Information culture and web 2.0: New practices, new knowledge

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From the observation of school librarians' usual practices in three secondary schools in Paris (2006-2009), with an ethnographic approach, the aim of this study is to better define information culture, in particular which kinds of knowledge are necessary to learn, live and evolve in the information society context. Thus, the study points up that the web 2.0, in order to be an educational tool, needs an accompanied digital conduct. New training needs appear, characterized by the emergence of new knowledge (digital identity, traceability, informative survey...) and the reconfiguration of some others (information ethics, indexing, mediation, authority, intellectual property, relevance…).

Which knowledge for information culture in the context of web 2.0? Since the 2000s, the changing media landscape, including the development of internet and web 2.0, generated a mini-revolution in information practices. Young people today seem impregnated by diversified media (video games, new modes of mobile communications, and more recently blogs, wikis, forums...). They learned to navigate in a more or less intuitive way in a flow of information, continuously adapting their approaches, and developing empirical skills throughout their practices. They come to school with a "culture" that school librarians and teachers cannot ignore. However, beyond their inventiveness, these practices are indicative of gaps that express a lack of information culture, highlighting new training needs, to make the Web 2.0 an educational tool.

The aim of this paper is to investigate what type of knowledge can meet these training needs: next to stable knowledge, sure values, essential to the point of not leaving them to chance, more moving knowledge, to reconfigure in the context of the web 2.0, and emerging knowledge, which are worth being studied because they provide some answers to current, new issues. These points will be addressed by examining information culture through the idea of culture: after presenting the contexts of our study and the methodology used to collect data, we will give off the key features of knowledge, considered as elements of an information culture to build, between permanence and change, before considering a few perspectives.

Our approach is comprehensive, focusing on the phenomena of "emergence of meaning", within the meaning of Pierre Paillé and Alex Mucchielli (2003). Information culture is studied

in its cultural and social dimensions, in the perspective of identifying the dynamics that emerge.

Context (s)

If this research, by its purpose, information culture, is in the field of information and communication science, it is discussed in the context of this work in an interdisciplinary way (in the orientation of the ERTé *Information culture and information curricula*, A. Béguin, dir.), borrowing from various fields (education sciences, anthropology ...), to reflect the different dimensions of information culture: cultural, social, cognitive particularly...
Information culture is questioned by the idea of culture, as defined by Guy Rocher, inspired by the work of anthropologists (Rocher, 1968), as “everything a person needs to know to live in a particular society”, that is “a vast symbolic set, including knowledge, ideas, thoughts, rules, common to a plurality of social actors, considered in a given space at a given time”.
Presented in this way, culture is action, it is a behavior related to appropriation (acquisition, learning), the values and symbols that compose it, correspond to “ways of life” (“manières de vivre”) in a given society; human groups produce it to meet the needs they share. At the same time, culture is not static (to freeze practices lead to an essentialist view of culture), it is a dynamic set which has a relative plasticity.
Describing a culture, it is therefore drawing the outline, showing how it is being developed daily, showing the elements that define it, those that situate it in relation to other cultures, and those that give it thickness. The mere juxtaposition of elements is not sufficient to define a particular culture, it is necessary to determine which organizes it into a more or less coherent set, which binds its components together, and to understand how it is worked by internal and external social relationships. Culture is an historical production, it is experiencing changes, transformations: it is in the interactions that social actors create the social rules, conventions, relations that give it meaning, as a collective process.
More specifically, on information culture, we strive to define the contents, as reflected in the observations, which is to try to understand how and in what, offering theoretical tools, information culture can be an instrument to think, live, evolve, and conduct oneself in a world of information (Baltz, 1998); or in other words, to become a "member" of this world (and society) of information (the issue is both anthropological and socio-cognitive). Information culture is considered in a dialogic way, by linking the experiences of pupils, their usual practices (information culture as they live it) and information culture more “cultured” that school librarians and teachers are trying to develop during training sessions. We are particularly interested in the evolution of these contents, in their genealogy, in the digital context.

Research methods

As said in introduction, our approach is comprehensive, and resolutely qualitative: from an objectifying observation of info-documentary situations, we seek to discover the meaning of the dynamics involved.
Observations are our primary data collection. Through the description of situations, particularly negotiations teacher-pupils, our aim is to bring out the structural elements of information culture, to translate the visible into readable, and to build a knowledge (anthropology) from “seeing” and “writing” on “seeing” (ethnography) (Laplantine, 2002).

