Vol. 07, Issue, 04, pp.8119-8123, April 2025 Available online at http://www.journalijisr.com SJIF Impact Factor 6.599

Research Article



THE ICT AT UNIVERSITY: ADDED VALUE IN A COMPLEX CONTEXT FOR TEACHER -RESEARCHERS AND STUDENTS

* Dr Ferdinand NGOUNGOULOU

Communication Researcher (IRAF/CENAREST), GABON.

Received 09th February 2025; Accepted 10th March 2025; Published online 20th April 2025

ABSTRACT

The educational context of the university is today very affected by the introduction of Information and Communication Technologies (ICT). The university, like any constituent and participatory sector of society, has not escaped the advent of ICT which has entered educational situations by having a real impact on the educational relationship. Through this article, we want to revisit the origin and definition of roles, both in the usual practices of research, access to information and in technological appropriation. Indeed, the rapid and irreversible development of ICT has opened new horizons in the field of teaching/learning and research, thus creating a new, more complex universe in terms of the acquisition of knowledge and know-how. How have ICT changed teaching and learning methods? We therefore want to focus on new sources and new methods of access to information brought about by ICT.

Keywords: Pedagogy, University, ICT, Teaching-Learning, Information search.

INTRODUCTION

The problem we want to answer is to know why it is necessary, in this so-called knowledge society, to train teacher-researchers and students in information skills? The world of information and access to knowledge has been experiencing intense transformations for several years. The observation made is that for more than 25 years, ICT has become one of the factors of educational change at university. Indeed, the dematerialization of information and the development of remote access via the Internet contribute to making university libraries less and less visible. The hypothesis that we formulate is that the ease of use of search engines reinforces among students and teacher-researchers, a feeling of autonomy which encourages them to turn away from traditional mediators of information of which university libraries are a part. . To verify this, we want, through this article, to revisit the origin and definition of roles, both in the usual practices of research, access to information and in technological appropriation. The consequence is that we are witnessing the emergence of a new information ecosystem which breaks down barriers and modifies traditional information practices (Stéphane Chaudiron, Madjid Ihadjadene, 2010).

By ICT we mean:

"A set of technologies based on computing, microelectronics, telecommunications (notably networks), multimedia and audiovisual, which, when combined and interconnected, make it possible to search, store, process and transmit information, in the form of data of various types (text, sound, still images, video images, etc.)".

Today, the integration of ICT in the various sectors of society is becoming an unavoidable phenomenon, particularly in that of education, a sector called upon to promote access to information, the construction of knowledge and acquisition of knowledge and knowhow. ICT is changing teaching practices. From this perspective, the

*Corresponding Author: Dr Ferdinand NGOUNGOULOU, Communication Researcher (IRAF/CENAREST), GABON. integration of digital technology in university teaching continues to give rise to a large number of studies aimed at measuring its impact on teaching and learning. To deepen this reflection on the integration of ICT, their use, as well as their added value in teaching-learning and scientific research, we want to answer the following question: can ICT contribute or participate efficiently in development of teachinglearning and research at the university? In other words, to what extent can teacher-researchers and students appropriate ICT and make good use of it?

The use of ICT and the teaching-learning paradigm

The variety of ICT use in the university context tends to increase the diversity of educational situations. In addition, the axis of theoretical reflection which is interested in the link between ICT and the teaching- learning paradigm tends to develop and paradoxically, many think that it is more restrictive for teachers to transform their traditional teaching into integrating ICT. François Larose, Vinvent Grenon and Sylvain Lafrance (2002), believe that research on the integration of ICT in higher education makes it possible to identify two major trends: the first, centered on a social constructivist epistemology, which analyzes this integration as vital and favorable to the modification of practices teaching; the second, of a neo-behavior list and pragmatic type, perceives ICT as simple tools compatible with traditional teaching. Which implies, as with any other educational situation, an educational contract, an affiliation by the teachers on the one hand, and by the students on the other hand with the tool and the technique. Technological changes directly clash with the models of thought and action that were deeply anchored within the university institution and its actors, through "the fear that some experience of seeing the professor, considered here as the principal, if not the 'unique, transmitter of knowledge, replaced by ICT'. In this sense, the use of ICT at university does not only refer to technical issues, but implies a change in the educational context and interactions. Beyond the "technophile" posture which would attempt to place greater emphasis on the beneficial consequences of the functional use of ICT in higher education, there is another "technophobic" critical reading which would tend to stigmatize the effects possible negative effects of the presence of ICT or their inappropriate use at university. This

bivalence leads us to invest instead in the impact that ICT can have on the teaching-learning relationship and research at university considered as a complex social phenomenon.

