Catching the technology wave:
an enquiry into perceptions and usage of ICT in higher education
– Implications for HRD

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Abstract

The majority of higher education institutions (HEIs) in English-speaking countries have been working with technology-led learningand development for well over a decade now (HEA, 2012). However a more traditional teaching approach is still used for transmitting knowledge in Latin cultures, particularly in the south of Europe. In French universities and business schools, the current debate focusses on how (and how much) technology to integrate into higher education (Pilkington, 2012; Fioraso, 2013;Gobry, 2013; Caulcutt, 2014) rather than maintaining a teacher-centred pedagogical approach.

The use of information and communication technologies (ICT) is replete in the contemporary global environment; changing human interaction,our relationship with information and knowledge, and transforming everyday communication (Basque, 2005).Today's digital society is characterized by rapid advances in ICT and the increasingly widespread adoption of MOOCs (massive open online courses). Such technological developments add to the debate surrounding the validity of using traditional teaching approaches in a virtual era and the implications for human resource development (HRD) initiatives and approaches within higher education contexts. It is important to bear in mind that the integration of technology-led learning requires more than 'merely' Internet infrastructure, financial investment and management commitment. Too frequently, the necessary change in culture is overlooked. In addition, the role of perception (of using modern technology) seems very important for adoption and usage. The human factor (the users) is left out of the discussion. Worldwide,

rapid technological change and the increased complexity of modern society are creating new challenges for academics (Isaac & Kalika, 2007) and putting further demands on the education system. Academics and business professionals are under increasing pressure to keep pace with ongoing change in order to transmit skills, understandings and personal attributes to students in such a way that increases employability (HEA, 2012).

Building on the work of Ben Youssef and Hadhri (2009) and Isaac and Kalika (op. cited), we designed a paper-based survey (see Appendices 1) to be administered to higher education business lecturers in France and Britain. The aim was to conduct an exploratory study comparing the perceptions and usage of ICT. The survey focuses on two specific questions: Are the main barriers to the adoption of ICT, identified in previous studies, still apparent or not? Is there a difference in the perception of ICT on either side of The Channel? The findings of the study thus offer a range of insights and implications for the role of technology in teaching and learning settings.

Introduction

In a number of regards, France and Britain have a similar higher education system. In the UK, a wide range of models co-exist in the same marketplace, including quasi US-model schools, professionally-oriented schools, social science-based schools and specialist schools in finance or technology. Similar clusters and patterns can be found in France, where INSEAD is perceived as an elite model, the *grandes écoles*constitute the key social and management science schools and national elite, the *écoles supérieures* are more professionally, practically-oriented schools and Paris/Dauphine or Science Po as specialist schools (Thomas *et al.*, 2013).In this paper, for the purposes of space, focus, access and purposive sampling, we focus on fee-paying institutions that select students.

Despite having similar higher education systems, France and the United Kingdom differin the acceptance and usage of technology in the learning process.Pilkington (2012) believes that Franceis well-equipped to face the numerous challenges of the global knowledge economy; however, Caulcutt(2014) argues that the French higher education system has failed to anticipate how the digital revolution has changed the economy.Fioraso (2013) sees digital technology as the key to building asuccessful university sector in France which is innovative,

modern andopen to the world.The general consensus is that France is falling behind the United Kingdom.

Taking into account that France and Britain are in different phases of technology adoption in higher education, this paper sets out to explore the perceptions and usage of ICT. Building on the work of Ben Youssef and Hadhri (2009) and Isaac and Kalika (2007), a survey was designed and administered to lecturers and research staff who deliver business modules at undergraduate level. The findings add to the current debate on the role of technology in teaching and learning settings.

The above argument produces the following research questions:

1. Why has ICT not been more widely adopted by certain business schools as a key approach in learning and human resource development?
2. What are the implications of tardive development by French business schools for learning and human resource development and overall competitiveness?

The development and usage of ICT in higher education: in different phases?

On 2 October 2013 the French Ministry of Higher Education launched the national MOOC (massive open online courses) portal and blended learning portal using edX's open source learning platform (Ministère de l'Enseignement supérieur et de la Recherche, 2013). The goal was to provide French-speaking students withaccess to online education technology, and to help transform pedagogy on campuses across France.The first hurdle involves trainingfacultyin innovative teaching methods in order to take advantage of the new technology.

Meanwhile in Britain, the government published "*The Maturing of the MOOC*" (2013)in which attention is drawn to the fact that "the burning issue in the MOOCosphere is the search for business models – and all the associated sub-issues of scale, sustainability monetisation, accreditation for MOOC learning and openness" (Department for Business, Innovation and Skills, 2013: 5). Academics are under increasing pressure to keep pace with ongoing changes

in order to transmit new skills, understandings and personal attributes to students in such a way that increases employability (HEA, 2012).Changeis needed within higher education; “A new era of teaching and learning is on the rise: a student-centered, technologically-and socially-rich environment that promises breakthroughs across the educational spectrum” (Baird and Fisher, 2005: 6). The launch of Udacity and Coursera in 2012, two Silicon Valley start-ups offering free education through MOOCs, calls into question the speed at which digital technologywill make traditional business models obsolete. MOOCs are multiplying in number, resources and student recruitment- without a recognized business model of their own.For some commentators “2012 is The Year of the MOOC” (Pappano, 2012) but Gobry (2013) asks if France will completely miss the technology wave in higher education and if so,this will clearly have implications with regards to its international competitiveness.

Today’s student cohortuses instant communication tools, particularly social networks, to share their student experiences with friends, family and the wider world(Lichy, 2012).Institutions can no longer trade on past reputation alone. Betterinformed students will take their custom to places offering more value for money.Undeniably “the online lifestyle of young people going into higher education was inescapable” (Melville *et al*., 2009: 5).With the introduction of web 2.0, the social web, teacher-centred pedagogy is being replaced by innovative pedagogy incorporating online resources, flexible curricula, multi-disciplinarity, internationalisation, entrepreneurship and various assessment methods. ForJonassen (1996: 261) the role of the teacher “must change from purveyor of knowledge to instigator, promoter, coach, helper, model and guide of knowledge construction”.Today’s ‘connected’ business world requires higher education to provide graduates with digital skills. In practice, however, many intangible factors hinder the transformation towards a technology-enabled learning environment. The acceptance of change is often hindered by the subtleties that constitute cultural difference regarding the perception and usage of ICT.

Consolidating the European Higher Education Area: the position of France

Globalisation and its market logic have transformed higher education and research. Science and technology still play a key role in the social and economic development of societies, but innovation is driving the pace of change and the nature of competition. Increasingly, the

global marketplace is characterised by the Anglo-Saxon(i.e. English-speaking world) model. This approach is far from universally accepted in France (Jennings, 2006), and it may partly explain the current perception and usage of ICT.

