SHAPING THE FUTURE OF NEWS MEDIA

Carles Singla
Irene Da Rocha
Xavier Ramon
(Eds.)

Lifelong Learning Programme

Integrated Journalism in Europe

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Introduction

TEACHING JOURNALISM IN EUROPE: TECHNOLOGICAL ISSUES AT STAKE IN NEWS MAKING

Jacques Guyot

(Université de Paris 8 – Vincennes)

For the last three years, along with our colleagues from Pompeu Fabra University, the Danish School of Media and Journalism, the University of Babes Bolyai in Cluj Napoca, the University of Linnaeus and the University Paris 8, we have been investigating within the European Project called Integrated Journalism in Europe[1]. Now, this international conference organized in Barcelona by Prof. Carles Singla and Dr. Irene Da Rocha is the concluding event of this project and we would like to share with all the participants our reflexions about *Shaping the future of news media*, a theme expressing special concern for educational issues in the field of journalism.

My intervention is also a way to point out some of the problems we have met during this 3-year research programme where we have tried to assess the main issues the schools of journalism in Europe have to cope with nowadays in what is usually referred to as the age

[1] All the documents and reports related to the project can be consulted on the IJIE website: http://integratedjournalism.upf.edu/

of digital media. The expression "integrated journalism" that we have tried to address and analyse crystallizes the main technological change news desks do presently go through, a situation which directly questions the way to train journalists.

Now, ever since the emergence of the print media in the 17th century, and all the more so during the industrial revolution, news making has always had to cope with important technical factors. During the 20th century, the introduction of ICTs in the 70s as well as the computerization of newsrooms or the development of the Internet and social networks in the 90s brought major changes in the way journalists work and considerably speeded up the part played by technology in the production and circulation of news.

In this particular context, if we go back upstream to the educational institutions training future journalists, we can see that the schools of journalism are directly confronted with this changing and unsteady situation when organizing their curricula, their teaching programme. Therefore, how do schools deal with such challenges in Europe? In educational terms, what are the priorities, what is the ideal ratio between theory and practice, between polyvalence and specialization, between the fundamentals of journalism (related to social sciences and general knowledge) and technical skills? What are the specificities of journalistic practices compared to the news produced by ordinary citizens or activists in the social networks? What are the schools' strategies to offer the best training to their students, to keep up with technological change, starting from the principle that following the pace of endless innovation processes often has a heavy cost? In other words, how do the schools of journalism take into

account technological change and its consequences on journalistic practices in their curricula?

These are some of the issues I would like to briefly introduce in my presentation, both in an historical and socio-economic perspective; these questions will also be debated more thoroughly by the lecturers participating in the IJIE International conference. I will develop four points: 1- technique and its historical background in the field of journalism; 2- the journalist as a mythical figure; 3- the debates around journalism studies; and 4- the future of journalism studies.

The historical background

Historically speaking, technique has been an essential constituent of journalism practices from the very beginnings of printed press; then, later on with the arrival of electronic audiovisual media and more recently of digital media and Internet, this technological dimension quickly invested all the different stages of the production line with a variety of tools and techniques to collect information, shape and broadcast it, and used by professionals who are expected to master multimedia skills.

Typically the production of news is the outcome of an industrial process, born within the development of capitalism and thus ruled by the logics of the division of labour (even if the nature of this division of labour changed with the rise of what is called the *information* society after the 1940s) with, on one side,

> the journalists, i. e. a group of people composed of intellectuals, novelists, writers (Let me mention Victor Hugo,

Émile Zola, Jack London, Ernest Hemingway, among others), globe-trotters or adventurers who often have another job; they are often loners working on their own, jealously guarding their independence, in short individuals belonging to the world of arts, literature and social sciences and therefore a job with no specific identity as pointed by Ruellan (1993), who talks about journalism as a profession with fuzzy frontiers, and on the other side.

the technical staff, i. e. groups of highly-specialized workers in different fields of technique, with a strong professional identity – they often belong to powerful and influential trade unions- and clearly defined tasks.

Even if there are few research works focusing on the real technical process of news making (Ruellan, 1993), which, by the way is more a collective work, this division determined the relationship journalists have with technique over time: from a clear separation particularly in the case of printed press – though the format of the paper and the necessities to respect the deadline imposed specific constraints on journalistic routines - towards the gradual integration of new skills when newsrooms switched to computerization, digitalization and networking. Indeed, for a long time, journalists were not directly involved into technical matters, which were in fact delegated to the "technicians" or press workers. Even though both groups are all strongly committed to the media they work for, they do not share the same values, the journalists being concerned with the content, and above all aware of their role as mediators, and the technical staff with the form

(rendering of the printing, quality of the live broadcast in the case of television, etc).

Indeed, technique always framed – and still does – journalistic practices or routines, and the services in charge of the production process are key players in media industries. As mentioned by the head of the news desk of a French regional paper, "I have always known systems where the weight of technique was important [and] in my father's days, the technical director was number two of the paper" (Guyot, Aubert & Zagyi, 2014).

The situation changed again with the development of audiovisual journalism and when ICTs were introduced into newsrooms; the journalist adopted new tools to investigate and the border between humanities and techniques began to fade. A few examples to illustrate this phenomenon:

- the radio reporter with his Nagra Tape recorder,
- Michel Parbot, the journalist who covered the invasion of the Grenada Island in December 1983, the first one to use a portable Betacam Camera which he could operate alone,
- the computer taking over from the type writer and directly connected to the layout recorded into the paper's information system and to the World Wide Web.

In the same way, the development of Internet has a strong impact on the way to collect information, the news desk turning into a real control room, a situation sometimes criticized by some journalists who feel they have lost direct contact with the outside world. This is how a Spanish journalist, for instance, would ironically describe his new computerized working environment in 2004:

> "In the old times [journalists] would be in bars, in cafeterias, in the streets. We are becoming sensitive to cold, we are frozen. We do not sound out the streets. We don't know what the citizen thinks. We live in capsules" (Guyot, Mattelart & Multigner, 2006). This image of working like a cosmonaut in a space capsule is quite interesting.

More generally, following the reflexions of the political economist Harold Innis, who inspired McLuhan, one can say that we are now in a world of space-biased media (characterized by portability, flexibility, lightness and user-friendliness) where new organized forms of power and also power struggles shape the communication systems at international level (Innis, 1951).

The figure of the journalist and his role in democracies

In this specific context, journalistic practices are shaped by technical logics for the best and the worst. But above all, the journalist as the central figure of the "fourth power" owes his very existence to the technical advances in the field of information and communication. The huge circulation of papers made possible by the rotary press widely contributed to the recognition of the journalist as the modern mediator, legitimizing his role in democracy. Let us remember the incredible audiences of the papers at the end of the 19th century and, in many countries until the 1950s.

This is why the French sociologist Gabriel Tarde saw in the journalist the positive contributor to building a public opinion (Tarde,

1989) thus anticipating some of the American sociological research on the *Two-step flow of communication* and the *Agenda setting theory*.

What I mean is that Tarde, with other social scientists of the late 19th century, had understood that the printed press was one of the main elements contributing to this anthropological transition from the age of the multitude, the age of the crowd, towards the emergence of diversified publics who could express their communicative rationality within the public democratic sphere.

Same analysis from the German philosopher Jürgen Habermas when he points out the shift from *information press to press of opinion*, this press whose "role was to be a mediator and a spur for public debates – not just the mere vehicle of information, but not yet a media in a consumer's culture" (Habermas, 1989). Printed press also helped people identify themselves with the imagined communities theorized by the political scientist Benedict Anderson (Anderson, 1983).

The central figure of the journalist was forged thanks to the rise of the press as a cultural industry. The image of the journalist was reinforced by all the novels that flourished in the 20th century around the mythical figure of the reporter. Let us quote Gaston Leroux with *Rouletabille*, Jules Verne with *Phileas Fogg,* Lincoln Stephens, Ida Tarbel or Upton Sinclair who popularized The Muckrackers, i. e. the detectives denouncing the evils of the American society; or Leslie Charteris with *Simon Templar*, also known as *The Saint*, Hergé with *Tintin,* etc. To say nothing about the movie industry!

Novelists portrayed the reporter as the hero of modern times, the White Knight fighting for a free world, against corruption and

social injustice. In many novels, technologies are presented and widely used, like the electric telegraph, which became an international means of communication after the 1880s and gave birth to the first press agencies (Associated Press in 1846). Reporters also use cameras and tape recorders. They are the messengers collecting the news all around the world for their paper. Each time new tools were made available to produce or broadcast information, they boosted journalistic practices as well as competition between the different media. To end on that topic, the figure of the reporter is also an ideal-type as he embodies the pure synthesis between the independent writer, the free adventurer and the open-minded pioneer using the last techniques to investigate and report. As underlined by many sociologists and media specialists, future journalists are still influenced by this professional myth, which is part of their motivations when joining a school of journalism (Le Bohec, 2000; Ruellan, 1993).

Training journalists

So, the technological environment, which has always been part of the journalist's everyday life, has a strong knock-on effect on the way to train and educate the students. Here again, history gives interesting clues. Until the beginning of the 20th century, there was no school dedicated to the education of journalists in Europe (Terzis, 2009). There are several reasons accounting for this rather strange situation.

The first one is that journalism was considered as a job you could only learn on the spot. Most future journalists would then directly integrate a news desk in a paper, or later in a radio or a

television, or start as freelance correspondent abroad. This is what many people did until the 1940s and sometimes later, the seventies, for example in the United Kingdom. Many well-known journalists belonging to the "old generation" were totally self-taught men or women: this is the case of Serge July who launched Libération in France, or the famous CBS anchor, Walter Cronkite, who started working in 1935 for the *Houston Post*. This is why Journalism studies were included quite recently into the European universities: they had a bad reputation, most academics would look down on journalists who were considered as strange dabblers, mixing a touch of literary talent with a taste for adventure, using strange methods to collect information, bluffing their way through, between the detective-like intrusive manners and off-the-record tips or gossips picked up in society parties. The journalists did not fit in with the criteria of social sciences, nor with the conventions of academic circles, and nor were the tools they adopted to cover the news.

Anyway, the principle of some kind of on-the-job training is still strong, even though most curricula combine the teaching of the fundamentals gathering academic disciplines, professional practices, mostly with workshops, professional simulations or editorial projects and periods of internship in media organizations. Nowadays, university staff is composed of teachers and researchers, media professionals and journalists who are hired as associate professors or come to lecture.

In this context, the schools of journalism must constantly reinvent the best formula to educate open-minded journalists capable of analysing the main challenges in an ever-moving economic and technological environment.

But, what must be underlined is the relationship with technique, which is a central issue into the debates about journalism education between the pros who are in favour of more practical teaching, more technological integration, and the cons who expect a better focus on the fundamentals of journalism, starting from the principle that a solid general education is the best asset to get adjusted to professional change.

The variety of training models developed in Europe shows how this relationship with technique has also been shaped by a large number of political, historical, cultural and sociological factors. On the whole, the necessity to create schools of journalism imposed itself in three stages, one linked to the 1940s political context, the second being related to the rise of an educational offer and the last one related to the demands for specific training from the media.

Firstly, the role played by media during the Second World War revealed the need to promote an independent and free press, to serve the democratic ideals and to improve the quality of the training of young journalists. This is what happened in France when the CNR (Conseil National de la Résistance – National Council for Resistance), gathering representatives from the different branches of the Resistance movement, ranging from the Gaullist to the Communist Party, decided it was time to open specific schools in order to professionalize journalists (Guyot, Mattelart & Multigner, 2006). In the same context, let us mention the creation of the *Deustsche Journalistenschule* in Munich in 1959 (Pouthier, 1991: 415).

Secondly, the development a wider and more diversified offer in the field of journalism studies or of information and communication

studies, with the opening of schools and departments of journalism in the seventies: *The Danish School of Media and Journalism* in Aarhus, Denmark in 1971, is a good example, just like the *Centre for Journalism Studies* in Cardiff in 1970, the *Istituto per la Formazione al Giornalismo* in Milan (1974) or the IUT (Technological University Colleges) (Pouthier, 1991: 415).

Thirdly, since the 1980s, the major technical and economic changes affecting the development of media groups lead to specific demands in terms of professional skills. Now, when dealing with the technological environment, as I said before, the range of tools and technical procedures considerably increased, due to the processes of digitalization and networking; therefore, there is little space for a type of journalism that would be totally disconnected from technical skills, less space too for improvisation.

In many ways, the European schools' educational strategies are deeply marked by each different national culture and history. In this sense, the relationship with technique also has to do with the professional representations of the journalists (or with the dominant reference models of journalism – Anglo-Saxon versus European), the role they play(ed) on the political scene, especially in periods of democratic transition.

Most schools are aware that the margin is narrow between what the best training could be like in a very unsteady and moving environment, but they know that technical skills (ability to master the code, referencing software, data aggregation, video editing, computer graphics, community management, big data, etc.) are a key issue to professionalize future journalists, to legitimize their job in a new ecosystem of news production. Of course, the choice to

develop more workshops has a direct impact on the cost of studies, having in mind that tools, machines, software, and networks are quite expensive and become quickly obsolescent.

To conclude, I would like to point out some of the challenges future journalists will have to face as well as the educational institutions that train them.

THE FUTURE OF JOURNALISM STUDIES: SOME OF THE CHALLENGES TO TAKE UP

As regards the evolution of the job, what journalists have discovered during a number of recent major events (The Arab Spring for example, or Wikileaks with Julian Assange) is that they **no longer have the monopoly over information**. What is often defined as citizen journalism, or collaborative journalism, or social networks featured by the arrival of non-professionals producing information, is the direct outcome of the democratization of digital tools and networks; therefore, this technological background fosters processes of appropriation from non-professionals belonging to civil society. In other words, making the news which, before, was the exclusivity of media is now in the hand of ordinary people, digital activists, groups of artists and so on.

All of this is appearing in a general context of deep **crisis of journalism**. Journalists have lost part of their credibility as privileged mediators and *gatekeepers* in contemporary societies: they are accused of being disconnected from the social reality, of being in too-close proximity to political powers and economic circles, of not being enough professional, etc. Many newspapers have lost part

of their audience and their economic viability is threatened. As for the web, mainstream media have to face heavy competition from pure players on the Internet. In both case, no real viable economic model is rising out.

As far as media convergence is concerned, it is true that the barriers between media are less cut-off than in the past, and "bi-media" or "multimedia" skills tend to be the new professional standards. In the same way, the artificial opposition between *technicity* (that can be defined as the relationship with technologies, i.e. the professional field of the technicians) versus *intellectuality* (the relationship with the content, and more globally with the political and socio-cultural environment, i.e. the professional area of the journalist) is put into question to such an extent that some researchers now talk about *intellectual technicity*. If the journalist is not, strictly speaking, a technician (as defined by a specialist of video editing), nevertheless, he is a user of ICTs and always collaborates with specialized technicians; even if the technical dimension is not clearly claimed by the journalist as part of his practices, he is more in a strategy of integration, both on the front of technique and in the area of communication to control his field of activity, than his public professional "discourse" let it show (Ruellan & Cornu, 1993).

In other words, as pointed out by some philosophers, sociologists, anthropologists and historians,[2] technique goes far beyond the use of concrete and material tools or industrial artefacts managed by a group of experts or technicians, even

[2] Among many others, let us mention Jacques Ellul, Georges Friedmann, Jack Goody, Harold Innis, Henri Lefebvre or Lewis Mumford.

though such a trend does exist. Indeed, technique is integrated by professionals – whatever their job is, but all the more so with journalists – to rationalize their practices. To make things clear, this process has little to do with the technological determinism asserted by McLuhan and his followers. On the contrary, it is a matter of strategies, of appropriation, of bricolage or of poaching to take Michel de Certeau's expression, which helps journalists find their way between the possibilities and the constraints of ICTs (De Certeau, 1984). In this respect, speaking of *intellectual technicity* is quite relevant.

However, polyvalence and multimedia skills have their limits. What clearly appears in the IJIE project is an overall trend to master two media, generally a traditional one (print, radio, television, photography) and the web. The reason is that writing for the print and making a video report are two different universes both in terms of writing techniques, rhetoric, aesthetics and professional cultures. "You cannot be good at everything", said some of our interviewees, pointing out that a journalist able to write a good article is rarely a good video reporter.

One possible way to overcome such challenges may be to follow what some researchers advocate and call *digital agility*, i.e. a way to experiment a set of empirical tricks by trials and errors, in order to get adjusted to the specificities of the web: shorter articles, a four-dimension writing to offer an enriched "text" (layout, pictures, sounds, …), teach students to learn how to learn using the online resources, think of the web in terms of editorial production, making different contents converge on a platform, work in team around an editorial project.

This also implies collaboration at international, or European level where experimentations can be shared and debated. The idea of organizing cross-country 2 days courses for students is a good option, just like the development of European networks, seminars, or an annual conference gathering researchers, teachers and media professionals. But cooperation could also be extended to non-professionals working for ONGs, associations or social networks: although the schools of journalism do not like to communicate on career prospects, let me remember that most graduates in journalism studies do not work for mainstream media.

To conclude, I would like to say that one major challenge to take up has to do with ethical issues: there is an urgent need to update the deontological charters in order to cope with the new ethical stakes related to the development of digital media: privacy of collected data, anonymity of the sources, right to the image, online fact-checking, propagation of rumours, development and use of big data, responsibility of the journalist. In this particular context, the schools have a major role in putting into debate these issues that condition the future of the journalism, but also the new forms of news production and circulation.

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Part I

CHALLENGES ON NEW PRACTICES OF NEWS PRODUCTION

AUTHORS' RIGHTS: JOURNALISTS, AUDIENCES AND NEWS ORGANIZATIONS

Javier Díaz Noci

(Pompeu Fabra University)

Participatory narratives

Narrative is present in our daily lives. Amongst many other genres, fictional or not, news is an important part of the stories we consume every day. Moreover, media provide, in all its varieties (newspapers, radio, television, film, literature), multiple narrative products, both fiction and nonfiction. Companies employ many workers to produce such stories and receive many others, not being a minor part of them in these days those sent by the audience. Since at least the invention of printing, these products always have had an author and have been addressed to a targeted audience, which in turn now contribute to some extent and in certain ways to the media production. The multimedia and multimodal character of many of these stories has led to talk of transmedia narrative (Ryan, 2009), on the other hand. "The multifaceted nature of storytelling is nothing new", explains Ruth Page, but to analyse it in its whole complexity "means that the kinds of stories that now come under scrutiny extend much further

than the literary texts typically prominent in classical narratology" (Page, 2010: 11).

While they are not strictly new phenomena (letters to the editor in the press, calls from the public on television or radio, adapting novels to film, converting movies on TV series or comics are common practices many time ago; Evans, 2011), the popularization of the Internet through the World Wide Web from the last decade of the twentieth century onwards and the possibility of editing, publishing and disseminating through the use of digital tools in a network of global hypertext has made the active participation of the public an increasing reality, parallel to the vindication by the users themselves of their status as authors or, at least, co-authors. This is a scenario that appeared in 1934 in a short book by Walter Benjamin, *Der Author als Produzent* (we use the English translation of the original German):

> [We stand in front of a] crisis of a form of production which has been made obsolete and anachronistic by new technical discoveries [...], since we stand in the midst of a powerful process of the transformation of forms, a process of transformation in which many of the oppositions with which we used to work could lose their power, a dialectical moment in which the realm of literature gains in width what it loses in depth, when the difference between author and public, maintained artificially by the press, is beginning to disappear, a time in which the newspaper is in a showplace of confusion, in which, for better or worse, consumers and readers show signs of the impatience of whoever feels himself excluded, whoever thinks he has a right to express his own interests himself. A scenery in which

> the indiscriminate assimilation of facts goes hand in hand with the similar indiscriminate assimilation of readers, who see themselves instantly raised to the level of co-workers, in which we might ask whether we are dealing with a revolution or simply feeding an apparatus of production without transforming it, if the challenge is to lead consumers to production, [...] making co-workers out of readers or spectators.

The authors' rights system faces, since copyright appeared from the first time in the legal system in the 17th century, a necessary adaptation of its protection mechanism to the authors with every new technology. The popularization of the publishing and dissemination tools of the Internet has multiplied phenomena, which previously existed, such as participation of the readers or narrative extension through transformation of pre-existing works, and it has promoted the audience to the category of (co)authors. Even in those countries whose copyright acts allow these kinds of transformative works, which is the case of the United States, some practices have been forbidden by the courts. In some other countries, like the United Kingdom, some reports (the *Gowers Review of Intellectual Property* of 2006) recommended to enact such kind of works, assuming that they "can create huge value and spur innovation", but the British Government has repeatedly refused to do so, and, as it has been noted by McNally *et al.*, a later review on intellectual property, by Ian Hargreaves in 2011, did not recommend neither a users' right exception nor a transformative work exception.

Actually, it has been said that if there is a users' right to be enacted, like in the case of Canada in 2012, "the objective of

copyright is to promote the creation of works", but at the same time it is necessary "to balance the interests of the pre-existing copyright holder with the ones of the would-be copyright holder" (Chapdelaine, 2013: 9; a similar position defended by McNally *et al.*, 2012), in which can be considered an instrumentalist approach to copyright, whose "ultimate objective is to encourage a thriving cultural and intellectual domain [which provides] a balance between rewards for creators, and maintaining an optimal level of access to a rich public domain" (Wei-Ming Chan, 2013: 242). Instead, the international trend of copyright is rather aligned with a strong approach which presumes that authors should be remunerated, or receive any compensation, for the successive exploitations of their works Participative or citizen journalism, fan fictions, which appeared in several media, has developed the so called *transmedia narratives*, and the law necessarily faces some problems derived from their particularities.

Regarding to news reporting, cybermedia like online newspapers or broadcast organizations' websites –and even native media devoted to current affairs– integrate languages of all previous media, as they have demonstrated authors as Lev Manovich (Manovich, 2001) and Henry Jenkins. At the present time, "the most significant stories tend to flow across multiple media platforms" (Jenkins 2006: 46). In the case of current affair information items the most evident of the effects of this scenario is the multiplatform phenomenon, which even at the beginning of the World Wide Web led to court decisions that have guided the jurisprudence in many countries, for instance *The New York Times* vs. Tasini *et al.* (533U.S 483, 2001), in which the Supreme Court of the United States ratified

the first judgment of the district court of New York. The publisher of *The New York Times* was condemned to indemnify some of its journalists, headed by Jonathan Tasini, for publishing their texts, whose rights were obtained just for the print edition, also on a CD-ROM.

Another consequence is participatory journalism (manifested through multiple forms: comments, chats or even adopting the form of collaborative Works, sending video clips, stories, texts, readers' blogs -see Scassa, 2010-, shared narratives as *Eskup* by the Spanish newspaper *El País*). The new role of the users is more evident and more developed in the field of fiction, whose most obvious manifestation is the so-called *fan fiction*: derivative works created from authorial proposals as movies or TV series, in which, for instance, the fans continue the story in many ways, proposing alternative endings, developing plots and characters and, finally, transforming the work in many different ways. It is, on the other hand, a rather old practice, and usually a controversial one, if the author of the original work is not correctly mentioned. This is the case of misappropriation of characters, at least before the works were passed to the public dominion after the authors' death and once his or her heirs' subsequent rights were expired.

On the other hand, the legal regulation of (some particular) user-generated[3] contents (UGC), the changes in the structure of the information market and in the very structure of the media

[3] We assume in this essay the definition provided by the Organization for Economic Cooperation and Development (OECD) in 2007 (*Participative Web and User-Created Content: Web 2.0, Wikis and Social Networking*, p. 18), which involves three requisites: publication, creative effort and "creation outside of professional routines and practices".

and communication groups, alongside with the growing trend to media convergence, have raised many new problems, of whom it is not the least the management of copyrightable works (in the case of fiction, see i.e. Perryman, 2008). The question is that now "copyright is better appreciated as a relation between people –not as between author and user, but as between potential authors" (Wei-Ming Chan, 2013: 249). Regarding to news reporting, the problems that quality journalism can face because of the greater speed and flexibility in the production of news has been highlighted by, among other scholars, E. Huang (Huang *et al.*, 2004).

This tendency to accept contributions by the readers, the need of the citizens to participate in the construction of social reality is generically referred to as "citizen journalism" (Deuze, 2008; Reich, 2008). Some authors distinguish the "participatory journalism", a term coined in 2003 by Shayne Bowman and Chris Willis (Bowman and Willis, 2003; see also Bruns, 2005; Singer *et al.*, 2011), despite the consensus to equate the two. If users acquire the status of authors of such contents -from comments to texts, photographs and videos-, and considering the internationalization and harmonization of the laws on intellectual property and copyright, it is essential to try a comparative legal analysis (Doutrelepoint, 1997; Reimann and Zimmerman, 2008), which considers the major international media groups, and which are the solutions adopted to include such user generated contents in the collective work that are most of the media –newspapers and magazines, broadcasting services and web pages devoted to news.

Our main hypothesis is that the greater the extent of internet, and even when some legal systems like the Canadian one have ruled

that kind of user's rights (users are considered always individual), ignoring how collaborative can be the users' creations (Scassa, 2013: 438), the most the companies try to exercise a complete control over in the acquisition and management of rights to exploit those works. In this sense some legal reforms have been implemented legislative, in addition to harmonizing legal systems and national laws, legal movement which emphasizes the possibility of transfer of exclusive rights for better positioning and easier trading with third parties, in an increasingly international market. The contractual nature of the final sharing of rights from authors to holders, from the legal attribution to the first one to the appropriation of the second ones through the possibility of transferring those rights, make the holders' position much more powerful when defending the economic profit of the work through economic right than the creator's position. This is precisely the position defended by the publishers represented by the World Association of Newspapers who signed in 2009 the so-called *Hamburg Declaration* to "encourage creativity" and asked the Commission of the European Union "for online copyright to be respected" because "numerous providers are using the work of authors, publishers and broadcasters without paying for it".

The way to do that is a reserve of rights using the terms of use, taking advantage of some of the possibilities the law offers instead of the others or even, in some legal systems, against a legal presumption which exists in favour of the authors, when they do not me an express cession of rights. The terms of use of many websites is a contract in which a party –the company– proposes some clauses and some right transfers the users are supposed to accept when they enter the website, and if not, he or she is exposed to litigation.

Sara Wei-Ming Chan explains how "copyright holders have begun to target the conduct of end-users […] increasingly characterizing 'unauthorized personal use' as an obstacle to their exclusive rights to exploit their works" (Wei-Ming Chan, 2013: 250). Pascale Chapdelaine summarizes the situation this way: "What Parliament created and gave to consumers, it also gave explicit allowance to copyright holders to take back from them" (Chapdelaine, 2013: 46). It was necessary in Canada, and probably will be in the next future in some other countries, to legislate this "legal grey area", as Sara Wei-Ming Chan has defined in which "average citizens now occupy the fields of production as well as consumption" in an everyday activity (Wei-Ming Chan, 2013: 236).

We try, in turn, to determine whether the revolution of the implementation of social tools in the news reporting process is a subversion of the traditional order of information (unidirectional and whose power is in the hands of the big media groups), has arrived to the online media, or otherwise, they are in a static phase, as a result of the doubts amongst whether the companies should decidedly give voice to the active audience or to remain in a more conservative and well-known formula.

Questions of authorship

What are the movements in the conception of authorship that are occurring due to the changes introduced by the so-called Web 2.0, and consequently, what are the rules by which the media are governing users' participation? In particular, what is the intellectual property regime that is applied to user-generated content and

how it is done in the two great legal traditions: Common law and Civil law? These are the main questions posed in this paper. It is commonly said that in the first legal tradition, Common law –and copyright system– the confidence reside in the company (a legal entity) as a promoter of the intellectual activity and the main agent of the intellectual property market, both in the fields of information and entertainment, whilst the continental legal tradition of Civil law and the authors' rights system relies on the creative capacity of people (individuals) and, secondarily, on the legal entities (Strowel, 1993).

In this respect, it is notorious how the users' rights exceptions are always considered for the individual, not for corporate entities but, on the other hand, fair dealing exception contemplated by most of the copyright acts, at least those of the Common law countries, are "clearly available to corporate news outlets" (Scassa, 2013: 436), which can create an unbalanced situation, expressly pursued or not. Some media, even in the supposedly more user-friendly Canadian legislation, are very restrictive even in the use of quotations from other media. This is the case of *The National Post*, one of the greatest newspapers in the country, whose license is very eloquent in this respect[4], and this approach "suggesting that fair dealing may not apply to the use of work that may generate revenues" has been criticized by professor Michael Geist.[5]

[4] https://license.icopyright.net/rights/fairUseStatement.act?sid=36&tag=7.11150

[5] Geist, M. (2013, July 3). Is This Canadian Newspaper Breaking Copyright Law? *The Huffington Post* (Canada). Retrieved from: http://www.huffingtonpost.ca/michael-geist/copyright-national-post_b_2828854.html.

Actually, three kinds of user-generated content may be considered, following Daniel Gervais: content authored by users, which is not the main object of legislation, since there is, in principle, no difference with the works by any other author, professional or not (but the terms of use of the media make some differences, as we will examine later); content derived by users, which is the object of legal reforms, like the one performed in Canada; and content copied by users, which is usually treated as plagiarism.

One of the main differences that prevented an earlier harmonization of the laws of the countries of both legal traditions is the recognition of moral rights. The authors' rights continental tradition considers those rights personal, while in Common law countries, which have recognized moral rights at the end of the twentieth century, they can be transferred to the company, or even the company can be subrogated in terms of authorship –so a newspaper, for instance, can be considered the author of a news item. We are dealing with collaborative works, product of the effort of multiple authors, and of subsequent narrative developments, so it should be understood that the legal obligation to mention all the time which is the original work which produces the derivative one is not only a legal requirement, it is a mandatory rule at least in those countries whose tradition is to enforce the individual's rights. This conception is based on a total originality of the works, but in fact most intellectual creations borrow to some extent previous works, and it is clearly the case of the journalist activity of news reporting. Any person is entitled to be recognized as the author of his or her work and get recognition both morally and economically, if applicable. Moral rights mean that legally the journalist, the photographer, the artist

have the right to be mentioned as authors of their work, even when a short paragraph is added at the end or in the middle of some other author's news item, for instance, which is a quite common practice in journalism. The author of the comments and other contributions by the users is the reader who sends them using his name or one (or more) pseudonyms or nicknames.

These contributions do not only occur on the Internet, we just need to look at the weather information of many televisions, public or private, to ensure that the public can send quickly, systematically and with a quality that often has nothing to envy to that of audiovisual professionals, pictures or videos which are shown publicly, usually in exchange of a mention and an ephemeral minute of fame only. Compensation, we need to remember, does not have to be raised in strictly monetary terms but in some other economic value, such as prestige. In this sense, it is representative the case of Tasini v AOL, in which Jonathan Tasini, now a blogger of the *Huffington Post* (which does not pay the authors of a blog on their website, but monetize their production), pleaded the Court for the Southern District of New York for sharing benefits after the *Huffington Post* was sold to America On Line. Tasini argued that it was because of the quality and traffic generated by his and some other bloggers' writing that the *Huffington Post* became what it was considered an interesting product to be acquired. The Court denied the protection that he had requested.

