

The Upcoming of Learning Technology

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Mitchell's provocative essay leads me to believe that we should really rejoice at the demise of educational technology rather than attempt to shore it up with a strong injection of control systems theory (the proffered solution to the current crisis). I believe ET (Educational Technology) is problematical, but in a rather different sense than the one advanced by Mitchell, and, as announced by my title, the solution to the problem lies, I believe, not in educational cybernetics but rather in educational psychology.

ET As Ineffectual

ET is ineffectual only in as much as we expect it to be a panacea for today's and tomorrow's educational ills. While it certainly may be true that near illiteracy and innumeracy characterize too many of our kids upon high school graduation, whose demise should that announce? ET is but one player in an organic educational and societal system that juggles constraints and goals to improve its situation. Here is where a systems view needs to be applied!

Mitchell is an idealist, however, and espouses (most mistakingly, I feel) a radical ET paradigm which views transformation of education as its goal (the clearing up of the messes, as he puts it). The educational technologist is seen as a change agent, one which attempts to change people's minds regarding the way to teach and to organize learning. It must be recognized that radical ET is an elitist perspective, which fortunately (or unfortunately?) often shoots itself in the foot with its latest enthusiasm (remember ETV or CAI?), thereby calling into question the short-sightedness of its missionary zeal. Over the years, I have come to believe that if the solutions we educational technologists propose to our clients are not readily appropriated by them, then the lack is not primarily in our client's understanding and receptiveness, but rather in our own proposed solutions.

This seems to be what Mitchell is advocating, that we need to broaden our problem space and bring to bear system tools to truly tackle the problems. Unless I have misread his point of view, however, his solution remains tied to an advocacy position in which we attempt to bring about change in a generally unwilling and unresponsive system. Only now, our efforts should be less blinkered by our largely non-theoretical and routine application of instructional design. Mitchell's idealism, a laudable prospect on its own terms, keeps him unfortunately well settled in the radical ET camp.

The Cybernetic Solution

Mitchell is saddened by the oft-encountered shallowness of ET and calls for

a larger perspective to bring some measure of perspecuity to the situation. He forgets, however, how valuable even routine ET can be in instructional design (when not involved in foot-shooting, of course). My own personal experience in large-scale training programmes has pointed that out to me whenever I have contrasted the quality of training materials developed through an ISD process with the quality of materials developed without such a process. Even if it is limiting, the instructional systems design process can be beneficially applied to many educational and training problems.

I do agree with Mitchell that many aspects of ET are very much less sophisticated than one would ideally like. He rightly suggests, for instance, that CAL is simplistically geared to a trivial process of discourse which fails to build on anything like an appropriate model of student understanding. Let's keep in mind, however, that we are dealing here with advanced technology (the design of intelligent tutoring systems) that is still largely in the arena of R&D and therefore still in the future in any practical terms.

Sophisticated solutions to our educational ills, Mitchell contends, will require a cybernetic perspective that refines our notion of regulatory control theory so that it properly includes psychological frameworks (our own and that of others) into its workings. Despite stating that ET has unfortunately been traditionally concerned more with instruction than with learning, Mitchell is essentially proposing a refinement of control through instruction, even if that control is meant to be more responsive to student needs.

Here, in my view, is where the crux of the ET problem lies. Control is the single big issue that ET needs to address in order to invigorate its theoretical programme and prepare itself for the advent (onslaught?) of interactive technologies in the school and in the home. The issue is the following: given that we can control the flow of instruction along optimal lines (that, after all, is the ambition of any individualized system of instruction), should we do so? That is, to what extent should we hand over to the learner control over the instructional flow, as opposed to trusting our own models of instruction, as embedded in our instructional artifacts? The issue is a complex one and it will require our best efforts to make sense of its various aspects.

The Rise of Learning Technology

The reason I raise this issue is that I believe Mitchell is misguided in proposing the need for a cybernetic regulatory model to guide ET. What is needed instead is a focus on how we can better involve the learner in education both formal and informal. We need to focus not on the design of systems, but rather on the design of learning environments (an orientation broached, but hardly adequately dealt with, in Duchastel, 1988).

Thus, there is little cause for concern over the demise of ET as long as we foresee its successor in what is becoming known as Learning Technology. This new technology promises to focus to a much greater extent than its predecessor on learning processes and on how they tie into instructional settings.

In his essay, Mitchell has rightly pointed out that ET is headed towards

trouble. His proposed solution is a strong one, and one which is therefore contentious. I find that exciting, for I think that educational technologists are on the verge of redefining their field. That is cause for rejoicing, and for hope that our collective efforts may have some measure of impact in improving education. Let's bury ET and give birth to LT.

REFERENCE

Duchastel, P. (1988). Designing intelligent learning environments. In H. Mathias, R. Budgett, & N. Rushby (eds.) *Designing new systems and Technologies for learning*, (p. 93-98). London: Kogan Page.

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