Towards a Philosophy of M-Learning

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Abstract

On the Internet e-mail is the most popular application, and mobile devices, too, are used mainly for purposes of person-to-person communication. These observations confirm the view, long entertained in philosophy, that to communicate is an anthropological necessity. Starting from an analysis of the ubiquitous nature of communication the paper refers to the intimate connection between communication and education, and proceeds to examine the historical origins of the separation between school and society; recalls that childhood itself is socially constructed; and points to the advantages of a learning environment containing not just texts but also pictures. In such an environment person-to-person mobile communication by itself becomes learning. Communication is the source from which m-learning emerges.

1. Ubiquitous communication

According to an oft-cited formulation in Dewey's *Democracy and Education*, a major work both in 20th-century philosophy and educational theory, "[s]ociety 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 they have in common; and communication is the way in which they come to possess things in common." To this Dewey added: "Persons do not become a society by living in physical proximity... A book or a letter may institute a more intimate association between human beings separated thousands of miles from each other than exists between dwellers under the same roof." [1, pp.4f.]

Some years later, however, Dewey expressed reservations about the cohesive powers of written forms of communication. In its "deepest and richest sense", he stressed, a *community* must always remain "a matter of face-to-face intercourse". The "winged words of conversation" - Dewey meant verbal conversation - have a "vital import lacking in the fixed and frozen words of written speech". As he went on to say: "The connections of the ear with vital and out-going thought and emotion are immensely closer and more varied than those of the eye. Vision is a spectator; hearing is a participator." [2]

Modern mobile multimedia communications devices combine voice, text, and live pictures – just think of the promise of MMS. Dewey would no doubt have found mobile telephony a medium with a great potential for the fostering of social cohesion. Also, Dewey's belief in the intrinsic connection between communication and community is fully corroborated by the insights of contemporary cognitive science. Robin Dunbar has convincingly shown that language evolved specifically to service social relationships, and even today is mainly used for exchanging information on social matters. [3] And Merlin Donald plausibly argues for the thesis that language first emerged as a visual sign system, and still today retains a basic dimension of mimetic gestures. [4] Mobile telephony thus brings back a world that very much fits our anthropological makeup: the world of ubiquitous multimodal communication.

2. School and society

In *Democracy and Education* this is how Dewey continues the passage quoted above: "Not only is social life identical with communication, but all communication (and hence all genuine social life) is educative. To be a recipient of communication is to have an enlarged and changed experience." In primitive cultures it is the everyday world of communication which fulfils the functions of an educational environment. "Savage groups", writes Dewey, "depend upon children learning the customs of the adults, acquiring their emotional set and stock of ideas, by sharing in what the elders are doing. … To savages it would seem preposterous to seek out a place where nothing but learning was going on in order that one might learn." However, this changes "as civilization advances". The gap between "the capacities of the young" and "the concerns of the adults" widens, "learning by direct sharing in the pursuits of grown-ups" becomes increasingly difficult. In particular with the emergence of *literacy* there arises the need for separate institutions of formal education. Schools, Dewey points out, come into existence "when social traditions are so complex that a considerable part of the social store is committed to writing and transmitted through written symbols". [1, pp.6, 9, and 22]

Writing some four decades later, Marshall McLuhan describes a completely transformed situation: "Today … most learning occurs outside the classroom. The sheer

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quantity of information conveyed by press-magazines-film-TV-radio far exceeds the quantity of information conveyed by school instruction and texts. This challenge has destroyed the monopoly of the book as a teaching aid and cracked the very walls of the classroom so suddenly that we're confused, baffled." [5] Another four decades go by, and, with the advent of the internet, the time has arrived for radical formulations such as the one by Seymour Papert: "The whole concept of curriculum, accreditation, and segregation by ages is entirely a product of outmoded ways of disseminating knowledge. ... The entire school is determined by primitive technologies of the past... The artificial kind of learning we call a school was simply proposed to get children to know things they didn't acquire naturally from the learning environment. As this need disappears, the institution of school will disappear." [6]

It seems, then, that we have to re-think Dewey. His argument was that we need schools, artificial eductional environments, because the young can no longer learn spontaneously by moving around in the world of adults. I believe this state of affairs is rapidly changing. The medium in which children play, communicate, and learn – the world of networked computing and mobile communications – is increasingly identical with the world in which adults communicate, work, do business, and seek entertainment. The patterns of primary and secondary education are bound to change.