In front of the doctrine of fair use of the Common law tradition, the continental Civil law tradition proposes the l*ucrum cessans, damnus emergens* doctrine, and accept some limitations, so that, we advance, the fact that a derivative work is produced not to

obtain a direct economic compensation (Cabedo Serna, 2011), now or in the future, can prevent the gains of the authors of the original work (even in Canada, where the users' right have been enacted, users "have no right to transfer the copy of the copyright work that they lawfully acquired" (Chapdelaine, 2013: 25). Indeed that is the reason why some authors show a radical intolerance towards, for example, fan fictions derived from their novels, but meanwhile they accept the adaptation of those novels to the movies, since the author receives a substantial compensation. This is the case, i.e., of the American author Anne Rice, who never admitted a fan fiction derivative work, or the reluctance of the author of Harry Potter, J. K. Rowling, compared to the more than 50,000 readers' sequels that have been placed on the Internet, or the changes of mind of George Lucas regarding derivative works, in principle but not necessarily, done just for fun and with no profit by the many fans of *Star Wars*. Once those derivative works receive some money in exchange, this position changes radically. This is the reason why the only national copyright act which explicitly mentions the users' rights, the Canadian one, just accepts that the user can generate a derivative work using preexistent copyrightable works and that the new product cannot be profitable.

It may be worth remembering that although one new author has the express permission of the author of the original work to make a derivative one (for example, the film adaptation of a novel) the parties may set some limitations, and they do. A good case is the final decision of the Spanish Supreme Court in 2006 confirming the decision of 1998 by the Court of First Instance of Madrid and of 2002 by the Provincial Court of Madrid that accepted the plea

of the writer Javier Marías against the director Gracia Querejeta and her father, producer Elías Querejeta, and condemned them to remove any reference to Javier Marías and the title of his novel *All souls* in the film *El último viaje de Robert Rylands* (1996), considering that the adaptation of Marías' novel was much more that free and actually it absolutely disproved all his characters and plots, and that it was an breach of the clause carefully included by the writer in the adaptation contract, establishing undoubtedly that he as the primary author had the last word on the changes made to his original story.

Types of works

The copyright laws protect anyone who has created any type of work, provided that it is original. This is an extreme that include all the terms of use of the online media: the demand and the assumption that all material submitted by the user is original and that the user has the rights on that work, regardless of its quality (Ornebring, 2008). The liability arising from the breach of this provision rests with the user, not the medium, which always reserves the right to delete (remove) any content it deems that does not respect this legal mandate.

The works can be of various types, according to copyright laws. First, they are original works and works that can be created from them, i.e. derivative of transformative works. There are many examples of derivative works: the translations and the overdubs, for example, but also some other (re)creations that deviate more from the original work, like adaptations or, in the case of participatory or transmedia narratives that we deal with, continuations of the original works, alternate versions, different endings, spin-offs, development of secondary storylines, etc. Even if most of them

are quite common in fictional stories, they are possible as well in the case of news reporting.

Anyway, derivative works, according to the Anglo-Saxon legal terminology, strictly speaking could only occur with the express permission of the authors or assignees of the right of transformation (in legislations such as the continental legal systems, in both aspects of moral rights and patrimonial or economic exploitation rights), which would prevent the extreme proliferation of users' works. The possibility that the author or his heirs prevent this type of work exists in the Anglo-Saxon legal world as well as in the Continental legal system, although it always depend on the tolerance of the authors of the original work or, in the best cases, on the doctrine of fair use. As we explain in this paper, even in the case of those legal systems which have decided to include a users' right exception to be added to the existent fair deal exceptions are, when examined in further detail, quite restrictive, firstly because they are not mandatory but a mere possibility.

The fair use could be considered, in continental legal terms, a legal exception, although, contrarily to those which operate *lege ferenda*, they depend on a test applied *a posteriori* and based on the application of four rules: the so-called transformational rule or purpose and character of the use; the nature of the original work, and that is copyrighted or not, because if this is an orphan work, or a work in the public domain, its possible infringement could only be applied by the public authorities on the basis of a possible transgression of moral rights (at least, in the Civil law tradition), for example, the lack of attribution of authorship to the original work; the fact that the derivative work uses a substantial part or not of the

original work; and the effect on the potential market, equivalent to our *lucrum animum*.

The success of fair use has made, albeit unused by the continental legal tradition, it is frequently invoked by the Civil law doctrine, because it allows a degree of flexibility that goes in favour of one of the protected legal interests: alongside with the main one, the right to earn a decent living using one's intellectual skills, excluding any tortious interference by any other person, another interest to be protected is the right of access to culture, that was in the very title of the first copyright act, the *Statute of Anne* of 1710, or *Act for the Encouragement of Learning*. On the Civil law doctrine, however, the principle of profit and loss (the *lucrum cessans et damnus emergens* formula) and the right to claim for consequential damages is invoked. Strictly speaking: an author may prevent any derivative work of his or her original own creation, even the most amateur fan fiction, arguing that the existence of further development of their plots and characters, or developing some other news reporting in the case on non-fiction, prevent himself from eventually doing the same, and get equally potential economic benefit. However, the tendency is to consider that if there is not a direct and present profit use this principle should not be applied.

Another case is when characters from different works already in the public domain are used and developed, it means when more than 70 (in some cases, 80) years have passed after the author's death, although, in exceptional cases such as *Peter Pan*, whose royalties are perceived by a British charitable trust, have been lengthened many times –an exception that is not applicable outside the United Kingdom.

Regarding to works of nonfiction, most legal notices and terms of use of the media studied explicitly veto the possibility of deriving the contents of its website works and it is understood that this includes the contents both produced by its own workers and those sent by users. Thus, the BBC, which has generally softer rules than other media, tells users that "you may not, and you may not assist anyone to, or attempt to […] create derivative works from BBC Online Services and/or BBC Content in whole or in part".

Although it is amateur effort, the work of fans, the success of this participatory narrative is quantitatively enormous, giving visibility to the original work but could also detract from users. There are actually several sets of systematic legal recommendations (Tushnet, 2011) to authors who want to develop with guarantees a derivative work such as *Copyright 101: A brief to copyright for fan fiction authors*, by A. T. Lee, and *Copyright, work for hire, and other rights issues* in the *Writers and Editors* website, and of course in those websites that are great repositories of fictions such as *Fanlore*.

These are problems that do not occur with such intensity in the case of non-fictional works, but do pose some reflections in the case of current events information or news reporting. Even if we deal with exclusive information, or with a scoop by a media or a journalist, legal exceptions which apply to news from the Berne Convention of 1886, there is nothing which prevent any other practitioner, or even an amateur, to develop that news story if he or she is able to get some new data, or even remake the whole story, always mentioning author and source, as established by most copyright acts.

Alongside with derivative works, we also have other types of works in which the authorship is shared, such as composite works (contributions of several authors), the work in collaboration (in co-authorship regime) and collective works, which is the case of media (newspapers, magazines, websites, radio and television broadcasting services), whose authorship, or, in the case of Continental laws, at least some originary rights, in this case, exceptionally corresponds to a legal entity, under whose leadership and payment the work is created. The collective work is composed of individual works, and sometimes, derivative works as well. A particular case of composed work, very typical of the Internet, is the mash-up, even susceptible of being considered a derivative work, when it is a reelaboration of pre-existing works. To make it a composite work, and not a collaborative one, it is necessary that the new work incorporates another person's work without further intervention (but obviously with his or her permission) of the author of the pre-existing work. Cyberjournalism is full of such works. News items to which links are added which refer to related news, previously published by the media, could be considered a composite work. A special section, which includes news items, photos, videos, infographics on a particular topic (e.g. the football World Cup, or elections), and therefore produces a new work from previous works which are incorporated or added with no changes would also be a composite work. Here we must also distinguish two levels of authorship, the authorship of the individual works incorporated by the new ones, by accession (a legal figure known from the Roman classical period), which is necessarily respected, and the authorship of the new work, which, to be considered as such, needs a minimum of originality,

and whose attribution is usually given to the corporate entity under whose direction is composed.

Exclusive and non-exclusive assignments

Usually, companies understand that the transfer of exploitation, and even moral rights in the case of the Common law tradition, is done in the same terms of exclusivity and freedom of negotiation, publishing and even modification which are applied to the works made by journalists for hire. It is not unusual for online media legal notices to mention the express assignment of readers' rights, and some of those online media, such as the Brazilian portal *Globo,* one of the most powerful media conglomerates in Latin America, mentioned that in the event of a economic benefit from the exploitation of these contents, the authors of these -comments, but more often videos, photos, texts sent by users in the purest style of the participatory journalism- would be entitled to receive a percentage of those profits. Actually, there is nothing new under the sun: in the printed press it was the same with letters to the editor, and is therefore quite dubious that the company, or a journalist thereof, could publish an anthology of these letters to the editor, for instance as a book, without the express permission of all and every one of the authors. By the way, let us note, with Teresa Scassa, "the potential that compilations might constitute UGC for the purposes of this exceptions of real significance" (Scassa, 2013: 440).

Most online media are aware of the importance of acquiring for valuable consideration or not the transfer of the exclusive rights on the content they offer, wherever it comes from. Upon payment of a salary when hired (work made for hire, in the case of

the Common law system), or of the price agreed for any piece of news, when there is a commercial or civil contract and not a labor one (this is the case of freelancers). Or with no payment when the readers who send all kinds of content agree that they are doing so on their own expenses. In the latter case, it uses to be a clause whereby, when the contents transferred are considered to be non-exclusive content, thus the parallel or subsequent exploitation of such content is permitted, once again only as non-exclusive, in other media, or to be included in anthologies (the right of collection), and sometimes when the company can get some profit with the content submitted by a user, for instance with third parties, the author could obtain some fair compensation for their efforts. All media publish terms of use or contracts that adhere to current legislation, and all without exception include attractive jurisdictional clauses: the user, whatever his or her nationality or residence, knows that the substantive and procedural law applicable and the courts which are intended to decide on any copyright infringement are those of the country where the media is legally located, and to whom the user voluntarily submits its content.

Most media devote an entire section of their legal notices to the user-generated contents. Therefore are included comments like Times People type services (in the case of *The New York Times*) or even reader reviews, or criticisms made by users. Rules that in other media are accommodated more as ethical recommendations are here are elevated to the status of legal norms (contractual norms, since acceptance of those rules by the user is necessary). In most of those legal notices or terms of use, it is very clear that there will be no commercial purpose by the user. But, on the contrary, the

company reserves for itself an exclusive assignment on whatever material sent by the users in such an explicit clause:

> "You grant NYT a perpetual, nonexclusive, world-wide, royalty free, sub-licensable license to the Submissions, which includes without limitation the right for NYTimes.com or any third party The New York Times designates, to use, copy, transmit, excerpt, publish, distribute, publicly display, publicly perform, create derivative works of, host, index, cache, tag, encode, modify and adapt (including without limitation the right to adapt to streaming, downloading, broadcast, mobile, digital, thumbnail, scanning or other technologies) in any form or media now known or hereinafter developed, any Submission posted by you on or to NYTimes.com or any other Web site owned by NYT, including any Submission posted on NYTimes.com through a third party".

It's a similar solution to that found in the Terms of use in *The Guardian* and in many other media, including those of Canada, which is the only country that has determined to enact the users' rights:

> "You or the owner of the content still own the copyright in the content sent to us, but by submitting content to us, you are granting us an unconditional, irrevocable, non-exclusive, royalty-free, fully transferable, perpetual worldwide license to use, publish or transmit, or to authorise third-parties to use, publish or transmit your content in any format and on any platform, either now known or hereinafter invented".

That is, while on one hand the media companies reserve for themselves the possibility of transferring to third parties all the contents that are sent to them, in some way (in many cases, tacitly) the author of these contents, the reader, is guaranteed that his or her right will be properly managed, even when negotiating with third parties, usually legal entities.

There are some few more open agreements. A paradigmatic case of a more permissive model is the BBC, which, on its website, invites users to "make, share or submit your own, original contributions to BBC Online Services" whilst in the provisions contained in the Terms of Use propose, as a contract, "how you may do so and how the BBC may use your contribution" which "may include text, photographs, graphics, video or audio". Specifically, the BBC offers the reader to make a non-commercial use of his or her content, which is common in all online media (but we should do well to reconsider what happens when the user input is added or completes a news item of the Premium version and, therefore, it implies a payment in exchange of the use of this item) in exchange of ensuring that the medium will moderate and make a rational use of those UGC, provided that is common in all media, for obvious reasons of avoiding any criminal implications, to reserve the right to cut them or even eliminate them if it considers that they are against the ethical standards contained therein in the terms of use or that it is not an original content, but plagiarism. Specifically, the BBC ensures that "any copyright in your contribution will remain with you and this permission is not exclusive, so you can continue to use the material you contribute in any way including allowing others to use it", which goes beyond a mere acknowledgment of paternity

(moral right), which, although possible in the copyright system of Common law, under no circumstances is estimated to be transferred (although it also makes clear that "we normally show your name with your contribution, unless you request otherwise, but for operational reasons this is not always possible", but it is not clear why the author should not be properly mentioned, in any case).

There are few exceptions. *Eskup*, a service provided by the Spanish main newspaper and news website *El País* (not the entire website of the newspaper) uses Creative Commons licenses.[6] However, and very significantly, while the license Creative Commons used in *Eskup* allows to "copy, distribute and transmit the contents of our website", the company cares to make it clear that "you cannot make derivative works, or make a commercial use of that content on the Internet", and the license does not even apply, "at least not directly", to the contents of users whose rights are strictly reserved to the owner, and whose consent is required for any transformative action.

However, the position of the media, at least in the United States, is tending to a certain tolerance towards derivative works, unless they cause serious economic damage (Tushnet, 2004). In an *Amici curiae* (a document spontaneously addressed to a court while it examines a cause, specifically related to the topic at hand, the writer JD Salinger v Colting *et al.*), New York Times, Associated Press, Gannett and Tribune Company addressed to the Court of Appeal of the United States of America such a document in which, among other things, they claimed that:

[6] http://eskup.elpais.com/Estaticas/creative_commons.html

> "Amici [they refer to themselves] publish copyrighted material everyday, and depend on the copyright law to protect their writings. Indeed, the need for copyright protection is today more intense than ever as digital technologies make it ever easier for third parties to seize and repurpose the fruits of their costly newsgathering efforts. Nonetheless, Amici fiercely believe that the availability of a preliminary injunction under the copyright law cannot trump the prerogatives of the First Amendment [which regulates the freedom of expression], and that a book banning of at least arguably transformative work cannot be countenanced".

Enacting Users' Rights: The Case of Canada

The reality of the growing importance of the user-generated contents, fully original or, more usually, derivative works built upon pre-existing ones, has led to the consideration of the necessity of enacting users' rights. For the time being, the only country that has reformed its copyright act in this sense has been Canada. There has been some discussion within the European Union on the necessity of adopting such an exception, but neither the Union nor any of the European countries have decided to implement the user-generated content exception that the *Copyright in the Knowledge Economy* report of 2008 contemplated, since in 2009 the European Commission revealed that the results of some consultations made amongst copyright holders indicted that "they felt that it was too early to change copyright laws to enable UGC production and dissemination" (cited in McNally *et al.*, 2012).

Most of scholars and the legislators themselves based their argumentations on the economic importance, in terms of productivity and in terms of innovation, of users' works. Canada has done so by two ways. Since it is a Common law country, the court decisions are as important as the Parliament's acts in developing a right; at this has been the case of users' rights as well. At the time the conservative-winged Government and the Parliament were considering how to enact those rights, in 2012 the Supreme Court of Canada decided upon two relevant cases concerning this legal aspect: *CCH Canadian Ltd. V Law Society of Upper Canada*, in which the Court recognized that there could be some users' rights opposed, as exceptions, to copyright holders' exclusive rights, and *Théberge v Galerie d'Art du Petit Champlain*, this one considered by some scholars a good example of a jurisprudential interpretation of copyright as a dual system which pursues to provide incentives to creation whilst rewarding authors for their efforts (Wei-Ming Chan, 2013: 245). On the other hand, the digital lock protection enacted in the new Bill C-11 is considered to be one of the strongest ones in the world. Actually, the new *Copyright (Modernization) Act* passed on June 2012 enacted more fair dealing exceptions, to be added to the already existing ones (like, for instance, the one on news reporting, section 29.2 of the *Canadian Copyright Act*) but the use of fragments in other people's works is legal for purposes of education, parody or even in news reporting, whenever there are no digital locks involved.

This was a precedent, which led to the approval of some new exceptions, included the users' rights one, in the *Canadian Copyright Act*. This was received as a great advance, since it was the only national system which has incorporated those rights, but began a

legal controversy on the nature of those rights, whether they are mandatory or not, and whether they caused the most evident effect –to enhance users' creativity (see. i.e., Wei-Ming Chan, 2012: 237)– or, on the contrary, led the copyright holders, usually legal entities such as media companies, to protect even more the control upon the work susceptible to be used as the starting point of a derivative work (i.e., a news item or a report), and the rights upon the derivative work itself. This conception leads to a scenario of opposition of the rights of the copyright holders to the rights of the users (Chapdelaine, 2014: 3), only permitted when they are non-commercial. If there is some profit, the user needs the copyright holder's authorization to perform a derivative work –and share benefits. So it is enough that the copyright holder reserve for him or herself (or itself, when it is the case of legal entities such as media companies) the exclusive rights of producing, reproducing, transforming and disseminating the work to prevent the audience from performing any derivative purpose. The limits imposed to pre-existing works are a handicap for creativity, and much confidence has been put on the DRM systems. As an example, when the content industry launched the *Principles for user generated content services*, it was recommended that the UGC sites use these technical barriers to detect possible copyright infringements, a contrary way than the one recommended by the Electronic Frontier Foundation (McNally *et al.*, 2012).

To fulfil this purpose, the user needs to deal with released pre-existing works, under, for instance, Creative Commons licenses, which allow him or her to create a new work upon another one. Of course, the user can also purchase it, because most of the rules and also the news Canadian users' right of the so-called *Copyright*

Modernization Act requires that the pre-existing works have been legitimately acquired in any way, but at the same time, we must insist, the user-generated new work must be for non-commercial purposes, which in most cases means "copyright liberties", as defined by Jessica Litman, "a mere ability to enjoy, read listen, and engage with creative material", but with many difficulties to make circulate this new material on the open market. User-generated contents, when they are transformative works (if they are fully original they are not considered UGC, but normal author's works), need to respect the moral rights, especially the paternity one, since respecting completely the integrity right is much more difficult if a new derivative work is to be created.

Conclusions

The only way that the lawmakers have found to enhance users' creativity has been exceptions to general rules. Beneficial as it may be when comparing to the precedent situation, it also collides with the rights of the authors of the original works in which the derivative user-generated content is based, and with the right of economic exploitation of the copyright holders. Even the most recent legal reforms of some Civil law countries, for instance France and Spain, tend to give more originary rights to the legal entities as promoters, quasi authors, of the collective work. So these legal entities are concerned with the protection of their exclusive rights, to the extent that they confront employees and users with terms of use, which adopt the form of compulsory licenses or adhesion, take it or leave it contracts. Even if such laws as the *Canadian Copyright Act* are a considerable advance, since it takes into account the

users' rights –a legal issue to be developed in the next future– it is a matter of deep discussion which is the nature of the users' rights, but undoubtedly "contract undermine the very existence of users' rights" (Chapdelaine, 2013: 2, 45).

The examination, necessarily very short, of the main legal issues affecting narrative and content produced by the users leads us to propose some conclusions from the observation that, in both the fields of fiction and non-fiction, the trend of users' participation in authorship or co-authorship is a growing phenomenon:

1) The nature of derivative work is imposed to the concept of collaborative or collective work, which is clear in supposedly collaborative contents such as the social network *Eskup* by *El País*. This is even clearer in the case of fiction, where the story lines are expanded through, for example, fan fictions.

2) In virtually every way we examine, the contents of the users are treated independently of the contents produced by the media company itself, and its workers; although the medium makes it clear that the exploitation rights collectively for all the content published by the company is a company's business, it is clear that, whenever those contents can be segregated in such contents whose origin is outside the labour or civil contract under whose journalists, photographers act, it is highly recommendable to provide those contents produced outside the newsroom by with a differentiated legal treatment.

3) In general, and unlike what happens with contents generated by professionals, those sent by the users are considered transferred

on a non-exclusive basis, and therefore can be exploited by their authors in any medium and format.

4) The content generated by users is considered non-commercial and non-profitable, although this would be more debatable in the case of the media main activity if news reporting- and is intended that the company will not get direct economic benefit from them. Since the management of all contents, generated by the user or not, is considered to be put on the hands of the company that publishes them, in case of further negotiation with third parties, it is considered that the user should be compensated for it.

5) Non-commercial uses, and in the Anglo-Saxon but increasingly invoked by the continental doctrine, fair use are considered essential for authors of original work to show a tolerance –to which they are not bound by law- towards derivative works, which, although they can somehow distract attention from the original work they develop, on the other hand they give even more prestige to the original work, and whenever a direct economic profit is not involved, prestige continues to be a fair compensation. Fair deal, and fair use, should be contemplated rather as an integral part of the copyright system than a defense, as it was decided in Canada in the aforementioned *CCH* case. Unless the copyright holders see a clear profit opportunity in user-generated contents, they will remain on the sphere of the purely original ones, i.e. content submitted by the users or blogs created by them and hosted in the media organizations' websites, usually for free, since in the media industry's opinion "aggregation and distribution of UGC are relatively easily monetized", but derivatives work are not, although there is a shy tend to recognize

that it is possible to "capitalize on electronic communities" and a "source for innovation" (McNally *et al.*, 2012).

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DATA ANALYSIS AND VISUALISATION. THEORY AND TOOLS FOR DATA JOURNALISTS

Andreea Mogoș

(Babeș-Bolyai University)

Dramatic changes took place both in the information environment and in the way how contemporary societies relate to data. The digital information revolution provides unique opportunities for information identification, retrieval, analyse and communication. Due to technological the development, a critical mass[7] of digital data is now available; analytic and computing power is diverse and cheap; and powerful and easy to operate software are at hand.

Lenoir (2002) emphasizes on digital revolution's impact on the human existence: "Media inscribe our situation. We are becoming immersed in a growing repertoire of computer based media for creating, distributing, and interacting with digitized versions of the world [...] In numerous areas of our daily activities, we are witnessing a drive toward the fusion of digital and physical reality".

[7] Current volume worldwide is nearing three (3)-zettabytes (Bihanic, 2015).

The digital revolution affects the way journalism is made at the beginning of the 21st century. Disclosing big data sets and presenting complex information in a way that is easy to understand by the audience are the two new challenges of the data journalism.

In order to better understand how data visualizations are constructed and what principles and structures are used in order to effectively convey information, the paper will analyse several examples of static and dynamic visualizations and few free applications used to visualize large data sets directly retrieved from the Internet. The paper will also discuss which storytelling elements and structures are used in data visualization to package information in structures that are easily remembered and understood by the viewer.

Data journalism

Data journalism displays two predilections: a tendency to look for what is categorizable, quantifiable and comparable in any news topic and a conviction that technology, properly applied to data, can tell to the audience something about the story that is both worth knowing and unknowable in any other way.

15 years ago, almost no newspaper was using interactive graphics to tell stories in new ways. Nowadays, the editors cannot ignore anymore the increasing important role played by data-driven journalism. Many of the elite media outlets adopted and developed data-driven journalism products. Four of them, which are fostering innovation in journalism, will be briefly reviewed.

The first major news organisation to propose data visualisations was *The Guardian* in 2009, when the *Data Blog* was launched on their

website. Data visualisations are widely used since WikiLeaks' Afghan War documents leak in July, 2010. In 2011, Simon Rogers from the *Data Blog* was talking about new ways of doing journalism: "every day brings newer and more innovative journalists into the field, and with them new skills and techniques. So, not only is data journalism changing in itself, it's changing journalism too".

In April 2014, *The New York Times* launched *The Upshot*, a project aimed to serve as navigator for the news, featuring a rich stream of graphics and interactives. Linda Zerbian (2014), when describing this media project, emphasizes that data should be used to expand knowledge and understanding: "We view data as a tool – a powerful tool, thanks to the explosion of digital information and computing power – for describing the world. But data is powerful only to the degree it helps clarify reality".

Three months later, when the *Storyline* project of the *Washington Post* was launched in July 2014, Jim Tankersley (Economic Policy Correspondent - Washington, D.C.), pointed out that the impact of journalism increases when the narrative approach is blended with data analysis: "what distinguishes Storyline from other explanatory sites is its ambition to put public policy questions into context with powerful personal stories. This narrative approach is an effective way to process complicated information, just like graphs or charts are".

Gerard Baker, Editor in Chief of Dow Jones and Managing Editor of *The Wall Street Journal*, when presenting the new Enterprise Projects (2014) underlined that: "expanding our data reporting capability in a data-rich age is a priority".

Improved digital tools allow journalists to produce and coordinate content for multiple platforms. However, newsrooms face many barriers to multimedia convergence. Programs and coding languages for creating visual content fail to optimize graphics in tandem for print, the Web and tablet devices[8] (Hamblin, 2012).

But innovative data journalism products are not always cheap, because they demand the joint expertize and efforts of the computer savvy reporters, visual artists or designers and sometimes programmers, mainly because of the complex flow involved by data journalism processes.

One of the pioneers of the data journalism, Paul Bradshaw[9], uses the well-known news story structure of the inverted pyramid to illustrate the processes that are defining the specificity of data journalism (Figure 1).

[8] According to Hamblin's research (2012), "*The Wall Street Journal* uses scripts to automatically convert graphics from a print-legible format to a web-legible one; […] *USA Today* prefers to customize the graphic to the medium rather than reformat it automatically; […] the *Washington Post* manually converts print graphics for the Web."

[9] Paul Bradshaw writes for The Guardian Data Blog, publishes the Online Journalism Blog, and is the co-founder of the award-winning investigative journalism network HelpMeInvestigate.com.

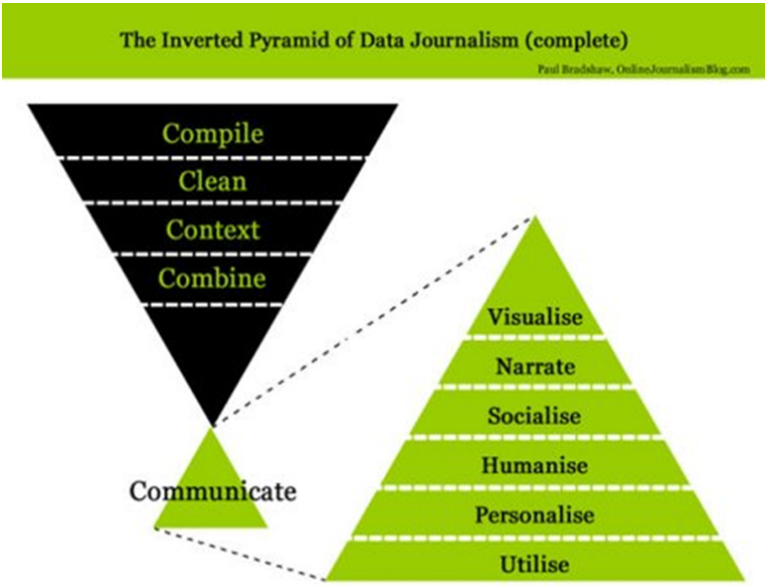

Figure 1. The inverted pyramid of data journalism, by Paul Bradshaw (2011). Source: http://onlinejournalismblog.com/2011/07/07/the-inverted-pyramid-of-data-journalism/

The inverted pyramid suggests that data journalism begins with large data sets that after being refined, verified, and combined are presented in a visually appealing form to the audience. The five data journalism processes, as suggested by Bradshaw, are:

- Compilation: either the journalist has a question that needs data to be gathered, or an available dataset needs questioning.
- Cleaning: it typically takes two forms - removing human error and converting the data into a format that is consistent with other data.

- Contextualization: data cannot always be trusted. It comes with its own histories, biases, and objectives. The methodology used to gather the data set should be clear. Therefore journalists should ask questions about the data set: who gathered it, when, and for what purpose? How was it gathered?
- Combining: good stories can be found on a single dataset or journalists need to combine multiple datasets.
- Communicating: visualising the results (on a map, in a chart, an infographic, or an animation).

In conclusion, data journalism uses big data collections or existing data compilations, which usually need to be cleaned in order to convert the data into a format that is consistent with other data. Sometimes, classic narrative, news apps, case studies and personalisation are appropriate forms to use for communicating the results. But visualisations become more and more effective forms for communicating the results using a map, a chart, an infographic, or an animation. Visualisations favour understanding by illustrating a point made in a story in a more compelling way; they can remove unnecessarily technical information from text; or they can provide transparency about the reporting process (particularly when visualisations are interactive and allow exploration).

As Dona Wong (2010) suggests, good information graphics combine rich content with inviting visualization (content interpretation and essence highlighting) and with sophisticated execution, which brings the content and the graphics to life. That's why designers and visual artists play a central role in finding

compelling ways to present big data in small spaces and in helping the viewer to get the message rapidly.

Perceptual issues in data visualization

Data visualisation is a process of mapping information to visuals, which apply rules to interpret data and express its values as visual properties. All visualizations have an either explanatory, or exploratory goal, but good visualisations attract reader's attention without distracting from the data.

The main challenge for the designers is to present large amounts of data in simple and clear ways. Therefore, they try to design minimal, clean shapes in order to deliver both a sensitive and meaningful experience of datasets. This leads back to the *Gestalt* principles of perception.

Gestalt principles describe how our mind organizes individual elements into groups. Designers can use these principles to highlight patterns that are important and downplay other patterns, to reduce the noise from charts, choose the ideal aspect ratio, show relationship between elements more clearly (proximity, similarity, enclosure, closure, continuity, connection, symmetry, figure and ground).

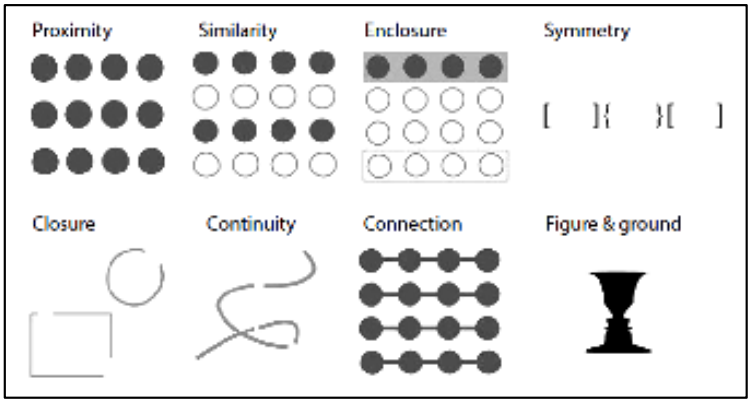

Figure 2. Gestalt principles relevant to visualization
(Source: White Paper - *Principles of Data Visualization – What we see in a Visual*)

Sensory aspects of visualizations derive their expressive power from being well designed to stimulate the visual sensory system. In contrast, arbitrary, conventional aspects of visualizations derive their power from how well they are learned (Ware, 2012).

Preattentive attributes are the basic building blocks of visual perception and they are identified by the viewer almost immediately. According to Ware (2012), preattentive attributes are what immediately catch the viewer's eye when he/she looks at a visualization: *form* (orientation, line length and width, size, shape, curvature, added marks, enclosure), *colour* (intensity and hue), *spatial position* (2D position). Out of this list, position and length can be used to perceive quantitative data with precision. They lead the viewer to spot patterns in a visual, and designers know it.