In 1998, the European Unionbegan harmonizing higher education across member countries. The Bologna agreement, signed in 1999 and reaffirmed by the Treaty of Lisbon in 2000, enables students to live and study in a European host country as part of a recognised academic programme. Within the first decade, aEuropean Higher Education Area was consolidated; member countries converge in education, employability and mobility, attracting students, professors and researchers from around the world (Cornuel, 2007).There are mixed views about European education measures. In France, the implementation of reforms is undertakenthrough legislation. Convergence requires European universities to re-structure their degree programmes in addition to their teaching and learning methodologies - this change has met with a certain level of resistance in France - but change is urgently needed in order to meet the requirements of international rankings and international accreditation (AACSB, EQUIS, AMBA).Higher education institutions (HEIs) are required to respond to the challenges of today's global marketplace: they must achieve a level of quality that stands the test of international comparison, improve governance and accountability, increase their funding and diversify sources of funding.The international dimension constitutes an additional pressure, it is essential for raising visibility in the international academic community and for accreditation.

HEIs need to clarify their positioning and strategic choices. As the pace of reorganization and restructuring accelerates, the French landscape of higher education and researchis being radically transformed, with the creation of 26 PRES or *pôles de recherche et d'enseignement supérieur* (hubs of higher education and research) across France (Ministère de l'Enseignement supérieur et de la Recherche, 2012). New centres of excellence have been created from school mergers such as SKEMA Business School (Lille/Sophia-Antipolis), BEM/Euromed, France Business School (Amiens/Brest/Clermont-Ferrand /Poitiers/Tours) in an attempt to produce leading European Business Schools that can challenge American institutions. In the light of the current changes, the question of innovative pedagogy and the integration of technology in learning becomes central.

Compared with its European neighbours, France is very protectionist, "the most prickly about American power, the most zealous in defence of its language and the most committed to the central role of the state in its' citizens lives" (Economist, 2013: 26). In an era of scarce funding for university courses, however, it seems logical to step outside the cultural 'comfort zone' and to adapt the offer to an internationally mobile, Anglophone student cohort, although it is recognised that change on this scale may be misinterpreted as a move towards American brainwashing. The French illustrationdraws attention to some of the complex factors that face HEIs embarking upon a new business model based on innovative pedagogy.

The habitual teaching style in France is based on an authoritative relationship where the teacher dispenses knowledge to the students (Barsoux and Lawrence, 1997), using the traditional face-to-face teaching model (Kleck, 2008). The culture of teacher-centred pedagogy obliterates any effort to integrate student-centred learning. The use of online resources and innovative pedagogy is far from commonplace. Teachers have yet to relinquish control in the teaching process in order to allow for student empowerment and the creation of learning communities. For Paquette (2012), the problem concerns motivation as much as management.

The French education system remains extremely discriminatory; a handful of prestigious institutions educate the elite, to the exclusion of the lower echelons of society who desperately lack the resources to compete (Naszalyi, 2010). As a consequence, the system is not geared up to open learning based on sharing knowledge. Teaching and learning is highly classroom-based (Ardagh, 1987) and one long-standing feature of French society is intellect:

> 'Where America lays emphasis on money, Britain blood, France chose the concept of cleverness'(Barsoux and Lawrence, 1997).

This difference is clearly visible in the French education system where its role is to transmit knowledge and to train intellects rather than develop the full individual (Ardagh, 1987). Educational reforms are met with unbending resistance in the French context, with the result that changing the institutional culture will be slow for three key reasons (Isaac and Kalika, 2007): firstly, France has yet to be convinced of the real benefit of integrating ICT to createsubstantial added value. Secondly, current management thinking in higher education does not encourage the adoption and usage of innovative practices. Thirdly, and most

significantly, at an individual level there is an overriding fear of losing one's intellectual capital in the marketplace, seeingit stolen or dispossessed. These views are also confirmed in the French press (Baverez, 2013).

A further factor that influences the perception and usage of ICT is the way in which it is interpreted; "The evolution of technology has led to a confusing variety of concepts in the field of education, such as distance education, e-learning, online learning or blended learning, that are often used interchangeably, even though they entail different dimensions." (Vieira Vasconcelos *et al*., 2013:142). Similarly, Basque (2005)states that the definition of ICT used in an educational context exceeds the traditional definition of 'learning media' – and puts forward three approaches to using ICT. The first is to consider ICT for its role in processing information. The second approach focuses on the symbolic dimension of ICT for exchanging information within the social dynamics of our societies; essential for initiating a constructive exchange,using the same codes and speaking the same language. Thirdly, ICT can be considered as cognitive tools that modify the intellectual activity and modes of thinking of an individual. Accordingly, one is forced to recognize that the use of ICT is capital inthe learning processas a vector for the transmission of knowledge, and furthermore,as an opportunity to change teaching practices (Alberto and Dumont, 2002; Haeuw, 2002). This positioning is reiteratedin the work of Ben Youssef and Hadhri (2009) who highlight how higher education lags behind many other industries that have been able to integrate developments in ICT. Modern technologies remain under-utilised resources in the traditional teaching model dominant in France, even though the integration of digital technology into everyday life is widespread. ICT has not only transformed our relationship with time and place, it has provided access to information that was previously withheld or unavailable. In today's connected society, knowledge is universally available via the Internet. On the basis of these arguments, the integration of technology-enhanced learning has the way forward (Isaac and Kalika, 2007).

Consolidating the European Higher Education Area: the position of Britain

In *Privatising Our Universities*(UCU, 2010), the University and College Union (the higher education trade union in the United Kingdom) raised concerns over the proposed changes that

they perceived as the Americanisation of UK higher education. Their concerns were based on the belief that privatisation will harm higher education through introducing:

- decreased funding, forcing universities to rely on private income streams,
- students as 'consumers' who will have greater weight in judging the quality of education
- greater encouragement to create 'for-profit' institutions to offer their own degrees at the expense of public institutions,
- inaccessible/ unaffordable education
- further cuts and closures at public institutions
- devaluation of UK higher education as reputation will be governed by student preferences rather than academic standards
- aggressive marketing of education services to satisfy shareholders.

