

The Institute for Learning Technologies: Pedagogy for the 21st Century

ILTdoc: Pedagogy for the 21st Century 1994

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The [Institute for Learning Technologies](#) is guided by an understanding that, by and large, the defining characteristics of the modern school precipitate from the implementation constraints of the information technology that enabled and supports them -- printing. As we enter a time when networked digital technologies are fast becoming the prevailing technologies for communication and for information retrieval, processing and creation, the Institute seeks to identify new ways to realize various pedagogical principles -- ways that are enabled by this shift in dominant technologies. The educational principles and practices the Institute advocates have historically found expression in diverse philosophical contexts, and they have implications for the whole of the educational enterprise -- for schools' size, schools' physical structures, schools' temporal structures, teachers' roles, curriculum, methods of curriculum design and development, teacher training, and so on.

The research literature in a number of related areas informs the Institute's vision of schools in the 21st century. The ideas advanced in the literature converge, however, on a central notion -- that small, nurturing, personal schools [1] in which educational activity can be tailored carefully to individual students' needs and interests are most effective and most compelling. And this notion is supported by a related belief that students' work in school should be guided by projects that they share in defining and that, to the greatest degree possible, involve them in authentic intellectual activity rather than canned recitation exercises. While these guiding principles are not exactly novel ones -- the so-called progressives of the 1920's urged a similar conception, and Jean-Jacques Rousseau articulated a similar vision in the mid-18th century -- schools now find themselves newly able to bring them to life. The digitization of our cultures is providing schools with access to a breadth of intellectual and cultural resources far greater than ever before; it is providing new, sophisticated and customizable tools for inquiry and investigation; it is enabling modes of interaction, communication, and collaboration not formerly possible. [2]

To the extent that the Institute follows and advances any one educational philosophy, it is a constructivist one. Constructivism [3] [4] is actually a collection of theories and ideas about different issues in pedagogy that are informed by a range of philosophical/epistemological outlooks. Some of these conceptions are incommensurate with each other; others complement each other. The Institute conceives of the constructivist agenda [5] as primarily motivated by a recognition that most, if not all, knowledge domains are complex and ill-structured in a number of ways that require for their mastery experience with a broad range of cases that reflect the complexity and diversity of the field. Aligned with this idea are the related notions that learning requires a significant degree of practical experience with the application of principles, and that learning is a kind of enculturation akin to the acquiring of natural

language knowledge and skill. By and large, knowledge and skill are seen as intimately bound up with each other, such that the folk categories of knowing what and knowing how [6] are seen as significantly interdependent. Flowing from these general principles are more specific practices such as so-called 'anchored instruction', 'cognitive apprenticeship' [7], and 'collaborative learning' that find articulation throughout the literature and that the Institute brings to life in its projects.

Much of the Institute's work can be seen as an on-going effort to identify important, and newly realizable, features of the contexts for good, constructivist practices. Here, the Institute finds itself aligned closely with the "essential schools" movement of the Coalition for Essential Schools [8] and the New Visions Schools Initiative of the Fund for New York City Public Education. Both these initiatives are guided by the constructivist idea that the dominant metaphor in school should be the student-as-worker, and by the supporting idea that the student's work should engage complex information resources capable of sustaining authentic inquiry that is carefully conceived to help her integrate new acquisitions into her corpus of knowledge/skills. The schools affiliated with these organizations serve diverse communities with diverse needs, and it is an important part of the vision that they be free to implement structures and practices that reflect their idiosyncratic circumstances. But they are united in their belief that smaller schools are more able to remain essential -- more able to attend to individual needs and more able to ensure that the activity is carefully conceived.

The roles of teachers in these essential schools are reconfigured just as much as the curricular structures are. Whereas, in the comprehensive school, staff members have highly expertise-specific duties, in the essential school each and all have a collaborative responsibility for the whole. What's more, as the raw materials of the curriculum increasingly become electronic ones accessed via digital networks, the range of skills required of teachers is broadening rapidly. All this change points to a need to rethink the processes of professional development for educators. The work that constitutes their profession is changing and so must their training. The Institute is currently conducting work in this area as well, investigating ways to align the findings and the prescriptions of various standards organizations with new needs that flow from what is enabled by the implementation of networked digital technologies in the context of the essential school.

Much of the theoretical background for both constructivism and the essential school converges nicely with some current ideas in systems design methodology. The Institute has identified in so-called 'participatory design' [9] a number of ideas about design strategy and tool use that have significant applications in the area of developing curriculum computer supported curriculum, in particular -- in the essential school. Participatory design is a collection of principles and practices originating in Scandinavia as part of a labor-empowering movement to democratize the workplace. The theoretical underpinning of PD is a reconsideration of a traditional view of design as a formalizable means of rational decision making about the relative worth of different states of affairs. PD urges that we understand designing as a combination of purposeful, but not reasoned, moves and more detached, actively rational decisions. The theoretical literature discusses ways that tools are used by communities that have adapted them to certain occasions for use such that they are employed without reflection, much the way conceptual or linguistic tools frequently are in discourse. These notions are related to other ideas about ways that information systems fail when these features of tool use are not adequately attended to in the design of systems. Ultimately, PD makes a strong case that the users of systems should be enfranchised in the design process. A good deal of the reasoning supporting this conclusion is markedly similar to that supporting the tenets of certain constructivist conceptions. In particular, many thinkers in both movements are driven by an

interest in the significance of context for understanding cognition and action in learning situations. An interdisciplinary movement is emerging from cognitive psychology, anthropology, philosophy of language, and philosophy of mind that urges that cognition be regarded as inherently situated. These thinkers are reconsidering the traditional starting point of cognitive psychology -- that all cognition is fundamentally a process of symbolic representation of the world. The Institute is attempting to mobilize this convergence of PD and constructivism to large effect by exhibiting the practical efficacy of integrating the design, evaluation and dissemination processes of curriculum development along PD lines. Such an integrated approach fits well with the concept of the essential school where individualization and collaboration already play important roles.

Effecting a strategic vision in education requires the sustained application of diverse resources in a deliberate manner, according to a clear and rational plan. It is to help lay the groundwork for such an effort that the Institute has designed its program of practice. The Institute believes that there are four distinct requirements to effecting systemic educational change. These are:

- a *proof of concept*, to show that a significant alternative to existing practices is possible;
- a *driving force*, to provide the historical energy to carry innovations through to full implementation;
- a *moving social vision*, to legitimate the costs incurred with change and to inspire the efforts needed to effect it.
- a *tangible institutional leverage*, to enable new practices to alter resistant organizational structures, transforming them from within.

The Institute has developed its program to meet these requirements and to provide a framework for the mobilization of disparate elements in a common endeavor.

Those interested in a more in-depth discussion of the ideas guiding the development of the Institute's program should see McClintock, *Power and Pedagogy* [10]. Those interested in an in-depth description of the Institute's program as it aligns with these ideas should see McClintock and Taipale, "Educating America for the 21st Century": A Strategic Plan for Educational Leadership 1994-2001. [11]

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