

IMPACT SYNERGY
Defining the Scientific Evolution of Technology Enhanced Learning
VALUE EXCELLENCE



Embedded Thinking

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- Preliminary considerations

Philosophical considerations, folk theory about reality, and everyday practice are closely related.

Philosophical considerations are determined by difficulties caused by communications technology.

- Communication revisited
- Education from the point of view of philosophy
 - Philosophy and communications technology
 - A turning point in philosophy
- Philosophy and practice

- Communication

“Society not only continues to exist *by* transmission, *by* communication, but it may fairly be said to exist *in* transmission, *in* communication. There is more than a verbal tie between the words common, community, and communication. Men live in a community in virtue of the things which they have in common; and communication is the way in which they come to possess things in common. What they must have in common in order to form a community or society are aims, beliefs, aspirations, knowledge – a common understanding – like-mindedness as the sociologists say. Such things cannot be passed physically from one to another, like bricks; they cannot be shared as persons would share a pie by dividing it into physical pieces. The communication which insures participation in a common understanding is one which secures similar emotional and intellectual dispositions – like ways of responding to expectations and requirements.” (J. Dewey, *Democracy and Education. The Middle Works of John Dewey 1899-1924*. Vol. 9, Carbondale and Edwardsville : Southern Illinois Univ. Press 1985. p. 7)

- “Not only is social life identical with communication, but all communication (and hence all genuine social life) is educative. To be a recipient of a communication is to have an enlarged and changed experience. ... The experience has to be formulated in order to be communicated. To formulate requires getting outside of it, seeing it as another would see it, considering what points of contact it has with the life of another so that it may be got into such form that he can appreciate its meaning.” (Ibid. 8)

- Education from the point of view of philosophy
 - Dewey
 - Philosophy of communication
 - Epistemology

“All of these separations [traditional dualisms like matter vs. method, intellect vs. emotion, activity vs. passivity, empirical vs. higher rational knowing, etc.] culminate in one between knowing and doing, theory and practice, between mind as the end and spirit of action and the body as its organ and means.” (Ibid. 346)

- Continuity vs. dualism
- Dualism means "absence of fluent and free intercourse" (Ibid. 343)
- Focusing only at one of the poles at a time

- Philosophy and communications technology
 - orality (conservative and traditional, storage language)
 - literacy (the age of written records and analytic rationality)
 - secondary orality (set in with telephone, radio, television, and the various kinds of sound tapes and similar electronic technologies)
 - secondary literacy (an epoch which is characterized by the rationality of literacy but due to the changes in communications technology allows for multimodal enhancement)

- Epistemology
 - The philosophy of the literate mind
 - Breaking apart of body and mind
 - Atomistic individualism
 - Thought process = symbol manipulation

– A turning point in philosophy

- Bergson, Dewey
- Wittgenstein, Heidegger
- Conceptual/cognitive metaphor theory
- Cognitive science and psychology

- perception
- motor activity
- environment
- practice
- embeddedness

Summing up the differences

Phil. of the literate mind

- Individual mind
- Body/mind dualism
- Subject observes the world
- Entities and symbols correspond in some way (symbol manipulation)
- Focus on abstract reasoning

Phil. of secondary literacy

- Social brain
- „Body in the mind”
- Subject is immersed in the world
- Conceptualization related to bodily experiences
- Language in a new light and the importance of imagery

- Philosophy and practice
 - Response to changes
 - Vocabulary to fit demands

- Notions and institutions
 - Childhood
 - School and discipline

“The first concept of childhood – characterised by ‘coddling’ – had made its appearance in the family circle, in the company of little children. The second, on the contrary, sprang from a source outside the family: churchmen or gentlemen of the robe, few in number before the sixteenth century, and a far greater number of moralists in the seventeenth century, eager to ensure disciplined, rational manner.”

(Aries, P. 1962 *Centuries of Childhood: A Social History of Family Life*, transl. from the French by Robert Baldick, Random House, New York p. 132)

Similar changes noticeable in the concept of education. The surprising fact that in medieval society the idea of childhood, i.e. “an awareness of the particular nature of childhood” does not exist (*ibid.* 128) means at the same time that “it had no idea of education” either (*ibid.* 411). In the middle age school was not considered the institution to educate children. Only at the beginning of modern times emerged the demand for education to target the youth in the so-called colleges. The other “essential difference between medieval school and the modern college lies in the introduction of discipline” (*ibid.* 333). Discipline means better supervision inside school and at the same time the expectation to respect the complete school period. This change emerged in the late 16th and 17th centuries.

“But why did the school system itself emerge?” asks Kristóf Nyíri. “The explanation is obvious, even though Ariès fails to see it. As Neil Postman, combining Ariès with McLuhan, points out: it was the rise of *literacy* that made formal schooling inevitable.” (Nyíri, Towards a Philosophy of M-Learning. in: M. Milrad – U. Hoppe – Kinshuk, eds., *Wireless and Mobile Technologies in Education*, CA: IEEE Computer Society, Los Alamitos 2002, p. 122)

Let me to refer Bruner's considerations with regard to the importance of context. As he wrote, "because so much of the 'meaning' of what is being learned is intrinsic in the context in which the learning occurs, there is very little need for verbal formulation". Bruner goes on to quote from Fortes: "It would seem that Tale children rarely have to ask 'why' in regard to the people and things of their normal environment because so much of their learning occurs in real situations". We can say that the more complex a society is, the stronger the need for "*telling* out of context rather than *showing* in context."

Jerome S. Bruner, Rose R. Oliver, and Patricia M. Greenfield, et al., *Studies in Cognitive Growth*, New York/London/Sydney: John Wiley & Sons, Inc. (1966) 1967, p. 61)

- What about learning nowadays?

- Integrating vs. taming

“[I]nstead of the computer cutting across the disciplines in the subjects, the computer is now confined to a computer room and it is a subject of its own, taken out of the mainstream of the learning environment. There’s now a specialized computer teacher. There’s a curriculum even for the study of the computer. It has been normalized by the system; it has been tamed. That’s not the only way in which it can be tamed.”

(Papert, S. 1998 Child Power: Keys to the New Learning of the Digital Century. http://www.connectedfamily.com/main_alt.html)

- Embedded education

“A good educational system should have three purposes: it should provide all who want to learn with access to available resources at any time in their life; empower all who want to share what they know to find those who want to learn it from them; and, finally, furnish all who want to present an issue to the public with the opportunity to make their challenge known.” (Ilich, I. (1971) 1978 *Deschooling Society*, Marion Boyars, London, p. 75)

- The technological background is given.
 - Multimedia
 - The networked mind and social networks
- In the light of these changes it's time to bridge the gap between school and everyday life.

Thanks for your attention.

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