To this end, observations are discussed in terms of a constructive pluralism, according to an *a posteriori* methodology in which the researcher is in an inquiry process.
At the same time, we opted for a reading "in positif" of situations, more careful to identify and understand their own logic (narrative observation) than their gaps or deficiencies (attributive observation). This second dimension may however be present, insofar as we identify critical moments, explainable by a conceptual vacuum (missing knowledge and concepts), which leads us, to a certain extent, beyond the "look / see", to make inferences.
Finally, to achieve the necessary distance and ensure the validity of data collected, but also to better perceive the complexity of our object and allow the discovery of unexpected dimensions, we wanted to cross the findings with the discourse of the actors, giving their point of view on practices: interviews, informal conversations, collection of documents...
At this stage of the research, interviews with school librarians, scheduled for the end of observation, have not yet been made, and we mainly rely on informal conversations and other materials gathered during observations. Four school librarians (two beginners and two more experienced ones), in three secondary schools, were observed during training sessions, over time, in various situations, sometimes working alone, sometimes in collaboration with teachers.

Data analysis and findings

Pupils' experiences and training needs

A first observation is that information practices change very quickly in school context with the introduction of new resources (tools of Web 2.0 in particular). Pupils seized these new tools, they arrive at school with an experience of information-documentation. Their personal practices, their "manières de faire" are the reflection of a generation imbued with the screens, they show great creativity, reflecting their ability to make "small arrangements" with technology and information.
These practices, mixture of improvisation and adaptation, are also influenced by the family context: references to the practices of parents and elders are very numerous. Empirically acquired, these skills are sometimes sources of gaps, or at least of misunderstandings that highlight the need of an accompanied conduct to allow the construction of meaning ("*sensemaking"*, Dervin). As written by Michel de Certeau, it is not enough to be author of social practices so that there is real culture, it is important that these practices may have meaning for the person who is author of these practices (Certeau, 1990).
With the web 2.0, culture is dynamic, not stable, collaborative, it introduces uncertainty in school, in a world characterized by stability, certainty, peculiar to academic knowledge. The fast flow of information, and the apparent ease of access to a profusion of data, with a single click, give pupils illusion of power control and reinforces their tendency to impatience, in contradiction with the long time for learning. The increase in resources, the fragmentation and granularity of information create new social attitudes, which can bring problems: disorientation, informational confusion, saturation effect, problems to situate and be oneself.
To be operational, pupils have to navigate through several worlds and to be at ease with different formats of information: formal and non formal information systems, traditional information structures and their controlled vocabulary and new emerging resource, multimodal, with more chaotic forms. In practice, they are quickly frustrated when they are

limited in their projects, that the management of moments of doubt or the respect for codes of good conduct restrains their inventiveness.
The challenge for school librarians and teachers is then to find how to maintain their enthusiasm and creativity, encouraging initiative and risk, while promoting a distanced and wise use of new media, which is the condition of a real entry into “culture”; or in others words, ensure that pupils find the flavor to knowledge, considered not as "closed knowledge", utilitarian, but as a "living knowledge", providing answers to the questions asked by the pupils themselves (Frisch, 2007).

A cultural approach, between permanence and change

Negotiations between teachers and pupils show information culture being built, from the pupils' questions, while refracting their own experiences (and culture of belonging).
For school librarians, a way to give meaning and thickness to the knowledge is to link, on a dialogical mode, heritage approach and anthropological approach (Levine, Develay, 2003). In this construction of meaning, knowledge is used as a "tool-to-think", promoting the transition from "information practices" to the "culture of these practices" (Tardif, 1998; Maury 2005).

Most of the time, school librarians introduce knowledge, integrating it in a "story of problems" (making it “problematical”), related to the founding questions of information-documentation. Thus, knowledge is not only considered in the present, but linking past and present, with its genealogy and stakes, on a larger scale, between permanence and change. “Warm knowledge", in permanent change, it is referring to controversial topics, object of debate in society. So, a lot of knowledge needs to be reconfigured in the context of web 2.0.

The concepts of document, information or media, for example, are difficult to define in a definitive way with pupils.
In context of the web, the document is less stable, more plastic, it is a process as well as a product. As we have seen, it is not easy for young pupils to distinguish what is a document (or not) and to identify its attributes. Everything “is” document: a stream, an inscription, a digital exchange... Man himself, with his digital identity, becomes a document when he is “traced”, documented on the web (Ertzscheid, 2009).

As for information, the traditional distinction between data and information (machine data and social data) is in question: when information is manipulated, transformed to fit the patterns of the machine, it is treated as a data, demythologized. What’s more, it is addressed not only in terms of content (an end in itself), but in terms of exchange, service, sharing of data. It is difficult for the pupils to determine where to draw the limit between information and non-information? From when, for example, is a trace becoming information? And as "*everything happens*" on the web (school librarian, secondary school), the issue of its construction is also raised (with wikis, blogs ...).

Also for media, the traditional categorization (a type of support for an object) is less relevant. Internet, presented as the "ultimate media", is at the same time technology, support, media, and source of knowledge, and it conveys sound, image and writing (Cotte, 2005). The social networks (blogs, wikis...) are also media; and by extension, the city or the stores are used as media by the signs, with the new communication strategies. However, may anything be a media?