Designers become more and more creative, "by not only positioning graphic primitives (point, line and colour), but also

combining visual primitives (X and Y plane or position, size, value, texture, colour, orientation and shape), in addition to other graphic attributes such as edge, contour, area (empty-full relationship), light, volume, and field" (Bihanic, 2015).

The arrangement of the visual elements tells a story. Based on the arrangement decisions a designer makes, a visualisation can prompt feelings of tension, confusion, and agitation (Duarte, 2008). Conversely, clarity of the visual message could be maximized by employing: *contrast*, so that the viewer can identify the main point quickly; *flow*, to suggest the order in which to process the information; *hierarchy,* to help the viewer see the relationship between elements; *unity* – to make the viewer sense that the information belongs together; *proximity* – to enable the viewer to perceive meaning from the location of elements; and whitespace, to give visual breathing room.

In the *The Wall Street Journal Guide to Information Graphics*, Wong (2010) brings arguments based on visual perception mechanisms and turns them into practical advices regarding an effective graphic presentation of the data. For example, Wong explains that bar charts should show data following a decreasing pattern, and a specific bar should be marked using a darker tone; when drawing pie charts, the designer should bear in mind that the eye is scanning the image clockwise and from top to down, therefore slices should be placed in a decreasing order, from the biggest ones to the smallest ones; in addition, one pie chart graph should not have more than five slices.

It is important to know the subtle mechanisms of visual perception and to apply them to convey clear information and meaningful data to the viewers. As Bihanic (2015) concludes: image

does not decorate, illustrate, or describe; it selects, recomposes, and graphically transposes certain objective data elements, which it then codifies and differentiates before presenting them in another light and from other angles.

Narrative data visualisation

New tools[10] and technologies help the development of visual storytelling. When practiced honestly and with care, the process of data visualisation can help the audience see the world in a new way, revealing unexpected patterns and trends in otherwise hidden information around us. At its best, data visualisation is expert storytelling (Murray, 2013).

But data stories differ in important ways from traditional storytelling. Stories in text and film typically present a set of events in a tightly controlled progression. While data visualisation can be organized in a linear sequence, they can also be interactive, inviting verification, new questions, and alternative explanations (Segel & Heer, 2010).

Storytelling affordances (Kosara & Makinlay, 2013) are visualization's features that provide a narrative structure and guide the reader through the story. One of the fundamental features of stories is that they provide a temporal structure, even if not necessarily linear. Time is closely related to causality, since causality can only work forward in time. Providing the causal relationships

[10] Among the most popular tools we mention: Google Fusion Tables, Tableau Public, Google Spreadsheet Charts, ManyEyes, Color Brewer, Chartsbin, iCharts, GeoCommons, Piktochart.com.

between facts and events ties the individual parts together to create a cohesive structure.

Based on his journalism experience at BBC, Martin Rosenbaum identified several types of data stories (in *Data Journalism Handbook*, 2012). The *measurement* stories are based on counting or totalling something, but in order to provide context to the data, proportion, internal and/or external should be used. The change over time stories are based on the temporal structure and derived causality afore mentioned. The "*league tables"* focus on comparisons, but they must take the size of the compared data sets into account. The *analysis by category stories* focus on few categories and enables comparison among them. The *association* stories emphasize on correlations, to provide in-depth analysis of the data.

Though, adopting and creating new ways to tell stories with data visualisations is not a new challenge for the data designers and data journalists. Edward Tufte[11] spent a career in identifying the best modalities to convey a complex message to an audience through a scientific graph or visualization: complex ideas should be communicated with clarity, precision and efficiency. Tufte proposed in *The Visual Display of Quantitative Information* (2001) a set of general rules that graphical displays should obey so they can effectively communicate the message: to show the data, to induce the viewer to think about the substance rather than about methodology, graphic design or technology of graphic production, to avoid distorting what the data have to say, to present many numbers in small space,

[11] American statistician and professor emeritus of political science, statistics, and computer science at Yale University, widely known for his writings on information design and as a pioneer in the field of data visualization.

to encourage the eye to compare different pieces of data, and to reveal the data at several levels of detail.

Static visualisations have long been used to support storytelling, usually in the form of diagrams and charts embedded in a larger body of text. Static visualisations offer pre-composed views of data – where the number of dimensions of data are limited and the all the visual elements must be present on the same surface at the same time (Murray, 2013). An emerging class of visualisations attempts to combine narratives with interactive graphics. The advantage of the dynamic, interactive visualisations is that they can empower people to explore the data for themselves.

Shneiderman proposed in 1996 the basic principle of the visual design that might be summarized as the *Visual Information Seeking Mantra: overview first, zoom and filter, then details on demand.* This principle is perfectly working for the interactive visualisations: overview refers to the perception of the entire collection, then zooming to certain elements of interest and filtering the uninteresting items, and selecting an item or group and getting details when needed. Bihanic (2015) goes further and explains that by placing the user at the heart of the of interface-based data representation, designers use perception-driven tactics that encourage discovery (visual data mining), judgment and analysis (visual synthesis).

Data visualisation's analysis. Methodological framework

Over the last 20 years, authors established diverse data visualization taxonomies, which enable the researchers to dissect the more and more complex visualisations and to identify their strengths and weaknesses using clearly defined criteria. Three conceptual frameworks for visualization analysis (Shneiderman's, Cairo's and Segel & Heer's) will provide the base ground for our analysis.

Shneiderman (1996) established a taxonomy of static visualization types from the information visualization techniques point of view. The seven categories present in an exhaustive manner the data visualization typologies starting from the main features of the data set:

- **1D/Linear** visualisations include list of data items, organized by a single feature: textual documents, alphabetical lists;
- **2D/Planar or map data** (Geospatial[12] visualisations: choropleth, cartogram, dot distribution map, proportional symbol map, contour/isopleth/isarithmic map, dasymetric map, self-organizing map);
- **3D/Volumetric** (surface and volume rendering, computer simulations), temporal (timeline, time series, connected scatter plot, Gantt chart, stream graph/theme river, arc diagram, polar area/rose/circumplex chart, Sankey diagram, alluvial diagram);

[12] Among the most commonly used 2D information visualisations used both in research and commercial domain are the Geographical Information Systems (GIS). They combine several layers of information about a location. GIS are not simple maps, they allow large data sets analyse to generate information (hypotheses, conclusions, insights, new hunches) about widely varied socio-economic phenomena.

- **Temporal** (time lines are used in historical presentations to create a data type that is separate from 1 dimensional data);
- **nD/multidimensional** (pie chart, histogram, wordle, tag cloud, unordered bubble chart/bubble cloud, bar chart, radial bar chart, tree map, scatter plot, bubble chart, line chart, step chart, heat map, parallel coordinates/parallel sets, box and whisker plot/candlestick chart, mosaic display/ Marimekko chart, waterfall chart, tabular comparison of charts, small multiples);
- **Tree/hierarchical** (general tree visualization, dendrogram, radial tree, hyperbolic tree, tree map, hyperbolic tree, tree map, wedge stack graph/sunburst, icicle/partition chart);
- **Network** (matrix, node-link diagram, dependency graph/ circular hierarchy, hive plot, alluvial diagram, subway/tube map).

Using a different approach, Cairo (2012) proposes the *visualization wheel*, a conceptual device for analysis. The wheel has six axes that correspond to the main features a designer need to balance. The upper hemisphere's features (abstraction, functionality, density, multidimensionality, originality, novelty) define graphics that are deeper and more complex, while the lower hemisphere's features (figuration, decoration, lightness, unidimensionality, familiarity, redundancy) define graphics that are more intelligible and shallower. A graphic could be complex and shallow if you use a funky graphic form to encode irrelevant data, or simple and deep if you encode tons of data with common graphic forms. But, in general, complexity and depth are related variables in information graphics and visualizations.

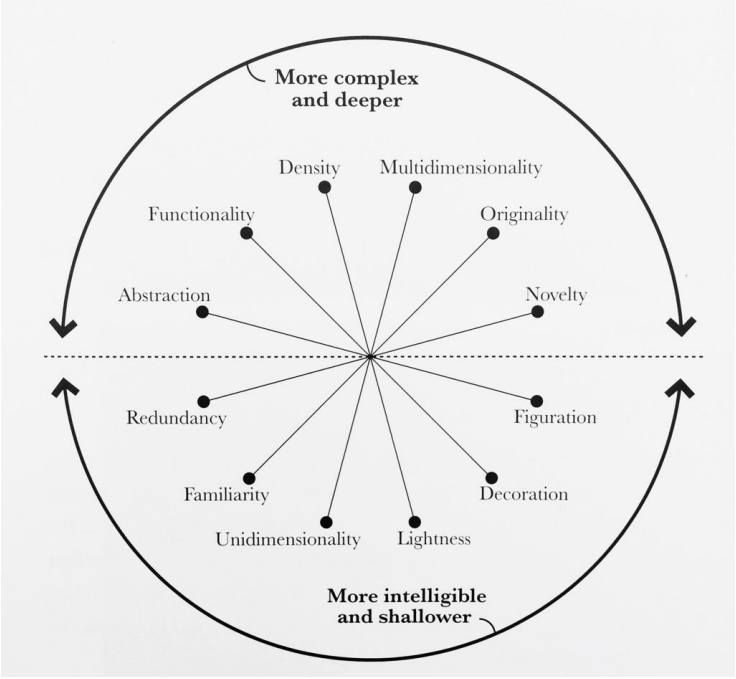

Figure 3. The visualisation wheel. Source: Cairo, 2012

Segel & Heer (2010) proposed an analysis grid for the organization of the design space using three divisions of features: (1) genre, (2) visual narrative tactics, and (3) narrative structure tactics.

1. *Genres* (they vary in terms of the number of frames and the ordering of their visual elements): magazine style (image embedded in page of text), annotated chart, partitioned poster, flow chart, comic strip, slide show, video animation.

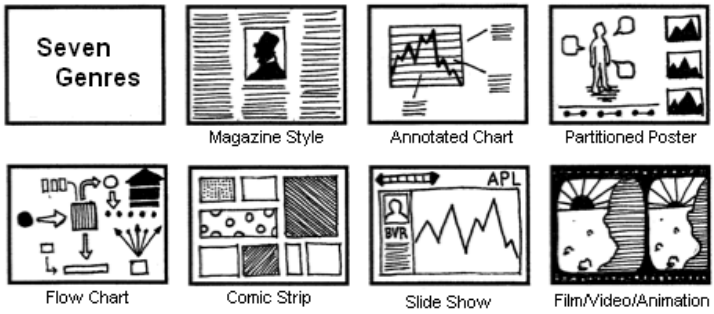

Figure 4. Genres of narrative visualisation. Source: Segel & Heer, 2010

2. *Visual narrative tactics* (visual devices that assist and facilitate the narrative): visual structuring (mechanism that communicates the overall structure of the narrative to the viewer, orientate and allow him to track his progress through the visualisation), highlighting (visual mechanisms that help direct the viewer's attention to particular elements in the display - the use of colour, motion, framing, size, audio), transition guidance (techniques for moving within or between visual scenes without disorienting the viewer).

3. *Narrative structure tactics* (non-visual mechanisms that assist and facilitate the narrative): ordering (the ways of arranging the path viewers take through the visualization – liner, random access, user-directed), interactivity (the different ways a user can manipulate the visualization (filtering, selecting, searching, navigating), and also how the user learns those methods (explicit instruction, tacit tutorial, initial configuration), and messaging (the ways a

visualization communicates observations and commentary to the viewer, through short text fields (labels, captions, headlines, annotations) or more substantial descriptions (articles, introductions, summaries).

When assessing the interactivity of the visualisations, the same Segel & Heer (2010) suggested three structures, forming a continuum between the author-driven approach (which has a linear path through the visualization, relies heavily on messaging and includes no interactivity) and the reader-driven approach (which supports tasks such as data diagnostics, pattern discovery and hypothesis formation). Though, a few hybrid models have become most common.

a. **The Martini glass structure (author-driven approach)**, following a tight narrative path early on (the stem of the glass) and then opening up later for free exploration (the body of the glass).

b. **The Interactive slideshow (dialogue between the two approaches)** incorporates interaction mid-narrative within the confines of each slide, this structure allowing the user to further explore particular points of the presentation before moving ahead to the next stage of the story.

c. **The Drill-down story (reader-driven approach)** presents a general theme and then allows the user to choose among particular instances of that theme to reveal additional details and backstories.

Telling stories with data. Analysis

Shneiderman's, Cairo's and Segel & Heer's conceptual frameworks will be used for visualization analysis of a convenience sample which contains static and dynamic data visualisations, and few data apps.

Seeing the familiar in a new way

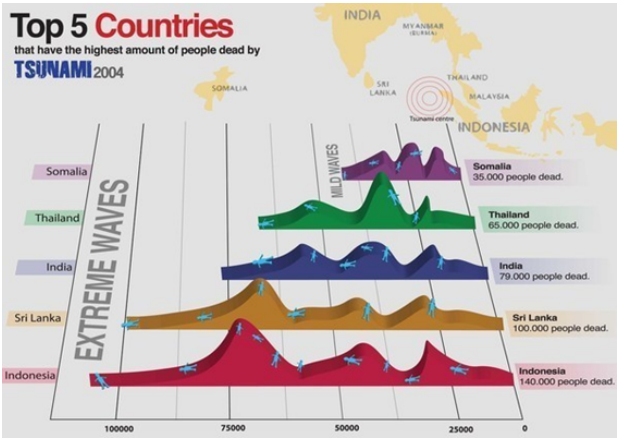

Figure 5. Top 5 countries that have the highest amount of people dead by tsunami 2004 Source: http://www.pdviz.com/tsunami-2004

The *Tsunami* 2004 chart is a multidimensional static visualization that combines a geographical map showing the tsunami centre and the regions affected by the huge waves with a multi-dimensional bar-type chart combining three types of data: the wave's strength, the number of casualties and the countries affected. The length of the waves (bars) is showing the number of dead people. A different colour is assigned to each county (red is used for the country with most casualties).

SHOWING CHANGE OVER TIME

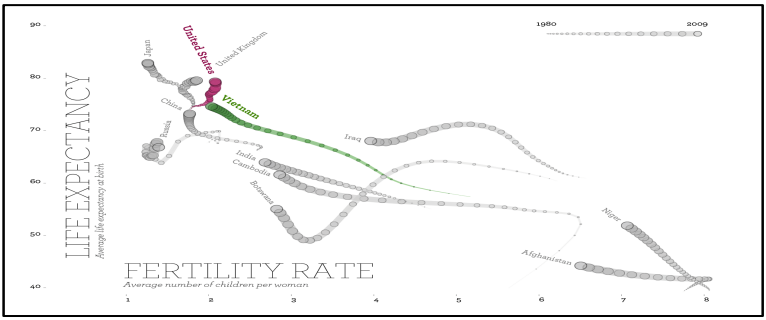

Figure 6. Remixing-Rosling chart
Source: http://truth-and-beauty.net/projects/remixing-rosling

The *Remixing-Rosling* is a multidimensional static visualization that combines a time line with two data sets: the fertility rate (on the X axis) and life expectancy (on the Y axis). The time line is represented by a row of bubbles increasing in diameter (from past to present). Two colours are used to highlight the evolution of the two variables (fertility rate and life expectancy) in two particular countries: USA and Vietnam, each one displaying a whole different pattern. The visualization uses simple forms (circles) and tends to be very abstract, but it allows the viewer to compare and correlate variables of a complex data set.

Comparing values

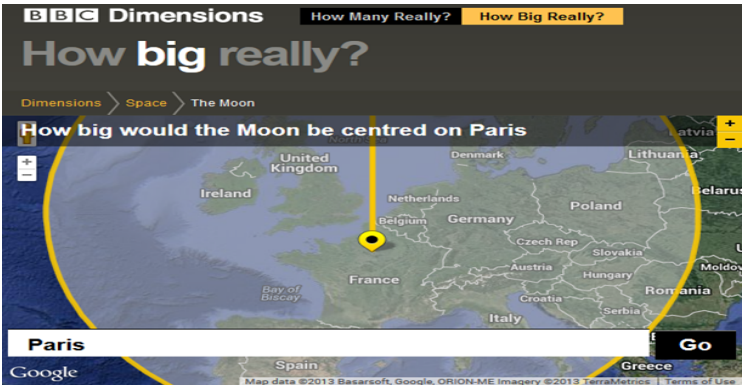

Figure 7. BBC's visualisation tool. Source: http://howbigreally.com/

The *How big…* is a unidimensional visualization, overlaying the round-shaped yellow outlines of a virtual moon on a Google map chosen by the user, which allows the viewer to understand the actual size of the moon by comparing it with the size of the continents and countries. The tool allows the user to navigate and establish where the centre of the virtual moon will be placed, according to his interests. The visualization is highly figurative and clear.

Showing connections and flows

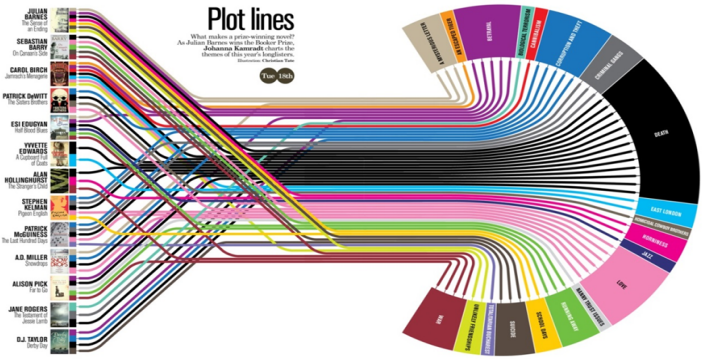

Figure 8. Plot lines chart.
Source: http://www.coolinfographics.com/blog/tag/connections

The *Plot lines chart is* a multidimensional visualization using a subway/tube map to show the common plot stories for the 13 nominated books for the Booker prize in 2011. The relative chaos at left becomes organized on the right side and the viewer is invited to explore the visualisation. Colours are used as a conscious artistic choice that wafts with concrete meaning (black for death, pink for love, purple for betrayal).

Dynamic visualisations

The Better Life Index[13] (established by OECD - Organisation for Economic Co-operation and Development) is an interactive web-based tool created[14] to engage people in the debate on well-being.

[13] www.oecdbetterlifeindex.org/

[14] by Moritz Stefaner.

The tool invites the viewers to compare well-being across countries according to the importance they give to 11 topics: community, education, environment, civic engagement, health, housing, income, jobs, life satisfaction, safety and work-life balance. The visualization functions as bar-type charts that allow zoom in and further investigation for an item chosen by the viewer.

Figure 9. Better Life index.
Source: http://www.oecdbetterlifeindex.org/topics/education/

Selfiecity[15] is an interactive tool that investigates the style of self-portraits (selfies) in five cities across the world using a mix of theoretic, artistic and quantitative methods. Findings about the demographics of people taking selfies, their poses and expressions are available. Rich media visualizations (imageplots) assemble thousands of photos to reveal interesting patterns (head tilt, anger of happiness displays, mouth position etc.). The interactive selfiexploratory allows the user to navigate the whole set of 3,200 photos.

[15] http://selfiecity.net/

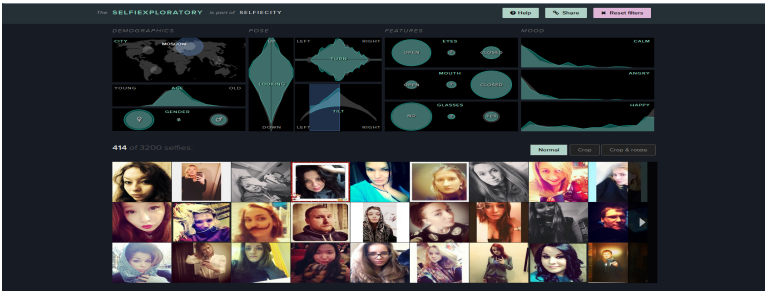

Figure 10. Selfiecity.
Source: http://selfiecity.net/selfiexploratory/

Newsmap[16] is a tool that visually reflects the constantly changing landscape of the GoogleNews aggregator. Its purpose is to divide information into quickly recognizable bands which, when presented together, reveal underlying patterns in news reporting across cultures. It shows hierarchies and reveals the relationship between data and unseen patterns in news media and some patterns of different journalism cultures (emphasis on a subject, the balance between hard news and soft news). The tree map visualization uses a different colour for each news category (world, national, business, technology, entertainment, sports). Different shades of the same colour are giving information about the news item frequency. Newsmap application got in 2004 the Prix Ars Electronica.

[16] http://newsmap.jp/

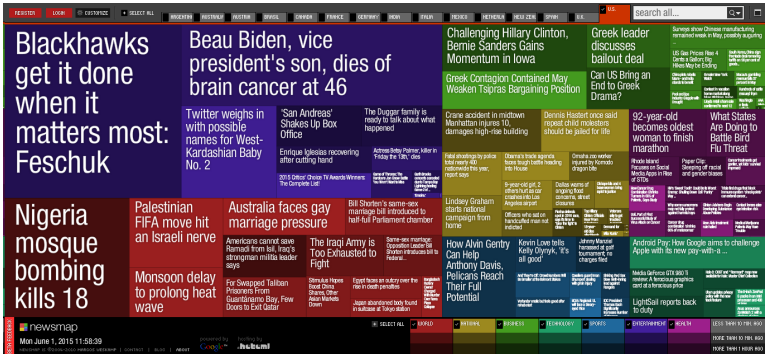

Figure 11. Newsmap. Source: http://newsmap.jp/

Akamai Real-time Web-monitor[17] offers a real time overview on the global internet conditions. The application identifies the global regions with the greatest attack traffic, cities with the slowest web connections (latency) and geographic areas with the most web traffic (web density). It allows the user to make inferences on how the web activity was pertubed by specific political, social, economical events. The visualization proposes a heatmap that uses the colour conventions (green for average activity, red for above average activity). It allows zooming on specific geographic areas.

[17] http://www.akamai.com/html/technology/real-time-web-monitor.html

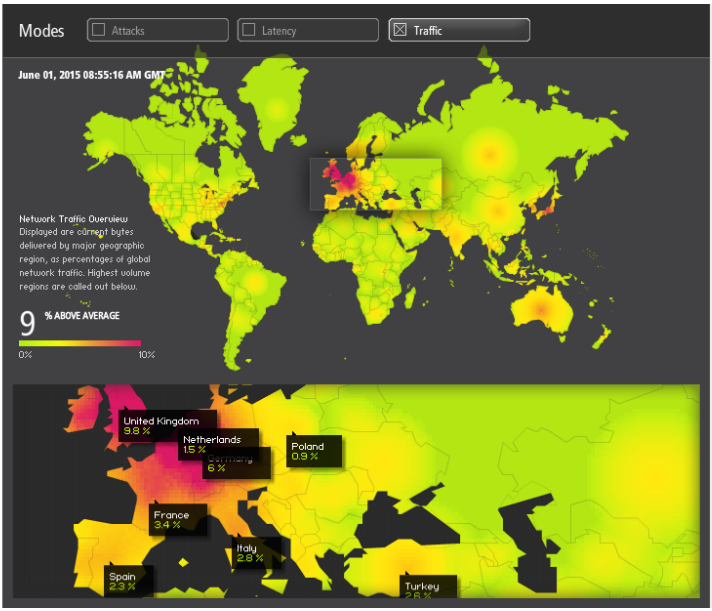

Figure 12. Akamai real time web monitor
Source: http://www.akamai.com/html/technology/dataviz1.html

WikiMindMap[18] creates spider diagrams that allow the user to visually organize the Wikipedia information. The mind map is created around a single concept (requested by the user), drawn as an image in the centre of a blank landscape where connected wiki-concepts are added. Major ideas are connected directly to the central concept, and other ideas branch out from those.

[18] http://www.wikimindmap.org/

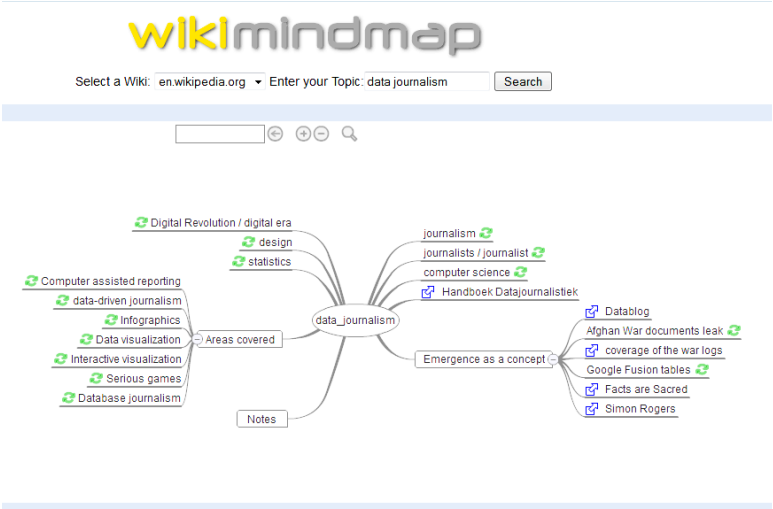

Figure 13. WikiMindMap. Source: www.wikimindmap.org/

Tweet Sentiment visualisation is an interactive visualisation tool that pulls from Twitter recent tweets that contain the keyword typed by the user and visualizes them in the Sentiment tab as circles. Each tweet is shown as a circle positioned by sentiment, an estimate of the emotion contained in the tweet's text. Unpleasant tweets are drawn as blue circles on the left, and pleasant tweets as green circles on the right. Sedate tweets are drawn as darker circles on the bottom, and active tweets as brighter circles on the top. The visualisation allows in depth exploration, showing the tweet text when the mouse is hovered over a tweet. Other seven tabs (Topics, Heatmap, Tag cloud, Timeline, Map, Affinity, Tweets) are allowing different ways to visualize the data.

Figure 14. Tweet Sentiment visualisation
Source: http://www.csc.ncsu.edu/faculty/healey/tweet_viz/tweet_app/

Visualisation critique

Visualisations are effective ways to convey meaning and make information more accessible for the viewer, but that can also be used to lie, mislead, or distort the truth (Murray, 2013). The notion that graphics can indeed lie derives from Darrell Huff's bestseller *How to Lie With Statistics* (1993), which describes the most common kinds of visual sins, such as truncating the Y-axis of graphs.

Infographics strive for objectivity, precision and functionality as well as beauty, but sometimes they only become too complex, too abstract, too dense or too far from the aesthetics the majority of the viewers expect (Cairo, 2012).

Howard Wainer explained in *Visual Revelations* that most graphic lies are based on three strategies: not showing much data; showing the data inaccurately; and obfuscating the data. Cairo (in Bihanic, 2015) reorganized Wainer's list, pointing out the strategies used to lie with visualisations: hiding relevant data to highlight

what benefits us; displaying too much data to obscure reality; using graphic forms in inappropriate ways (distorting the data).

Confusing, misleading and ineffective graphics can be easily found in the news media, too. Toles (2014) underlines that "in the world of data, there are two kinds of data. Facts, and USEFUL facts. What is the ratio between these two categories? Not this bad: haystack, needle. But it's fairly easy to generate a lot of data that's interesting in an abstract sort of way, but doesn't get you any closer to good policy outcomes, which to some of us is kinda the whole point". His conclusion is that data journalism should not only present different sorts of data forgetting that they should produce policy outcomes.

Bad visualisations

Figures 15, 16 and 17. Lying visualisations
Source: http://www.theguardian.com/news/datablog/gallery/2013/aug/01/16-useless-infographics

In the first three visualisations, the size of effect shown in the graphic is not reflecting the size of effect in data. In the chart on poverty, 76% are shown to be less than three quarters of the pie-chart. In the bar-chart using human silhouettes, displays 4 silhouettes for figures around 43,000, but an increase of 3,168 nurses is shown as 28 silhouettes, suggesting that the increase is much more important than it really is. In the pie-chart showing the online behaviour, many questions are raising: how the data was collected, to which moment the graph is referring (month, hour), why different amounts (like 204 millions and 278 thousands) are displayed in equal slices?

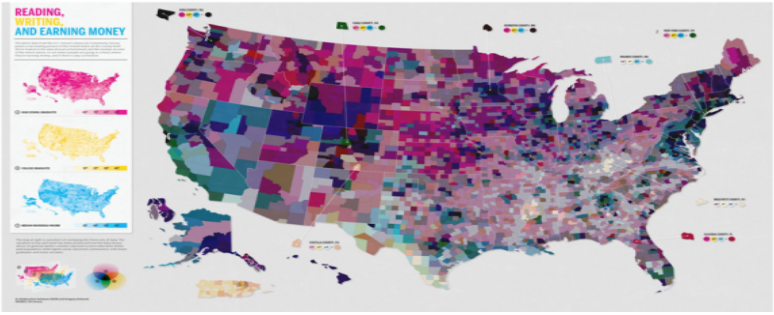

Figure 18. Lying visualisations (continuation)
Source: http://www.theguardian.com/news/datablog/gallery/2013/aug/01/16-useless-infographics

The choropleth map of US (a map that uses different colors and shades) combines three data sets: reading and writing behaviors with the amounts of eaned money across US. The designer used the CMYK color model[19] and overlayed the three maps, which makes the data visualisation almost impossible to read without a color separation editor.

Figure 19. Lying visualisations (continuation 2)
Source:http://www.theguardian.com/news/datablog/gallery/2013/aug/01/16-useless-infographics

[19] Colour model used in colour printing, and used to describe the printing process itself. CMYK refers to the four inks used in some colour printing: cyan, magenta, yellow, and key (black).

The treemap shows how when an android phone is released, lots of different versions can spin off it, but the hierarchy could not be traced and it makes the visualisation almost impossible to understand.

Journalists and communicators are tempted to use data visualisations, but they are not always recommended. McGhee (in Gray, Chambers, & Bounegru, 2012) writes about the situations where visualisations should not be used: when the story can be better told through text or multimedia; when there are very few data points; when there is very little variability in the data, no clear trend, or conclusion; when a table would do.

Conclusions

The introduction of information visualization in the media requires a convergence of journalistic and visual thinking skills, a more iterative news production process and a revised view of the function of news per se (Smit, De Haan & Buijs, 2014).

In this context, designers tend to move toward a visual coding approach, which rewrites data in the form of graphic objects by pairing each data-derived variable with a graphic one, such as position, length, area, colour, light, density, shape, texture, angle and curvature (Bihanic, 2015). But coding should not affect the "readability" of the visual displays: they have to have to be clear, to avoid distorting the meaning of the data, to encourage the viewer to compare different data pieces/sets, and to reveal the data at several levels of details.

From the extensively used pie chart to the complex interactive visual displays, data visualisations use diverse storytelling tools and

techniques: counting or totalling, temporal structure and causality, comparisons and correlations. The complex landscape of data visualisations could be analysed from different perspectives: focusing on the used visualization techniques; using conceptual devices such as *the visualization wheel*, with its six axes that correspond to the main features a designer need to balance; or analysing the organization of the design space using three divisions of features: genre, visual narrative tactics, and narrative structure tactics. Most of the times, combining the three approaches afore discussed could lead to an insightful analysis of the data visualisations (techniques, design and storytelling).