Despite these concerns, later in the same yearthe current ConservativeGovernment shifted all the costs of Universities to the UKPLC balance sheet, in effect moving the costs off the annual income and expenditure account which may solve a problem for today but is likely to create a problem for the future. They achieved this move by making all future students 'customers', thus the customers (students) pay all the cost of fees but they reimburse the cost later, through the tax system. More specifically, they will only start repaying when they earn over £21000 *per annum*, and full payback only starts at over £27000. All debts are written off after 30 years. It is reasonable to assume that around 50% may never be fully repaid.The ceiling on fees was set by government at £9k. They expected a range between £6k and £9k but most universities decided to charge between £8 and £9k per annum.Students can access means-tested 'living cost' loans to help ease the cost.All universities in the UK have to offer bursaries. Taking account of these changes in relation to ICT adoption and its impact on learning and development, a key implication of this shift to privatisation, commodification and marketization of higher education has been the opening up of mind-sets and perspectives in relation to all manner of change and innovation. While it would be incorrect to suggest that these changes have been easy for, and readily accepted by, all sections and stakeholders in the United Kingdom, they have nevertheless liberalised and created a disposition and propensity for change across wide spans of higher education and HRD communities.

In relation to the British context, it will be useful to consider a number of aspects of the dynamics of the higher education and HRD environment in greater detail. Whereas most full-time students in the United Kingdom do not attend their local or regional university, many part-time students do. Overall the number of part-timers has fallen considerably since the fees wereincreased. In the United Kingdom, university league tables drive every decision. The Universities and Colleges Admissions Service (UCASwww.ucas.com)manages the macro-admissions process. Unlike in French universities, access is selective, and selection is based on exam grades. Universities *de facto*, have contracted numbers of students to respect but since 2012, these numbers have become more contestable since, if students get 'good' grades, they can swap their UCAS accepted offer and attend any university which will take them. The net outcome is that some universities will grow, and others will get smaller over time. This move will transform the system. It is difficult to ignore the economic logic; students who over-perform can end up in universities with a strong brand and these universities will gradually get bigger over time.

One of the key developments over recent years in higher education has been the phenomenal growth of 'for profit' institutions. In November 2012, the Department for Business Innovation Skills (BIS) awarded university status to the previously charitable College of Law, following its £200 million sale to Montagu Private Equity (Morgan, 2013). The rebranding of the College to the University of Law marks the first time a 'for profit' company has been allowed to use the title of university in Britain, where use of the term is tightly controlled. BIS introduced guidelines requiring that within three months of the completion of any sale or change of ownership, universities must undergo checks to see if they continue to meet the criteria for their title. To qualify for university title, institutions must show they have at least 1,000 fulltime equivalent higher education students and meet standards on corporate, financial and academic governance.In August 2013,BPP University College of Professional Studies became the second profit-making institution in the UK offeringcourses dedicated to business and the professions(Garner, 2013). BPP University aims to give students practice-facing programmes which will equip them for the world of work. This new model represents a culture of professionals teaching professionals; staff all have practical, professional and'real-world' experience with which to enrich classroom experience. Until 2012, the University of Buckingham was the only private university operating in the UK - but it was run as a charitable concern. BPP offers postgraduate degree courses, MBAs, summer schools and training courses in addition to undergraduate degree courses. It has schools in London,

Bristol, Birmingham, Cambridge, Leeds, Liverpool and Manchester plus other regional centres across the UK, and also proposes a range of flexible study options including part-time programmes, accelerated course and online distance learning courses.

The decision to award BPP 'for profit' status as a university fits with developments elsewhere in the world as globally private institutions outnumber public institutions: with 30 555 private higher education institutions representing a 55.7 per cent share of the total private higher education institute provision.Arguments against this model draw attention to the fact that HEIs need fee-paying students in order to survive, so there may be an incentive to keep under-achieving students in the system irrespective of their low attainment. There is also the feeling that paying fees degrades the learning process and will lead to some students considering themselves to be entitled to a degree, as they have paid fees. In the light of recent scandals at American 'for profit' universities that have cost students and taxpayers dearly, many commentators have published their views via the blogs of THE (Times Higher Education), UCU (University & College Union) and Chronicle Blog Network (The Chronicle of Higher Education).

The Office for Fair Access (OFFA) safeguards and promotes fair access to higher education by approving and monitoring access agreements. All English universities and colleges that want to charge higher fees must have an access agreement with the OFFA. Officially, the OFFA supports social diversity and ensures on paper that no-one is priced out of the system. Critics would argue that, in reality, certain stakeholders such as the British middle classes and international (non EU) students are very skilled at looking after their own interests. All UK universities have huge business overseas - and consequently many different business models.

In summary to this section on the United Kingdom context, it can be seen that, while it is similar in some regards to the French environment (i.e. institutional structures and types of institution) the introduction of market and financial dynamics has been much more all-encompassing. This aspect, in conjunction with a range of further factors, has created a particular *a priori* openness to pedagogic and, in particular ICT, innovation for learning and HRD purposes.

Methodology

By gathering information on the perception and usage of ICT in higher education, the findings provide information that can shed light on why ICT has not been more widely adopted by certain institutions.

Based on the main arguments outlined in the literature, a paper-based survey(see Appendix 1) was distributed to higher education business lecturers in France and Britain. The survey was designed to explore the perceptions and usage of ICT in higher education, focusing on two areas: identifying the main barriers to why has ICT not been more widely adopted by certain business schools as a key approach in learning and human resource development; and, secondly, identifying the implications of tardive development by French business schools for learning and human resource development.

The survey was drawn up to explore the notions put forward in two leading studies (Isaac and Kalika, 2007; Ben Youssef and Hadhri, 2009) concerning the perception and usage of ICT. The survey comprised a mixture of 54 open and closed questions, of which 5 related to personal data (employment status, age, years of teaching experience, involvement in distance learning, nationality). Since the intention of the survey was to *explore* the current situation regarding usage and perception of ICT, rather than measuring a dichotomy, a rating scale (Likert style) was chosen to represent different aspects of the same attitude or opinion. Of the 54 questions: 32 questions used a 4 point scale, 11 questions were closed**,** 4 questions were multiple-choice, 5 questions regarding the identity of the respondent and 2 questions were open-ended. The intention was to use different types of questions in order to generate different types of data and thus explore individual thoughts and behaviour.

In May 2014, the survey was distributed to 700 faculty staff (part-time, full-time, temporary teachers and researchers): 350 surveys were emailed to a French business school and 350 surveys were emailed to 3 Anglo-Saxon partner institutions (located in Britain and related contexts), chosen for their similarity (business degrees awarded, accreditation, number of staff and students, etc.). The intention was to explore how ICT is perceived and used by teaching staff in higher education in each national setting.The surveys yielded a 27% return, of which 47% were received from the French institution and 53% from the Anglo-Saxons partners. Owing to incomparable labour law in each national context, the variable “employment status” was not taken into consideration since teachers have a different legal status in each country. “Age” was also dismissed as many French respondents omitted to divulge this information.

