural act if we are talking about the kind of learning that happens in a healthy relationship between a mother and her baby or between two people getting to know each other. But schooling is not a natural act. Quite the contrary: the institution of School, with its daily lesson plans, fixed curriculum, standardized tests, and other such paraphernalia tends constantly to reduce learning to a series of technical acts and the teacher to the role of a technician. [13]

In the first part of this extended quote Papert clearly states how teacher’s roles have been reduced by the prevalence of technical thinking (or Postman’s technopoly). It is interesting to note that just as Postman suggested that one does not need a computer to do the kind of things that Papert wants to see happen in schools, Papert points out that one does not need a computer to become “technicalized” in the schools. It is the regimen of standard lessons, curricula, and assessment schemes that make up the technical reality in schools. I would suggest that in technical terms, computers are only clumsily used by schools in this process as they are too new, too undersupported, and too scarce to really be an effective part of the technical system.

If Papert is particularly perceptive in noting the invasion of technical thinking into the institution of School, he is also keenly aware of the human response. The quote above continues:

Of course, it [School] never fully succeeds, for teachers resist the role of technician and bring warm natural human relationships into their classrooms. But what is important for thinking about the potential for megachange is that this situation places the teacher in a state of tension between two poles: School tries to make the teacher into a technician, in most cases a sense of self resists, though in many the teacher will have internalized School’s concept of teaching. Each teacher is therefore somewhere along the continuum between technician and what I dare call a true teacher. [14]

Papert pays particular attention to something we have not previously discussed in thinking about technopoly—the tendency to try to humanize our increasingly technical world. Employing ever more technical means leads to less human environments, but Papert highlights our natural resistance to that effort.

He goes further to say that technology can be an ally in this resistance to technical thinking. Postman would disagree, or at least he would say that technology has no unique contribution to make to this resistance effort. Papert expands on this notion as the quote continues:
Not since the printing press has there been so great a surge in the potential to boost technicalized learning. But there is also another side. Paradoxically the same technology has the potential to detechnicalize learning… the great issue in the future of education is whether technology will strengthen or undermine the technicalness of what has become the theoretical model, and to a large extent the reality, of School. My paradoxical argument is that technology can support megachange in education as far-reaching as what we have seen in medicine, but it will do this through a process directly opposite to what has driven change in modern medicine. Medicine has changed by becoming more and more technical in its nature; in education, change will come by using technical means to shuck off the technical nature of School learning. [15]

Papert makes two striking points here. First, he suggests the possibility that computers in the school might be agents of megachange, of reform at the deepest levels. Second, he is adamant about the inadequacy of the medical model to accomplish that change. It is precisely this medical model that many proponents of NCLB hold up as the one that educators should strive toward emulating. In a recent article, Denis Doyle says that “data driven decision making is the foundational activity that underlies the No Child Left Behind Act of 2001 (NCLB).” Doyle continues “not to put too fine a point on it, schools gathered data for 150 years but rarely used it (except for compliance purposes); nine months into NCLB schools are now required by law to use data… In the world of education, ‘knowledge based decision making’ is, of necessity, a blend of data-driven decision-making and professional judgment, just as in medicine.” [16] For Doyle and other advocates of NCLB, technical thinking will be the critical agent for reforming education. For Postman, technical thinking is an anathema to education. For Papert, technical thinking can be resisted by, of all things, technology.

This is Papert’s paradox, and he has some evidence that he understands how to carry out this resistance. In the 1980’s the Logo computer language that he developed had a significant following among educators who were beginning to use technology to enable what later became called project-based learning. The Lego Mindstorms robotics kits are named for his groundbreaking 1980 book. Robotics competitions are held around the country by organizations such as First Lego League and a wide range of local groups including the Oregon Oregon Robotics Tournament and Outreach Program (ORTOP) [17] At his Learning Barn lab in Maine he works with others “to develop methods of learning that are too far ahead of the times for large-scale implementation.” And he has chosen some unique places to try out some of these methods—much of his time currently is spend working in the Maine Youth Center, the state’s facility for teenagers convicted of serious offenses. [18] But clearly his ideas have had an impact larger than these smaller “boutique” projects. Papert is credited with inspiring and helping to shape Maine’s laptop initiative for every student. [19]

03. Papert and la technique (return to index)

In his seminal writing, Jacque Ellul argued that the predominance of la technique (or what I am calling technical thinking) means that increasingly all pressing problems are conceived of as technical problems requiring technical solution. Efficiency is the governing value in this increasingly closed system. The desirable end for all human activity is to carry out our endeavors more efficiently, more effectively. To what end we do not know, according to Ellul, and that is at the heart of our current crises.

Papert argues that technology in the schools can be used either to support the existing system of technical thinking, or to render it obsolete. He believes that technology “is doing best in the minority of schools where it is being used to go beyond improving traditional performance of school” [20]. He wants to use technology to unseat technical thinking in the schools, and thinks that often the best way to do that is to demonstrate the viability of these new ways of learning with technology in a small but significant minority of schools.

We are living with an educational system that is fundamentally as irrational as the command economy and ultimately for the same reason. It does not have the capacity for local adaptation that is necessary for a complex system even to function efficiently in a changing environment, and is doubly necessary for such a system to be able to evolve. [21]
Ironically his argument for school reform is ultimately that our current schools are inefficient. According to Jacques Ellul, efficiency is the sole value of our technical system. Thus Papert proposes to undo technical thinking using technology. But the reason that he gives for undoing this technical thinking is fundamentally technical—to help a complex system function more efficiently. So while in many ways Papert seems to understand the heart of Ellul’s argument about the predominance of la technique or technical thinking, in the end he appeals to the technical value of efficiency to make his case. One of the most profound parts of Ellul’s critique is that he argues that technical thinking is so pervasive that it is very difficult to escape it, even when one is consciously trying to do so. Ellul’s point is not simply that there are the “good thinkers” who critique technology and the “bad thinkers” who are its sponsors. His point is that all thought is pulled in the technical direction, and that our technical solutions are ultimately exacerbating our human problems. For Ellul technical thinking is the only way we have left to think in this modern (and post-modern) age. This brief exploration of Papert’s perceptive critique of technical thinking makes that point once more. Doing things more efficiently is something that even our best critics of technology must appeal to if they are to be heard.

In the third and final part of this series I would like to further explore what I have earlier called the fundamentally human character of education. Parker Palmer has written eloquently about the importance of this human side and the extent to which it is neglected. I will also suggest some ideas about a response to the technical phenomenon of our times.

04. Notes (return to index)


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York: BasicBooks.

Papert resources


[18] See http://www.papert.org


05. Papert resources (return to index)

http://www.papert.org/
Seymour Papert’s homepage containing links to works by Paper and resource pages for Logo and the Logo foundation, Lego Mindstorms, and MaMaMedia.

06. References (return to index)


ONE THOUGHT ON “WHERE ARE WE GOING AS WE LEAVE NO CHILD BEHIND? LA TECHNIQUE AND POSTMAN, PAPERT, AND PALMER – PART TWO”

cork board ideas

on February 5, 2014 at 12:41 PM said:

Pretty! This has been a really wonderful post. Thank you for supplying this info.