So, school librarians have many opportunities to intervene, leading pupils to less naive representations and global perspectives: showing that media are diverse, and a construction of reality, not reality itself, that they are related to values, interests and power relations.

Other change, the crisis of traditional mediators [and media], whereas the monopoly of knowledge by experts is challenged. Intellectual property issues (authorship, copyright, authority, Information Law) join the questions of deontology and ethics: lively discussions between students and school librarian in a high secondary school (School of Photography) shows that, through the questions of law, students are questioned in their own posture towards information, but also in their relationship to the world. What is authority? Is it sufficient to be a writer (in a blog or a wiki...) or a photographer to be an author? Is the traditional publishing or peer review process necessary to declare information valid? It is more difficult to teach authorship and evaluation in an open authorship environment than in a controlled world. Two modes of authorship and validation coexist: a traditional mode, with filtering and upstream validation by a recognized institution, and an "authoritative" one, with self-publishing on the web, and downstream validation, *a posteriori*, without reference to a printed institution. So, many issues emerge when learners evaluate information they find: popularity, recommendation are not validity, relevance; points of view and opinions are not facts or information. Charters are often discussed and generated, they serve to build a culture of blog or wiki, as a guideline for a sure and responsible behavior and a fair use.

Indexing is also changing in the context of the web, and pupils needs understanding of both worlds, folksonomies and taxonomies. From tags to keywords, then to descriptors, they can access progressively to the concept of indexing, with its three dimensions, social, free, controlled. By developing tag clouds, they discover information relationships in a playful way (broader terms, narrower terms, related terms). If tag clouds are different from the structured controlled vocabulary, they can help to understand the underlying structure of controlled vocabulary and its hierarchy. So, by showing both Boolean logic and descriptors, and popular folksonomies, school librarians lead pupils to have more search power.

Information culture and emergence of new knowledge

In a world in permanent change, it is not enough to know how to select, evaluate, have a fair use of information and contribute positively to the community, pupils need also to control their information world, in order to work independently. New training needs appear, with learning of new skills and emerging knowledge, such as informative survey or digital identity.

In their practice of the web, pupils usually have a practical and functional relationship to information, they seek to collect immediately useful information *("carottage"*), they are less attentive to their information process, in the long-term; most of them have not a prospective approach. As we have seen, they limit informative survey to specific topics ("supervised personal work", school search) or hobby (photography, sport…), they don't think to channel information automatically in their direction. So, school librarians, particularly in high secondary school, take pains to teach them how to control their own information world, to seek the information they want to get, not just to receive (pull *versus* push): by selecting relevant RSS feeds, mailing lists, newsletters, in order to personalize their own stream of information.

These informative surveys are authentic experiences, they permit to conduct original researches, and give them more control. They learn how to extract a sophisticated report from a flow of information in response to their initial questions. These experiences foster a flexible and hybrid thinking, leading to global perspectives (beyond school context), turned towards information dynamics (beyond information literacy).

Another important question in the digital age is the virtualization of identity. Virtual environments are areas of construction of identity: technology changes the nature of identity which is not the same as the identity in everyday life. Identity is socially constructed from interactions within the social world: partly constructed by individuals, partly imposed upon individuals by other people and social systems or structures. Luke Tredinnick notes three entangled elements: virtualization, meaning that the sedimentary record or trace of identity becomes dissociated from corporeal being; sedimentation, meaning that the digital traces of actions or transactions are recorded and stored; and fragmentation, meaning that the unity of identity declines (Tredinnick, 2008).
Young people don't seem anxious about their digital identity, unlike the adults; they feel protected in school context, school practices give them the illusion of a closed world, whereas their actions are visible to the world. The use of blogs and wikis, with a thinking on the tracks left on the web, offers an opportunity for school librarians to make the pupils conscious of the issue of identity: risks and rights relating to digital identity, protection from harmful information, management of online identity (pseudonyms, profiles). Generally, the purpose is not to restrict choices but to make pupils conscious of potential and limits of an open environment, and of both freedom and responsibilities relating to the community.

Concluding perspectives

There are many changes in terms of information culture in the context of web 2.0. First, web 2.0, by bringing real life (outside life) in school, is the perfect tool to develop information skills; it generates a mini-revolution in information practices, bridging the gap between social practices and academic knowledge. Then, it presents opportunity, via blogs and wikis, for learning not only information retrieval but also expression and communication.
As shown in this communication, this mini-revolution in information practices brings a reconfiguration of knowledge, and the emergence of some others (digital identity is an important one): knowledge considered in its continuity, through its genealogy, between change and permanence.
So Information culture is much more than the ability to seek, use, create and communicate information. It is not only a matter of reading but of creating meaning out of cultural objects. It implies social and cultural dimensions which participate to define the significance of information, and allow a critical and reasoned use of it. And it includes thinking on the process of knowledge creation and communication: in digital age, the value of knowledge depends on the understanding of this process, and of the underlying assumptions, values, biases, and belief systems.

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