An analysis of the completed surveys using frequency tables and *confirmatory factor analysis* (CFA) reveals evidence of cultural difference (see Appendices 2, for further details).

Discussion of findings

(i) ICT in higher education – general observations

Although all the respondents agreed on the impact of ICT on our rapport with information and communication, knowledge, and interpersonal relations, the Anglo-Saxons in this sample revealed a more diversified adoption and usage of ICT. Moreover, the Anglo-Saxon respondents were more inclined to recognise the necessity of integrating ICT in to higher education and to accept the way in which modern technology has modified the traditional role of the teacher. Unlike the French respondents, the Anglo-Saxons consider the use of ICT in higher education as a source of competitive advantage (see Annex 1).

Comparing the French sample and the Anglo-Saxon sample, the perception of the impact of ICT within education also differs. French respondents seemed to expect more collaborative support while their Anglo-Saxon counterparts had integrated dynamic web 2.0 tools such as MOOCs and podcasting into teaching (see Annex 2). This difference can partly be explained by the fact that the two cultural settings are in different phases of ICT adoption and usage; they clearly do not share the same perception of ICT. For the French respondents, ICT is used more for preparing and teaching face-to-face, than for dynamic interactivity or distance learning (see Annex 3).

(ii) ICT – current usage in teaching and learning

Based on the information gathered from the two cultural contexts, several significant differences are apparent. The first concerns the usage of ICT. The French sample and the Anglo-Saxon do use ICT with the same frequency. Furthermore the Anglo-Saxons are more comfortable using ICT and in particular web 2.0 tools (see Annex 4).

Cultural difference aside, what seems interesting is the complementarity of tools for teaching. Information-oriented technologies (namely PowerPoint, databases and intranet) have not been replaced by the collaborative web 2.0 tools. Instead, interactive tools tend to be integrated alongside existing web 1.0 technologies. Taking the results as a whole, the authors put forward a typology of teaching approaches based on different usages of ICT. CFA was undertaken to test for frequency of ICT usage, revealing the existence of 2 approaches: one

linked to collaborative tools, the other to information-oriented technologies. The contribution rate of each variable is as follows (see tables 1 & 2).

Table 1: teaching approaches based on different usages of ICT

	Collaborative tools		**Information oriented**	
		Contribution rate		Contribution rate
Variables	Blog	0,98	Intranet	0,98
	Wiki	0,94	Power point	0,9
	Personal video	0,95	Online lessons	0,99
	Serious games	0,97	Course complement	0,85
	Illustrative video	0,8		
	Info internet info	0,81		

Based on the findings, the authors put forward a classification of 3 distinct types of ICT usage observed in teaching delivery.

Table 2: classification of ICT usage in teaching delivery

	Categories of usage		
	Type A: non users	Type B: traditionalists	Type C: digital converts
Characteristics	Very little use of even basic ICT and no evidence of using collaborative tools	Use of web 1.0 information oriented technologies (PowerPoint & Internet to prepare class materials …)	Full use of ICT available.Progressive integration of new ICT.

(iii) Management thinking

The responses gathered in the survey point strongly to a clear difference in management thinking concerning the usage of ICT. It would appear that management policy and management practise in Anglo-Saxon institutions is more engaged and of greater significance in terms of training and evaluation. In our sample, the Anglo-Saxon staff are better trained

and more competent with ICT; they are fully aware of the fact that the use of ICT features in the evaluation of their teaching performance.

Awareness of the ICT infrastructure is another factor that differs between the cultural settings. Even if the Anglo-Saxon respondents have the same ICT provision as the French respondents, the Anglo-Saxons teaching staff seem considerably better informed of the technology available. Technological developments over the past 5 years have changed teaching methods irreversibly; there is a greater awareness of this evolution among the Anglo-Saxons respondents compared with the French respondents in this study (see Annex 5). Unsurprisingly, the management thinking reported at the respective institutions seems to support the findings concerning usage of ICT.

Concluding comments

The genesis of our exploratory study into the perception and usage of ICT stems from personal experience, together with a review of academic literature and information available in the public domain. The intention was to explore the extent to which our notions of ICT usage were well-founded.

An analysis of the survey data points to a significant difference in both teaching practice and in the way that individuals perceive and use ICT in each national setting.The notions put forward in the two leading studies (Isaac and Kalika, 2007; Ben Youssef and Hadhri, 2009) concerning the perception and usage of ICT are thus confirmed. Technology is neither perceived nor used in the same way in each national setting.

However, given the size and scale of the sample, it is not possible to attribute ICT usage to a cultural dimension. Nevertheless the results reveal the need to undertake deeper research in order to investigate ICT usage on a wider (international) scale. To the end, the survey will be modified for an international sample of teachers working in higher education.

References

Albero, B. et Dumont, B. (2002) Les technologies de l'information et de la communication dans l'enseignement supérieur : pratiques et besoins des enseignants, Rapport ITEM SUP pour le ministère de la Recherche, direction de la technologie, sous-direction des technologies éducatives et des technologies de l'information et de la communication (SDTETIC), bureau de l'enseignement supérieur (B3), Paris

Baird, D.E. and Fisher, M. (2005) Neomillennial user experience design Strategies: utilizing social networking media to support "*always on*" learning styles, *Journal of Educational Technology Systems*, vol. 34, no.1, pp. 5-32

Basque, J. (2005), une réflexion sur les fonctions attribuées aux TIC en enseignement universitaire, Revue internationale des technologies en pédagogie universitaire, vol. 2, no.1, pp. 30-41

Baverez, N. (2013), La contre-révolution numérique, *Le Point* n° 2143, 10/10/13, pp. 17-18

Ben Youssef, A. et Hadhri, W. (2009) Les dynamiques d'usages des technologies de l'information et de la communication par les enseignants universitaires, le cas de la France, Réseaux, 2009/3 n°155, pp. 23-54

Caulcutt, Clea (2014) France adds employability to the university mission France adds employability to the university mission[pdf] London. Available at: http://www.timeshighereducation.co.uk/news/france-adds-employability-to-the-university-mission/2010636.fullarticle[Accessed 24 January 14]

Cornuel, E. (2007) L'enseignement du management, une priorité pour l'Europe, Revue Française de Gestion, n° 178-179, pp. 3-16

Department for Business, Innovation and Skills (2013)BIS RESEARCH PAPER NUMBER 130: The Maturing of the MOOC [pdf] London. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/240193/13-1173-maturing-of-the-mooc.pdf [Accessed 05 October 13]