The user of information and the emergence of digital technology

With the emergence of digital technology and its share of new information uses, the status of the information user has expanded. Today, the teacher-researcher or student is no longer a simple receiver, he now plays a role in the production, classification and evaluation of information. The user of information therefore moves from the receiving pole to the designer pole, that is to say that he is no longer passive, but now active: "he goes from the user who is the consumer of the information to the user consumer-information actor". Certainly some learners consider themselves skilled at finding and evaluating information on the Web (Shannon Smith, Judi Caruso 2010), but there is still a need to properly train them in information skills, because many of them also doubt their own effectiveness (Thierry Karsenti, Simon Collin 2011). At university, this training, whether it takes place in the library or in the classroom, must not only be very current, but also closely linked to the evolution of the information available on the Web and with the use of new tools available to search for it, evaluate it, use it, organize it, archive it, or even share it effectively, since it is, in the latter case, of an increasingly essential skill in the new digital environment where students evolve alongside their teachers.

This article therefore addresses the academic uses of technologies in education, a use at university which brings to light certain new questions linked to the teaching-learning and research relationship. A dialectical relationship which is invented in a clearly evolving technopedagogical context. Indeed, the educational relationship in an environment using ICT as an emerging social process remains a sort of "black box". Many wonder what faculty members and students gain or lose when involved in a technological environment. For Saïd Ezzahri (2002), the Internet constitutes a new and efficient medium for the dissemination of information. ICT brings together the techniques of computing, audiovisual, multimedia and

telecommunications which allow Internet users to communicate, access sources of information, store, manipulate, produce and transmit information in all forms: text , sound, image, video, interactive graphical interface (HMI). One of the advantages of this tool is the possibility it offers of searching the Web, rich in scientific information, the opportunity for immediate communication with other Internet users, going beyond the simple individual framework between the reader and the book or between the student and the teacher-researcher.

The integration of ICT and university pedagogy

We conducted a survey in 2023 among 50 students from the University Institute of Organization Sciences (IUSO) in Libreville, Gabon, i.e. 54% women and 46% men. The massive majority of respondents, notably 94.9%, were students in initial training (FI) compared to 5.1% in continuing professional training (CPD). Regarding the level of study, all students prepare a 3rd year bachelor's degree in Information and Communication Management (GIDO). The results reveal that there is inequality in terms of technological equipment, especially that relating to the possession of computers and the Internet. Thus, nearly 88% of students own a mobile phone.

On knowledge of ICT in pedagogy, practice, use of ICT, research and access to information, 70% of those interviewed actually responded

that they knew more compared to 30% for whom these notions still remain vague. 60% of the students surveyed think that ICT, through the web, contributes to student learning provided that scientific activity is regulated by teachers. 20% expressed reservations due to the fact that ICT can be dangerous or addictive while the remaining 20% believe that the use of ICT depends on the subject taught because, according to the latter, certain subjects deserve in-depth study to the detriment of others. Regarding the diversity of information search tools on the Internet, 50% of the students questioned have no idea on the issue compared to 35% who claim to use the appropriate tools for better access to information (search engines). search, metasearch engines, directories). However, 15% think that the tools available online are not adapted to their needs.

Concerning the choice of internet research tools, 95% of the students questioned generally use Google and Wikipedia for their research compared to 5% who do not carry out internet research. Regarding connections or searches on the internet, 7% go there to do personal research, 18% to consult a document, watch a video, a magazine, a novel, etc. 75% of the population surveyed goes online as part of an assignment or a presentation. Asked what is the added value of ICT in pedagogy, 100% of students estimated that ICT must be deployed in higher education establishments through the installation of computer equipment, high-speed internet connection because ICT is an excellent communication tool. Furthermore, the advent of the Internet offers new possibilities through its numerous applications (searching for information, electronic messaging, browsing thousands of sites, file sharing, etc.).

Today with the Internet, the development of informational and technological skills is required to get students to think about their information needs, to respond to a specific request, allowing them to develop different strategies to acquire this information, select it. process it, verify it, compare it with previous knowledge then organize it with a view to communicating it. This entire journey involves mastering information and inevitably contributes to the construction of knowledge and high-level cognitive strategies, in a transversal manner and useful for learning. A number of studies carried out by Eric Bruillard (2000) have shown that most students do not have the necessary skills to work independently with a computer. When it comes to searching for information, hypertextual navigation, due to its non-linearity, causes a feeling of disorientation. That is to say, it imposes a very cognitive load on the Internet user. Indeed, the overabundance of information raises the question of filtering which requires mastery of selection rules, prioritization and value systems. This involves students developing skills to access information; to learn to transform raw information into elements of knowledge, an area that falls to those responsible for teaching.