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LET'S KEEP THEM ENGAGED. EXPLORING STRATEGIES OF AUDIENCE PARTICIPATION AMONG THE MOST INNOVATIVE JOURNALISTIC INITIATIVES IN SPAIN

Miguel Carvajal, José Alberto García-Avilés, Alicia de Lara & Félix Árias

(Universidad Miguel Hernández of Elche)

This paper studies the audience participation initiatives in the most innovative journalistic initiatives in Spain. Using a methodology of content analysis, 99 activities of audience participation were examined in the 25 news outlets listed in the 2014 Ranking of Journalism Innovation. This Ranking systematically analyses and classifies the innovative ideas that have currently become the driving force of change in the Spanish news industry. The ranking is made up of the top 25 journalistic initiatives with the largest number of innovation indicators. The top five include Fundación Civio, a non-profit foundation with several media projects; *Vis-à-Vis*, and interactive magazine designed for iPad; *El Confidencial* and *Eldiario.es*, two "digital native" news websites; and *Acuerdo*, an online initiative which specialises in new narratives.

To develop the ranking, we used an analytical matrix that classifies a total of 196 challenges from different journalistic areas, using a methodology which combines the input of experts with the use of measurement tools and metrics. The study ranges from July 2013 to July 2014. The journalistic initiatives displayed innovations in any of these areas: a) product and service; b) production and distribution processes; c) internal organization and d) commercialization. The results show that journalistic innovation is being implemented at the margins of the traditional Spanish media industry and it also highlights the need for these alternative projects to consolidate and become increasingly popular among users.

The results show several engagement strategies through activities that promote the role of citizens and collaborators, as well as followers and activists. The nature and implications of these engagement strategies are discussed.

Introduction: the interactive media ecosystem's new challenges

The current media ecosystem is undergoing profound changes in key areas that shape its structure and functioning, such as the increase in distribution platforms, the innovation in news formats and business models, as well as a renewed relationship between the media and their audiences. Online media are benefiting from the interactivity provided by the Internet, incorporating services and applications that enhance users' participation. The rise of the Internet and digital devices -smartphones, tablets, iPods, etc.- have radically changed how contents are gathered, produced and distributed, enabling the entry of new intermediaries that create

and distribute news, including online aggregators, social media users, bloggers and "citizen journalists", among many others. As a consequence, legacy media, broadcasters and Internet companies find themselves competing head-to-head in a global online news environment.

The synergies between television and the Internet have brought about innovative ways of considering the role of audiences and amplifying the reception of programs, as interactive technologies transforming the way television communicates with the audience, and also increasing the opportunities for audience feedback and engagement with programs (Deery, 2003). As use of the Internet and computer networks expands and integrates with everyday life, questions about use are changing from who is 'signing on' to more in-depth analysis of what people do online (Haythornthwaite, 2005). Among these considerations is a growing recognition of how the Internet is stimulating connections and forging new links at all levels of organization -grassroots, corporate, institutional and global. The audience is now at the core of the news process. The dissemination of social media channels (e.g. Facebook, Twitter and Instagram) has led to a more selective news audience, one which is no longer willing to accept everything the legacy media dishes out. A number of studies have shown that new technologies have facilitated the implementation of innovative products, services and processes that meet users' needs (Storsul & Krumsvik, 2013).

Increasingly, users can reach their own audience and they rather often bypass traditional media channels. This shift has been driven by two elements which have combined to replace the old gatekeeping model with what Axel Bruns (2011: 6) has called

"*gatewatching* practices": the continuing multiplication of available channels for news publication and the development of collaborative models for user participation and content creation, which are now often summarized under the "Web 2.0" label.

The shift from print to online media consumption is forcing the entire media industry to attempt to reinvent itself. Journalists and technical experts work more closely with one another through open source engagement, which fosters such values as transparency, tinkering, iteration and participation (Lewis & Usher, 2013). However, because it is experiencing a drop in reader numbers as well as declining profits, the media industry must increase its investment in innovation.

The growing demands for audience participation

Audience participation is becoming a key strategic question for media success and civic engagement (Dahlgren, 2007). The formulation of a common social media strategy and bolstering motivation towards user-generated content is becoming a universal bonding agent, even in companies that have relied on a strict separation of print and online journalists to date. In the convergent media scenario, both public and commercial media are expanding the content offers that are distributed through several platforms and using immediate, continuous and on-demand methods.

The concept of audience participation shares a variety of meanings. In this paper, it is defined as the interactive initiatives that media platforms provide for users to engage through a combination of traditional systems and new technologies. It thus

encompasses a variety of actions, such as voting, commenting, sending pictures, answering surveys, engaging in chat discussions or supporting the production of content financially through *crowdfunding* (Carvajal *et al.*, 2012).

The Web 2.0 interconnected with radio and television channels is making it easier for users to generate their own content, thus becoming at the same time producers, distributors and consumers, as is the case of discussion programs (Carpentier, 2001) in user-generated content (García-Avilés, 2010) and new forms of activism and collaboration (Franquet *et al.*, 2011; García Avilés, 2011). The Web 2.0 opens up unprecedented opportunities for more inclusive public engagement in the deliberation of policy issues and the role of gate-watching (Bruns, 2011). The potential of participative media facilitates the involvement of the public, by commenting, sharing, labelling, criticizing and reacting to different pieces of news or entertainment (Jakubowicz, 2008; Syvertsen 2004).

News users are more confident and are no longer satisfied with what is offered; they place further demands on journalism (Karaganis, 2007). Fixed viewing, reading and listening habits are changing. Instead of news on fixed times and in tightly directed formats, today's audience expects constant updates, a broader selection of topics and a greater variety in design. Other news media (news websites, Twitter, journalism blogs, etc.) provide people with more opportunities to consume news. Many emancipated news users demand a greater say in the journalistic process. As a result, the traditional top-down pattern in which public broadcasters try to edify their audience is broken. The audience, not the channel, decides what they want to watch or listen to (Hargittai & Walejko, 2008).

Young people expect journalists to stay on top of the news and to jump in the middle of it for a "participatory" news experience (Lewis *et al.*, 2005). Glasser (2000: 28) emphasizes another aspect of "news participation": "Without narrative, news loses its *expressive* power; and without the power of expression news fails to engage readers as participants in the process of understanding".

News users take pleasure in sharing their knowledge with journalists but journalists are often reluctant. Newsmakers hesitate to trust and rely on proficient citizens, especially in giving them the final say (Domingo *et al.* 2008; Hermida and Thurman 2008; O'Sullivan and Heinonen, 2008). It's not just the expert citizen that is not optimally used as a source – viewers, readers and listeners together, in a mass, often know more than one journalist (however well informed that journalist is) (Leadbeater 2008). This "wisdom of the crowds" is barely used as a news source (Patterson and Domingo 2008). Journalists use to scout the "wisdom of the crowds" by checking valuable information with followers.

According to Bruns (2014), the audience plays a larger role as a "watchdog" and has become part of the entire newsgathering process. Regarding the technologically accelerated progress, however, Bruns (2014: 23) argues that "innovation in media technologies and innovation in media practices are increasingly decoupled from one another".

The implementation of innovation in media companies

Innovation implies the capacity to react to change and using creative abilities to solve a problem or need, finding an original solution and

implementing it successfully, often in a disruptive way. According to the literature, journalism innovation is not only focused on products, but also on the processes that create those products. As Anderson, Bell and Shirky (2012) argue, the process of disruptive media innovation has diminished the privileged position of traditional journalism. Weiss and Domingo (2010: 3) come to the conclusion that innovation is becoming a "crucial asset to the survival of the media industry". They also see the need for more academic research regarding "the actors, dynamics and factors involved in the processes, theories that acknowledge the changing nature of journalism – more than ever" (Weiss & Domingo, 2010: 3).

Media outlets that have implemented innovative strategies to develop multiplatform products and improve news quality, required effective communication from management, as well as a general upgrade of production processes (Westlund & Krumsvik, 2014). Lucy Küng (2008, 2013) examines how media companies cope with the change of culture brought about by the implementation of innovation. Küng (2013: 10) sums up that "the barriers between content creation and technology have broken down". In her opinion, the challenges for media outlets are innovation, technology and organizational change – three foundations which she considers indispensable for the success of any media company.

Studies on media innovation and its concepts therefore also turn their attention to internal processes in the media organizations and to the on-going processes of newsgathering. García-Avilés (2012) argues that news production rapidly changed newsroom organization and journalistic practices. Journalists have had to rethink their role -due to the changing demands of audiences.

The problem of transforming journalistic practices, according to García-Avilés (2012: 272) is not the "quantity of technology but the quality of management". Bleyen, Lindmark, Ranaivoson and Ballon (2014: 48) introduce a novel typology of media innovation based on five categories: "business model, production and distribution, consumption and media, inner form, and core". The main challenges for legacy media, according to Küng (2013), are innovation, technology and organizational change.

Westlund and Lewis (2014: 11) agree with Küng's statement in this respect by adding that "innovation must involve something more than the repetitive cycle of everyday news production". Thus, legacy media organizations have no other choice than to transform themselves, and "act strategically in improving their editorial processes and products, as well as their business models and organizational structures" (Westlund & Lewis, 2014: 11). Pavlik (2013) takes the argument one step further and observes that professional journalism, in order to be innovative, needs four basic dimensions: "(1) Creating, delivering and presenting quality news content; (2) Engaging the public in an interactive news discourse; (3) Employing new methods of reporting optimized for the digital, networked age; and (4) Developing new management and organizational strategies for a digital, networked and mobile environment" (Pavlik, 2013: 183).

Dogruel (2014) looks at media innovation from a different angle. She examines the theory of media innovations and refines it by including the interaction between the media, existing media products and media institutions. Media innovation no longer focuses only on product- and process-related aspects. Dogruel

(2014: 62) says that it also includes "user-sided appropriation processes [and] the combination of different innovation dimensions (e.g. organizational, technological or design-related aspects)".

Even an innovation-driven broadcaster, such as the BBC, is in urgent need of transformation. And the BBC is very aware of what it could mean to enter unknown paths. In its recent report, the company emphasizes that: "the risks here are enormous. It's easier to predict what is going to happen than when. If the BBC moves too slowly, it will become irrelevant to the audiences of the future; if it moves too fast, it will lose its audiences before [it] even get[s] to the future. And, to be clear, there will still be TVs in the front rooms of homes across the UK in 2027" (BBC, 2015: 25).

The technological shifts towards better connectivity, more computing power and the use of big data have changed news consumption completely (BBC, 2015).

2014 SPAIN'S JOURNALISM INNOVATION RANKING

A number of digital native media have also experienced considerable success. *ElConfidencial.com*, specializing in economic, political and social contents, went online in 2001; and in 2013 set up an innovation lab to work on data-based and other forms of journalism. *Lainfomación.com*, which focuses on computer-based news-information production and innovative multimedia narrative approaches, appeared in 2009. Other recent digital native initiatives, such as *Eldiario.es* and *infoLibre*, have implemented successful funding and user-participation models.

This kind of grassroots journalism is especially sought-after in some sectors of the audience, and is becoming increasingly prevalent online. Some media outlets have also emerged from not-for-profit projects, and are financed by crowdfunding actions. The financial success of such projects may be attributed to their ability to build and motivate user-communities, although in Spain such movements remain small and offer limited support.

Several multimedia content production agencies work exclusively to produce digital news and new media packages for online distribution. Companies such as *Vis-a-vis*, a tablet-based magazine publisher founded in 2011; V*izzuality,* dedicated to the visualisation, analysis and cloud based services for big amounts of data since 2009; and *CartoDB*[20], a multimedia production company specialized in developing maps and apps, are examples of the broader panorama of innovative digital media outlets in Spain. They are usually made up of small teams of young, talented professionals with a mix of journalistic and technological backgrounds.

Methodology

The methodology used in this study was designed to obtain the 2014 Innovation in Journalism Ranking for Spain. The aim of the ranking was to identify the most innovative aspects of journalism in Spain. The work consisted of two different phases: a) collecting and selecting the sample, and b) performing a qualitative analysis, quantitative valuations and the final assessment. To collect the cases,

[20] CartoDB is the web's easiest tool to create, share and publish interactive maps, by transforming data into beautiful visualizations and change the way users communicate insights: http://cartodb.com/

an online survey was carried out via e-mail in which twenty experts, selected among the academic and the profession, were asked to propose ten innovative journalism initiatives in Spain. The experts proposed a total of 60 media outlets or journalism projects. To obtain the final sample of 25 cases, the list was ordered according to three criteria: a) professional relevance, b) expert relevance, and c) social relevance.

Professional relevance measures the industry's interest in the specific case. This interest is obtained via a Google search engine that is fed with sector's top sources (blogs and key websites). This engine registers the number of results from a search using key words and Boolean operators. Expert relevance is obtained by calculating the number of votes submitted by the experts who were consulted to prepare the initial sample. Social relevance is calculated with the media outlet's position in the Alexa ranking and its activity in social networks. Specifically, this measures the ratio of retweets out of all published tweets (Twitonomy) along with the ratio of engagement in Facebook (Likealyzer), which indicates the average number of comments or shared posts.

The second part of the methodology was the qualitative analysis of the 25 cases with the highest scores. The analysis focused on four key areas of the journalism process: a) product or service, b) production processes and distribution, c) the organization of the company or the media outlet, and d) commercialization (Amoedo *et al.*, 2013). Innovations were registered using a Google form containing two sections. The first section was used to register each innovation individually along with the degree of its impact (radical or incremental), whether or not it has a technological base (proprietary

or third-party), the aim of the innovation and the solution it provides. Once the exploration was completed, the second section was used to collect general information about the media outlet and the company.

Through this exploration, 625 innovations were initially registered from the 25 selected cases. They were then reviewed to eliminate redundancies and to avoid aspects without sufficient reasoning. Thanks to this selection, the final number of innovations dropped to 196. The final ranking was obtained by assigning a score to each innovation. Since each innovation has its own relevance and each media outlet changes at its own pace, two categories were created: a) 'incremental' innovations, which represent an adaptation or a slight improvement in the established time period or region (worth one point), and b) 'radical' innovations, which represent items that are applied for the first time or that include a significant improvement (worth three points). These two types of innovations were to be implemented between July 2013 and July 2014 (the time period established for the ranking). This made it possible to obtain the final ranking.

The work presented here focuses on innovations related to audience participation. In order to analyze the innovations, it was decided to delimit the concept of engagement audience upon reviewing the main bibliography. As a result, it was understood that innovation with regard to the audience could include any interactive initiative proposed by an editor or media outlet that promoted user engagement through a combination of innovative technologies and traditional practices. Two researchers then filtered the results of the initial study in order to find innovative proposals

that had an incremental or radical positive impact on audience participation. During one week in February, the analysts filtered the results separately and then compared their selections. Based on the results, it was decided to analyze a sample of 99 items that directly or indirectly reflect the efforts of the media outlets selected in increasing the audience's participation or engagement.

Results

This study identified and analyzed instances of innovation at 20 digital media outlets in Spain, most of which were digital native media. We explored the objective of innovations undertaken at online media outlets. Of the 160 cases registered, 99 cases (62%) showed some elements of audience participation. Out of these 99 cases, the breakdown is as follows: 33 cases (33%) involved innovations relating to a product or service, 39 cases (39%), innovations in production or distribution processes, 24 cases (24%), innovations in commercialization, and finally, only 3 cases (3%), innovations in organizational structure. In other words, innovations that focus on production and distribution processes and products and services prove significantly more prevalent (72%) than changes in commercialization and internal organization (27%).

We found a great variety of innovations related to production and distribution processes for media contents, in 17 of the 20 most innovative media (see Table 1). Production innovations related primarily to leveraging the news value of contents submitted by users and fostering interactivity. In the area of distribution, the main objective of such innovations involved multiplatform diversification, based on technical means designed to facilitate or reinforce users'

interaction through apps for mobile telephones, tablets and social networks. Also in the area of distribution, several media outlets explored voluntary and mandatory user-registration options.

Media	No. of distribution innovations
El Confidencial	5
Infolibre	4
Qué hacen los diputados	3
Revista Don	3
Civio	3
Jot Down	2
El Diario	2
RTVE Lab	2
La Marea	2
Vizzuality	2
Yorokobu	2
Ara	2
Sports You	2
Vis-á-Vis	1
Granada iMedia	1
The Objective	1
Panenka	1

Table 1. Number of innovations in production and distribution

At the same time, the online media outlets explored here evinced a somewhat innovative approach in their production and distribution processes. The overall aim of this approach was to foster creativity because such initiatives sought to leverage the news-value of contents submitted by users, as well as to reinforce the journalistic

brand of blogs and apps developed for mobile telephones, tablets and social networks.

Among organizational innovations, the most significant was the establishment of R&D&i labs for new products, also known as media labs, at two of the media outlets analyzed: RTVE and *El Confidencial*. With the help of these departments, generally referred to as "innovation labs", media outlets are trying to find out which trends and innovations are appropriate and useful for the company's DNA.

One example is the Spanish national public broadcasting TV station RTVE, which established its innovation lab in June 2011. The lab's objective was to explore the best storytelling approach for their diverse content. The lab's nine employees (two TV directors, two journalists, three developers and one designer -as of February, 2015) investigate whether a story needs a textual, an audio-visual or a graphic code. The lab runs its own microsite[21] -independent of the official website- where the different storytelling approaches are vividly represented.

Another example is the digital native media *El Confidencial,* which established its own innovation lab – the Laboratorio[22] – in March 2013. It builds a bridge within the *El Confidencial* between the in-house newsroom and the technology department. The lab comprises a team of 20 professionals who deal with design, user experience, web analytics, mobile, new narratives and projects. The lab's main tasks, according to its director (Cobo, 2015), are research,

[21] http://lab.rtve.es/

[22] http://blogs.elconfidencial.com/comunicacion/el-blog-del-laboratorio/

consulting in questions of product development, e-publishing on tablets or smartphones, as well as the integration and analysis of metadata and linked data within newsfeeds.

By its very nature, this kind of innovation is qualitatively more advanced than other innovations registered in this study. In the end, the overall purpose of such labs is to foster and further innovation within the digital media organization. Thus, media labs are both innovative and act as catalysts for on-going innovation.

Innovations in production or distribution processes

One strategy is to give users a say in the news, by promoting their comments or providing space for their inputs. *El Confidencial* launched an internal chat space among their own users' community, which is defined as the place of conversation among the *El Confidencial*'s newsroom and its readers". Also the section "España is not Spain" is devoted to users' participation through pictures that show the usual cliché associated to Spaniards. *Civio* fosters publishing pictures sent by users, in the section "El Fotomandón", at the platform "Quién Manda". In *ElDiario.es,* users' comments are highlighted above anonymous comments, using the label "Our members tell us". And a hyperlocal website, such as *Granada Imedia*, fosters UGC. Residents from city neighbourhoods can contribute by sending their own news stories and pictures.

Infolibre launched the section "Actúa" where users might propose campaigns that *Infolibre* will eventually support and publish if editors think they are worthwhile. In the sections "Biblioteca" and "Videoteca", *Infolibre* promotes books and videos that are

recommended by members. Also, the media outlet hosts chats with newsmakers or the editor for members. *Infolibre* also provides users the chance to publish their own pieces in the section "LibrePensadores".

Other initiatives are based on personalization of content. For example, *El Confidencial*'s weather's app is personalized upon data provided by each user. *Revista Don* provides a quiz game that, according to the user's answers, generates original content. *Vis-á-Vis* introduced interactive maps that gradually expand according to each user's interest.

Some activities are geared to foster the medium's transparency and accountability to their readers. For example, *ElDiario.es, Civio* and *Qué hacen los diputados* allow users to download their annual report of incomes and expenses. All of them also ask readers to contribute financially to their projects.

A variety of initiatives tap on users' curiosity and interests. *Sport You* implemented a section so that users might vote for their preferred sports dailies, including their own. It also included a quiz about the performance of soccer players. *Vizzuality* developed the section "The evolution of the Web", where screenshots of the different versions are provided by users. Finally, *Ara* launched an initiative to foster users' participation through stories about business projects in Catalonia that have been successful.

Innovations in organization

A few initiatives show that internal organization is opened towards users' participation. For example, *La Marea*'s readers who are

members of the project and support it financially might take part in the decision-making process about editorial content. Also readers of the *The Objective* are involved in the creation of supplements that cater for their tastes and preferences.

Innovations in product

We have identified 31 product or service innovations that help promote user participation in 14 of the 20 most innovative journalism initiatives (Table 2). Not all of these innovations involve direct audience participation, but they do promote engagement. This factor creates a link between the user and the brand, and in the long term it increases the user's interest in participating (Napoli, 2011).

The product or service innovations that increase direct user participation can be grouped into four categories: a) the media outlet's presence and promotion in social networks, b) the creation of gamification narratives that promote consumption or direct user participation, c) innovation in the comments system to create a better-quality community, and d) user involvement in the production process (crowdsourcing).

Having and managing social network profiles can no longer be considered innovative. However, certain media outlets use these channels to promote the participation and engagement of their audience. For example, *Vis-a-Vis* magazine integrates its Spotify profile to enrich the user's experience and content. In addition, readers who use this iPad application can subscribe to the music lists the magazine suggests as well as comment or listen to them. RTVE Lab has also experimented with social networks in order to

ascertain the degree to which users follow events such as the Goya Awards ceremony or the Eurovision Song Contest.

Stories that are shared in an innovative manner promote audience participation because the narrative can be followed in accordance with user interests. For example, *Vis-à-Vis* magazine has used gamification in certain articles in order to offer contests or challenges that involve users. This means that readers must focus on the content and answer the questions related to the story. *Don* magazine published a graphical story that gave readers several routes in order to receive a prize. *Acuerdo* magazine did something similar in a multimedia story on the Srebrenica massacre.

The comments section is clearly a key resource for promoting audience participation. The innovations identified in these media outlets strive for user involvement with two goals: a) to build a community that is more participative, and b) to have higher-quality and more respectful discussions. For example, the *El Confidencial* lists the five most-voted and most-read users at the top of certain pages. *Vizzuality* allows users to comment the infographics of certain applications. *The Objectiv*e integrates Facebook profiles in its comments section, making it easier to comment and also eliminating the registration system. *Eldiario.es*' site also creates a comments hierarchy and gives greater importance to its members by visually highlighting their texts and allowing them to vote other comments.

Audience participation is also evident in their involvement with the journalistic production process. Crowdsourcing is a common phenomenon that is present in some Anglo-Saxon journalism projects (*The Guardian, The Texas Tribune, Propublica, The New York Times*). In Spain, this philosophy is present in certain initiatives

carried out by Fundación Civio, Lab RTVE and *Vizzuality*. For example, *Vizzuality* has developed a software application that allows users to create their own maps. *Civio* asked users to help build power relationships between politicians, business owners and the media. *Eldiario.es* also requested the audience's assistance in screening certain data regarding the Bankia financial scandal.

Media	Number of innovations
El Confidencial	4
Infolibre	2
Panenka	1
Revista Don	2
Civio	2
Jot Down	1
RTVE Lab	6
La Marea	1
Vizzuality	4
Acuerdo	1
Ara	1
Sports You	1
Vis-á-Vis	4
The Objective	1

Table 2. Number of product innovations related to audience engagement

Innovations in commercialization

Innovations related to commercialization focus on using user participation to generate new revenue sources and to build customer loyalty. *Vis-a-Vis* is a free magazine for iPads that is financed with

advertising revenue. *Vis-a-Vis* ads are designed using interactive stories that allow users to play with ads. This innovation has made it possible to increase reading and attention times, which are extremely valuable when selling advertising space. *Don* magazine has also experimented with innovative resources aimed at improving its advertising offering. For example, it allows users to download celebrity facemasks so they may play with them.

The study reflects that it is increasingly important to organize events in the media in order to create alternative revenue sources. These meetings between journalists and users promote audience participation. *Infolibre, Eldiario.es* and *Naukas* have organized activities that integrate members of their community with journalists and readers. Arranging meetings with the media outlet's founders increase engagement and can sometimes result in potential new revenue sources. *Civio* and *Politikon* have also carried out these types of innovative activities. The satirical magazine *Mongolia* has made the most progress in this area with the production and launch of a musical tour that has visited a number of Spanish cities.

In this regard, events also help promote the media outlets' transparency. Subscribers value knowing how the company is managed and how their contributions are spent. This is why publishing financial statements in an entity's website in an open and transparent manner also helps boost user engagement. A good relationship between a media outlet and its audience affects production and distribution. In this regard, *Infolibre*, *Eldiario.es* and *Civio* are the most active cases. They publish their financial statements and provide information about their funding in order to improve their brand image and to build the loyalty of subscribers and benefactors.

Media	Number of innovations
El Confidencial	3
Infolibre	1
Panenka	2
Revista Don	1
Civio	1
Jot Down	1
El Diario	2
RTVE Lab	1
Politikon	1
Naukas	2
Acuerdo	3
Mongolia	1
Vis-á-Vis	2
The Objective	2

Table 3. Number of innovations of commercialization related to audience engagement

Conclusions

The quality of journalism can be increased if media learn how to benefit more efficiently from the expertise of users by letting them participate in the journalistic process. Both the demand for more participation and better representation point out a public need to expand the democratic mandate of journalism. These changes in the relationship between news and the news user support a claim for a different organization and understanding of news.

Audience participation has become an essential phenomenon in the management of contemporary media outlets. The industry

believes that it is also important to find new ways of integrating readers in the media in order to strengthen their brand's image in a scenario that is saturated by social networks and the superabundance of information. On the other hand, users demand a more decisive role in the selection and distribution of content since they have become accustomed to these activities in social environments.

Innovation can cover various facets of the journalistic process, which means that it can be studied according to how it transforms the service that is offered, the production and distribution of content, and how it affects the organization of the work or the commercialization of the final product. The concept of innovation that is used in this study is based on the need to find original solutions that focus on users rather than the introduction of technologies.

The method used has made it possible to gather a number of innovative initiatives aimed at improving or increasing audience participation. Within the global framework of the study, the results suggest that audience participation is one of the areas in which the most innovations take place, although they are not directly related by default. Among the selected cases, it can be confirmed that the most innovative media outlets are also the ones that make the strongest effort to involve users in the journalistic, production and distribution processes, as well as in the final product. The analysis matrix contains innovations that are directly related to audience participation, such as the production interactivity used in crowdsourcing or improvements made to the comments system.

Product or service innovations allow readers to have a more relevant view of their role in the media outlet. Media outlets can take

advantage of these types of innovations by using social networks creatively, by applying stories that involve users more actively, or by using comments systems that are more elaborate. Creating meeting points that strengthen a media outlet's sense of belonging to a community helps improve audience engagement.

Further research is needed in order to expand the reach and depth of our analysis in a longitudinal study, which would allow measuring the effectiveness of the participation strategies in the selected media over a period of time. Also, conducting interviews with journalists responsible for engagement with users would allow significantly increasing the quality of our findings.

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Part II

CHALLENGES ON JOURNALISM EDUCATION

INTEGRATED JOURNALISM IN EUROPE, WP4: PUBLIC REPORT AND RECOMMENDATIONS

Asbjørn Slot Jørgensen

(Danish School of Media and Journalism)

Introduction

A large number of best-practice models of integrated journalism courses were selected, analysed and presented – as the Work Package 4 component of the IJIE project. The courses derive from a large number of European universities. The WP4 was mainly targeted towards the primary beneficiaries of the IJIE project, in particular teachers, academics and researchers in the field of journalism, with the aim of improving and enhancing teaching in crossmedia and integrated journalism. The aim with the output of Work Package 4 –and of this chapter– was to share inspiration and ideas among European universities and journalism schools.

This chapter serves as an introduction to (and an abstract of): a) a series of model courses, and b) a pool of very concrete tipsheets, all of which were selected and evaluated by members of the IJIE consortium.

In 2014, the previous work package (WP3 of the IJIE project, had as its main output the State of the Art report and its recommendations (the *10 Tips Guide*). The WP4 expanded and developed the findings and recommendation in that report by establishing a range of hands-on and realistic tipsheets from our own teaching experiences, along with the description of selected model courses from other universities and journalism schools. As such, this report can serve as a catalogue of inspiration, including relevant tips and teaching material.

The tipsheets and model course descriptions are available in their entirety online, including links and contact details. Although the IJIE project officially finished by the end of June 2015, we expect these resources to remain prevalent and even to be further developed and shared after this deadline. Headlines from the findings and suggestions include:

- Large cross-platform newsrooms of 70-80 students
- External partnerships and university publications
- Motivation and learning: the power of media related topics
- Newsroom design – the physical space for teaching integrated journalism skills
- Collaboration: group size and group composition
- Entrepreneur-ship and intrapreneur-ship – competitive and real-life
- Social media: the new ethics
- Social media – professional profiles for journalists
- The journalism teachers' professional development and commitment

- Computer programming – anarchy, and shortcutting the system
- Event-based teaching

This chapter first describes the objectives of the project and the Work Package 4, as well as the approach applied to our work. Then comes introductions to the tipsheets and the model courses – and samples from the material. The next section describes new issues that have arisen from this process, as well as limitations and problems encountered. After that follows a section that summarises our findings and provides suggestions for the future. And the last section mentions some planned future activities.

Objectives of the project

It is a basic assumption throughout the IJIE project that

> "Higher education institutions should actively research and promote new dynamics and innovation in the newsrooms, in order to train a new generation of 'integrated journalists'. Young versatile journalists should be competent to work cross-platform, to control production processes, to proceed with the news coverage with any tool that can be carried in a backpack, and to edit material choosing the most appropriate language for each kind of information" (from the IJIE Progress Report, p.6).

The IJIE project has among its overall objectives to:

- Provide proposals for a true simulation training in college

- Propose different integrated journalism models for different universities and companies
- Achieve greater business involvement at college level
- Develop educational materials to promote the integrated newsroom model

In the line of the four main cornerstones of the IJIE project –media integration, professional simulation, bonds with media companies and internationalization– the Work Package 4 was designed to focus on preparing *materials, exercises, and techniques* to include these key ideas into the university curricula.

A pedagogical approach should be used to "develop themes, materials and exercises that will produce an optimal professional environment inside the classroom. As if they were in a real multimedia editorial department, students will have to improve several skills that will be required in the journalism world" (from the Project Document, p. 60).

Approach

The target groups, as defined in the original project description of the IJIE project, range from specialised academics to European NGOs and the broader public.

For Work Package 4, it was decided to focus on the *teachers and academics* as our primary target group. This was not to exclude other target groups or beneficiaries, but rather to collect and produce material with depth and of a quality that could be directly applicable or at least useful for the primary groups – with the possible result

that we maybe actually reach more target groups better than had we applied a broader approach. With this in mind, and with an eye to the limited time available, the IJIE consortium partners decided to work along two parallel tracks.

Track A was designed for collecting a pool of interesting sample courses supplemented with course materials and a structured and usable description. The selection of sample courses was based on the partners' work with two previous IJIE work packages (these work packages 2 and 3 are a database of journalism curricula in universities and other institutions of higher educations all over Europe; and a State of the Art report about research, literature and stakeholders' views concerning integrated journalism). Expected output from this track A: A catalogue of ideal lesson plans.

Track B was designed for testing the recommendations from the Work Package 3 State of the Art report, and for applying these to the IJIE project partners' *own* course elements or procedures. Expected output from this track B: Concrete examples and results to offer with or as an extension of the WP3 recommendations.

