

Section 2

Chapter 8 - Main Achievements of Mobile Learning Through The Use Of Educational Applications

Theoretical Framework

8.1: The creation and circulation of knowledge

By dividing the process of making culture into three phases, that of the *elaboration* of knowledge, that of its *storage* (through various types of memory) and finally that of its *transmission*, the school is traditionally placed in the final phase, that of the "transmission", of which it represented - and still represents - the main agency. In fact, the school was born with exactly this "mnemonic" function, in an era in which the cultural device gravitated around the technology of the book, first chirographic and then typographic.

In a material and analog reality, the development of this dynamic takes place linearly in a sequential manner: from the field of research comes the knowledge, which must be stored and archived for a later time, through different techniques of data retention that allow deferred access. The *book* was the technological tool traditionally used for this purpose. In a third moment, logical as well as chronological, through the book knowledge has traditionally been transmitted. In order to better understand the moment in which we find ourselves today, we can invert the terms and instead of considering the book as an instrument of the school, we can conceive the school as an extended peripheral of the book. In fact, it reproduces - even today - its structural morphology and "indexing" (classes, subjects, etc.), with particular regard to the sequential and linear dimension of the educational phases. The introduction of digital technologies has gradually put the epistemic and functional system of this device in crisis. Thanks to their immateriality, they



have fundamentally rendered obsolete the sequence of production-archiving-transmission of knowledge.

8.1.1: Digital applications in the culture cycle

Even if the educational institutions in the cycle of culture are born and develop in relation to the processes of management and not of creation of contents, McLuhan has always taught us that, proceeding these institutions from the alphabetical culture connected to the technology of the book, they have in the course of modern history deeply influenced also - and perhaps above all - the processes of *elaboration* of the knowledge that they had the task of transmitting.

In short, it was exactly what is likely to happen today, through the gradual replacement - or at least through the increasingly pervasive side-by-side - of books with digital applications of various kinds, of which the mobile typology represents only the smallest and most widespread form: they are undoubtedly contributing to the birth of a new paradigm of thought, with unprecedented psychological and perhaps even physiological implications. This new paradigm, beyond its being currently a vehicle of knowledge of alphabetical matrix, will in the future profoundly influence the very processes of elaboration of such knowledge.

The best applications are therefore those that most fully contribute to this paradigmatic transformation of knowledge, regardless of the punctuality or exhaustiveness with which they carry the knowledge previously elaborated through the alphabetical paradigm still dominant today (i.e. the current school material). When faced with traditional channels such as books, these applications may appear reductive or overly simplistic; this is not their real function. For this reason, we can take for granted the certain survival of the channels and of the thought that we have defined as "alphabetical"; to which is added, with its peculiar characteristics, the hyper-textual and hyper-medial thought, fundamentally holistic and expressed in the best way by what - still today - we call simplistically videogame.



8.2. Psycho-technological characteristics of digital applications

“Do Androids Dream of Electric Sheep?”

Philip K. Dick, 1968

Before proceeding with the specific analyses in this chapter concerning the character and use that can be made of current mobile applications in the field of education, it is necessary to recall some essential aspects of the techno-anthropological context in which these devices are placed.

1) The concept of a *Computer apparatus*; the mobile applications - didactic or not - are part of a wider "device" in the sense that Michel Foucault gave to the French term *Dispositif*, that is, the set of practices, technologies and behaviours within which social life is articulated and through which the "common sense" - understood in the broadest sense - is repeated¹.

2) The *Holistic dimension of virtuality*: this "device" is today the all-encompassing expression of the digital revolution as a whole, understood as the anthropological passage from the "mechanical" dimension of analogue culture to the computer dimension of digital culture, a passage through which objects (things) become information (i.e. "ideas"), with all that derives from it in practical and operational terms.

3) The process of *Gamification of the real*. The paradigmatic form of such a new cultural "device" seems to be, to all intents and purposes, that computer product which for years has been considered marginal and which has been given the name of "videogame"; this kind of technological application has in fact been the first - and in its "generality" to date remains the only - "resident" product of the computer. It constitutes a direct "emanation" of the structural shape of the machine from which it derives and of its operation.

¹ Foucault, M., Defert, D., Ewald, F., & Lagrange, J. (2001). *Dits et Écrits, 1954-1988. II, II*. [Paris]: Gallimard.

4) The idea of *Experiential narrative*. In that new form of "text" that is the video game, the presence of content is offered in narrative and dramatized form; moreover, since "experience" is the key word of this technology, it configures a "narrative environment" in which the virtual presence of the player appears in the typical fictional mask characteristic of the playful activity.

5) The *Pure visibility of multimedia*. Finally, this "cybernetic" extension of body and mind primarily concerns the physical sense of sight as well as its tactile connotations at the cortical level, inheriting all the value and meaning - also social - that art and the aesthetic dimension of culture possessed in the past, as symbolic forms and mythopoeic catalysts of ideas and visions of the world. For this reason, even the "simple" visual dimension of the aesthetics of gaming applications must be carefully evaluated.

We are dealing with technological *devices* that are *informatic – ludic – aesthetic*; as such, they must be considered as a whole.