The appropriation of digital technology by teacherresearchers and students

The use of ICT, as in any sector of activity, is based on the human factor. This use constitutes an essential variable which can influence the behavior and attitudes of teacher-researchers and students regarding the appropriation of technological tools in a university environment. In the Robert dictionary of sociology (1999), the term use refers to "the use of an object, natural or symbolic, for particular purposes". This concept is widely used by researchers in Information and Communication Sciences (CIS), and is supplanted today by the term close to "practices". Florence Millerand, thinks that "the term use is used for that of employment, utilization, practice, or even appropriation [...]". Josiane Jouët (1993) makes a first distinction between the notions of use and practice:

"use is [...] more restrictive and refers to simple use while practice is a more elaborate notion which covers not only the use of techniques (use) but behaviors, attitudes and representations individuals who relate directly or indirectly to the tool".

When we talk about online tools, the observation made today is that the Internet has taken a preponderant place in the daily lives of teacher-researchers and students. It is considered the largest "database" where the most diverse information can be found. In this sense, Thierry Karsenti and Gabriel Dumouchel (2011) affirm that ICT are today an essential element in education, which is able to adequately prepare future citizens to live in this information and knowledge society.

Variety of tools, practices and information skills

Since 2014, UNESCO has already affirmed that mobile phones, tablets and computers continue to gain ground and offer strong added value for teaching and learning reading and writing, particularly when an Internet connection is available. However, we must recognize the urgent challenges facing countries around the world in this area due to the rapid expansion of these technologies, the financial investments they imply and the need to have a clear, precise and of the role that teachers have to play in harnessing the full power of ICT, whether in teaching or outside the classroom. UNESCO (2015), however, recognized that despite the use of ICT in the education sector, they are still at an embryonic stage in the majority of sub-Saharan African countries. The lack of computer equipment, computer rooms, research laboratories, etc., are all pitfalls which can explain the delay in the integration and appropriation of ICT at university, particularly in sub-Saharan Africa. It is a question of knowing, what is the relationship that the teacher-researcher or the student has with the internet tool and therefore what informational practices should he mobilize? Moreover, access and dissemination of information implicitly assume an organized environment, an environment whose structure users know (Brigitte Juanals and Jacques Perriault, 2006).

In the context of the university, the difficulties faced by teacherresearchers and students are, in most cases, inherent to the very nature of information activity. Indeed, research is an activity motivated by the desire to satisfy a need for information depending on the cognitive and psychological state of each individual. Here the objective of acquiring informational skills rhymes with the ability to find relevant information among a multitude in the digital environment. This environment often offers a range of research tools and different sources of information. In other words, the variability of the need for information, the growing increase in the volume of information and the multiplication of information search tools accompanied by a clear restriction of the role of the human intermediary (librarian, librarian, etc.) are all factors contributing to making information activity more and more complex. The absence of teacher-librarians means that subject teachers are mainly responsible for training students in the acquisition of information skills centered on information and communication technologies. Unfortunately, many students, rightly or wrongly, emphasize the lack of communication with their teachers in course or research situations outside the university. Furthermore, on the teachers' side, the devalued place of teaching at university, particularly in relation to research, seems to accentuate the "disinterest" in educational and human investment. Some authors also mention the break of students with classic cultural forms in favor of images, technologies, the virtual, "useful" knowledge, the culture of instantaneous information (Nicolas Pinel, 2003).

The term "practices" here has a double etymological origin, it comes from the Latin pratice which refers to active life and the conduct of business. Then the term "practices" comes from the Greek verb prattein which means "to act". This second etymological origin is meaningful for us because it shows the meaning of the action. "Informational practices" are understood as the action of obtaining information. According to the information dictionary (2008), information practices are defined as:

"the abilities, knowledge and attitudes related to the identification of information, to the knowledge of sources of information, to the development of strategies for searching and locating information, to the evaluation of information found, its exploitation, its formatting and its communication all from a problem- solving perspective".