Economist print edition (2013)*Charlemagne: L'exception française*, June 15th, p. 26

EUROPA (2013)Speech/13/306: Opening up higher education to the world and the new university ranking, U-Multirank, 11/04/2013[online]. Available at:http://europa.eu/rapid/press-release_SPEECH-13-306_en.htm [Accessed 31 July 2013]

Fioraso, Geneviève (2013) France Université Numérique: la première plateforme d'enseignements en ligne est lancée [online]. Available at: http://www.gouvernement.fr/gouvernement/france-universite-numerique-la-premiere-plateforme-d-enseignements-en-ligne-est-lancee [Accessed 11 October 2013]

Garner, Richard (2013) Profit-making university is just the start, minister says[online] Thursday 08 August. Available at: http://www.independent.co.uk/student/news/profitmaking-university-is-just-the-start-minister-says-8751028.html[Accessed 6 August 2013]

Gobry, Pascal-Emmanuel (2013) La France va-t-elle rater la révolution de l'université en ligne? [online] France. Available at: http://www.atlantico.fr/rdv/high-tech/france-va-t-elle-rater-revolution-universite-en-ligne-pascal-emmanuel-gobry-633173.html#1GJ42dvU3Sq3dKEj.99[Accessed 7 August 2013]

Graham, Charles (2006). Blended learning systems: Definition, current trends and future directions. In C. J. Bonk & C. R. Graham (Eds.), *The handbook of blended learning: Global perspectives, local designs*, Pfeiffer, San Francisco, pp. 3-21

Haeuw F. (2002), technologies en formation et compétences des acteurs : adaptation ou transformation ?, Education permanente, n°152, pp.71-83

HEA (Higher Education Academy) (2012) Pedagogy for employability[pdf] York. Available at: http://www.heacademy.ac.uk/resources/detail/employability/pedagogy_for_employability_update_2012 [Accessed 27 June 2013]

Isaac H. et Kalika M. (2007), TIC et enseignement de la gestion : une révolution manquée ?, Revue française de gestion, 2007/9-10 n°178-179, pp.117-123

Jennings,Jeremy (2006) France and the 'Anglo-Saxon' Model: Contemporary and Historical Perspectives, *European Review*, vol. 14, issue 4, pp. 537-554

Jonassen, D. H. (1996), *Computers in the Classroom: Mindtools for Critical Thinking*, Englewood Cliffs, NJ: Merrill, Prentice Hall

Lichy, J (2012) Towards an international culture: Gen Y students and SNS? *Active Learning in Higher Education*, vol. 13, no. 2, pp. 101-116

Milroy, Leslie and Milroy, James (1992) Social network and social class: Toward an integrated sociolinguistic model, *Language in Society*, vol. 21, no. 1, pp. 1-26

Ministère de l'Enseignement supérieur et de la Recherche (2012**)** PRES: pôles de recherche et d'enseignement supérieur [online]. Available at: http://www.enseignementsup-recherche.gouv.fr/cid20724/les-poles-de-recherche-et-d-enseignement-superieur-pres.html[Accessed 17 October 2013]

Ministère de l'Enseignement supérieur et de la Recherche (2013) France Université Numérique [press release] 02 October 2013. Available at: http://www.enseignementsup-recherche.gouv.fr/cid74183/france-universite-numerique-construire-l-universite-de-demain.html [Accessed 10 October 2013]

Morgan, John (2013) UK's first for-profit university still meets grade [online] Thursday 08 August. Available at: http://www.timeshighereducation.co.uk/news/uks-first-for-profit-university-still-meets-grade/2006388.article [Accessed 9 August 2013]

Pappano, Laura (2012) Education Life [online] Published: November 2, 2012. Available at: http://www.nytimes.com/2012/11/04/education/edlife/massive-open-online-courses-are-multiplying-at-a-rapid-pace.html?_r=0[Accessed 13 October 2013]

Pilkington, Marc (2012) The French evolution: France and the Europeanisation of higher education, *Journal of Higher Education Policy and Management*, vol. 34, no. 1, pp. 39–50

Thomas, Howard; Lorange, Peter; Sheth, Jadish (2013) The Business School in the Twenty-First Century: Emerging Challenges and New Business Models, Cambridge University Press

UCU (2010) *Privatising Our Universities* [pdf] February, London. Available at: http://www.ucu.org.uk/media/pdf/9/6/ucu_privatisingouruniversities_feb10.pdf[Accessed 7 August 2013]

UKCES (UK Commission for Employment and Skills) (2012) Business and Schools: Building the world of work together [pdf] London. Available at: http://www.ukces.org.uk/assets/ukces/docs/publications/business-and-schools-building-the-world-of-work-together.pdf [Accessed 6 October 2013]

Vieira Vasconcelos, Sandra; Balula, Ana; Almeida, Pedro (2013) E- and blearning in European Tourism Higher Education courses: benefits, barriers and challenges, *International Journal of Management Cases*, vol. 15, issue 4, pp. 141-152

Appendices 1:

ICT in learning - SURVEY

In collaboration with Erasmus partners, IDRAC is investigating use of ICT in higher education through a comparative study. We would appreciate your input by completing this survey. Total anonymity will be guaranteed. Please return by email to Jessica.lichy1@idraclyon.com Thank you for your time and consideration.

1. The usage of ICT is widespread in today's society

❍disagree ❍mostly yes
❍rather ❍yes

2. The usage of ICT has changed our relationship with information

❍disagree ❍mostly yes
❍rather ❍yes

3. The usage of ICT has changed our relationship with knowledge

❍disagree ❍mostly yes
❍rather ❍yes

4. The usage of ICT is changing our everyday relationship

❍disagree ❍mostly yes
❍rather ❍yes

5. The usage of ICT is changing our everyday communication

❍disagree ❍mostly yes
❍rather ❍yes

6. ICT are tools that are restructuring thinking and intellectual capacities

❍disagree ❍mostly yes
❍rather ❍yes

7. If ICT are embedded in modern society, teaching must integrate these approach (language, use, tools, ...)

❍disagree ❍mostly yes
❍rather ❍yes

8. More specifically, do you think that teaching needs to integrate ICT (If no, go to Q 10)

❍yes ❍no

9. If yes, in which ways? (several responses are possible)

❑collaborative support (blog, wiki, online community, ...) ❑video clips / podcasting
❑dynamic learning (serious game) ❑broadcast yourself

10. The use of ICT is changing the role of the teacher

❍yes ❍no

11. Classify by importance (1 most important, 3 least importance)

☐ the role of the teacher is to transmit knowledge and information

☐ the role of the teacher is to show the student how find & integrate the information