Concerning discussions of and approaches to availability of the material: As responsible for the Work Package 4, the DMJX team had suggested to the project partners that as much as possible of the WP4 work should be made public. The consortium agreed with this suggestion, which is in line with the IJIE project document's (p.33-34) statement regarding the availability of the project results:

> "The project outcomes, including the guides, web platform, training material, library of activities, lesson plans, will be part of its legacy, as they will be available for use beyond the

> project duration, addressing the wide educational, academic and research community".

This approach should enhance the probability of a life cycle of the project results going beyond the project period (IJIE project document, p.34):

> "From the educational point of view, the project outputs, i.e. methodology, web-platform and workshops experience, will be integrated in the participating universities and can be useful for other journalism teaching centres.
>
> The guides … [will be spread between journalism] studies centres to improve their relationships and European journalism practice".

Highlights and examples

This section highlights the content from some of the above mentioned course documents and tipsheets, and briefly describes its relation to the recommendations from the IJIE State of the Art report (the so-called 10 *Tips Guide* from that report). The numbers and titles in parentheses refer to the specific content as displayed on the website "learning.euromain.net".

Track A – the Model Courses

Models for external partnerships and for university publications

The model course from Porto (A-11) is selected as an example of how several projects and the media outlets at the universities become a single area of study, connecting experience with academic work. Students can train the work as editors and multimedia journalists in the faculty and gain experience by using cameras/microphones, which they might have missed during class. They function as content providers for the faculty's own media (JPN and JPR).

The course from Barcelona (A-12) similarly uses university publications, but also has as a key component its university-industry links: as part of the integrated newsroom course, the students' work is published by media companies: *El Punt-Avui* newspaper, *Barcelona-FM* radio, *VilaWeb* online paper and *Barcelona TV* under one common brand, "Cetrencada".

Large cross-platform newsrooms of 70-80 students

However chaotic and unmanageable it may sound, they exist: classes of 70-80 students working simultaneously in the same newsroom with one editorial team. In Oslo, Norway, and Barcelona, Spain, we find these examples.

The example from Oslo (A-20) focuses on students from the start of their journalism education and provides them with the tools to produce journalistic stories for the school's web/news site "Journalen". In this course, by the end of their 2nd semester, 70

students work in groups in a coordinated newsroom setup of online journalism with text, video, audio, photo. They work with global press issues with a local focus.

The course from Barcelona (A-12) focuses on 80 students during a full academic year and their work in a workshop that simulates the operation of a professional integrated newsroom with a multidisciplinary and transmedia perspective. The input of manpower is considerable; there is a coordinated team of 20 teachers coming from both academia and the media industry.

How coverage of media related topics seems to improve commitment and results

Motivation is a key factor for a successful learning environment. When journalism courses involve simulated newsroom work, this motivation is influenced not only by the skills learned, but also by the topics chosen for the newsroom simulation work – with media related topics as a possible shortcut to reaching a high level of motivation. This is among the strong features shown by the Oslo course (A-20). In their journalistic work students are in contact with real people, coping with the conditions of *press freedom*. The BKF Hungary course (A-16) aims at multiplying the multimedia experience by using *social media* not just as a platform, but also as a subject of the reporting.

Newsroom design – the physical space and the workflow

When teaching integrated journalism skills, the design matters: design of the room and design of the workflow. Physically

working together over a long period of time develops specific competencies.

As seen in the model course from Göteborg Sweden (A-18), in the last week of 12 intensive media weeks, the 40 students enter the Media House together –as "professionals" – and have learned the importance of cooperation for a collective media product.

In the CFJ Paris course (A-15), the technical design of the classroom is important but not decisive; the last weeks of the newsroom workshop are organised around the competencies where each team is in charge of one activity - abandoning the classical one where journalists are specialized by thematic areas.

Track B – Teaching Tipsheets

The tables below introduce some of the *different tipsheets* developed by the partners in the IJIE consortium. The tables also show the link from each tipsheet to the *10 Tips Guide* recommendations, and indeed some of the *bonus topics* touched upon in the different tipsheets. The titles and numbers in the centre column refer to the online versions available at "learning.euromain.net".

The recommendation no. 1 from the *10 Tips Guide* is about common editorial projects, internal and external – and collaboration between students with different skills.

Keywords	Origin and title	Picks from the tipsheet
Video/ visual journalism, and handling modern 1-man equipment	UBB, Cluj, Romania: B-35: About Videojournalism - Storytelling, Tools and Techniques	Quality levels: "Teach them to decide if [a piece with bad sound or pictures] is of major content value. Otherwise, don't use it". "Quality makes the difference between a video journalist and an amateur. Quality sends better messages". Teaching focus: self-confidence: "This course is basically about self-confidence. The major outcome of this course is that students are being taught to make decisions on their own, to be bold and innovative based on a thorough understanding of capabilities and limitations of technology ... Getting the best outcome in the given conditions". Providers of visual content: "This course has the purpose of preparing students to work as complete providers of visual content, as producers, writers, photographers and video editors on their own. This is becoming more and more common, as more content is demanded by the internet, rather than TV".

The origin of the IJIE project; a model experiment for teaching trans-media journalistic work	UPF, Barcelona, Spain: B-31: Transmedia journalism, or when 1+1+1+1 = 1	Mindset more important than going all-in: Although having very modern equipment and resources installed, UPF still has a disclaimer: "Don't try to go all in, when there are not enough resources. Just start with bi-media. One traditional/legacy media with internet". "What is important is to prepare the mind-set of future graduates that they might work in any media". Do or disappear: "We do not know at which pace this process will evolve. But what we do know is that, in the future, the journalists' work will either be versatile or they will cease to be journalists" (quote from the instructor). About the physical space: It is recommended to occupy the same physical space (integrated newsroom), which can help students and teachers take advantage of synergies of multiplatform distribution and basic editorial coordination.

External media and integrated journalism – working with news agencies	UPF, Barcelona, Spain: B-33: Agreements with external media companies	Create bonds and stimulate: Engage external media to publish students' work and to help create bonds between the industry and the university in order to stimulate production and innovation. Advantages outweigh problems: One of the main "critiques" is that when you have the pressure to publish in external media that you must comply with the expected delivery times, and you therefore may miss some of the teaching and learning opportunities from a slower rhythm; however, the advantage remains in the high motivation and the readiness for work.

Point **no. 2** from the *10 Tips Guide* recommends giving more attention to new journalistic principles in the light of technological change and new devices. This point also asks for balance between journalistic fundamentals; a good general knowledge in social sciences; technological skills; and practical on-the-job training.

It is followed by point no. **3**, which recommends updating professional charters so they can cope with new deontological stakes; this is crucial to journalism training as soon as students are encouraged to use new tools which question the fundamentals of journalism.

Keywords	Origin and title	Picks from the tipsheet
Ethics in Social Media use	Paris 8, Paris, France: B-38 - Ethics_Social Media	This tipsheet lists a range of questions and decisions the journalism teacher must consider when having the students work with social media – either for their research or with their own profiles. The recommendations indicate some mistakes to avoid, but may also assist journalists and journalism students in minimizing conflicts of interest and/or pressure.
Professional social media profiles	DMJX, Aarhus, Denmark: B-40 – Social Media Profiles	Understand the transition: Journalism students must understand the necessary transition *from* a private and carefree individual *to* the public role as a journalist. Implement in parallel: Set up the teaching so that students can implement professional social media profiles parallel to the lessons. Events (e.g. sports events) are excellent playgrounds for this, using social media dialogue in the coverage of something limited in time and space. Hard work for journalism teachers: You don't have to pioneer ahead of everybody. But you must be a professional social media user yourself and if you are, students will openly appreciate it.

Ethics in news workshop production	UPF, Barcelona, Spain: B-32: How to introduce ethic competences in multimedia/ transmedia courses	Preserve the credibility: Due to the potential loss of credibility among the students' publication audience, there should be a priority and a scrutiny on the items to be posted. Select some events that can be covered live and follow them together with the students. Assess all credibility and authorship elements during the process of publishing.

Point **no. 5** in the *10 Tips Guide* is about the relations between journalism schools and external stakeholders – and new links with non-media professionals associated to NGOs, associations, and social networks. Today, ordinary citizens, political activists or amateurs are also producing the news. Surprisingly, participatory journalism or the development of social networks are thoroughly investigated by researchers, but are not necessarily part of the teaching agenda.

KEYWORDS	ORIGIN AND TITLE	PICKS FROM THE TIPSHEET
Amateur content vs. professional content	Paris 8, Paris, France: B-39: Amateur Content: fact checking, metadata, document value; security of the informant	This tipsheet synthesizes some of the main principles when dealing with amateur content in journalism teaching: 1. evaluating the informative value of amateur web content; 2. checking the authenticity of photos and videos; 3. maintaining the security of the informant. The question toward our students is to ask if ethical standards are determined by a specific technology or new concurrent actors, or if these standards have to be the unchanging centre of the profession.

In point **no. 7** of the *10 Tips Guide,* it is recommended that future journalists should be given information about the new business models: self-employment is becoming the standard, and entrepreneurship is an important value.

KEYWORDS	ORIGIN AND TITLE	PICKS FROM THE TIPSHEET
Innovation and entre-preneurship – ideas that could break through	UBB, Cluj, Romania: B-36: Live web projects	This tipsheet points to very ambitious goals: Encourage students to come up with new ideas that may break through the traditional types of content/ distribution and reach new audiences. Apply competition: Teams of up to 5 students compete with live web projects over the course of two months. The aim is to make the students understand what the important elements for a web project are in order to be able to turn into a business.
Entre-preneurs and *intra*-pre-neurs: turn ideas into plans	DMJX, Aarhus, Denmark: B-41: Entre-preneurship training	A double purpose: 1) Prepare students to establish their own business, being entrepreneurs; 2) Prepare them to act as innovators inside existing organisations as intra-preneurs. "The most important aim is to change the mindset of the journalism students – get them to a point where they agree that they must develop the profession" (Quote from instructor). Tip-of-the-day: real-life project pitching: Open pitching in front of students and teachers, and a panel – this is a highly motivating and rewarding method. It is regular pitching-training, but it also improves the concepts and the final submissions.

In point **no. 8**, the 1*0 Tips Guide* suggests that the teaching of code (programming) should be generalized, so students have more autonomy and that collaboration with IT students should be encouraged.

KEYWORDS	ORIGIN AND TITLE	PICKS FROM THE TIPSHEET
How to teach coding to journalism students	UBB, Cluj, Romania: B-36: Teaching coding and functionality design	A range of very concrete tips, like: Teaching actual programming to students with a background in journalism is not very likely to happen but they can learn web design and web content management. Do not expect them to learn coding syntax, but rather to be able to find information on it when it is needed. The greatest challenge is perhaps convincing students that they should not shy away from the "trial and error" approach. Here, even a little anarchy is recommended: Avoid using institutional hosting and subdomain names for live projects (so if the university's servers or IT-regulations may cause restrictions to the students' projects – find solutions elsewhere!).

In its point **no. 10**, the *10 Tips Guide* propose an annual European conference of journalism schools centred on the training of journalists in a digital technological environment, held for staff, journalists, and researchers from different countries.

Keywords	Origin and title	Picks from the tipsheet
Gathering students, media and academia 'Assises du Journal-isme'	Paris 8, Paris, France: B-38: 3 groups, 3 days, in one place	The French 'Assises' conference provides concrete ideas for an international conference. For example: Bring in the citizens, too! "The public's confidence crisis with the media can only be resolved with the public, so dialogue between journalists, publishers, and citizens is important" (quoting one of the initiators of the tri-partite conference). Create awards: This initiative offers real visibility on the work of researchers and journalists and can expose the best practises.
Teachers' confer-ence on Integrated Journalism	DMJX, Aarhus, Denmark: B-42: What teachers expect from con-ferences	A survey done among journalism teachers – all of whom participated in the 2014 version of the biannual Nordic j.-teachers' conference – show high interest in attending an international seminar focused on teaching the elements of integrated journalism. There is a particularly high interest in ethical issues, visualisation; web video; social media integration; and in the impacts on didactics and possibilities for teaching methods. The respondents consider themselves busy people; such a seminar should last no longer than 2 full days, and should preferably be in their own or a neighbouring country – and they ask for participants and presenters to be working journalists or teachers with industry experience.

Deviations, challenges and solutions

This section will describe a few deviations from the original project plan, as well as how we handled some of the challenges occurring throughout the duration of Work Package 4 – from April 2014 and until June 2015 when the entire project ended.

Deviations from the original project plan

As described in the Project Document (p. 60-62), the foreseen deliverable from WP4 should be "a lesson plan and activities for practicing four media types (TV, Radio, Press and Internet) and the interaction between them".

A first release of the lesson plan should be tested in each university partner, and also in the WP6 Pilot Week, and after this testing "adapted and corrected in order to achieve the planned objectives". Then, the lesson plan should be released to the public. The consortium decided to adjust and enhance this rather rigid one-course-or-nothing-approach. There are a number of reasons for this change:

a. <u>The findings from earlier phases of the IJIE project:</u> It was anticipated – for all good reasons – that the WP4 and its pedagogical framework should build on the previous work packages. This sequence of work was also described in the project document. The WP2 (the Database on journalism teaching in Europe) showed a very broad range of existing approaches to the teaching of integrated journalism skills, which deserved

to be further investigated and shared. Furthermore, the WP3 (the State of the Art report) recommendations are much more subtle and diverse than what can be implemented in one single course manual, which called for more implementations (and more refined), and for testing of these tips.

b. Timing of the project's activities. With only a few weeks to design and start the specific course, it would not have been possible to have the course plan approved as part of each member university's curriculum. Instead, with the chosen approach, more sub components have been tested, developed and/or described (This work is still as of fall 2015 on-going in the different partner universities, as an exploitation spinoff or benefit.)

c. The diversity and different demands of journalism teaching and universities: Each journalism school or university has its own profile, its own position in the educational landscape, and its own relations with the media industry. One size doesn't fit all; this was proven early on in the project period just by the differences between the five IJIE consortium members, all of which have very different profiles. In probably very few cases would it be possible to transfer a course plan directly and fully; one can just imagine the issues of language and literature/readings. Instead, we have tried to showcase different options, and have tested components of the courses.

Challenges during the process

From the very start of the actual work with Work Package 4, we (the DMJX team responsible for the work package) experienced delays and the need for changes to the expected timeline. This affected the preparation leading up to the consortium meeting in October 2015, which took place in Cluj, Romania. However, the consortium partners unanimously agreed on the model with the tracks A and B, and signed up for specific tasks and elements to deliver. Also, the Romanian consortium partner offered to structure the actual online presentation of the WP4 material.

However, delays and cancellations occurred again. The last project meeting and bilateral talks over the WP4 were held during the Pilot Week in Barcelona, March 2015, and here the work package leader presented the status and assessed that the output by the end would contain fewer elements and of a lower overall quality than what was the confirmed ambitions nine months earlier. The consortium accepted the plan for the finalisation of the work, and fortunately, the final output in June was much better than anticipated in March.

Along the way, the internal and external consultants linked to WP4 showed flexibility, and by June, the web server was up and running again, and the online presentation work could be completed by the Romanian partner.

Conclusions and suggestions

It is not possible to make one single conclusion or present one overall recommendation based on the Work Package 4 - Pedagogical

Framework. The *tipsheets* and the *model course* descriptions cover a broad range of issues and deliver a wide variety of tips – see the website http://learning.euromain.net and the documents there. Nevertheless, besides the detailed recommendations in these documents, we did establish other proposals and ideas to further develop these courses and concepts.

Need for teaching material and textbooks

When evaluating the pool of model courses, it occurs that there are only few regular textbooks available for these courses. This can be due to the fact that the integrated newsroom and the crossmedia journalist are still relatively new concepts with a very high frequency of reasons to alter or make adaptions to the content – a frequency higher than what fits the realm of scientific research and textbook writing. Language is also an issue here; English as a "lingua franca" does not always work, and hence publication of textbooks is limited to the markets defined by the European languages. For consideration:

- Share teaching material directly between journalism departments and journalism schools, or even between individual teachers.
- Develop textbooks together, across languages.
- Encourage new formats for textbooks: online books, tipsheets, wikis, etc.

More discussions on physical space, group sizes, and classrooms

With a view to establishing the optimal learning opportunities for the students, it seems important not to forget the elements that construct the learning environment. Some dilemmas:

- Designing the physical classroom/newsroom is important and expensive – and the optimal solution may look different next year!
- Test new models of group work, but remember that virtual is not everything; being in the same room working on a common task never goes out of fashion.
- University requirements are "so last century"; the requirements collide with contemporary media models and work modes. For instance, how will a student be assessed if submitting a super relevant twitter conversation for a school assignment, when the requirement of the assignment asks for a 1,500-word essay?

Make cross-country courses of 1-2 weeks

In March 2015, a 5-day course on integrated journalism was conducted as part of the IJIE project. It took place in Barcelona with participating teachers and students from all five partners. This Pilot Week was also meant to implement some findings and suggestions from the previous IJIE elements – about teaching integrated journalism skills. Obviously, that setup is totally different from regular courses: foreign language, unknown place, diverse background and uneven levels.

However, there is great potential: both the students and the teaching staff gained from working across nationalities, background, languages, traditions, and they experienced different teaching styles, new forms of working, new research standards, and different approaches to the profession, all of which allowed them to gain valuable knowledge. The proposal is: establish international training courses! Maybe like this:

- 1 week in duration with students and teachers from different countries.
- Mix of lectures, field trips and newsroom work
- Clear topical focus (e.g. migration, pollution, education, young workers), and maybe a specific platform/format
- Topics and publishing platform prepared beforehand
- Partnership with local media/NGOs
- Economy: Erasmus support, private housing, own staff.

Some unanswered questions:

- How to recruit? ECTS points or not? Holiday or semester? Who pays the staff?

The teacher's role; challenges and a new mind-set

The changing role of the journalism teacher pops up several times in the model course descriptions and within the tipsheets.

- Teacher or instructor?
- Guide, coach, motivator, innovator?

"Changing the mind-set of the students" is mentioned over and again as an aim. In accordance, it is also about "changing the mind-set of the teacher": Admitting our own doubts, experimenting together with students, accepting new formats, exposing our personality on social media.

Events + cross-media + journalism students = great combination

Events seem great for training integrated journalism and new/cross-media: elections, sports matches or other sporting events, music festivals, exhibitions, conferences, camps. Why so? Activity planning is possible; events are delimited in terms of time and place; there is easy access to sources; the target group is clearly defined – all in all, a safe playground for journalism students (and journalism teachers alike).

Send more money? No, send more entrepreneurs, please

Here, there appears to be lots of room for improvement and further development. Some proposals derived from the WP4:

- Make the teaching environment competitive.
- Issue awards, prizes, etc.
- Work real-life, not just as a lab or simulation.
- Compete against the industry.

And send some intra-preneurs, too.

Don't forget the intra-preneurs; those capable of developing concepts, ideas, products inside a company, without necessarily having to deal with the money and fundraising.

Let's meet - again

It was said already in the WP3 comparative report (the State of the Art – *10 Tips Guide*): Establish international seminars and conferences for journalism teachers and researchers about issues related to crossmedia and integrated journalism teaching. The recommendation was enforced in WP4 through our survey among journalism teachers from the Nordic countries (see the tipsheet).

Future activities

A large number of best-practice models of integrated journalism courses from a large number of European universities were selected, analysed and presented. The WP4 results are mainly targeted towards the primary beneficiaries of the IJIE project, in particular teachers, academics and researchers in the field of journalism, with the aim of improving and enhancing teaching in crossmedia and integrated journalism.

The external evaluation of the project points out that these model courses are highly relevant, up to date, state of the art courses. But communication and dissemination is needed to raise awareness of these resources. Hence these activities:

- The products and report derived from WP4 are all available publicly online.
- Information has been distributed to all consortium partners, to allow staff to implement changes for the benefit of students at these institutions.
- Additionally, information about these resources has been distributed to all contributing universities.
- Results and findings have been presented locally, and at the IJIE conference in Barcelona, June 2015.
- For a smoother dissemination, key findings and recommendations from the WP4 have been translated into five other languages (Catalan, Spanish, Danish, French, Romanian).

Looking forward, some additional activities are foreseen:

- The European Journalism Training Association (EJTA) has confirmed its interest in dissemination of information about the WP4 and other project findings.
- The plan is to publish articles on the EJTA website, and to have presentations at the upcoming EJTA conferences. This way, a significant share of Europe's journalism schools and journalism departments at universities will be reached.
- A proposal for sustaining and further expanding the WP4 catalogue of best practice courses will be presented at the board meeting in The European Journalism Training Association (EJTA) in the fall of 2015.

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BROADCAST-ONLINE INTEGRATION AND LONG PRODUCTION CYCLES: A SENIOR-YEAR EXPERIENCE IN JOURNALISM SCHOOL

Samuel Negredo, Bienvenido León & Avelino Amoedo

(University of Navarra)

INTRODUCTION AND METHODS: PRACTICE-BASED RESEARCH ABOUT AN INFORMAL TEACHING COLLABORATION

Solidarios: ayuda que cambia vidas[23] is an open-ended online documentary series with extra interactive content. It is the result of the informal collaboration programme between the *Television production* and *Digital media editing* courses. They both belong to the first semester of the senior year of the degree in Journalism of the School of Communication at the University of Navarra. The site showcases stories of people that work together to improve the lives of others, and about people whose lives have changed thanks to the help of others. Starting from their testimonies, which are collected in five-minute video packages, online extras allow users to go into detail about many faces of society in Navarra, with data, images, additional cases, and ways to take part and act.

[23] https://solidariosdoc.wordpress.com/

Practice in the senior-year television course is based on a long cycle, as each group of students develops a short documentary film during the term, whereas during the first three years it has been offered, *Digital media editing* has comprised two short-term tasks with pre-fixed topics –which have no relation with the *Solidarios* project–, and a longer-cycle project with a free choice of formats and topics, which can be related to the documentary. The *Radio production* course, which is planned to be incorporated to the *Solidarios* project from fall 2015, has been designed up to now around the idea of daily cycles, which are repeated one morning every week for each workshop group.

This article presents a form of practice-based research (Candy, 2006), in the sense that the authors have been, and are, involved in the development and production of the artefact described in the first paragraph. But the artefact seldom explains itself; it needs to be contextualised, and in the following pages we pay more attention to the teaching and learning process, to the dynamics and the organisation, rather than to the final, static, published work. Information was collected by means of participant observation, with the authors leading the project from its inception, not immersing themselves in the case mid-way through its development, but driving it as educators, by guiding the work of students in classes, tutorials and e-mails. These forms of contact provided information that we use here on background only – in an indirect way. Apart from the time working with students, opportunities for gaining perspective and reflecting on the project were provided by the preparation of the materials and the ways to communicate it to the class; the coordination and assessment meetings among the teaching staff in

each course, and the editing and management of the site. As part of these activities, the authors-lecturers generated documentation, which has also been useful for reconstructing and explaining the project.

The first-hand experience provided by this kind of practice-based research, and the knowledge generated by it, is very valuable, but it needs to be compensated with a necessary exercise of the authors distancing themselves from the experiment, in order to decrease subjectivity and partial views. Theories about media convergence and studies on cases of integrated journalism provide the concepts, categories and overall frameworks for a more structured and comparable analysis, and perspective is also gained by separating the teaching stages from this exercise of reflection. The production of each season[24] of the online documentary takes place entirely during the fall semester, and even if the project is in progress and expansion, accumulating content and trying to introduce improvements in teaching year after year, this piece of research and evaluation has been conceived once the first two seasons have been completed and published, and when plans have been laid out for the third year of the collaboration –the first year, in the case of the radio course–.

The purpose of the project is experimental, and therefore it includes a mission to innovate; that is, to create a viable alternative that will solve a problem of fragmentation of the study plan, or to put it differently, to give students the chance to bring some unity to the time and efforts that they dedicate to learning by doing, with

[24] We understand by *season* the set of video episodes and corresponding online topics produced by the students each year.

an aspiration to improve their focus on the practice of skills-based courses, and to help them learn something about multi-platform coordination and multi-skilling along the way.

There is also an aim to bring the online, television and radio journalism workshops closer to the real-life profession, and that, in journalism, entails publishing the students' work for access by the broader public. This can be done in collaboration with professional media, which brings clear motivational outcomes, for instance in Pompeu Fabra University's *Integrated Journalism Workshop* (Da Rocha & Singla, 2014), or directly by the School, as is usual practice at the University of North Carolina at Chapel Hill,[25] and in a number of other academic institutions worldwide (Domínguez, 2013).

Next, we put observations of the first two years of the informal collaboration scheme between the courses, side by side with some of the most recent studies about the professional implications of media convergence in journalism, and with the current demands of the news market. After that, the teaching project is analysed under the light of the four areas of media convergence (Infotendencias Group, 2012). Later, quantitative results are presented, and conclusions and challenges are drawn.

Review: the time factor and professional implications of media convergence

As synthesised by Salaverría and Negredo (2009), there are different formulas for media convergence. The first one is section-driven integration, based on multi-platform desks, which remain as units

[25] http://www.jomc.unc.edu/academics/student-work

of specialised content production that cover a broad topic for all platforms, or produce content with a distinctive technique –layout, graphics, data, photos, video…–. The second formula is integration based on the production cycle; that is, to organise teams depending on the pace of work; this can take the form of a news unit focusing on broadcast bulletins and a continuously updated online service, which can be complemented with a multi-platform unit for teams working on programmes with daily, weekly or even longer deadlines, and their online content. The third formula is commercial integration for several platforms or brands –in the areas of advertising sales, marketing, and customer relations management–, with editorial autonomy or even independence for each of the newsrooms.

The risks of the second formula of integration, the one based on the pace of work, as pursued by the multi-platform collaboration project we have put in practice, show up in the words of a "head of the journalist management group" of Flemish public broadcaster VRT, collected by Van den Bulck and Tambuyzer (2013: 70): "Whereas before integration we had a 'Berlin wall' between radio and TV workers, we have today improved cross-media collaboration but we have ended up with a Berlin wall between news and current affairs programmes". The situation was later reverted in that newsroom to "a division according to medium".

In our plan to expand the coordinated workshops, the dangers of overlapping production efforts and competition for the same sources would be minimised in the case of the *Radio production* course –the only one in which two rhythms of work would coexist–, as students working on the bulletins would continue to cover the day's news, which is short-term, perishable content, and the students

working on the solidarity programme would be dealing with different sources and would produce long-term, almost evergreen content.

Dupagne and Garrison (2007: 247) studied media convergence at the Tampa News Center and they wrote that there was an increased sense of community between journalists working for different platforms "in covering both major news stories and routine news". At first, the long-term nature of the work in *Television production* and *Digital media editing* did not allow interactions between them and Radio production, which dealt only with breaking news coverage on a weekly basis; that is the reason why the collaboration started at a scale of two, and that is why changes are now planned for *Radio production,* too.

One of the main features of integrated newsrooms, or even the cornerstone, we may say if we follow popular models, is the multimedia desk or central assignment desk. This does not exist in the case we are discussing, and there is neither a common working space, for the moment. But these physical layouts only make sense when there is a purpose of increasing communication, on a continuous basis, between journalists who were previously separated; this can also be achieved in spite of computer lab walls and office doors, as almost all students know each other very well and share a lot of time together, and informal communication among them can be supplemented with guidance from each of the courses. However, there are plans for this project to incorporate a common class-newsroom, where students will carry out the workshops of the three courses in a coordinated space.

In their study of the Catalan Corporation of Audiovisual Media (CCMA), Micó, Masip and Domingo (2013) confronted

the views of convergence as multi-skilling and convergence as cooperation among medium-specific newsrooms. They stated that "convergence is a void word and clear aims and strategies to reach it need to be defined" (Micó *et al.*, 2013: 135). For the CCMA, a case of convergence that brought together the same kinds of media as in our project –television, radio and online–, Micó *et al.* explained that "the initial plan of the top management already acknowledged that voluntary engagement was the most realistic approach to collaboration between newsrooms" (2013: 132). As we explain later, students are also free to choose whether to participate in the cross-subject collaboration scheme.

Working together while still training specialists

Within the workshops belonging to the *Digital media editing* course, there needs to be a constant re-evaluation of the roles that journalism students need to fill in the *Solidarios* project, because in the current professional environment, media work goes beyond newsgathering and content creation, as shown by the study of the *web* first culture at FT.*com* by Schlesinger and Doyle (2015). This is why, since the start of the course and the project, students had to write a two-page proposal that includes a social strategy for their work and a plan for professional development in the area, including guided self-learning if possible. The acquisition of a richer professional culture is also fostered by the suggestion for students to include in their proposals some references of real-world examples that they wish to emulate.

Although students have their own preferences, we think that academic and professional training in convergent journalism should help them overcome the negative aspects of the cultural differences

associated to each medium, while taking advantage of what each platform does best –depth, access, interactivity, visual storytelling–, for the benefit of their journalistic work.

Lawson-Borders (2005: 17) stressed that "the blending of these cultural dynamics is key to the success of convergence within an organization", but she acknowledged that "because of the production cycle of print, broadcast and the Internet, some aspects of the culture will remain distinctive in each of these mediums". Even if this teaching project in our school does away with print –as there is no specific course for that in the semester when the three other courses coincide–, and efforts are as coordinated as possible, some medium-specific dynamics and cycles have to be incorporated, while still achieving the desirable outcome of having students arrange access to the sources and the collection of news material on the field considering all platforms at once. This would enable them to optimise the time and rationalise the efforts required by these three courses that entail original journalistic work.

It is important to note that convergence in the 4th year of the degree in Journalism at the School of Communication of the University of Navarra means that previously separate media –or courses– come together for the practice part if a student chooses that to happen, but the courses are not mixed in terms of assessment or in how they appear in the study plans. The challenges this brings will be further discussed in the final section of this paper.

Multi-platform coordination among courses at the Journalism School is an opportunity to make students feel that they are acquiring the skills that are specific to each medium, as well as the judgement to make coverage choices among platforms, and

the ability to organise multimedia work in groups. This contrasts with the changes brought by digital convergence in broadcast newsrooms; they increased functional versatility, and resulted in multi-skilled journalists doing more tasks than ever before and, in many cases, elevating their workload and being more individualistic (García Avilés and León, 2003). Even if convergence and functional versatility happen at the level of the student, the fact that they work in groups helps us to prevent that undesirable outcome. The size and arrangements of these groups are coordinated among courses, following the specificities of each area.

Speed versus cooperation and long-lasting content

Immediacy and the acceleration of news cycles are professional realities that need to be covered somehow, even if a choice is made to go for slower cycles in order to make cross-course coordination possible. Journalists interviewed by Zeller and Hermida (2015: 111) "deemed the integration of multimedia content as influencing the public perception of a news organisation". In the words of a journalist working in broadcast media, "it might make us more immediate in the eyes of people". This effect was triggered by interactivity, too. They also mentioned "the accelerated pace and speed of news reporting" as the "key determining factor" of convergence, according to the aforementioned authors.

Usher (2014: 128) wrote in her ethnography of *The New York Times* that "immediacy is, indeed, an emergent and contested value of online journalism", and that "journalists do not know what it means, but they know that it is increasingly ordering how and what they do and that it is essential to the quality and perception of the work they

do", even if the people she interviewed considered immediacy to be an imposition more than a value (2014: 148). In print-online media, "long debate, communal conversation, and lasting stories" (Usher, 2014: 147) are associated with the traditional platform, but there should be room for that even in online-television-radio convergence at Journalism school, no matter the subject.