In other words, information skills encompass in an integrated manner the informed and reflexive search for information, the understanding of the processes by which information is produced and put to use, or better, the use of information to generate new knowledge and ethical participation in learning communities (ACRL 2016). In Information and Communication Sciences (CIS), informational practice is "considered as all the actions and choices of the individual which can be active and/or passive, conscious or not and always linked to the sources of information during a research phase caused by a need for information" (Patrick Wilson, 2000). For Stéphane Chaudiron and Madjid Ihadjadène (2010), "information practice can be considered as all of the actions and choices of the individual during an information search phase caused by a need for information". In other words, it is the way in which "all devices, sources, tools, cognitive skills are effectively mobilized in the different situations of production, research and information processing" (Stéphane Chaudiron and Madjid Ihadjadène, 2010). Information practices as defined by these authors refer to the irreducible overlap between practices, uses and representations in the use of technical tools in any situation of research and production of information. Abdullatif Ahmed (2015), adds that the authors include in this term "practice" both the behaviors, the representations and the informational attitudes of humans (individual or collective) associated with these situations.

The place and role of university libraries

According to the American Library Association (ALA), "being competent in the use of information means knowing how to recognize when an information need emerges and being able to find the appropriate information, as well as than to evaluate and exploit it. The concept of information competence in an educational context (Karsenti and Dummochel, 2014) refers to:

- ✓ all the skills necessary for the student or teacher to be able to clearly identify the information sought;
- ✓ to search for it;
- ✓ treat it effectively;
- ✓ to make ethical and legal use of it for educational or academic purposes.

Information skills thus encompass, in an integrated manner, the informed and reflexive search for information, the understanding of the processes through which information is produced and put to use, the use of information to generate new knowledge and ethical participation. to learning communities, (ACRL, 2016). Dinet and Tricot (2008) argue that the model that seems most popular with library staff is that of Kuhlthau's (1993) information search process. Indeed, the documentary research methodology corresponds to all the steps allowing you to search, identify and find documents relating to a subject by developing a search strategy. Today, in a context of

overabundance of information (infobesity) and diversity of media, the processes of documentary research and validation of information require the application of an effective methodology. Documentary research is a stage of work to be carried out before embarking on an empirical study. It makes it possible to collect informative data through the study of documents from reliable sources, official or university documents. The information collected during the research will be useful for developing knowledge on the subject studied. However, these are still based on a few key principles. Kuhlthau's (1993) model of documentary research includes six (6) steps:

- initiation, where the individual recognizes that they need information to accomplish a task; selection, where it determines a research subject and an approach to explore it;
- exploration, where he seeks information useful to a subject;
- formulation, where he reflects on the subject based on the information found in order to identify a more personal perspective related to the problem;
- the collection, where he searches for relevant information on the subject;
- presentation, where relevant information is organized in order to adequately respond to a task.

Internet and its appropriation at university

The concept of Internet is the abbreviation of international network. Laurence Corroy and Jacques Gonnet (2008), think that talking about the Internet is referring to the most extensive global network. For Francis Balle (1998), "The Internet is a global network itself made up of a multitude of computer networks of local, regional, national or continental dimension linked to each other, interconnected. It is a global mode of communication accessible to all." According to Serge Cacaly (2008): "Internet is the interconnection of transmission networks (...) this possibility of exchanging data with various environments will modify the behavior of many academics, who will develop and install free of charge on the global network also constituted several tools facilitating the use of "the network of networks". Today, the appropriation of tools for access to information poses a certain number of problems including that of the immediacy and transparency of the tools. "naive" belief in this immediacy of tools leads to underuse or even ineffective use of tools. This article also takes place in the sociology of uses. The sociology of uses draws attention to the place occupied by technology. social change. That is to say, recognizing the relative autonomy of teacher- researchers and students in the face of technology For several years, many CIS researchers have produced numerous scientific publications on studies related to uses (Jacques Perriault, 1989; Michel de Certeau, 1990: Chambat Paul. 1994: Francis Jauréquiberry and Proulx Serge. 2011; Josiane Jouët, 2000 etc.). From its origins until the beginning of the 1980s, the sociology of uses has so far been based on three approaches:

- the approach to diffusion and adoption;
- ✓ the approach to innovation (design and use);
- ✓ the appropriation approach.

The third approach to appropriation that interests us here highlights the autonomy of the user. The user is no longer passive, but active as we said above: he is now a user-actor. "The user-actor now presents himself as a subject who can construct the meaning of a creative activity of which the producer does not have exclusivity and which sometimes diverts the technical media device" Narcisse Ekongolo (2016).