☐ the role of the teacher is to facilitate knowledge

12. Have you integrated ICT into your delivery? (if yes, go to Q 14)

❍yes ❍no

13. If no, why not? (open response, 5 lines max and go to Q 28)

14. If yes, what kind of use? few responses possible)

❑to prepare a class ❑for distance learning

❑to deliver a class face-to-face ❑for interactive collaboration

15-27. How often do you use :

	never	almost never	occasionally	systematically
15. PowerPoint	❍	❍	❍	❍
16. intranet (consultative information)	❍	❍	❍	❍
17. posting class materials online	❍	❍	❍	❍
18. posting complementary information online	❍	❍	❍	❍
19. posting exercises online	❍	❍	❍	❍
20. internet usage for retrieving information	❍	❍	❍	❍
21. virtual library materials	❍	❍	❍	❍
22. data bases online	❍	❍	❍	❍
23. usage of video clip during the class	❍	❍	❍	❍
24. usage of video of yourself teaching	❍	❍	❍	❍
25. usage of serious games during the class	❍	❍	❍	❍
26. usage of blog	❍	❍	❍	❍
27. usage of wikis	❍	❍	❍	❍

28. The usage of ICT constitutes competitive advantage in higher education (in general)

❍disagree ❍mostly yes

❍rather ❍yes

29. What do you think about ICT in your institution? (select one response)

❍available if required for teaching ❍obligation to use ICT
❍suggested / encouraged for teaching

30-31. over the last 5 years, have you noticed or felt an evolution

	clearly	partially	none
30. in meetings / discussions in your institution	❍	❍	❍
31. in practice in your institution	❍	❍	❍

32-38. Does your institution provide the necessary resources

	yes	no
32. IT equipment	❍	❍
33. wifi	❍	❍
34. E-campus	❍	❍
35. collaborative platform	❍	❍
36. data bases	❍	❍
37. virtual library	❍	❍
38. social networks	❍	❍

39. Do you receive training for using ICT? (if no, go to Q 42)

❍yes ❍no

40. Do you consider it satisfying

❍yes ❍no

41. Do you consider it was sufficient

❍yes ❍no

42. Is the use of ICT recognized and appreciated by your school manager (as a performance criteria)?

❍yes ❍no

43. Do you feel comfortable using web 2.0/ collaborative tools (blog, wiki, learning platforms)

❍yes ❍no

44. Do you use them? (if no, go to Q 46)

❍yes ❍no

45. Do you use these tools (go to Q 48)

❍willingly
❍obliged

46. if you don't use them, why? (several responses possible. "Autre" is an open response where you can specify your reason)

❑you don't know how use these tools
❑you don't see the benefit of using tem
❑Autre

If 'Autre' explain :

48. Do you feel motived to use these tools

❍not at all
❍some reservation
❍completely

49. Status

❍researcher
❍lecturer
❍short-term teaching contract

50. Seniority in teaching

❍- 2 years
❍2-5 years
❍5-8 years
❍8- 10 years
❍+ 10 years

51. Age

52. Gender

❍M
❍F

53. Do you offer distance learning

❍yes
❍no

APPENDICES 2

Annexe 1

pays, banalisation tic

	L'usage des TIC s'est banalisé dans nos sociétés		
	Moyenne	Ecart-type	Médiane
Fr	**2,44**	**0,76**	**3,00**
Gb	**2,73**	**0,47**	**3,00**

p = **0,2%** ; F = **10,03** (**TS**)

La relation est très significative.
Valorisation des échelons : de 0 (pas ok) à 3 (ok)
Les éléments sur (sous) représentés sont coloriés.

pays, tic modification cognitive

	Les TIC sont des outils qui restructurent la pensée et les activités intellectuelles		
	Moyenne	Ecart-type	Médiane
Fr	**1,71**	**0,89**	**2,00**
Gb	**2,17**	**0,89**	**2,00**

p = **0,06%** ; F = **12,66** (**TS**)

La relation est très significative.
Valorisation des échelons : de 0 (pas ok) à 3 (ok)
Les éléments sur (sous) représentés sont coloriés.

pays, sytème symbolique

	Si l'on considère les TIC comme un système symbolique caractérisant notre société, l'enseignement supérieur doit adapter ses contenus au nouveau système symbolique (codes, langage, usage, support)		
	Moyenne	Ecart-type	Médiane
Fr	**2,17**	**0,74**	**2,00**
Gb	**2,38**	**0,71**	**2,50**

p = **4,4%** ; F = **4,02** (**S**)

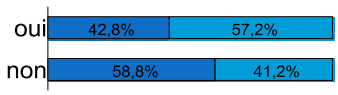
La relation est significative.
Valorisation des échelons : de 0 (pas ok) à 3 (ok)
Les éléments sur (sous) représentés sont coloriés.

pays, rôle enseignant

	Fr	Gb
oui	59	79
non	30	21

p = **0,05** ; Khi2 = **3,86** ; ddl = **1** (**S**)

La relation est significative.
Les éléments sur (sous) représentés sont coloriés.



pays, réoorganisation rôle prof

	Fr		Gb	
	N	% cit.	N	% cit.
oui	72	**38,1%**	98	**51,9%**
non	17	**9,0%**	2	**1,1%**

p = **<0,01** ; Khi2 = **15,23** ; ddl = **1** (**TS**)

La relation est très significative.
Les éléments sur (sous) représentés sont coloriés.

pays, avantage conccurentiel

	L'usage des TIC constitue un avantage concurrentiel sur le marché de l'enseignement supérieur		
	Moyenne	Ecart-type	Médiane
Fr	**2,01**	**0,82**	**2,00**
Gb	**2,30**	**0,86**	**2,50**

p = **1,8%** ; F = **5,56** (**S**)

La relation est significative.
Valorisation des échelons : de 0 (pas ok) à 3 (ok)
Les éléments sur (sous) représentés sont coloriés.

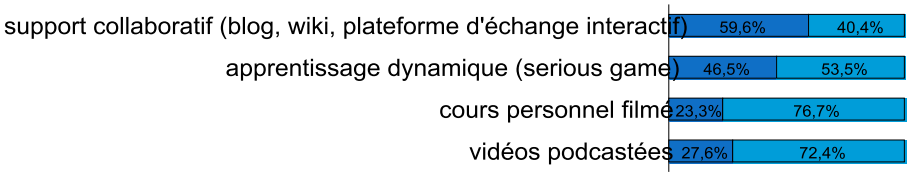
Annexe 2

pays, usage

	Fr	Gb
support collaboratif (blog, wiki, plateforme d'échange interactif)	59	40
apprentissage dynamique (serious game)	**53**	**61**
cours personnel filmé	17	56
vidéos podcastées	32	84

p = **<0,01** ; Khi2 = **33,77** ; ddl = **3** (**TS**)

La relation est très significative.
Les éléments sur (sous) représentés sont coloriés.