This coordinated teaching effort is based on the assumption that a kind of journalism that is produced in longer cycles, focusing on telling more complex stories across media, is much more suited for creative teamwork, corrections and tutoring than a breaking news multi-platform effort, even if such real-time experiences should not be ruled out.

Students of *Digital media editing* are made aware of the fact that sites wishing to attract big audiences need to be immediate in their continuous news coverage, besides being truthful, accurate and humane. However, the time allotted for the course means that not every format or genre can be taught, and the flexibility required by inter-subject collaboration means that immediate coverage, such as real-time reporting –liveblogs–, and social media newsgathering and storytelling, should be built into the project, instead of being put into practice separately, as in the first two years of *Solidarios*.

Meanwhile, Christensen, Skok and Allworth (2012: 16) argued that "news organizations should think about how to create value from their content beyond the daily or weekly news cycle". The *Innovation* report by *The New York Times* (2014) identified evergreen content as an opportunity to work on, too. Seemingly opposing trends, such as the need to deliver immediate coverage and to produce long-lasting content, often coexist in the market.

All the aspects of the profession and the trade of journalism that we have discussed in this review section should be considered when designing and re-assessing a collaboration scheme among courses.

Discussion: 'Solidarios' and the four areas of media convergence

The work in *Solidarios: ayuda que cambia vidas* can be analysed from the perspectives of technology, organisation, professional skills and content, which are the four areas of the media affected by convergence (Infotendencias Group, 2012).

Technology

The website at http://solidariosdoc.wordpress.com runs on WordPress.com for content management and presentation. This service is a clear winner in the aspects of cost, administration and durability. It also enables instructors to train students in using features that are basic to *Digital media editing*, such as user levels, workflow, post status, scheduling, categorisation, tagging, and handling pictures and media galleries.

The know-how that students acquire is easily transferrable to managing self-hosted WordPress.org sites, which are popular among undergraduates working on their final year projects or personal portfolio sites, and which also is an industry standard – or, at least, this training eases the path to using a more complex CMS.

The downside of WordPress.com is that to synchronise links to content with specific points in the timeline, a basic feature of

more immersive web documentaries, a later stage of development is required, and that is unfeasible with student involvement within the course because of time constraints: students need time to produce the contents, and the term is too short for adding further stages of development.

Creators can synchronise content with video by using JavaScript-based technologies that require coding, such as Popcorn.js,[26] or they can pick easy and free-to-use web applications like Popcorn Maker[27]. The problem with these tools is that it is difficult to integrate the results in a standard CMS such as WordPress.com, which only accepts embed codes from approved external sites.

As full alternatives to WordPress.com, commercial solutions including Klynt[28] offer a better combination of interactive video units and site architecture, and others such as Atavist[29] specialise in providing tools to build *Snowfall*-like single-page multimedia stories led by text but including video, too. Anyway, these services present instructors with concerns about workflow and licensing for such a big group of students working simultaneously.

This discussion shows that the choice of a digital technology, an aspect that is usually regarded as the one enabling convergence in the rest of the areas of media work, is at the same time very much determined by those other areas: the organisation of the team –the class, in this case–, the professional skills that need to be taught – site architecture and organisation as well as content production and

[26] http://popcornjs.org/

[27] https://popcorn.webmaker.org

[28] http://www.klynt.net/

[29] https://atavist.com/

editing–, and the types of content that can be produced and need to be integrated in the project site –text, photographs, audio, video and charts–.

Organisation

The overall organisation of this project resembles that of collaborative online documentary projects –the ones including user-generated content–, because of the number of content producers involved: instructions and examples have to be given so that participants will follow desirable models, even if, of course, they can come up with new format ideas, too.

One of the principles of transmedia storytelling[30] is that each platform is used for conveying the stories that it can tell best, within a broader story world. The *Solidarios* project, with several groups of students working simultaneously, and new stories being added every year, is only manageable if each organisation or case covered by a group of students is considered to be more or less independent.

If instructors and students looked for absolute coherence in the creative, production and editorial decisions they all make for the videos and the online content that goes with them, the whole *Solidarios* site might be more immersive and the parts would seem to be more connected, but there would be trade-offs, which may compromise the adaptation of the platform to the story and, most importantly for a teaching experience, following a strict model for

[30] The instructors involved are cautious and choose not to apply this term to the project for the moment.

the online extras may affect the students' freedom in choosing the formats they wish to use to develop their content.

Students in *Television production* work on a single video in groups of six to eight people, with specific roles: producer, production assistant, director, scriptwriter, lighting director, camera-person, sound-person and editor. The students in the *Digital media editing* course can choose between developing content for the web documentary, and covering a completely different topic on a news and features blog. This is intended to be managed as freely and voluntarily as possible, with students being advised that at least one person in each *Television production* group should develop related content for *Digital media editing*. Experience suggests that a cap should be established so that there would be no more than three students working on online extras, and only if they present a very clear and broad plan – otherwise, it's preferable to have only two.

The freedom given to students in how they organise themselves in the *Digital media editing* course means that some topics or stories are more broadly supplemented with online extras than others. In fact, two in nine stories in 2013 and one in twelve in 2014 lacked any student-produced online extras, as none of them chose to develop content to go with the short documentary films in the *Digital media editing* course, because they preferred to cover other topics. The video pages for those stories feature external links instead.

The timeframe is actually a little more than two months, with weekly class meetings, and the videos are available only at the end of the term. All this prevents students from working on the final presentation and organisation of the main site. A modest production handbook was put together with the aim of making

students participate in this late-stage task as much as possible: they are asked to publish a final post with the bullet list of links pointing to the contents, and a featured image, also known as thumbnail, that is attractive and represents the story; this may be a frame from the video, or a photograph.

In case interactive versions of the videos were produced, with links to the extras synchronised with video playback, students or the coordinator would need to have access to the script that was used for the final edit, as time codes help with this task. Ideally, students would develop an interactive video script, in which actions are included as an additional column, alongside time codes, images, sound and voiceovers.

Pre-production stages are extremely important for students faced with the choice of what parts of the story or the topic to tell in a television-like format; what issues, angles, testimonies or characters to bring to the radio station, and what data, what narrative and what interactions will be the best to put online.

In the first two years, planning was done independently, in each of the courses, with coordination at the level of the story relying mostly on the students. In the more complex scheme planned for fall 2015, the challenge for the professors leading the three courses, and workshop instructors, is to foster more opportunities for each piece of coverage to have the best possible development in all of the platforms –especially, in those that are more open in nature and allow work in smaller groups or even individually, such as radio, and, even more, online media–. This way, students get to think about the possibilities to tell a specific story in several platforms.

Professional skills

The two courses involved originally in the collaboration, Television production and *Digital media editing*, represented just 9 ECTS[31] (six and three credits, respectively), in a semester in which a standard student takes 30 ECTS. Radio production (3 ECTS, too) is planned to be added to this collaboration in fall 2015, and a change in study plans entails *Television production* being reduced to 3 ECTS from 2016. This makes the load of the block of courses to rise to 12 ECTS temporarily as the third course is added in 2015, and to go back to 9 ECTS –but still with three courses– from 2016 on.

Each course teaches the specific skills that are exclusive to the job in that medium, and other skills, such as news judgement or interviewing, which are transversal. Course contents are designed with an awareness of other classes; because of that, audio and video newsgathering and editing are not taught in the *Digital media editing* course, even if students may produce multimedia content as part of their digital media assessment, and radio and television lectures do not elaborate on community management and social distribution strategies, for example.

For the extra online content, every student and every group may choose the genres, formats and treatments they consider to be more suitable for the people, the topic and the organisation they are covering, depending on the access to personal and documentary sources, and their own skills: the ones they master already and, most importantly, the ones they wish to develop.

[31] Credit units as established by the European Credit Transfer System (ECTS).

Students should be able to see through the boundaries of each course, to apply all these skills to the topic, angle or character they are covering, and ideally, to deliver the work for the course in which it is more appropriate to be assessed. By bringing this sense of unity to the workshop part of the courses, even if class times and spaces are set apart, this simultaneous collaboration during the semester also enables instructors to bring students closer to the experience of integrated work.

Content

Each platform is given its own purpose and complements the others: in the first two years of *Solidarios,* video has been used for telling linear and clearly structured stories, and online extras have come in a variety of formats, trying to add depth, context and usefulness.

Students are told that the videos in *Solidarios* and in broadcast documentaries in general tend to approach reality through specific cases and experiences, and the online medium enables journalists to propose other approaches to the topic they are covering: to delve into the causes and the consequences, the history, the context, the geographic and socio-demographic distribution of the phenomenon, its social impact… and the user is encouraged to go from spectator to participant.

The "Handbook for the production of web contents for the *Solidarios* documentary (Season 2)," an internal, original document that students have access to, includes suggestions to produce these types of content: narrative photo galleries or slideshows; additional or extended original videos; other external videos and documents;

charts, diagrams and timelines. Text is a recommended format, too. Traditional genres are admitted, but it is better to think about how to complement the storytelling in the video, and how to offer new perspectives. Some examples given to students include reports and explainers with links, blog posts with a personal tone, analyses, profiles, place descriptions, etc.

Usually, videos produced as extra contents for the web documentary won't be interviews, but reports of activities and visits, ways of covering the topic that are alternative to those in the video package… Mini-videos, video blogs and alternative interview formats are encouraged. Long interviews in audio or video, with no other visual or sound support, and with little or no editing, are discouraged, because the same information can be provided more efficiently with a well-written text interview and a good photograph. "Multimedia on the cheap" is out of place in a website that is built around video packages with high production values.

Students are told not to offer their own contact forms or new modes for online users to get in touch with the NGO, but to create a post that describes the organisation in one or two paragraphs, and to give the official contact details it provides. The web documentary will stay online, but the needs and campaigns of the organisation may change.

As for style and architecture, guidelines are offered for the headline (title), byline (credit), standfirst (lead or description) and tags that should come with every piece of content, no matter the format. All this writing and editing is done by the individual students and groups, and supervised by their instructors.

Results: student involvement and site metrics

This work, up to the moment of writing, has been produced by students from the classes of 2013-14 and 2014-15. It was coordinated by the lecturers and instructors of *Television production,* in which 21 teams of students (9 teams in 2013 and 12 in 2014) produced linear *mini-documentaries* on non-governmental organisations, and of *Digital media editing*, where 19 students in 2013, and 27 in 2014, chose to develop related online content.

The chosen content strategy benefits the *findability* of the contents. Even if the videos may be uploaded to YouTube with optimised titles, descriptions and tags, the online extras that are presented in the WordPress site provide the kinds of useful information that people may look for, and in formats –text and well-captioned images– that are friendlier for search.

The WordPress.com site of *Solidarios* attracted 4,059 visitors and 11,164 views in 2014. Of those views, 1,166 came in June 2014, when the site with the first nine stories was promoted more heavily by the School and the University's solidarity unit, and views grew to 1,042 in October, peaked 4,588 in November and stayed at 2,172 in December 2014; those are the three months when the class worked on the contents and published them gradually, and when the site was organised and presented in its current form, with a homepage featuring the 21 stories. Traffic remained stable, always above 1,100 views per month, in the first four months of 2015.

All along 2014, the main external sources of traffic were search engines, which accounted for 28.4 % of all views, or 28.1 % if only Google Search and Google Image Search are considered.

Facebook brought 14.6 % of the views in 2014; Twitter, 3.5 %, Google+, 0.6 %, just like the link displayed in the courses' website. In the first four months of 2015, a period in which students were no longer working on the content and it was not promoted specifically by the University, 57.4 % of the views came from search engines; 6,1 % from Facebook, and 0.7 % from Twitter.

Challenges: integrating radio with television and online, and assessing the students' work

Senior-year students of Journalism at the University of Navarra taking the *Digital media editing* course have been able to decide since the start of fall 2013 term, as part of an informal collaboration scheme, if they wish to develop online content about the stories, characters, topics and organisations they cover in the documentary film they make for the *Television production* course, while still being assessed independently in each of the courses, following the distinctive aims and competences these are supposed to foster; in the case of *Digital media editing*, even if students may collaborate covering the same topic, all the work is handed in and assessed individually, student by student.

Radio production, which is taught simultaneously with the television and digital media courses, is planned to be added to the collaboration scheme from fall 2015. The School runs a station, 98.3 Radio, which broadcasts on FM and online, and this is where final-year journalism students put on air the 1 pm news bulletin and also produce hourly news for 10 am, 11 am and midday bulletins, as part of the *Radio production* course. When the course is added to the *Solidarios* project, students within each radio workshop group

will choose, at the start of the term, if they will work following the daily news cycle –once a week–, or if they will develop short programmes, usually with a longer shelf life, about the kinds of topics, stories and organisations that are covered in the *Solidarios* films and the website. Students will make a choice for the whole semester, not only between topic diversity or specialisation, but also between two distinctive rhythms of coverage and news cycles.

Us, the professors in charge of the three courses, which will total 12 ECTS –out of 30– in the first semester of the senior year in 2015-16, and 9 ECTS thereafter, expect that these changes will help the students to feel much more involved and focused on their journalistic practical work, as they will have the chance to come to the workshops, three days a week, once every week for each medium, and work on stories that are closely related.

No matter if they take part in the collaboration scheme or not –and if they do, they may choose it to affect two out of the three courses, or in the three of them–, students will still develop different skills in each course, all of those that are specific to each medium, but they will have the chance to go deeper into the same topic, and to learn by practice what convergence means at the level of the media worker.

Meanwhile, students with other professional development aims and thematic interests will be able to disconnect from Solidarios in the *Radio production* and *Digital media editing* courses, because current practice and production needs mean that not all the students covering a given topic and organisation in a Television production film can produce individually, at the same time, extra content for the *Solidarios* site, or mini-programmes on the same topic for the

School's radio station. Documentary filmmaking, at the standards pursued in the *Television production* courses, is labour-intensive, and if too many students working together on the film try to develop them separately on radio or online, usually the stories run out of angles and aspects of interest. This is solved by establishing suggested caps to the number of students that may cover the same topic for one of the complementary platforms.

The three courses remain independent in the official study plan, so assessment must be specific to each course for all students. Moreover, in some cases students may not take them simultaneously, and even if they do, they will have the freedom to work on *Solidarios* in *Television production* only, or in combination with just one other course.

There is a challenge to even out requirements and expectations for the two kinds of students: those who develop completely unrelated work for the courses, and those who take part in the collaboration. Both choices have pros and cons: students doing multi-platform coverage have easier access to sources, but at the same time they are conditioned by the production schedule for the documentary film, whereas students working on independent projects have to find topical subjects for online and radio coverage while still doing the part in the production of the film, but they may enjoy a bit more narrative freedom and theme diversity in radio, and increased chances to develop interactivity online.

The aforementioned challenge can be reformulated as the need to control that students are not given credit twice for the same work, while admitting limited and careful repurposing, and this can be achieved, at least, in three ways. The first one is to have every

student complete and sign an individual declaration of original work, a single one for the three courses, detailing what work they have done for each course; this is not usual practice at the School, but it resembles individual statements that are sometimes required in group projects. The second one is to have transversal coordination among the professors and instructors in the three courses, which entails quite an intensive and continuous commitment. The third way is to review the instructions and specifications of the tasks that the students have to complete; in the *Digital media editing* course, students get to choose two or three formats for their project, from a range of five: text, photographs, graphics, audio and video.

Closer ties with the *Television production and Radio production* courses, in the form of shared newsgathering and production efforts, mean that it may be acceptable that some forms of remediation happen in *Digital media editing*, in a way that existing materials may be significantly adapted so that they will fit better with the characteristics of the online medium, or that web content may be partially based on television or radio content; everything considered, these practices may contribute to a more comprehensive website. However, students should feel encouraged, most of the time, to develop completely original, web-native content, in coordination with the efforts made for television and radio.

Conclusion

We have presented a real-life implementation of the principles of media convergence in journalism education. We have organised multi-platform production among mono-media courses in our Journalism School, by coordinating the workshops of concurrent

courses pertaining to the first semester of the senior year of the degree, and therefore we have students working on the same topic for different kinds of media, in the frame of long production cycles that enable the execution to happen simultaneously on the different platforms. Additionally, the product of student work in these courses, with the common theme of solidarity, is published and communicated jointly to the public under the title of *Solidarios*.

The success of the experiment up to this point should be measured against the aims we stated in the introduction. The popularity of the initiative among students is shown by the fact that almost all topics of the *Television production* videos get digital coverage voluntarily, with enough students in each documentary production group choosing to produce online extras about the video package instead of working on an unrelated topic for their big project in *Digital media editing*. The improvements in the workload for students –bringing real dedication closer to the time allotted on the syllabus for practice and independent work– and in their ability to work on a topic more in depth, despite curricular fragmentation, are desirable outcomes that we are achieving progressively with this project. The acquisition of multi-platform coordination skills is not assessed per se, but it impacts positively on the quality of the work that students deliver for each of the courses, and they are definitely experiencing media convergence in ways that we didn't use to supply them with, before this initiative came into practice.

In terms of bringing our workshops closer to real-life journalism, this has been achieved with the television part, as student videos are not only uploaded to YouTube and screened in a festival hosted by the School, but they are also used by the non-governmental

organisations (NGOs) as part of their communication campaigns. In fact, most of the organisations have extensively distributed them through their own websites, social networks and presentations. This provides an additional motivation for the students since they are aware that the outcome of the course goes beyond the learning experience. Despite the moderately good traffic figures, there is a challenge to replicate this public-facing impact with the online content, and to make the students more aware of the role they may have in distributing and promoting their own work online, which starts with helping them to produce content that they will be willing to show publicly, and that may attract the attention of the public. The *Solidarios* radio programmes starting on fall 2015 are planned to be broadcasted on air and online, further increasing the reach of the project.

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COMPUTATIONAL THINKING AND JOURNALISM EDUCATION

Radu Meza

(Babeș-Bolyai University)

This paper will review the most important aspects of computational thinking and try to emphasize the most relevant ones for the future of journalism education, by looking at scholarship in the field and assessing abilities associated with computational thinking in the context of journalistic work, from topic identification, to data collection and interpretation, to information presentation and content aggregation and distribution.

From Critical Thinking to Computational Thinking

As critical thinking was gaining momentum in all areas of education in the late 1980s and early 1990s, the concept was still vague and its role in education interpreted in different many ways. A consensus statement regarding critical thinking and the ideal qualities associated with the critical thinker is presented in Facione (1990: 3) as the "purposeful, self-regulatory judgement which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological,

criteriological, or contextual considerations upon which that judgement is based".

The ideal attributes of critical thinking as habits of mind in both their positive and negative aspects are summarized as follows (Facione, 1990; Facione *et al.*, 1995):

Positive	Negative
truth-seeking	intellectually dishonest
open-mindedness	Intolerant
analyticity	Inattentive
systematicity	Haphazard
critical thinking self-confidence	mistrustful of reason
inquisitiveness	Indifferent
maturity of judgment	Simplistic

Table 1. Characterological attributes associated with critical thinking

As the traditional media institutions and implicitly media education are undergoing major changes on the backdrop of shifting economic models in the context of the fast and unprecedented development of digital communication technologies, a new concept is being hailed as a solution that should be introduced in education as early on as possible: *computational thinking*.

Early scholarly work describes computational thinking as "a fundamental skill used by everyone in the world by the middle of the 21st Century" (Wing, 2006: 33). According to the same author, at the core of this concept, which seems a generalization of theoretical computer science, are two fundamentals – *abstraction and automation*. Essentially, computational thinking is first conceptualized as

approaching problem-solving, system design or the study of human behaviour by relying on fundamental computer science concepts.

As other authors later approach computational thinking in education, the analytical aspect is also embedded in the concept. According to Lee *et al.* (2011), problem solving via computational thinking is defined by:

- *Abstraction* – generalizing from specific instances, stripping down problems to their essentials or capturing common characteristics or actions and using them to represent all other instances;
- *Automation* – a labour saving process whereby a computer executes repetitive tasks more efficiently than a human;
- *Analysis* – a reflective practice that refers to the validation of whether the abstractions made were correct.

Implementing the acquisition of computational thinking in education outside of computer science is a problem frequently tackled by progressive educators. A generally applicable model is the three-stage progression called *Use-Modify-Create* (Lee *et al.,* 2011).

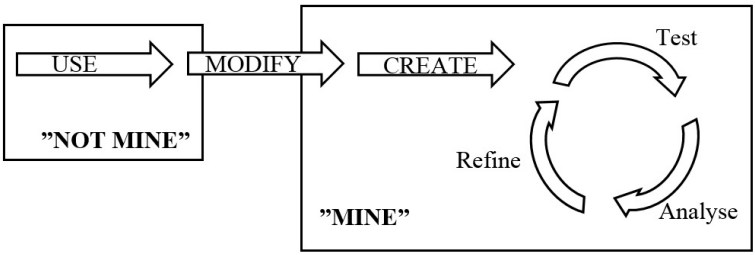

Figure 1. Use-Modify-Create Learning Progression – adapted from Lee *et al.* (2011).

This computational thinking-learning model is highly applicable to the use of free open-source applications and APIs. At the early levels, students would use a piece of software, then after gaining some understanding of the abstractions in use, they would be able to slightly modify the code to perform other automated tasks than originally designed, and eventually they would be able to apply iterative modifications (test, analyse and refine them) up to the point where the result is their own creation.

Journalism is moving in many different ways towards the new digital media, but journalism education has yet to acknowledge that the new media market and new media languages are different than the traditional media markets and languages. Future journalists might need to go further than just critical thinking skills that ensure their intellectual independence and foster creativity. Understanding the principles of the language of new media - *numerical representation, modularity, automation, variability and transcoding* (Manovich, 2001) and becoming educated in computational thinking are key to surviving and thriving in a global attention economy where the biggest players on the online advertising market rely heavily on automation to

deliver precisely targeted, apparently innocuous messages at very low costs, thus undermining the news industry's traditional revenue streams.

Academic approaches to journalism education emphasized critical thinking through research, while professional approaches emphasize production skills. According to Reese (1999: 85) "journalism provides a valuable educational setting to explore the redefinition of scholarship as well as other major pedagogical reforms […] such as collaborative learning and instructional application of information technology". However, "journalism practice need not cultivate intellectual autonomy, as indicated by the lack of self-critical insight exhibited by many of its practitioners, the formulaic recitation of quotes from experts and sources, media feeding frenzies, and pack journalism" (Reese, 1999: 86). Academic approaches to journalism are sometimes more likely to lead to innovation, especially in large universities, where the environment facilitates collaboration between academics and students across different fields, especially in the context of increased interest for computational methods in the social sciences and humanities. Professional environments tend to be more entrenched in traditional routines and rituals and (with some exceptions) are resistant to change, thus it's less likely to foster innovation, especially if such innovation requires interdisciplinary approaches.

Co-citation Networks and Interdisciplinarity

As academic research can open new paths in the subject matter of journalism education, especially when considering the new trends towards computational methods in all sciences (including social

sciences and the humanities), it is interesting to look at who writes what in the area of practices associated with computational thinking and journalism.

One of the frequently used methods to look at relationships between ideas as they appear in academic research is studying co-citation patterns. According to Small (1973: 265-266), "if it can be assumed that frequently cited papers represent the key concepts, methods, or experiments in a field, then co-citation patterns can be used to map out in great detail the relationships between these key ideas". In this way, we might come to a somewhat objective way of modelling the intellectual structure of scientific fields and emerging areas of interest. Viewing such structures over several years might provide information that can lead to a better understanding of the development of ideas, concepts, or methods.

Co-citation analysis has always relied on graph theory for visualisation and analytical tools or measures as authors or papers are represented through nodes and citation relations through directed edges. Concepts such as the in-degree and out-degree of a node are useful in measuring the importance of authors or papers as they show how many authors/papers cited a particular author/paper and respectively how many papers/authors a certain author/paper references. The development of the World Wide Web over the past couple of decades has driven the need to better organize and rank web pages (which can be seen essentially as nodes in the web graph) to provide better, more relevant search results. One groundbreaking development in this field is Google's PageRank, which transformed the company's web search service into a near monopoly. As Google founders Sergey Brin and Lawrence Page admit "academic citation

literature has been applied to the web, largely by counting citations or backlinks to a given page. This gives some approximation of a page's importance or quality. PageRank extends this idea by not counting links from all pages equally, and by normalizing by the number of links on a page" (Brin & Page, 1998: 2).

Co-citation and online social network research is making use of this measure to better rank authors and papers. For example, in Ding *et al.* (2009: 2232), the effectiveness in PageRank measures are tested in co-citation networks: "A page with a high PageRank means that there are many pages pointing to it, or that a page with high PageRank is pointing to it. Intuitively, pages that are highly cited are work browsing, and pages that are cited by the high PageRank pages are also worth reading".

Analogously, we can think about papers or authors. Authors or papers that are cited by many or are cited by authors or papers with a high PageRank must be important in a specific area.

However, the interdisciplinary nature of the emerging concept we are investigating requires more than just identifying works with high PageRanks. Relevant scholarship might be available in several different fields or the works cited by some papers might stray too far from our focus: the relationship between computational thinking and journalism. It is consequentially necessary to keep track of the field-specificity of the scholarly works and also using selection criteria that is not too rigid - some relevant contributions might not necessarily be published in databases like Web of Science.

For the purposes of identifying key themes that might be explored by computational thinking in the context of journalism

education, co-citation network analysis will be used in conjunction with term/concept co-occurrence network analysis over recent scholarship relating to "computational journalism". This approach will allow us to assess what some of the most relevant recent topics are and how technical they are (and implicitly how accessible to journalism students) with respect to the context in which the scholarly work was published.

Literature Review

The quantitative turn in journalism is far from a new issue, but it is constantly developing new aspects. Journalism education and practice most of the times is quick to embrace technological developments. Three strands of journalism have been identified as being more prominent among the quantitative shifts in journalistic practice (Coddington, 2015): Computer-assisted reporting; Data journalism; and Computational journalism. However interconnected or even overlapping these concepts may be, this paper will mainly look at the newest of the three: computational journalism.

Computational journalism, or the application of computational thinking to the activities of journalism is a fairly new preoccupation of professionals and especially academics. Early in-depth treatments of the concept (Cohen, Hamilton & Turner, 2011) see it as a combination of two already familiar approaches – computer assisted reporting and the use of social science tools in journalism with the aim to enable journalists to explore increasingly large amounts of data to create stories through the use of algorithms and data in order to supplement the accountability function of journalism.

In Flew *et al.* (2012), the authors outline four key challenges in the online news environment that computational journalism may address:

1. The shift from mass audiences to niche interests the subsequent isolation of the journalism profession from the needs of its readers/viewers;
2. The decline in revenue for traditional news providers results in cost cuts, which means that fewer journalists have to report less news in fewer pages with a severe cost in terms of quality reporting standards;
3. The tediousness and high costs of original investigative journalism which could balance out the flood of tabloid sites relying on low cost newsfeed content;
4. The shift in business models – from large established organizational structures, to smaller, more flexible start-ups;

The same overview lists a series of techniques associated with computational journalism (Flew *et al.*, 2012):

- Statistical analysis,
- Regression analysis to predict changes, trends using connections in datasets,
- Correlation and matching,
- Visualisation, mashups and GIS (Geographic Information Systems),
- Parsing – or automated syntactic analysis using software tools,

- Personalisation – adapting open-source tools to one's own needs,
- Co-creation (crowd-sourcing, co-reporting and facilitating citizen journalism).

Aside from enthusiastic literature on the promises of computational journalism, some studies (Karlsen & Stavelin, 2014) have shown that practitioners in large newsrooms do not perceive computational journalism as something radically different and are sceptical about this new approach's ability to increase the efficiency of doing journalism. Still, as stated earlier, it is expected that professionals be more resistant to change (especially those that require the learning of new skills from a different field) than academics that are more used to continuous learning and interdisciplinary challenges.

Also, computational journalism could be seen as just another piece in the *Big Data* frenzy that has captivated academics, professionals and entrepreneurs alike. In a critical approach to this trend, Boyd and Crawford (2012: 662) define Big Data as: "a cultural, technological, and scholarly phenomenon that rests on the interplay of (1) technology – maximizing computation power and algorithmic accuracy to gather, analyse, link, and compare large datasets; (2) analysis – drawing on large data sets to identify patterns in order to make economic, social, technical, and legal claims; (3) mythology – the widespread belief that large data sets offer a higher form of intelligence and knowledge that can generate insights that were previously impossible, with the aura of truth, objectivity and accuracy".

The same article makes some fine key points about the phenomenon, its assumptions and biases, which could be also

extended to the issue of computational journalism as it is associated with working with big data:

1. Big Data Changes the Definition of Knowledge
2. Claims to Objectivity and Accuracy are Misleading
3. Bigger Data are Not Always Better Data
4. Taken Out of Context, Big Data Loses its Meaning
5. Just Because it is Accessible Doesn't Make it Ethical
6. Limited Access to Big Data Creates New Digital Divides

Computational journalism is not the only concept to be proposed recently. Some scholars are working with more refined formulations such as *computational exploration in journalism* (Gynnild, 2014) to discuss specific practices that involve the journalistic co-creation of quantitative news projects with respect to three main pathways – the newsroom approach, the academic approach, and the entrepreneurial approach.

Some of the most extensive work on computational journalism and how this new concept is perceived especially by professionals in newsroom belongs to Erik Stavelin, who concludes his doctoral thesis on the subject by pointing out towards a gap that needs to be acknowledged between journalistic values and the reasons for using technology: "While computational journalism emerges from traditions of software-oriented news productions that to a large extent overlap as a merge of computer science and journalism, some distinctive features distinguish and define this field. Both internally in the newsroom and as journalistic output, computational journalism is defined to be a shift towards platforms, in creating

spaces for finding, discussing and narrating stories. This can include the management of computable models, not merely collected sets of data. As a craft, creating software to solve journalistic problems, computational thinking becomes a key skill that defines both reasonable expectations and limitations, but also collaborations […] Programming journalists strive for higher journalistic capital, while newsrooms adapt by both embracing computational efforts as possibilities for journalistic reinvention and keeping a distance by labelling the work as technical" (Stavelin, 2014: 5-6).

As the literature regarding computational journalism is very recent and quite scarce, this paper will try to investigate the scientific literature connected to this topic in order to emphasize the diversity of contributors, approaches and the development speed with the goal of assessing the extent of the usefulness of integrating computational journalism in journalism education and the relevant areas of research associated with the concept.

Research Design

The main goal of this meta-analytical research is to explore key themes in the scholarship relating to the application of computational thinking in journalism. Identifying and categorizing research themes, their respective field and analysing the structure of relations between published researches can be seen as an intermediate step in defining the key points to be tackled by computational journalism courses in undergraduate or graduate Journalism School curricula.

Research Questions

RQ1: What are the main research themes relating to computational journalism?

RQ2: How interdisciplinary is the scholarship relating to computational journalism?

RQ3: What are the connections between the main themes relating to computational journalism?