The technology-centered teaching-learning paradigm

As indicated by (Breton and Proulx, 2002), to speak of appropriation, three conditions must be met. First of all, you must demonstrate a minimum of technical and cognitive mastery of the technical object. Then, the technical and cognitive mastery of the technical object must be integrated in a significant and creative way into daily practices. Finally, appropriation opens up possibilities for direct intervention by users on the technical objects they handle. Far from being treated as a neutral dimension, technique is analyzed as a highly significant indicator of evolution and organization, of knowledge or ignorance, of skill or lack of mastery, of power or weakness. Far from being considered strictly utilitarian, it is shown as constantly carrying codes and norms, values and collective goals. In studies on information practices, the appropriation of tools and even techniques is a central factor. Because "appropriation is the act by which the user becomes an active and autonomous actor who constructs his uses according to his interests and constitutes "a self"" (Josiane Jouët, 2000).

Based on this definition by Josiane Jouët, we can say that appropriation is the final stage of use. In fact, the user (student) after having accessed the system (accessibility), masters its manipulation (use) and having integrated it, in the context of his training (use), the user (student) appropriates the techniques documentaries. Like the position expressed by Cécile Gardies, Isabelle Fabre and Viviane Couzinet (2010) stating that "the information practices approach makes it possible to understand the needs and appropriation of information, but also the use of 'information' (Gardies et al., 2010), our present work aims to grasp the reality of the information practices of a specific audience, that of students, in a precise social context, that defined by academic activities. According to (Vivianne Couzinet, 2009) "The analysis of information practices, considered as social practices, allows us to better understand information needs and to understand the logic of use of information communication devices" (Vivianne Couzinet, 2009).

The appropriation paradigm makes it possible to understand the ways of seizing information access devices and to capture the logics that support the use of these information access devices: the theoretical model of appropriation takes into account the user who implements the technical object in social life; it highlights the process of appropriation of technical objects, revealing the mechanisms of their insertion into the daily lives of users. However, the adoption of the Internet and documentary techniques does not go without saying. It goes through a process of taming, which is based on practices and uses and allows the construction of a "logic of use" (Jacques Perriault, 1989). Therefore, "the user is considered as an active subject, capable of manipulating information sources, adapting them to their needs and developing strategies to circumvent the constraints of information systems" (Paula Sedda, 2013).

CONCLUSION

This article aims to take stock of the integration of digital technology at the university and to identify some information practices of teacher-researchers and students. We noted that the main component of this appropriation of the technical and technological tool remains the human factor, which has not yet benefited from the support and training necessary for the proper use of ICT. We deduce that the tools are moderately mastered and that the reflexivity of the teacher-researcher with regard to new technologies is little present in his teaching activities. Consequently, this situation results in a number of difficulties associated with use for both him and the students. In the absence of appropriation of ICT, teacher-researchers and students will be forced to self-train to use technology wisely.

In short, the integration of new technologies in the university context has been booming in recent years. However, the majority of teacherresearchers and students still have difficulty integrating them, even if it is gradual. Many obstacles have been identified that remain to be overcome, as well as challenges to be overcome. Indeed, the use of ICT leads to major changes in information research practices. Thus, teacher- researchers are the first stakeholders affected by this change which must take place not only at the technical level, but also at the educational level. All the survey results show a real enthusiasm on the part of students regarding the insertion of digital technology into the educational framework within the university. However, we have noted a certain apprehension in mastering the new tools. To this end, an effort will have to be made in terms of training, support in research and finally in terms of digital appropriation.