The patterns of tertiary education, clearly, did already change. Young people growing up today will have, in increasing numbers, a permanent job years before they begin some sort of university studies. 1995/96 figures are reported by Richard L. Hannah: "The age, experience, and work history of students impact online acceptance, often define access points (e.g., campus, work, home) and indicate career relevance of leaning about and through the Internet in addition to the context of the specific academic course content. The traditional 'four year degree' is not realistic for most students. In fact, the majority (58.3%) of undergraduate college students are now beyond the benchmark (if not mythical) 21-year-old graduate... Statistical profiles of freshmen surveys consistently show a high proportion of students expect to work to help pay for college expenses, 39.5%, with 5.5% expecting to work full time... Anecdotal testaments indicate this is a significant underestimate of work hours, and some research is indicating that the work—school blending is also emerging as a significant factor in high schools." [7] On-the-job learning is becoming the rule. The importance of what – somewhat misleadingly, in the age of collapsing space – is called distance education, rises; the importance of the physical campus declines. Face-to-face contacts with venerable professors are supplanted by face-to-face contacts with senior members of the firm, or organization, where the young person works. As Ivan Illich has put it way back in 1970: "there is no reason why ... skill centers should not be at the work place itself, with the employer and his work force supplying instruction as well as jobs". [8]

3. The social construction of childhood

In his book *L'Enfant et la vie familiale sous l'ancien régime*, published in 1960, Philippe Ariès formulates a fascinating thesis. The conceptual distinction between "child" and "adult", suggests Ariès, is not one entertained in every culture. In Western history it was known in the Hellenistic period, forgotten in the Middle Ages, and rediscovered in sixteenth and seventeenth centuries. As Ariès puts it: "In the Middle Ages, at the beginning of modern times, and for a long time after that in the lower classes, children were mixed with adults as soon as they were considered capable of doing without mothers or nannies - in other words, at about the age of seven. They immediately went straight into the great community of men, sharing in the work and play of their companions, old and young alike." [9]

This pattern changed, Ariès shows, with the emergence of the early-modern school system. But why did the school system itself emerge? 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. [10] Now with television images supplanting the written text, Postman suggests, the boundary between childhood and adulthood once more becomes blurred. One does not have to go to school in order to be able to understand pictures. Curiously, Postman thinks that the move from texts to images amounts to a cultural and cognitive decline. I believe Postman is here mistaken.

4. Text and picture

Throughout the twentieth century the view that visual images play a substantial role in rational thought, and that pictures are important carriers of information, was a minority position in philosophy. The position was defended e.g. by Russell, who in 1919 said: "The 'meaning' of images is the simplest kind of meaning, because images resemble what they mean, whereas words, as a rule, do not." [11] Russell was echoed by H.H. Price in 1953. "We have the misfortune", Price wrote, "to live in the most word-ridden civilization in history, where thousands and tens of thousands spend their entire working lives in nothing but the manipulation of words. The whole of our higher education is directed to the encouragement of verbal thinking and the discouragement of image thinking. Let us hope that our successors will be wiser, and will encourage both." [12] Even Wittgenstein, whose name is seldom associated with this position, held

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that word languages on the one hand, and the language of pictures on the other, function jointly, acting on each other; that pictures, like words, are instruments embedded in our life. However, while words are predominantly conventional, pictures are in essential respects natural carriers of concrete meanings. "Philosophy", wrote Wittgenstein, "is a battle against the bewitchment of our intelligence by means of language." [13] Language, we could say, is less likely to bewitch our intelligence, and indeed less likely to cause confusion in the course of learning, if words are supplemented by pictures.

Due mainly to advances in cognitive science, philosophers today increasingly recognize that we do indeed have the capacity of thinking *directly* with images, without verbal mediation. And, due mainly to advances in computer software, pictures are today becoming a convenient vehicle for communicating ideas. Recall that through almost all recorded history, the production and duplication of pictures was a much more cumbersome and unreliable undertaking than was the writing down and copying of texts. In pre-literate times pictures obviously fulfilled an indispensable function in the storage and communication of collective knowledge. But with the emergence of phonetic writing, pictures receded into the background. Today however the notion that verbal language can be supplemented, and sometimes even supplanted, by a language of pictures, is rapidly gaining currency. The attention of mobile service providers becomes increasingly concentrated on the application of visual and sound symbols; the screen, and in particular the small screen, has been discovered as a promising domain of research by experts on visual languages. [14] And it is important to note that while static pictures are often in need of interpretation, *dynamic* pictures can be self-interpreting. Ambiguous pictures can be disambiguated by appropriate animations. In a recent book M. Stephens, taking issue with Postman, plausibly shows that the moving image in fact ushers in a new age of enlightenment, and answers in the affirmative the question: "Can we entrust video with the education of our young?" [15]