Method

Data collection was done using the Google Scholar specialized search using the exact phrase "computational journalism". A snowball sampling method was used to go through three levels of results provided by the search. For every first level result, we accessed the "Cited by" page (second level), we gathered all the articles citing the initial result. Then, for every result on every "Cited by" page, we accessed the "Cited by" page (third level). This non-probability sampling method is often used in social network analysis research (including co-citation research) when we are interested in the connections between actors. The total number of articles gathered initially was over 12,000. By eliminating duplicate records, we reached N1=7,747 scientific works. For an in-depth look at the most cited works we selected all scholarly works with a number of citations of 10 or above: N2=1,085 scientific works cited 10 or more times (according to Google Scholar). The records collected contain the publication title, the author(s), the year, the number of times it was cited and the database it is indexed in.

Tools

For constructing the co-citation graph and for data analysis NodeXL (Hansen, Shneiderman & Smith, 2010) was used along with other Excel add-ins used to clean-up the date. For term/concept extraction from the publication titles and for constructing the term/concept co-occurrence network we used KH Coder (Higuchi, 2001). For other descriptive visualisations of the dataset, we used Tableau Public.

Findings

We used NodeXL to construct the co-citation network in Figure 2. A clusterization algorithm was used to group the data. The groups with more nodes were then further analysed to reveal the most frequent terms and bi-gram syntagms (two term pairs) in the publication titles in each group. They are shown in the graph, in order of their frequency, with the number of occurrences for the most frequent term/syntagm.

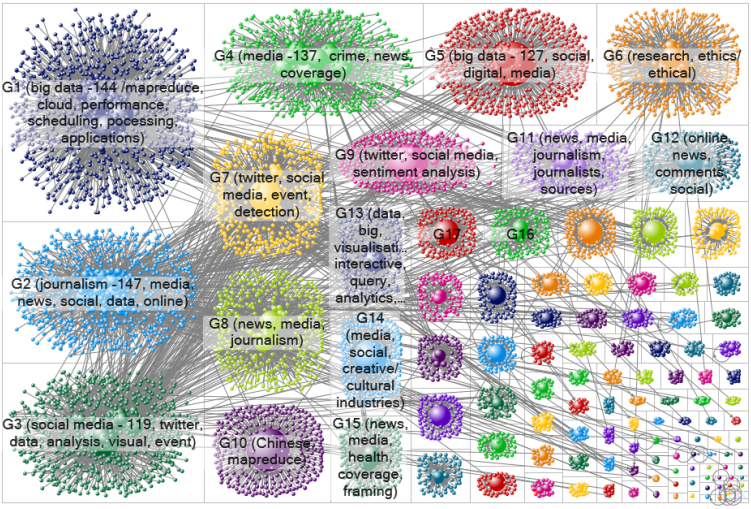

Figure 2. A visualisation of the co-citation network over the entire dataset (N1=7,747)

We can see several clusters that reveal key themes. *Big data* shows prominently in two clusters. Clusters that feature *mapreduce* (a framework used for processing large datasets) come from researchers in computer science and engineering. Also, big data research appears in conjunction with *visualisation, interactive* and *query*. There are three clusters that feature research relating to Twitter. The most frequent themes occurring in this context are *visual analysis*, *event detection* and *sentiment analysis* (the latter is also called *opinion mining* – using natural language processing tools to detect subjective information usually from messages in social media). It is also important to note, that there are also clusters that relate to *journalistic sources, comments and participation* and also, very important – *research ethics*. These results fit some of the challenges and key directions covered earlier in this paper. The sizes of the nodes are proportional to their PageRank score in the co-citation network.

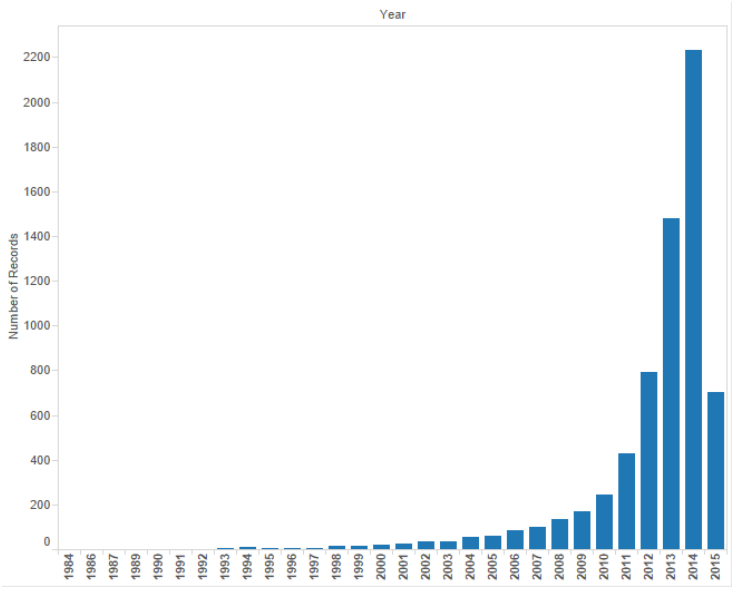

Figure 3. Descriptive statistics showing the number of published titles per year in the dataset (N1=7,747)

As Figure 3 shows, most of the collected records refer to publications published recently, demonstrating a steady increase in scholarly work published on related topics every year since 2010. Still, due to the sampling method used, a large part of this scholarship comes in fact from computer science and engineering. In order to try to differentiate between the more computer science oriented publications and the ones that apply computational thinking in relation to social sciences and humanities, or more specifically journalistic work, we looked at the databases indexing the publications.

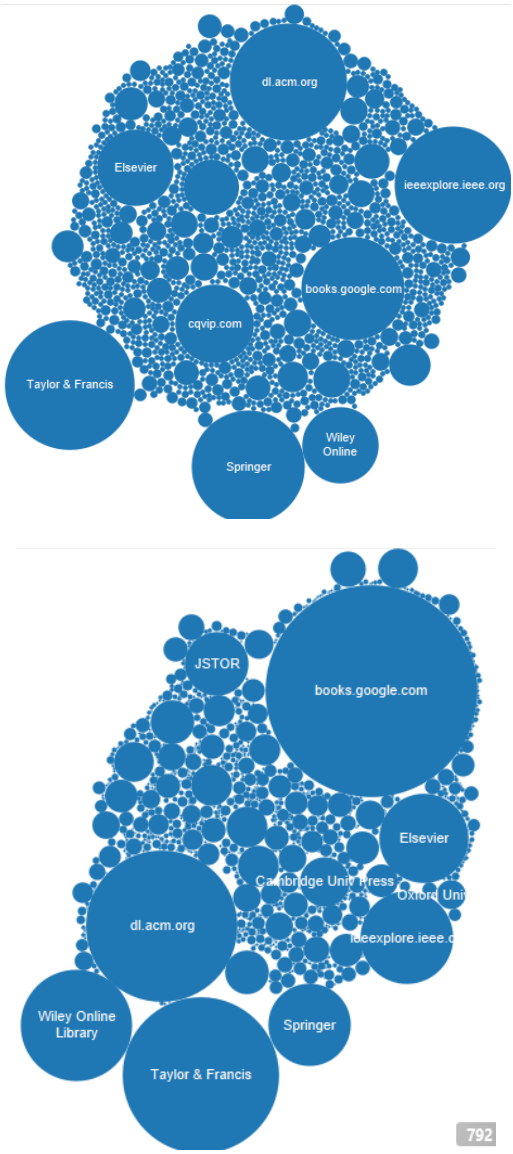

Figure 4. Total records per databases / Total citations for publications per database

In Figure 4 we notice that computer science and engineering databases (ACM and IEEE) mainly indexing conference proceedings are quite prominent when looking at number of records. Big academic journal publishers like Taylor & Francis, Springer, Wiley and Elsevier are also quite visible. When looking at how cited the publications are per database, we notice an interesting shift. Books (as indexed by Google Books) are very much cited, while conference proceedings papers are cited less (IEEE). Besides the JSTOR database, other publishers also show up more prominently in the visualisation on the right (Cambridge University Press and Oxford University Press) as their publications are very often cited even less in total numbers, attesting to its prestige.

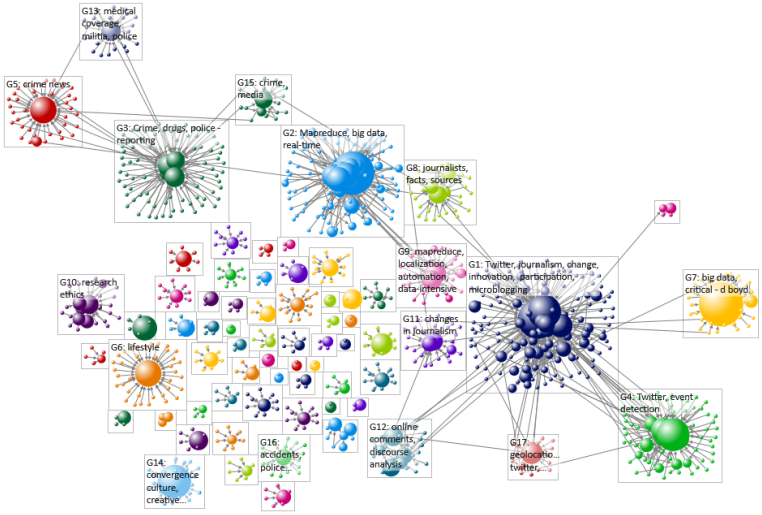

Figure 5. Co-citation network of most cited publications and key themes/group (N2=1,085)

Looking at the most cited publications and the key themes per cluster, we may notice the connections between different themes better. The *research ethics* cluster, although showing up in the context of *computational journalism* and *big data* research, does not appear to be connected to other areas. There is also a group of three clusters of publications relating to *crime, police, militia, drugs news/reporting* – probably relating to early attempts at mapping criminal/violent activity by use of public police records. It is fairly isolated from other scholarly work, which is more recent (as seen in Figure 6). The most visible cluster of research is G1, including topics such as *Twitter, journalism, change, innovation, and participation*. It is well connected to other clusters of research on Twitter (*event detection, geolocation), online comments, facts and journalistic sources and changes in journalism,* but also with critical meta-analytical approaches to big data research such as the ones produced by Microsoft researcher Danah Boyd. The more technical computer science clusters of scholarly work (G2 and G9 – featuring concepts such as *mapreduce, big data, automation, real-time, localization*) are well connected to each other and only loosely connected to the rest of the clusters.

Figure 6 shows a filtered view of the most cited publications by publishing year, focusing on only the most recent research. We can deduce that the focus on crime news and police reporting were probably of interest to scholars in the previous decades as this kind of public data was most likely made available by authorities. In both figures 5 and 6 the sizes of the nodes are proportional to their PageRank score in the co-citation network.

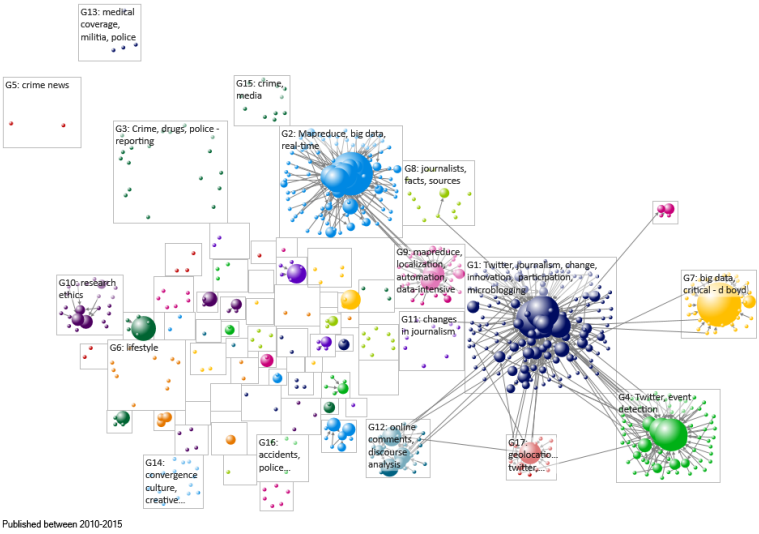

Figure 6. Co-citation network of most cited publications and key themes/group 2010-2015 (N3<1,085)

Figure 7 shows the highest scoring terms detected by KH Coder's Term Extract over the most cited titles. These results correspond to the themes identified by examining the co-citation clusters in figures 2, 5 and 6.

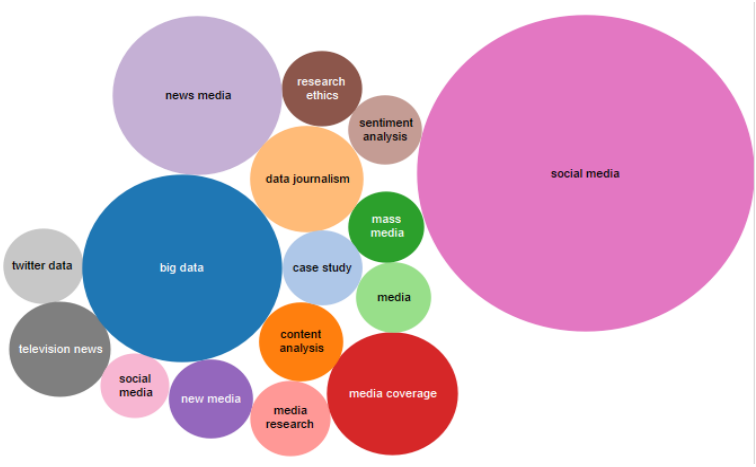

Figure 7. Most frequent concepts identified in titles (N2=1,085) using KH Coder

In order to look at the connections between these most frequent concepts found in titles of most cited publications, we used KH Coder to construct a co-occurrence network of terms/phrases. We coded both of the terms/phrases that had high scores, but also the names of the most prominent databases/publisher associated with the titles in order to establish connections between key themes and academic fields/research areas.

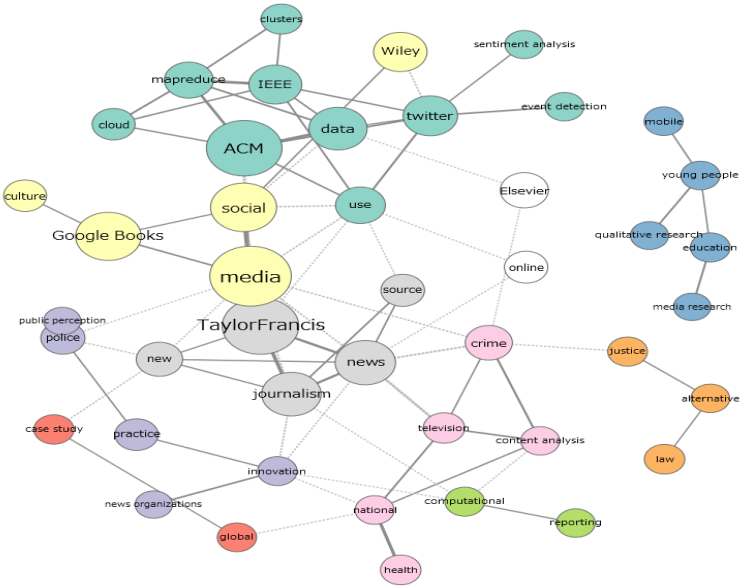

Figure 8. Co-occurrence network of frequent terms/concepts and databases

As we can see in Figure 8, the very highly cited publications on Google Books are mostly about social media and culture, the computer science and engineering databases that mainly index conference proceedings papers (IEEE and ACM) are related to big data research on Twitter – which is in turn associated most often with *sentiment analysis* and *event detection*. The topic of *education* shows up predictably in the context of research about *young people*, which is also connected to research on *mobile media*. There is considerable scholarship being published at Taylor & Francis on *journalism and news media* – as the publisher is heavily focused on behavioural, social sciences and humanities, but with a significant

number of journals being published in interdisciplinary and emerging areas as well as some (although comparatively fewer) in computer science. The numbers of journals per field are available at www.tandfonline.com.

However, the most interesting aspect shown by the co-occurrence diagram is the relation between computational, reporting (in the same group), *innovation, journalism and content analysis.* Articles published about *computational journalism* often place it in the context of innovation in professional practice or link it to the social science research method of content analysis.

Discussion and Conclusion

One might speculate that the nature of the associations of *computational journalism*, with either *content analysis or innovation in newsroom practice,* depend on the context of the research, whether it is done by researchers in universities that emphasize professional skills oriented teaching or academic skills oriented teaching.

Also, we should note that this concept is not frequently associated with big data research being done mostly by computer scientists, information engineers or mixed teams. However, *computational journalism* is frequently associated with data journalism (and also *computer-assisted reporting*), being only the third concept in a line of concepts trying to connect journalism with the more technical aspects of social sciences, hence the connection with the big data research spectrum.

The key themes identified by this research mostly coincide with pathways proposed in the literature reviewed. However, our

research has allowed a more in-depth perspective into recent trends in big data research that are still mostly explored by computer scientists or interdisciplinary research teams, but could very well be a part of the framework for a truly interdisciplinary computational journalism:

- *social media event detection* – using timestamps and geolocation data published on social media to detect events in real-time or gather multimedia associated to events;
- *social media sentiment analysis* – using natural language processing techniques to classify subjective information in social media messages;
- *(real-time) geo-location analyses/visualisations* – using timestamps, geolocation coordinates to create visualisations of multimedia from social media on maps.

As Boyd and Crawford (2012) pointed out, we should be mindful of the increasing gap created by differences in access to big data, ability to collect, process, analyse and make use of it when discussing computational approaches to journalism.

Also, the increasing number of scholarly works dealing with research ethics issues in relation to computational/big data approaches (collecting data from social media, respecting platform terms of service, truly anonymizing datasets collected from networked digital media) point out that we should not disregard journalism and education's strong need for continuing efforts into critical thinking that fosters creativity and independence in any field, but even more in the case of future journalists. As some others show (Stavelin, 2014), changes in journalistic practices might influence the

core values associated with the occupation as journalism schools educate journalists to be perhaps future attention brokers.

To conclude, there is definitely an increasing interest towards integrating computational thinking into journalism education. However, the definitions of computational journalism depend on each researcher's understanding of computer science fundamentals. The concept of computational thinking in journalism practice is associated with earlier trends like computer-assisted reporting and data journalism and is mostly associated with use of certain pre-made tools (designed by programmers). Depending on the context, computational journalism might be framed as: (1) innovation that takes place in the newsroom by ways of automation tricks or hacks; (2) a deeper infusion of social science methodology into journalism education with emphasis on content analysis (which requires abstraction and analytical skills and now might be made more efficient with the help of automation); or (3) just one specific application/example of the larger computer science dominated area of big data research and analysis.

Consequentially, I suggest that a computational journalism course in a future journalism school curriculum would need to tackle all three perspectives and attempt to:

- foster creativity, innovation and entrepreneurship supported by critical thinking and the Use-Modify-Create model of teaching computational thinking;
- ground itself into the fundamentals of both social science content analysis methodology and computer science theory, but be mindful of research ethics when collecting/publishing

information; constantly align itself to new research being done tools being developed both in academia and the business sector by computer scientists as not to widen the gap and ensure the independence and self-reliance of future journalists (for example discuss sentiment analysis, event detection, geo-location analysis).

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PARTICIPATORY JOURNALISM ENROLLS IN THE UNIVERSITY[32]

Bella Palomo & María Sánchez

(University of Málaga)

Introduction

Emerging media technologies have enabled ordinary citizens to contribute to news and democratic processes through citizen journalism. User-generated content has become a widespread phenomenon. Active audiences have revolutionized the process of news production, as well as the aims of newspaper companies. In this respect, the *Social Journalism Study 2015*, elaborated by Cision and Canterbury Christ Church University, indicates that 53.5% of UK journalists cannot carry out their work without social media. In this new stage in the history of journalism, journalists and citizens are closer together than ever.

Media consumption has also been affected; the volume of traffic reaching the online media thanks to social media is around 30%. Concretely, Facebook has become the main social media site

[32] This research is supported by the national research Project «Active Audiences and Journalism: Innovation Strategies in Media Companies and New Professional Profiles» (CSO2012-39518-C04-04), funded by the Ministry of Economy and Competitiveness (2012-15).

used to access news stories (Anderson & Caumont, 2014). Conscious of this situation, Mark Zuckerberg's company has strengthened its link to journalism, launching the FB Newswire news agency in 2014 and signing an agreement with nine media in 2015 for distributing content in the Instant Articles format.

A STAGE OF REINVENTION

Content analyses of news media job advertisements have also demonstrated the industry's interest in hiring digitally competent employees, underlining social media skills profiles (Bakker, 2014). Along the same lines, a study by the Progressive Policy Institute indicates that while contracting in the conventional media is in decline (during 2012 it fell by 5% in newspapers), the demand for journalists has increased thanks to the new media. According to figures from the Association of Self-employed Workers, there are 48,460 freelance and self-employed workers in the journalism profession in Spain. This is the only sector amongst the self-employed to have increased during the crisis, with the registration of 2,094 professionals, and it is thought that this atomization and reactivation of the profession is due to the spread of communication 2.0 (Mandel, 2013).

The appearance of new expert professional profiles in the management of these spaces – like social media editor, content curator, community assistant or community manager – has made it necessary in the last five years for many Journalism degrees to include courses related to Web 2.0 in their study plans. Some have gone further, founding specialized centres like the Center for Collaborative Journalism: Civic and Community Journalism, in Mercer University (Atlanta), where techniques for listening

to publics, resolving problems and getting citizens involved are analyzed and designed.

The novelty of the phenomenon means that the literature dealing with it is limited (Bor, 2014: 244), although the scant existing references support this advance with positive empirical results. On this line, some authors indicate that the practice of citizen journalism can be considered "as a civic education tool in the college classroom" (Nah *et al.*, 2014: 367), and as a formula for introducing the benefits of social capital into the program. Singer (2008) underscores the use of blogs for encouraging self-reflection in students.

The phenomenon has been approached in places as geographically diverse as New Zealand, the United States, the United Kingdom, Finland or Spain. These studies basically focus on describing how the new professional profiles are integrated into the classroom (Núñez, Teixeira & García, 2012); they monitor the use of Facebook and Twitter as teaching tools (García, de la Morena & Melendo, 2012); they analyze the technical knowledge of students (Hirst & Treadwell, 2011); they list the skills required by the industry in new hirings, what is expected of new graduates and the weaknesses detected in the new generations of journalists (Brown & Collins, 2010). Other studies analyze offers of employment that seek 2.0 professionals (Wenger & Owens, 2012), prior experience requirements, which are compared with postgraduate courses offered by universities (Sánchez & Méndez, 2013), and even propose formulas for introducing innovation into the training of journalists (Lassila-Merisalo & Uskali, 2011).

Bor (2014) analyzes the incorporation of the social media reporting curriculum in one university in the United States

through ethnographic and survey methods, and arrives at the same conclusions as Hirst and Treadwell (2011). The three researchers discovered that although students had experience using social media, they were still not completely comfortable when applying these techniques in the professional field, for example in creating content for a blog or posting a video on YouTube. The journalism student adopts a role closer to that of the consumer and does not identify him/herself as a producer. His/her passive, receptive attitude prevails over the proactive opportunity provided by the new communicational ecosystem, and his/her audiences are reduced to family and friends.

One of the most notable characteristics of the journalism profession in the first two decades of the XXI century is its instability. Apart from the crisis, journalists are under constant pressure resulting from the continual redefinition of their professional skills due to the extreme dependence existing between the media ecosystem and technological, economic, political and social changes. In this context, innovation – understood as improving already existing processes, services or products, or setting up new ones – is a key to the survival of newspaper companies and training. According to Pavlik, entrepreneurship is essential because "journalism and mass communication education is in urgent need of transformative leadership… The challenge confronting journalism and mass communication educators is how to prepare future journalism and media professionals and leadership for an industry in radical transformation" (2013: 211-212). The university has the opportunity of contributing to the shape of the future media industry.

Diverse studies have approached digital entrepreneurship (Aced, 2010; Domínguez & Pérez Colomé, 2012) by analyzing successful cases, profiles and the functions and/or skills of so-called journalists 2.0 (Torzuko, 2010). But it is equally necessary to tackle this question from a perspective that analyzes the opportunities available to future professionals for acquiring such skills, which entails going more deeply into the structure and content of current Journalism study plans. The fact that interaction with the public is not mentioned as a basic function in the professional profiles contained in the White Book on Undergraduate Degrees in Communication [*Libro Blanco de los Títulos de Grado en Comunicación*] elaborated by the National Agency for Quality Assessment and Accreditation [*Agencia Nacional de Evaluación de la Calidad y Acreditación* – Aneca] in 2005, makes it necessary to detect whether this aspect has been included or ignored in the university programs of journalism in Spain. Moreover, the employability of university leavers is one of the criteria used for measuring the quality of degrees, and if students are to obtain employment it is essential to explain the new, existing job openings to them.

What is therefore proposed is a useful, up-to-date and, above all, necessary study, since we are living through a period of transition in which even some professors have doubts about the future need for Journalism studies (Claussen, 2012). At present, the great challenge facing faculty staff in journalism is to continue being relevant in such a changeable journalistic and educational setting. Are young journalists prepared to function, experiment and innovate in the scenario of digital culture and the network society? Are students in journalism degrees being taught how to motivate

audiences to practice open journalism, how journalists should manage their digital profiles, verify social media content or resolve a communication crisis via Twitter, Facebook or YouTube? Do students know the strategies for making a news story go viral? Are the new graduates trained to manage communities? What are the premises, from the technical, ethical and legal point of view, that accompany this transmedia activity?

Objectives

The implementation of degree system was completed in all Spanish faculties in the 2013/2014 academic year. This makes it possible to obtain information on the academic universe and discover how interaction with the audience has been integrated in teachers' guides. This article analyzes where and how subjects like Participatory Journalism or Citizen Journalism and Social Media are studied in Journalism degrees taught in Spanish universities, with the goal of identifying strengths and weaknesses in the way new generations of journalists are being taught to manage social media.

Methods

Four methodologies were used in the studies analyzing the impact the new professional routines are having on the training of new generations of journalists: content analysis applied to teachers' guides and employment offers; surveys; in-depth interviews; and descriptive case studies, which basically narrate the researchers own particular experiences in their teaching activity. The novelty of this research is that it aims to examine the global situation in one country, Spain.

The research, begun during 2013 and concluded in 2015, was carried out in several phases, combining qualitative and quantitative techniques. The first exploratory phase involved examining all the study plans of the official educational offer of Journalism and Communication degrees in the public and private universities of Spain (39) for the 2013/2014 academic year, identifying those courses in which participatory journalism formed a significant part of their syllabuses, and then analyzing their teachers' guides. These data were updated in the 2014/2015 academic year, since in the previous year those universities whose programs of courses were unavailable online, or not officially detailed there, were excluded. To complement this analysis, in the final trimester of 2013 a dozen in-depth, unstructured interviews were conducted dealing with some of the courses studied. This panel of professors is made up by Cristina Aced (Abat Oliba CEU University), Montecarlo Blanquerna (Ramon Llull University), María Ganzábal (University of the Basque Country), Elvira García de Torres (Cardenal Herrera University), Carmen Haro (University of Valladolid), David Herrera (Madrid Open University), Xosé López (University of Santiago de Compostela), José Luis Orihuela (University of Navarre), Karma Peiró (Ramon Llull University), Teresa Sandoval (Carlos III University), Núria Simelio (Autonomous University of Barcelona) and Bárbara Yuste (Camilo José Cela University). These interviews were conducted by telephone or Skype and lasted between 40 and 60 minutes.

Due to the recent implementation of the Journalism degree in Spain, these interviews also have an exploratory character, as they provide an opportunity for elaborating a framework of future activities.

Results

The social media boom in study plans

The academy has always closely followed the industry's tendencies. Starting from this premise, it is easier to understand that digital skills specifically linked to the development of participatory journalism have ceased to be ignored, or to have a merely optional character, in many degrees and have acquired unquestionable prominence at the centre of communication studies in Spain.

Analysis of the study plans of all Spanish universities makes it possible to recognize two tendencies of balanced implantation: there are centres that give an autonomous, prominent role to participatory journalism, while others integrate these questions into other more traditional or general courses.

The first tendency offers a relevant role to interactivity. Twenty-two of the 39 degrees analysed include courses focusing on this question in their study plan. In these over 50% of the syllabus is linked to interaction in Web 2.0 context. Sixty-six percent are compulsory or form part of basic training, which denotes a greater consideration in the curricular system than online journalism received in its day (Tejedor, 2008: 33). The total number of courses found rises to 25, given that Ramon Llull and Camilo José Cela universities contribute two to the list. Another peculiarity is that, with exceptions (Navarra, Carlos III and Ramon Llull, where they are included in the first year of the degree), this type of courses is studied in the final two years of the degree. Teresa Sandoval, responsible for *Communication and Participation of Civil Society in the Internet*, justifies

this distinction: "For Carlos III University it was essential to include a modern and up-to-date course in the first year that would connect with the students… It continues the line of *Theory of Communication* together with a practical dimension prior to *Journalism on the Internet*". This course, which can also be studied in English, has a pioneering character in Spain as it deals with participatory journalism. It has been taught for six academic years.

The nomenclature of these courses varies greatly, as no two centres coincide in using the same name. Moreover, 72% is worth 6 ECTS (European Credit Transfer System), and only in two cases is this weight exceeded: the University of Valladolid's *Participatory Journalism on the Internet* and the University of Lleida's *News Management and Production on the Internet* are worth 7.5 ECTS.

The central axis of these courses is the relation with users. Their programs include study of the following: tools available for establishing this interaction; monitoring these actions; verifying content found in these settings; new narratives; how to manage a crisis through social media; reputation; SEO strategies; alternatives to conventional funding (crowdfunding); security; privacy; author's rights; new professional profiles 2.0 – which basically focus on the community manager and the content curator–; and how audiences are modelling news on the online media. From this perspective there is a noticeable homogenization of syllabuses, which in no case ignore basic aspects of communication, such as grammatical accuracy.

The second formula for approaching this type of content consists in dealing with the relation between journalists and audiences in a partial and/or transversal way, integrating communication 2.0 into wider syllabuses or more generic courses. In this respect, there

are 23 universities providing 35 courses with such characteristics. Vic University has the most diversified approach to the phenomenon, with five courses – four of them compulsory – that at some point in their syllabus deal with citizen participation, and a sixth course in which this forms the central pillar of its content. The Autonomous University of Barcelona and Carlos III University also stand out because of their broad commitment to interaction and digital content management.

The professors: prospective vision and open attitude

One of the handicaps for implementing change is that while students are digital natives, the majority of professors are digital immigrants (Prensky, 2001) or digital visitors (White, 2011). The interviews reveal that the majority of professors are aware that this educational offer is not homogeneous in all the universities; they know that there has been academic resistance, similar to that of the media industry towards Internet; and the cultural disruption produced by the new media has taken some of them by surprise. For decades journalism professors, like researchers and the professionals themselves, were reluctant to consider aspects falling outside traditional journalistic practice as part of the profession. They gave priority to newswriting and the treatment of sources in the printed media, and only subsequently adopted a more open attitude to the audiovisual and online format. The panorama appears to be changing in Spanish universities. Attitudes of rejecting, attacking or even feeling contempt for courses linked to the new media no longer make any sense, because the future is digital (Nosty, 2013), and content linked to participatory journalism is acquiring increasing

prominence. Although there is also criticism directed at the sector. As Bárbara Yuste observes, at times "the companies themselves do not recognize its importance, and they contract a junior profile to manage their social media accounts".