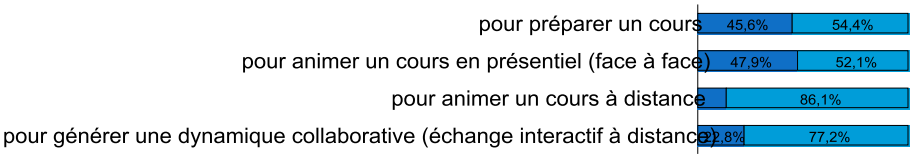
Annexe 3

pays, usage1

	Fr	Gb
pour préparer un cours	72	86
pour animer un cours en présentiel (face à face)	68	74
pour animer un cours à distance	10	62
pour générer une dynamique collaborative (échange interactif à distance)	21	71

p = **<0,01** ; Khi2 = **36,68** ; ddl = **3** (**TS**)

La relation est très significative.
Les éléments sur (sous) représentés sont coloriés.

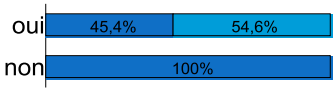


pays, intégration personnelle

	Fr	Gb
oui	83	100
non	6	0

p = **0,008** ; Khi2 = **6,96** ; ddl = **1** (**TS**)

La relation est très significative.
Les éléments sur (sous) représentés sont coloriés.



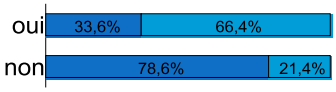
Annexe 4

pays, utilisation web2_0

	Fr	Gb
oui	44	87
non	44	12

p = **<0,01** ; Khi2 = **31,86** ; ddl = **1** (**TS**)

La relation est très significative.
Les éléments sur (sous) représentés sont coloriés.



pays, pp

	powerpoint		
	Moyenne	Ecart-type	Médiane
Fr	**3,58**	**0,83**	**4,00**
Gb	**3,61**	**0,75**	**4,00**

p = **77,7%** ; F = **0,07** (**NS**)

La relation n'est pas significative.
Valorisation des échelons : de 1 (Jamais) à 4 (Systématiquement)

pays, cours en ligne

	mise en ligne cours		
	Moyenne	Ecart-type	Médiane
Fr	**3,17**	**1,09**	**4,00**
Gb	**3,52**	**0,87**	**4,00**

p = **1,6%** ; F = **5,87** (**S**)

La relation est significative.
Valorisation des échelons : de 1 (Jamais) à 4 (Systématiquement)
Les éléments sur (sous) représentés sont coloriés.

pays, information internet

	usage internet comme source d'information		
	Moyenne	Ecart-type	Médiane
Fr	**3,55**	**0,67**	**4,00**
Gb	**3,62**	**0,68**	**4,00**

p = **51,9%** ; F = **0,43** (**NS**)

La relation n'est pas significative.
Valorisation des échelons : de 1 (Jamais) à 4 (Systématiquement)

pays, intranet

	consultation infos pédago. sur l'intranet		
	Moyenne	Ecart-type	Médiane
Fr	**2,87**	**1,10**	**3,00**
Gb	**3,34**	**0,90**	**4,00**

p = **0,2%** ; F = **10,18** (**TS**)

La relation est très significative.
Valorisation des échelons : de 1 (Jamais) à 4 (Systématiquement)
Les éléments sur (sous) représentés sont coloriés.

pays, complément cours

	mise en ligne infos. complémentaires		
	Moyenne	Ecart-type	Médiane
Fr	**2,72**	**1,07**	**3,00**
Gb	**3,40**	**0,80**	**4,00**

p = **<0,1%** ; F = **23,73** (**TS**)

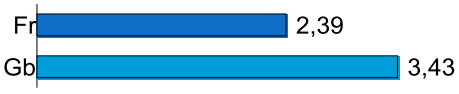
La relation est très significative.
Valorisation des échelons : de 1 (Jamais) à 4 (Systématiquement)
Les éléments sur (sous) représentés sont coloriés.

pays, exercices cours

	mise en ligne exercices		
	Moyenne	Ecart-type	Médiane
Fr	**2,39**	**1,05**	**3,00**
Gb	**3,43**	**0,84**	**4,00**

p = **<0,1%** ; F = **55,91** (**TS**)

La relation est très significative.
Valorisation des échelons : de 1 (Jamais) à 4 (Systématiquement)
Les éléments sur (sous) représentés sont coloriés.



pays, bliothèque virtuelle

	utilisation bibliothèque virtuelle		
	Moyenne	Ecart -type	Médiane
Fr	2,57	**1,03**	**3,00**
Gb	3,13	**0,93**	**3,00**

p = **0,02%** ; F = **15,19** (**TS**)

La relation est très significative.
Valorisation des échelons : de 1 (Jamais) à 4 (Systématiquement)
Les éléments sur (sous) représentés sont coloriés.

pays, bdb

	utilisation bases de données		
	Moyenne	Ecart -type	Médiane
Fr	**2,53**	**1,03**	**3,00**
Gb	**2,97**	**0,90**	**3,00**

p = **0,3%** ; F = **9,48** (**TS**)

La relation est très significative.
Valorisation des échelons : de 1 (Jamais) à 4 (Systématiquement)
Les éléments sur (sous) représentés sont coloriés.

pays, vidéos illustratives

	usage vidéos illustratives		
	Moyenne	Ecart -type	Médiane
Fr	**2,76**	**0,97**	**3,00**
Gb	**2,96**	**0,78**	**3,00**

p = **11,7%** ; F = **2,42** (**PS**)

La relation est peu significative.
Valorisation des échelons : de 1 (Jamais) à 4 (Systématiquement)

pays, vidéos personnelles

	vidéos de vous en situation de transmission		
	Moyenne	Ecart -type	Médiane
Fr	1,18	**0,50**	**1,00**
Gb	1,71	**0,87**	**1,00**

p = **<0,1%** ; F = **24,24** (**TS**)

La relation est très significative.
Valorisation des échelons : de 1 (Jamais) à 4 (Systématiquement)
Les éléments sur (sous) représentés sont coloriés.

pays, blog

	animation communauté de réseaux		
	Moyenne	Ecart-type	Médiane
Fr	1,46	**0,83**	**1,00**
Gb	1,99	**0,98**	**2,00**

p = **0,02%** ; F = **15,34** (**TS**)