5. Beyond disciplines

"Words make division, pictures make connection", wrote Otto Neurath. [16] In the world of learning, it was the *printed* word – the abundance of books – that was mainly responsible for creating divisions between fields of knowledge. This is the explanation Joshua Meyrowitz offers as regards the connection between the spread of the printed book and the increase in the number of disciplines in the sixteenth century: "[a]ll fields begin to develop 'introductory' texts that must be read before one can go on to 'advanced' texts. Identities splinter into a multitude of separate spheres based on distinct specialties and mastery of field-specific stages of literacy. The new grading of texts serves as a barrier to straying from one field into another. Crossing into a new field demands that one must bear the embarrassement of starting again as a novice and slowly climbing a new ladder of printed knowledge. This contrasts markedly with the oral and scribal approach, which is inherently interdisciplinary and non-graded." [17] The belief that there existed a unified body of knowledge remained alive all through the Middle Ages, and was merely reformulated by Descartes and Leibniz in the seventeenth century; however, the conditions to build up a unified framework of ideas were simply not given before the age of the printed book. And by the eighteenth century it became clear that the rapidly *expanding* world of knowledge could actually not be fitted into that framework. The ideal of unified knowledge had been a genuine one during that fleeting moment of history, the sixteenth and seventeenth centuries. Before that, it was unfounded; and after that, unattainable. I have described the story in some detail in my 1994 paper "Electronic Networking and the Unity of Knowledge". [18] Here I would like to mention just one point. It is not merely the *extent* of modern learning that makes it impossible to synthesize all knowledge into a unified whole. For it was perhaps the main discovery of twentieth-century philosophy that *all* knowledge, ultimately, is based on *practical* knowledge. The different branches of theoretical knowledge, conveyed through the printed text, cannot be amalgamated into a single whole when the underlying experimental practices diverge.

Now while the idea of unified science remains elusive, the barriers separating different specialties seem today to become fluid once more. A new, transdisciplinary mode of science emerges. This change is not independent of the fact that, as Gibbons et al. put it, "the density of communication among scientists through various forms of mobility has been greatly increased in recent decades", resulting in the "linking together of sites in a variety of ways – electronically, organisationally, socially, informally – through functioning networks of communication." Transdisciplinarity, write Gibbons et al., "has been facilitated through the availibility of … enhanced means of communication". They stress that the computer is a tool that "generates a new language and images", that "the experimental process … is increasingly complemented, if not in part replaced, by new computational models of simulation and dynamic imaging", and that this contributes to a "diffusion of … techniques from one discipline to another". This new mode of science is characterized by problem solving "organised around a particular application", rather than by problem solving wich is "carried out following the codes of practice relevant to a particular discipline". [19] When the relative weight of applied research as compared to basic research is growing, the experience of coherence in everyday life overrides the image of fragmented scientific specialities.

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6. Implications for m-learning design

There are two familiar approaches to the issue of mobile learning. The first points out that since the dominant mode of access to the Internet will soon be through wireless devices, e-learning simply becomes m-learning, without any particular changes in content. The second approach stresses that m-learning will characteristically aim at specific kinds of knowledge, namely knowledge that is location-dependent and situation-dependent. While acknowledging the merits of both of these approaches, the present paper has offered a different line of argument, taking its point of departure from the ubiquitous nature of communication. On the Internet e-mail is the most popular application, and mobile devices, too, are used mainly for purposes of person-to-person messaging. I define m-learning as learning as it arises in the course of person-to-person mobile communication. Mobile communication is enhanced everyday communication; and just as our everyday conversation is indifferent towards disciplinary boundaries, so, too, is m-learning. Situation-dependent knowledge, the knowledge at which m-learning aims, by its nature transcends disciplines; its organizing principles arise from practical tasks; its contents are multisensorial; its elements are linked to each other not just by texts, but also by diagrams, pictures, and maps. As I have tried to show in the foregoing, science today is ready to meet the needs of m-learning.

The objection that m-learning is likely to provide mere information, rather than knowledge, misses the mark. Information and knowledge are not identical; however, there is an intimate relationship between them: knowledge is information in context. Questions arising in the course of mobile communication seek location-specific and situation-specific answers: the questions create a context, and thus the answers can give rise to knowledge. Now in order to build databases furnishing answers to m-learning questions content providers will have to observe two basic requirements. First, the contents have to be designed not according to pre-existing disciplinary matrices but rather in relation to practical problems. To start from "gravitation" is wrong, to single out "high tide" is right. Second, contents will have to fit the conditions of person-to-person communication. The model to keep in mind is the downloading-something-in-order-to-forward-it-to-someone pattern - as opposed to the I-want-to-know-something-so-let-me-check-the-database pattern. Verbal and pictorial information circulates; a *knowledge community* is thereby formed.

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