REFERENCES

- ALAVA, Séraphin, 1998. Real or virtual challenges of educational technologies", Cahiers scolaire, special multimedia issue, n° 362, (article in digital format on CD-Rom).
- ALBERO, Brigitte, 2011. "The coupling between pedagogy and technologies at university: cultures of action and research paradigms", International Review of Technologies in University Pedagogy, n° 8, pp. 11-21.
- ALBERO, Brigitte, DUMONT, Bernard, 2002. Information and communication technologies in higher education: practices and needs of teachers, Paris: Ministry of Research, Ministry of National Education.
- ARDOINO, Jacques, 1971. Current comments on education, Paris: Gauthier-Villars.
- AUDRAN, Jacques, GARCIN, Claudine, 2011. "Learning online, a question of participation? », Research & training, n° 68, pp. 63-78.
- BARBOT, Marie-José, MASSOU, Luc, 2011. "ICT at university and teaching practices: different perspectives". In: M.-J. Barbot, L. Massou, dir., ICT and higher education professions. Emergences, transformations, Nancy, Presses universitaire de Nancy, pp. 7-18.
- BIAZ Abdelouahed, BENNAMARA Ahmed, KHYAT Abderrahim, TALBI Mohammed, 2006. Analysis of student practices on the Internet: Case of student-researchers from the Ben M'Sik Faculty of Sciences, Hassan II-Mohammedia University, Casablanca, Morocco.
- CHAMBAT, Pierre, 1994. "Uses of information and communication technologies (ICT): evolution of the issues", TIS, vol. 6, n°3, Dunod.
- CHAUDIRON, Stéphane, IHADJADENE, Madjid, 2010. "From the search for information to information practices", Études de communication, n°35.
- CHAUDIRON, Stéphane, IHADJADENE, Madjid, 2002. "What place for the user in the evaluation of SRIs?", Recent research in information sciences: convergences and dynamics, Proceedings of the Mics- Lerass conference, March 21-22, Toulouse, Paris: ADBS Éditions.
- CHATMAN, Elfreda Annmary, 1999. "A theory of life in the round", Journal of the American Society for Information science, 50, pp.207-217.
- CHRISTEL CANDALOT DIT CASAURANG, 2005. "Training in documentary research to develop the information culture of students: Under what conditions?", Documentation and libraries, Vol 51, No. 4, October–December.

- CORDIER, Anne, 2018. "We are not born a student, we become one", French Review of Information and Communication Sciences, No. 15.
- DERVIN, Brenda, 1998. "Sense-making theory and practice: an overview of user interests in knowledge seeking and use", Journal of Knowledge Management, Vol. 2, no. 2.
- EKONGOLO, Narcisse, 2016. "Models of information behavior in the process of access to information: The "paradox of abundance", Annales de la FLASH, UY1, vol 1, N°18, pp. 241-261.
- HENRY, Antoine, MACLUCKIE, Jean-Baptiste, 2013. Sustainable information practices: the question of information culture for digital natives at a time of the ubiquity of search algorithms and the appropriation of Google by "digital natives". COSSI, Information culture and sustainable information practices, Jun, Shippagan, Canada.
- IHADJADENE, Madjid., FAVIER, Laurence, 2009. "Informational practices and digital divide" In A. Kiyindou (ed.), "Fractures, mutations, fragmentations. On the diversity of digital cultures » Paris, Hermès Science, pp.11-23.
- IHADJADENE, Madjid, FAVIER Laurence, RANJAHALY, Stephan, 2008. "Poverty and informational practices", Revue SFSIC.
- JOUËT, Josiane, 2000. "Critical return to the sociology of uses", Réseaux, n°100.
- KARSENTI, Thierry, DUMOUCHEL, Gabrielle and VASSILIS, Komis, 2014. The information skills of students in the age of Web 2.0: proposal of a model to guide training.
- KARSENTI, Thierry, DUMOUCHEL, Gabriel, 2011. Training in ICT skills and information skills: closely linked objectives in initial training in Quebec. In: Georges-Louis Baron, Éric Bruillard, Vassilis Komis (dir.), Information and communication sciences and technologies in an educational environment: Analysis of teaching practices and issues., Oct 2011, Patras, Greece. Athens: New Technologies Editions.
- KOUAKOU, Kouassi, Sylvestre, 2017. "Teaching and learning of information mastery at university: proposal for a training framework", Links New series, FASTEF - UCAD Dakar (Senegal), No. 24, December.
- KUHLTAU, Carol, 1993. "Seeking meaning: a process approach to library and information services", Norwood: Ablex Pub, Corps, No. 5.
- MAHÉ, Annaïg, 2012. "The information practices of researchers in higher education and research: views on the decade 2000-2010", Digital Documentary Practices at University, Villeurbanne: Presses de l'Enssib.
- MITTERMEYER, Diane, QUIRION, Diane, 2003. Study on the knowledge in documentary research of students entering the 1st cycle in Quebec universities, Montreal, Montreal: CREPUQ.
- POCHET, Bernard, 2015. Training in information skills in the age of Web 2.0 and discovery tools, Proceedings of the conference of May 18, 2015, Brussels: ARES/BICfB.
- POCHET Bernard, THIRION, Paul, 2015. "Evaluation of students' information skills. Brief comparison of the EduDOC and FADBEN surveys", Médiadoc, No. 15, pp. 2-8.
- THIRION, Paul, POCHET, Bernard, 2008. Survey on the documentary and informational skills of students accessing higher education in the French Community of Belgium, Synthesis Report, Brussels: EduDOC Group.