To this must be added that, since these technological objects are the expression of the "computer device" as a whole, they inherit the mainly universal and all-encompassing, we could say transcendent aspect of it; an aspect which, in fact, today presents in the background what some futurology scholars belonging to the transhumanist current call the "technological singularity", indicated as the final destination of the current development of artificial intelligence².

All this means that in the judgement that we will give to the applications analyzed we will first of all take into account the fact - veiledly implicit in Philip K. Dick's quotation³ - of constituting not so much new tools to convey old content, born to be hosted by other media such as books (which unfortunately often happens when we want to decline the new technologies didactically, giving generally rather mediocre results), but rather of actually contributing to the definition of a new

² Kurzweil, R. (2005). *The Singularity Is Near: When Humans Transcend Biology*: Penguin Publishing Group.

³ Dick, P. K., Doubleday, & Company, I. (1968). *Do androids dream of electric sheep?*

way of "writing", aimed primarily at reformulating according to a new linguistic paradigm the content it conveys. Against the background of this consideration are the largely forerunner studies of Marshall McLuhan. What he called the "tools of communication" involve, with their diffusion, first of all a radical change in the "brainframe" within which the cultural or didactic contents of communication are framed, leading primarily to the re-elaboration of the paradigm that lies at the

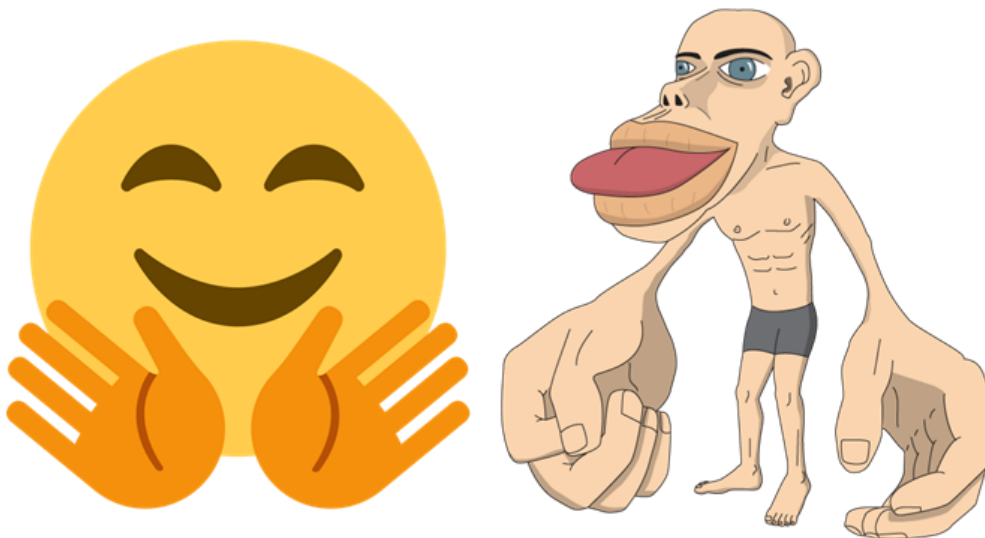


fig.1 - Whatsapp hugging emoji VS Cortical Homunculus

basis of both their formulation and - even more significantly - of the very thought that underlies it⁴.

8.2.1. The cloud

Digital technologies have also recently added a fourth dimension to their main characteristics, those of simulation, interaction and immersion, that of ubiquity. The development of cloud technology has made the previous processes of data access obsolete - processes that in their supply chain (think of the professional figure of the book publisher) also controlled their scientific and epistemological correctness - and by revolutionizing their temporal dimension as well as their

⁴ McLuhan, M. (1964). *Understanding media : the extensions of man.*

spatial one, have rewritten their dynamics (Sampson, 2013). This is particularly evident in the field of creativity: the tool used by the author to produce the work is also the means through which it spreads, as well as the one through which the user, interacting with it, is able to change it. The moment of the elaboration of the work therefore coincides with the moment of its fruition, and this creates a participatory model of knowledge that is not so much the result of a cultural project (artistic, in the latter case, or educational, in the case of the object of our study, but that can also be considered political and social) but rather of the "projection", on the process put in place, of the morphological "anatomy" of the (computer) technologies used. One could even look at the same mix of study and play that we are analyzing - i.e. between "research" and "leisure" activities - in the same way.

It is perhaps not superfluous to remember that this dynamic has already been anticipated in the artistic field, with the theorization of the so-called "open work" (Eco, 1962) relative to the avant-garde of contemporary art of the second half of the last century; this is significant, if we consider that the paradigm shift we are witnessing corresponds also to the replacement of the use of the *denotative* device connected to the book, to the use of a *connotative* device that finds its foundation in the image more than in the word.

The most significant opportunities that the ubiquity of the cloud offers to the educational and didactic experience consist fundamentally in the ease of access, in its localization (contextualization), in the thematic transversality, in the multimedia of its encoding and obviously in the personalization of the process, which allows (but perhaps obliges) to design self-learning paths, contextual and dynamic; in parallel, the possibility of sharing and collaborative access makes this individualization integrated in the group and in the community.

The greatest challenge in the use of these technologies is the need to create indexed and accessible thematic crossings, in order to avoid an excessive "atomization" of the contents, which



would inevitably lead to the disintegration not only of the specific didactic project but of the theoretical structure of the educational destination itself.