La relation est très significative.
Valorisation des échelons : de 1 (Jamais) à 4 (Systématiquement)
Les éléments sur (sous) représentés sont coloriés.

pays, serious game

	usage de serious games		
	Moyenne	Ecart-type	Médiane
Fr	**1,64**	**0,77**	**1,00**
Gb	**2,01**	**1,08**	**2,00**

p = **0,9%** ; F = **6,90** (**TS**)

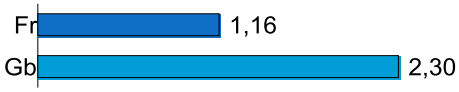
La relation est très significative.
Valorisation des échelons : de 1 (Jamais) à 4 (Systématiquement)
Les éléments sur (sous) représentés sont coloriés.

pays, wikis

	réalisation de wikis		
	Moyenne	Ecart-type	Médiane
Fr	1,16	**0,40**	**1,00**
Gb	2,30	**1,16**	**2,00**

p = **<0,1%** ; F = **73,53** (**TS**)

La relation est très significative.
Valorisation des échelons : de 1 (Jamais) à 4 (Systématiquement)
Les éléments sur (sous) représentés sont coloriés.



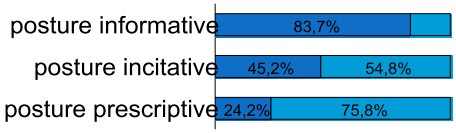
Annexe 5

pays, posture établissement

	Fr	Gb
posture informative	36	7
posture incitative	38	46
posture prescriptive	15	47

p = **<0,01** ; Khi2 = **36,32** ; ddl = **2** (**TS**)

La relation est très significative.
Les éléments sur (sous) représentés sont coloriés.



pays, pratiques

dans les pratiques de votre établissement

	Moyenne	Ecart-type	Médiane
Fr	1,81	0,56	2,00
Gb	1,49	0,54	1,00

p = **0,02%** ; F = **15,79** (**TS**)

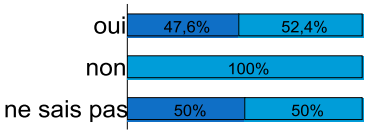
La relation est très significative.
Valorisation des échelons : de 1 (nettement) à 3 (aucune)
Les éléments sur (sous) représentés sont coloriés.

pays, équipement informatique

	Fr	Gb
oui	88	97
non	0	2
ne sais pas	1	1

p = **0,41** ; Khi2 = **1,80** ; ddl = **2** (**NS**)

La relation n'est pas significative.

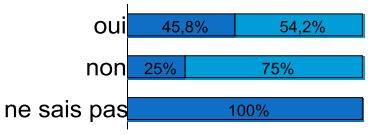


pays, wifi

	Fr	Gb
oui	82	97
non	1	3
ne sais pas	6	0

p = **0,02** ; Khi2 = **7,64** ; ddl = **2** (**S**)

La relation est significative.
Les éléments sur (sous) représentés sont coloriés.

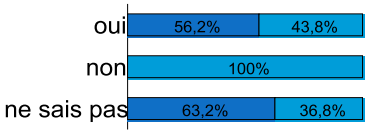


pays, plateforme informative

	Fr	Gb
oui	77	60
non	0	32
ne sais pas	12	7

p = **<0,01** ; Khi2 = **34,99** ; ddl = **2** (**TS**)

La relation est très significative.
Les éléments sur (sous) représentés sont coloriés.

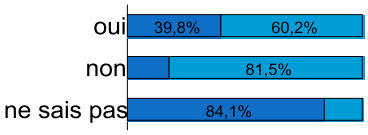


pays, plateformecollaborative

	Fr	Gb
oui	47	71
non	5	22
ne sais pas	37	7

p = **<0,01** ; Khi2 = **35,52** ; ddl = **2** (**TS**)

La relation est très significative. Les éléments sur (sous) représentés sont coloriés.

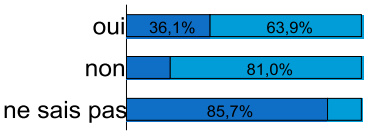


pays, réseaux sociaux

	Fr	Gb
oui	43	76
non	4	17
ne sais pas	42	7

p = **<0,01** ; Khi2 = **41,70** ; ddl = **2** (**TS**)

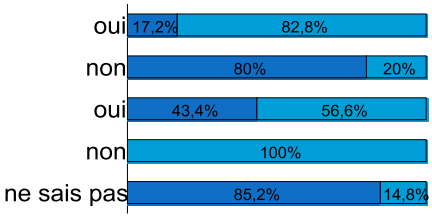
La relation est très significative. Les éléments sur (sous) représentés sont coloriés.



pays, formation, bibliothèque virtuelle

	Fr	Gb
oui	17	82
non	72	18
oui	66	86
non	0	10
ne sais pas	23	4

Bénéficiez-vous de formation(s) à l'usage des TIC? / Pays p =**<0,01** ; Khi2 = **74,69** ; ddl = **1** (**TS**)
bibliothèque virtuelle / Pays p =**<0,01** ; Khi2 = **25,45** ; ddl = **2** (**TS**)

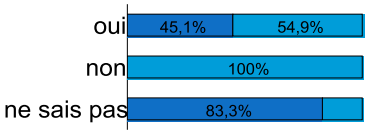


pays, bdd

	Fr	Gb
oui	**69**	**84**
non	0	12
ne sais pas	20	4

p = **<0,01** ; Khi2 = **23,58** ; ddl = **2** (**TS**)

La relation est très significative. Les éléments sur (sous) représentés sont coloriés.

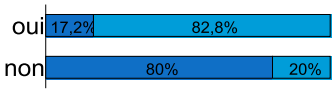


pays, formation

	Fr	Gb
oui	17	82
non	72	18

p = **<0,01** ; Khi2 = **74,69** ; ddl = **1** (**TS**)

La relation est très significative. Les éléments sur (sous) représentés sont coloriés.

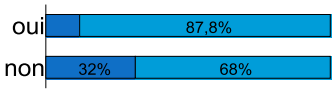


pays, satisfaction

	Fr	Gb
oui	9	65
non	8	17

p = **0,02** ; Khi2 = **5,17** ; ddl = **1** (**S**)

La relation est significative. Les éléments sur (sous) représentés sont coloriés.



pays, complétude

	Fr	Gb
oui	4	51
non	13	31

p = **0,004** ; Khi2 = **8,53** ; ddl = **1** (**TS**)

La relation est très significative. Les éléments sur (sous) représentés sont coloriés.