The profile itself and the open attitude of those responsible for teaching these courses are contributing to this change. Thus, the interviewees are aware that they must prepare students for future jobs linked to audience interaction that have not yet been invented. In this respect, this type of courses is anti-crisis as they aim to prolong the useful life of the journalistic profession. And this is an incentive because, as Montecarlo Blanquerna, a professor at Ramon Llull University, explains, "saying that journalism is in crisis does not attract new students; while the new solutions do".

In addition to this prospective vision of the profiles and skills demanded by the newspaper companies, these professors agree that the courses they are responsible for teaching are not comfortable ones. Their role requires a solid knowledge of theory, experience in using social media, constant exploration of new communication habits, and familiarity with work dynamics in networked settings. As Montecarlo Blanquerna observes, "the professor acquires credibility if students detect that you practice what you explain outside the classroom". The professors' training and exploration must be continuous, both to maintain these skills and to renew programs, which must be constantly revised facing the vertiginous and continuous changes taking place in the field of online communication. In short, greater dedication is required than is needed for traditional courses. And while it is true that the majority of professors consider themselves to be self-taught, they

recognize that exercising the profession or belonging to research projects on innovation in communication provide them with real experiences and give them knowledge of successful cases to pass on to students.

At this time of transition and the establishment of new courses, which are emerging with the support of Web 2.0, professors learn as much from their students as the latter learn from their professors. Discovering, integrating, applying and teaching these settings are the basic functions of the professor who specializes in participatory journalism.

The students: experts in personal use

The majority of students are digital residents (White, 2011), young people who spend a large part of their lives online and for whom using social networks as tools of interpersonal relation has become a daily habit. This predominant profile on occasion makes the professors' task a difficult one. Not because they are worried that some student might surpass them in technical knowledge, but because students, according to José Orihuela, a professor at the University of Navarra and author of the *eCuaderno* reference blog, sometimes have a naïve view of social media: "There is a generational skill aimed at maintaining relations with primary groups, not for generating value, or even business". This situation produces participatory myopia, since students believe that by having 500 friends on Facebook, they are already experts; and that the tone and professional language in these settings are the same as those they use for their personal relationships. Transforming the digital native into a professional with digital skills who makes rational use of the

social media is a common teaching goal amongst those responsible for these courses. A study by Monge and Olabarri (2011) revealed that 79.82% of students at the University of the Basque Country had not read the conditions of use of the social media they were participating in, a similar percentage to those who were ignorant of the legal consequences of their activities.

Besides this circumstance, it must be borne in mind that there might be students in the same classroom with different degrees of prior experience in using social media. According to Blanquerna, digital natives are an urban myth: "There is not just one student profile and I barely have three video-gamers in my class; some of them aren't even on Facebook".

The goal: professionalize the use of social media

The common teaching goal is thus to convert students, irrespective of their greater or lesser prior experience, into news professionals with rational digital skills for publishing content in environment 2.0 and energizing interactions with the audience. In this task, there is an essential balance between theory and practice because students need to know a wide range of applications, extending beyond general social media, and the arguments for deciding on their suitable use in the journalistic context. For this purpose it is equally important to provide them with resources and advice for surviving in online settings. According to David Herrera, community manager at IBM Spain and professor of *Digital Journalism and Social Media* at the Open University of Madrid: "It is necessary to follow the ten most successful journalists on Twitter and blogs, for [students] not to be afraid of downloading applications and to follow up references to

these questions to the maximum". A type of benchmarking by which to learn from the best in questions of participatory journalism.

Encouraging innovation and entrepreneurship

As Orihuela notes, this is a question of changing the mentality of the student body, guiding them towards autonomous work and entrepreneurship. Some of the courses linked to audience participation have widened their utilitarian function and become incubators of innovation (Lynch, 2007) that help enterprising students to experiment and start to define a future professional strategy.

According to Orihuela, students accept this challenge because "they are aware of the terrible time the system is going through, which has strengthened the vocational character of the profession". Along the same lines, Carmen Haro, from the University of Valladolid, observes that her students "have done group therapy because they have a very negative view of their future, as they have started to study in the midst of the crisis", and she therefore thinks that their best chance consists in concentrating on their values: "they are more generous, have a clearer idea of exchange and community; they pool everything".

The new dark side of journalism

It is therefore essential to encourage collaboration, innovation and entrepreneurship. But, in addition, professors responsible for courses related to participatory journalism often run up against a type of cultural resistance. In general, not even those students who carry out intense personal activity on social media usually consider a professional option related to such activity. According to Núria Simelio the reason

for this is not so much due to lack of awareness, since "from the first year they hear a lot about these new professions", instead there is a type of fear of "pursuing a livelihood".

The majority hold to a traditional view of the profession, in which the new dark side of journalism, previously occupied by press offices, as Cristina Aced from the Abad Oliva University recognizes, is now related to profiles linked to citizen participation.

This conservative gaze also affects the knowledge students have of participatory journalism. As pointed out by Karma Peiró, professionally linked for two decades to Catalan digital newsrooms and responsible for the *Digital Journalism* course at Ramon Llull University, this is a task that entails "great respect, tact and obligatory verification" of contributions from the audience. However, according to Peiró, students view citizen journalism projects as an intrusion in the profession and the Internet as a basically informative tool for users, rather than as a formula for interaction and collaboration with journalists. In her opinion, this is a "simplistic and conservative view of what it means to be a journalist". Changing the mentality of the student body thus involves changing their view of the profession and making them aware of the potential value of synergies between journalists and citizens for developing a type of journalism that is closer and more adapted to users' demands, and that therefore has more future than conventional journalism.

Online in the classroom?

Many students are permanently connected to their social profiles through mobile devices. These practices are also the subject of debate

when they take place in the classroom. The professors' response to this situation is very heterogeneous. There are those who forbid the use of these channels in theoretical classes but allow them in practical classes as a source of information and constant updating. Some accept that they are going to be competing with Facebook and this encourages them to give more attractive classes in order to hold their students' attention. Meanwhile, other professors have no desire to prevent the use of social media because they know that this new generation has the capacity to do several things simultaneously and, above all, because this contradicts the spirit of the courses they teach. In these cases, they encourage students to publish notes on their classes in real time on Twitter or to share the results of their work in online repositories.

Another complaint made by some professors is that there has been an 80% increase in cases of plagiarism, basically concentrated in blog posts or when they have to create their own content. There are empirical studies in this respect which show that online content is more vulnerable to copying because university students consider plagiarism in this context to be less dishonest than copying printed sources. This is because students consider that information made available on Internet is in the public domain, that they don't get money through this technique, that many texts appear unsigned, and there is no uniform style guideline on how to cite different resources that are available online (Baruchson-Arbib & Yaari, 2004: 5-6). In this respect, Wikipedia is the great reference: many students began copying its content during their secondary education. The challenge faced by university professors consists in reeducating them, setting exercises that cannot be copied, based on comparisons, which also

encourages the development of basic transversal skills for practicing journalism, like a capacity for analysis and the development of a critical sense.

Perceptions, successes and proposals for improvement

The design of courses on participatory journalism in the Spanish university, which involves intense continuous evaluation, where a high percentage of the mark is based on the student's work, results in a high pass rate (on occasion above 90%). This positive academic performance, together with the use of social tools that are attractive and familiar to the students, means that there is less frustration than in other courses. In spite of these data, there are also criticisms. Complaints arise partly due to the high level of practical work, which on occasion oscillates between 16 and 20 assignments. Students are also concerned that in some study plans this training appears in the final four-month period of the degree, when they think that they should learn about these new opportunities earlier, given their current influence in the profession.

On the side of the teaching staff, the most widespread complaint is that many students become overconfident on seeing that the course deals with social media, believing that it will be a mere formality. Some say that they have reconfigured the syllabus to deal with unfamiliar questions: such as Data Journalism; SEO applied to writing; new professional profiles; personal branding; or new tendencies linked to the emerging philosophy of the "pro-common" and digital culture, like crowdfunding or the co-creation of online content. These are questions demanded by media companies that are not covered in other courses and this means

that on occasion their courses can have a "catch-all" character. Half of the professors interviewed also perceive that other courses intrude on their content, which makes an improvement in teaching coordination necessary.

However, there is one very widespread suggestion for improvement: increasing the number of courses dealing with digital questions in a transversal form to encourage transmedia production. As Xosé López, full professor of Journalism and responsible for *Journalistic Movements and Citizen Participation* at the University of Santiago, observes: "we are at the start of a process of change, with periodical alterations in the subject matter".

Discussion

Mediamorphosis has become a constant phenomenon (Pavlik, 2013: 212), which makes it difficult to demarcate the skills that media industry demand of the new generations of news professionals in the short, medium and long term. This unstable and unpredictable situation can generate disorientation and even demotivation in faculty and students, and this requires pedagogical reflection. Innovation in the media is understood as a process that requires autonomy, alternative work cultures and a perception of technology in relation to the audience. Our research reveals that, little by little, a culture of innovation is being introduced in universities. The half of Spanish universities offering Journalism degrees are stimulating commitment and dialogue with the audience, transparency, and promoting new narratives that connect the reader/user with information in a new and meaningful way.

The evaluation that future generations of journalists make of the courses focusing on audience-generated content and management of these settings deserves an analysis to complement the present study. Besides determining the degree of difficulty attributed to such content, it would also identify the degree of satisfaction with the course and whether expectations are being met. In parallel, a future line of research could focus on the perception that students have of their professors, based on the hypothesis that they consider them to proceed from a pre-Web culture. It could discover whether young people really do understand that content is free, that producing knowledge is collaborative and that the media should be participatory, since the relationship of young people with technology is sometimes excessively mythicized.

Conclusion

Journalism studies are facing the greatest pedagogical challenge since they came into existence: training journalists in a scenario characterized by crisis, uncertainty and unpredictable changes. Marked by this context, this study deals with a basic question: What is the ideal formula for giving university training to future generations of journalists in participatory subjects? The answer is a complex one since the state of disorientation and the uncertain future faced by a media industry in continuous transformation prevent the design of study plans that will be effective in the medium term, and produce instability in the majority of the teaching programs in those courses directly linked to the current practice of journalism. This simultaneously accentuates the disconnection between the academy and the industry (Du & Thornburg, 2011).

This situation coincides with the implementation of the European Space for Higher Education, which has made it necessary to renew all the Journalism study plans in Spain and adapt them to this new context since 2010. In spite of this tendency towards homogenization of degrees, this study reveals that only 56.4% of the universities have given more prominence to audience management and the use of 2.0 tools in their curricular offer. Although speaking of social media in the classroom has become normalized, in many cases there continues to be a gap with media reality; this is prolonging the professional digital divide and means that the rational use of these tools largely depends on the auto-didactic knowledge of the journalist.

In parallel, another digital divide has been detected in the Spanish university, due to the rigidity of the academic system and its hierarchical model. In this case innovative professors coexist with others who are resistant to reducing the prominence given to outmoded approaches in their teaching programs and to encouraging online work. In this period of transition two different models of understanding the profession coexist, the current model and the traditional one: those whose teaching covers the new media, practices and tendencies; and those who restrict their gaze to classical journalism. This concept of vintage journalism –the nostalgic attempt to revive an old style of journalism in the university lecture hall, underlying the risks (and not the opportunities) of new media– is a sorry favour to future journalists, who must prepare themselves for adaptative journalism.

In this period of transition, the coexistence of the current model and the traditional one requires great educational

coordination that will lay the foundations of a new educational culture permeable to change, based on the constant apprenticeship of the professors to avoid overlapping and gaps in the training of future journalists in Spain.

From the perspective of students, contents related to participatory journalism are neither easy nor fast to learn. Our research has detected that during these classes students show a weak ethical responsibility, and an immature and superficial knowledge of social networks. Students confuse user knowledge of social media with their professional application, and they receive a more complex content than expected. To clarify this situation they have the support of professors with an innovative profile and a mentality that is open to continuous experimentation in digital environments. These new difficulties and learning needs confirm that journalism studies continue being relevant and make the university sustainable in the nearest future.

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JPN, A TEACHING LABORATORIAL EXPERIENCE ON THE NEWS DIGITAL PLATFORM OF COMMUNICATION STUDIES IN UNIVERSITY OF PORTO

Ana Isabel Reis & Helena Lima

(University of Porto)

Contexts

The teaching of journalism is a relatively late trend in Portugal, since the first degrees were only launched in 1979 at Universidade Nova de Lisboa and in 1985 at Escola Superior de Jornalismo do Porto (Mesquita & Ponte, 1997) In the following decade, communication degrees where journalism studies were included spread out either in universities or in bachelor degrees from institutes or private schools. Universities globally adopted a more theoretical frame in the choice of their curricula and syllabi, whereas bachelor degrees followed a more practical approach (Pinto, 2004) where the journalism techniques gained a central role, as for instance in the three years bachelor degree of Escola Superior de Jornalismo do Porto. According to Pinto, communication studies emerged in faculties normally shaped by humanistic studies background like history, philosophy, linguistics,

technology and other, while journalism would co-exist with other specialization formation such as public relations, advertising, audio-visual production and so on (2004: 52). Eventually, the bachelor courses evolved for four year degrees with a heavier theoretical component and, in the same sense, universities tried to change in order to accommodate to the market demands (Pearson, 2007).

This converging process somehow expresses the idea that "journalism and a broad academic curriculum should be articulated to one another" (Adam, 2001: 326). Deuze also agrees that in spite of formats or length of studies, journalism teaching "covers practical skills training, on the one hand, and general contextual education and liberal arts courses, on the other hand" (Deuze, 2006: 23). The University of Porto degree reflects this purpose and when it was launched, its name was "Journalism and Communication Sciences", therefore putting the accent on the journalism studies. The reason for this choice stems from the fact that journalism professors came from the professional field and had a clear purpose about the way it should be taught. Matching the critic approach of Adam (2001) on Pulitzer's perspective on this matter, Journalism and Communication Sciences degree was based on the conviction that the core of the curriculum should rely on a comparative journalism study, the identification of best practices and the intense supervision of a range of journalistic tasks, in articulation with "disciplines of the University on the understanding that they would provide the foundational vocabularies and methods of thinking for journalistic practice" (Adam, 2001: 323).

Since its launch in 2000, University of Porto Communication Sciences degree has been known to blend the two main trends in

journalism studies, the theoretical frame and laboratorial skills. The degree has a very interdisciplinary approach that is achieved through a study plan divided between four faculties: Arts, Engineering, Fine Arts and Economics. Therefore, it has the classical humanities courses, but also a large number of laboratorial hours, not only on journalism techniques but also on informatics and design. This perspective puts this grade on the "innovative" mode that teaches students by doing, rather than opting for the classical model (Deuze, 2006). *Journalism Techniques Communication* I and II, *Journalism Ateliers* combined with more technological courses like *Media Technology, Digital Communication and Internet* or *Media Labs* give students the necessary skills that match this more innovative model and JornalismoPortoNet is the peak of this learning process. Conceived as a semi-professional online newsroom and as well as a laboratory, JPN is the synthesis of the three-year grade in journalism specialization. Since its launching in 2004, it has had a very positive evaluation by students, professors and working market. Since the first generation of graduated students' reports enhance JPN as a solid formation platform which is also recognized by media companies. In the final reports, students consider that it creates a "dialogue" between practitioners and newsrooms (Zamith *et al.*, 2004).

Historical background

JornalismoPortoNet (JPN) was launched on March 22, 2004 as a result of one year of preparations and the combined efforts of the professors from the different academic fields that are the backbone of the Communication Sciences degree at the University of Porto, journalism, engineering, design and economics. JPN mainly stems

from the journalism practices and multimedia courses and has as main purposes:

1. The developing of theoretical and practical knowledge that were acquired in the previous years;
2. To provide a space where students could experience journalistic practices and be introduced to the professional routines;
3. To create the means to show the work developed by students during the bachelor and by so providing the building of their portfolio;
4. To create an internal and laboratorial newsroom for the last year students, before they reach the media internship in real newsrooms;
5. The laboratorial environment seeks to produce new and experimental forms of journalism.

The combined synergies and resources of Communication Sciences gave way to the construction of a digital platform for publication and edition that should be both accessible and intuitive for students, professors and technical staff engaged in this project. This platform ought to support the variety of multimedia resources that are normally used by online journalism which, by the time the JPN was launched, were still in an early stage. Accordingly, this online news site included specific spaces for audio and video which recently had evolved to integrated multimedia news and news reports.

Figure 1. JPN homepage in 2014

The technical specifications of the platform construction should respond to the online publications' requirements but, on the other hand, it couldn't imply a very demanding maintenance in the short and middle term. The design requirements "the JPN's interface was based on a structure that didn't aim only for the design, graphics or colour. Instead, its purpose was a visual structure that would support the diversity of the messages" (Zamith *et al.*, 2004: 11).

Structure and functioning

JPN has a hierarchic structure similar to the professional newsrooms. Teachers hold the director position and they are also area coordinators (journalism, design and engineering). Students

also have a hierarchical structure formed by the editor-in-chief and the executive producer that are elected by the group and rotate ever each month. The newsroom is entirely formed by students, however, this initial format evolved to a semi-professional level. More recently JPN has also included two editors, which are chosen among former students that are now have a fulltime job and perform as certified professional journalists. Apart from the daily editor functions they also produce and publish multimedia news contents.

JPN is also supported by technical staff from the audiovisual lab that guarantees the caption of sound and image as well as edition and post production. Another member of the staff ensures the platform's technical maintenance and the specialized multimedia features of the site and news. The newsroom is normally equipped with computers, telephones and television sets and a specific room for recording telephone calls. Complementary treatment of sound and video are provided by the radio and TV studios and all the available equipment, such as cameras, video cameras, recorders, editing stations and others. All these logistics support the production of audio and video news or other formats, photo galleries, multimedia for JPN, but also for the other courses. This technical structure also allows a weekly thematic newscast.

At the beginning of the first semester two newsroom teams are formed by students of different years whose voluntary work combined with news content produced in journalism classes give a permanent flow of news and other contents for JPN during that period. In the examinations periods and during summer, the editors update contents by publishing news and features. During the second semester, half of the internship is mandatory fulfilled at JPN. In this

period the newsroom is divided in two seven-hour shifts (morning and afternoon) from Monday till Friday. Weekends and nights are covered by rotation or according to the agenda and newsworthiness. Every shift begins with an editorial meeting where the daily agenda is debated and where students present ideas and angles, as well as the subjects that will be treated and deadlines.

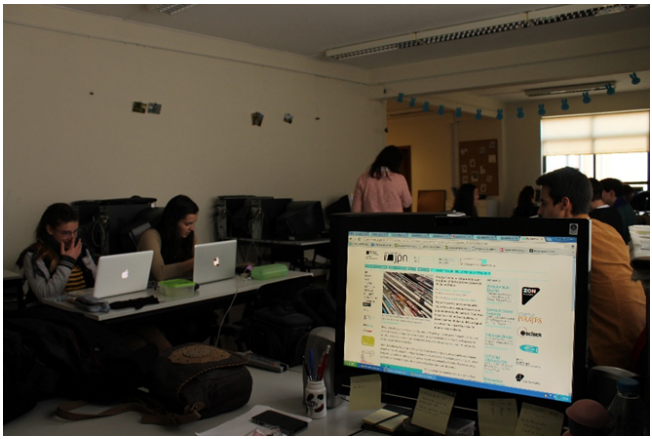

Figure 2. JPN Newsroom in 2014

When the JPN's newsroom is at full activity some professional journalists generally from Oporto news media are invited to become the "Editor for a day". This experience gives journalists the opportunity to lead the team since the morning editorial meeting until the moment that day news are published. For JPN it is an opportunity to show itself and make a stand in the working market and for the "Editor for a day" it is a different approach during which he or she may put in place untraditional practices, teaching professional experiences and giving professional guidance. For

students, this practice is seen as an opportunity to debate journalistic matters and work with professional journalists that, in some cases, return to JPN, as former students.

The choice of journalists is made among those with a wide experience either in radio, newspaper, television or online journalism and who can easily communicate with young students. Their main task is to supervise the newsroom and make suggestions or propose different angles for news reports. Alternative methods in the news gathering and reporting processes are also encouraged as means to improve the students' skills.

Figure 3. Germano Almeida, Maisfutebol journalist was JPN 'Editor for a day' in the World Football Cup 2014 opening

Some of these journalists already knew JPN and are regular readers, but others only met this project the very day that they were invited

for this task and began planning the agenda. By the end of the day, the JPN's newsroom is praised in terms of professional and personal experience and it is often seen as surprising.

Amílcar Correia, *P3*'s editor sees JPN as a unique case in the Portuguese online news and considers it "an interesting experience that is not limited by being a university site. Students have to deal with updates, talk to sources and produce news reports that show as much quality as any other media"[33]. This uniqueness is also marked by Raul Santos, journalist at Rádio Renascença that also points out the students' constant challenge in working with news sources and checking information, since JPN "isn't well known or very important, but they eventually get there"[34]. The editor for a day role may also be surprising for journalists that normally don't perform that kind of task, such as Pedro Mesquita, also from Rádio Renascença, whom also appreciates the work done by the team: "Still, I think that the novelty factor is important and I consider myself surprised by the JPN team"[35].

Some of the journalists such as Manuel Molinos already knew JPN's page and work due to the students that made the internship at *Jornal de Notícias*: "In my point of view the site is like a journalism lab, an interesting project within the University of Porto, that allows Communication students to interact with the real world that they will meet in the future"[36]. Paulo Pimenta is a photo reporter

[33] In http://jpn.up.pt/2011/03/31/amilcar-correia-o-jpn-e-um-caso-unico-na-imprensa-portuguesa/

[34] In https://www.facebook.com/video.php?v=10150652933810326&permPage=1

[35] In http://jpn.up.pt/2011/05/24/jpn-pedro-mesquita-e-editor-por-um-dia/

[36] In https://www.facebook.com/video.php?v=10200511789492712&permPage=1

from the newspaper *Público* that finds "important to come and share professional experience with students, giving them the work perspective, the street beat, to show how to tackle a story or shooting pictures. It was a great challenge to be within such a well prepared group"[37]. Inês Nadais, also from *Público* welcomes the idea that JPN works as a live training laboratory, which compensates a handicap felt by her generation, when the journalism teaching was marked by the disconnection between theory and practice. Furthermore, she points out other differences: "I felt a big difference between 'coordinating' a team of professional journalists and the JPN team, made by senior students. What distinguishes them is the curiosity and anxiety about what may be the in the future"[38]. The enthusiasm of JPN practitioners is also highlighted by Miguel Carvalho, from news magazine *Visão* that saw the experience as a flashback to the beginning of his professional career "with a lot of creative brainstorming, much debate and proposals. You have some of the best Porto's information, through different angles"[39]. The novelty of JPN's approach and the team eagerness are also stressed out by the television journalist Luís Miguel Loureiro: "in there is the spirit that should exist in every newsroom and it's good to know that trainees are willing to go out and make contact with the world. By doing so, they help to create a sense of identity which states credibility. It is reflective and quality journalism"[40].

[37] In http://jpn.c2com.up.pt/2014/04/29/paulo_pimenta_foi_editor_do_jpn_por_um_dia.html

[38] In http://jpn.up.pt/2015/04/25/media-ines-nadais-elogia-laboratorio-do-jpn/

[39] In http://jpn.up.pt/2014/03/21/10-anos-jpn-bastou-um-dia-para-eles-revolucionarem-a-redacao/

[40] In http://jpn.up.pt/2014/03/21/10-anos-jpn-bastou-um-dia-para-eles-revolucionarem-a-redacao/

Some of the editors for a day were former students of Communication Sciences of University of Porto that returned to JornalismoPortoNet, their first training camp. In a retrospective look they now see JPN differently and find that changes took place, as it is shown in Joana Felize's statement: "I realize the difference between what we did in the first year with less means, but the will and the passion to make news remains intact. I was not expecting to see this as professional, organized meeting and assigned work, in my time it was not so much"[41]. Manuel Bento considers that the project is now more solid and he is pleased by the "professionalism" shown[42].

Ivo Costa sees the students' experience as his own, very important: "For me JPN was very important to learn things that later were very useful"[43]. What can be improved? The answer is unanimous: "The updating and the speed".

Students do not always show enthusiasm for being coordinated by a professional journalist, although they are curious about the topics or approaches that might be proposed. At the end of the day, the perception changes and they realize that it was a unique opportunity to learn more about the profession: "I liked the realistic approach that the editor has given to the issues, we are still gaining experience and we think that everything is news. The editor helped us to get that sense of reality"[44]. Another student

[41] In http://jpn.up.pt/2014/03/21/10-anos-jpn-bastou-um-dia-para-eles-revolucionarem-a-redacao/

[42] In http://jpn.up.pt/2014/03/21/10-anos-jpn-bastou-um-dia-para-eles-revolucionarem-a-redacao/

[43] In http://jpn.up.pt/2014/03/21/10-anos-jpn-bastou-um-dia-para-eles-revolucionarem-a-redacao/

[44] In https://www.facebook.com/video.php?v=10153966713040422&theater

marks the public's point of view: "It helped us to put ourselves in the other side: does a reader read this? What is the best format? This was crucial"[45]. For another one "it was an opportunity to be in contact with the journalism's real world"[46]. In some cases there is a higher enthusiasm: "It was fantastic to have someone with so much experience to pass on important knowledge" or "It's not every day that we have a journalist with whom we can exchange ideas"[47].

Sometimes is when they are put in contact with people from outside the University that students are aware of the importance of JPN as part of the journalism teaching project: "When I had to do the preview of the Guest Editor, during the interview I realized that there are people who value JPN and follow it daily"[48].

For JPN Editors, this is also a valuable experience: "In terms of dynamics it is very different to write for the normal newsroom or having a professional journalist as editor". The young editors consider that they also learn and grow. So, when students put questions and hear valid advice in a different environment, they also listen and learn: "It helps us to have another perspective and to do other things"[49].

The senior student's testimonials

Since 2004, JPN brand has consolidated its place in the Portuguese academic journalism as an example of laboratory practice that

[45] In https://www.facebook.com/video.php?v=10153966713040422&theater

[46] In https://www.facebook.com/video.php?v=10153966713040422&theater

[47] In https://www.facebook.com/video.php?v=10153966713040422&theater

[48] Gerivaz, Sara (2014). "Relatório de Estágio Curricular". p. 31.

[49] In https://www.facebook.com/video.php?v=10153966713040422&theater

provides students the opportunity to experience what they have learned throughout the course, but still under the supervision of professors. The JPN is a middle ground between education and the labour market as it provides students a first contact with the professional routines, still under the professors' 'protection' and guidance, even though keeping the responsibility of their work.

In the internship reports from 2004 senior students "considered the experience a solid preparation for an external internship and future employment. It is in fact the intense 'dialogue' established between external trainee students in media newsrooms and the students from JPN that provide comments to the published news" (Zamith *et al.*, 2004: 24). Over the eleven years of existence of the JPN the stage of final reports continue to reflect this vision. The cyberjournal is aimed to the students at the first stage of their career as journalists.

For professors, some of them journalists or former journalists, it is a way of bringing together academia and newsrooms and to show what is produced within the University. For the media JPN is a laboratory where future professionals are formed. These different levels can be assessed in students' internship reports and the way they evolved since 2004.

Internship reports reflect on JPN, the work that has been done and its articulation with the curriculum. These reflections and critics are the basis for changes and adaption on technical and editorial issues in JornalismoPortoNet. What students write at the end of JPN stage in their internship reports? Some quotes from internship reports 2003/2004, first year of the JPN:

Strengths

- "To coordinate a group of friends is not always easy, we had to learn how to impose, we had to forget the friendship and, when necessary, ask friends to reason"; "To establish the basis of a project and make it work is a reason for pride"[50].
- "We were the first, JPN will always be 'our' site"[51].
- "The JPN managed to cross the walls of the Faculty and the barriers of the course, and this was one of the greatest achievements of those who were involved in the project"[52].
- "There, we stopped being students, but we were not journalists yet, we were in the middle"[53].
- "The JPN gave us freedom and added responsibility. The texts were published and this carried the obligation to be objective and rigorous"[54].
- "Now, in a back view, I recognize its importance in my learning process and assimilation"[55].
- "I feel more complete (…) more curious"[56].
- "I was the forerunner of a new idea that can live a trace"[57].

[50] Abreu, Andreia (2004). "Relatório de Estágio". pp. 5-6

[51] Abreu, Andreia (2004). "Relatório de Estágio". p. 16

[52] Abreu, Andreia (2004). "Relatório de Estágio". p. 18

[53] Morais, V. André (2004). "Relatório de Estágio". p. 20

[54] Morais, V. André (2004). "Relatório de Estágio". p. 20

[55] Morais, V. André (2004). "Relatório de Estágio". pp. 20-21

[56] Morais, V. André (2004). "Relatório de Estágio". p. 23

[57] Amorim, Bruno (2004). "Relatório de Estágio". p. 3

Weaknesses

- "The amount of work and the long hours"[58].
- "We didn't have a personal agenda or technical resources"[59].
- "We had to live every experience personally, we did not have anyone to follow or observe, it was just us and the professors"[60].
- "I was often relegated to a second place by the sources, out casted by PRs whom spoke only with professional journalists"[61].
- "The lack of means, especially reporting equipment"[62].
- "Delay in publication of texts that would lose the newsworthiness because JPN lacked someone with authority to re-read and publish"[63].

[58] Abreu, Andreia (2004). "Relatório de Estágio". p. 21

[59] Abreu, Andreia (2004). "Relatório de Estágio". p. 16

[60] Abreu, Andreia (2004). "Relatório de Estágio". p. 8

[61] Abreu, Andreia (2004). "Relatório de Estágio". p. 9

[62] Amorim, Bruno (2004). "Relatório de Estágio". p. 16

[63] Bento, Manuel (2004). "Relatório de Estágio".

Quotes of internship reports when the JPN site was renovated in 2006/2007:

Strengths

- "It was the daily production of news content that made me create a rhythm of work, live the routines, assimilate the journalistic culture and gain some professional experience"[64].
- "The internship in JPN made me more insightful and confident"[65].
- "I created the habit of thinking of an alternative way to explore stories that were already dead"[66].
- "Equal status excluded competition and privileges, there was a team spirit and camaraderie"[67].
- "There was a strong team spirit and mutual support, all of us gave it all to JPN"[68].
- "The site has been renovated and I could take advantage of other features, which was an asset because it allowed me to experience other things"[69].
- "Only after living JPN I realized that it was on the favorites' list of some journalists from quality media and it was read by them"[70].

[64] Posse, Patrícia (2007). "Relatório de Estágio". p. 20

[65] Posse, Patrícia (2007). "Relatório de Estágio". p. 20

[66] Posse, Patrícia (2007). "Relatório de Estágio". p. 9

[67] Posse, Patrícia (2007). "Relatório de Estágio". p. 9

[68] Queiroz, João (2007). "Relatório de Estágio". p. 7

[69] Queiroz, João (2007). "Relatório de Estágio". p. 13

[70] Queiroz, João (2007). "Relatório de Estágio". p. 18

Weaknesses

- "The main problem was time management and working with time great pressure"[71].
- "The editorial choice was not always clear"[72].
- "The contact with the sources revealed the weaknesses of a project still looking to build credibility and recognition from the public"[73].
- "The big criticism is the excessive hours, from 8 am to 20 pm, which is doesn't result in more work and affects the free time and time to rest"[74].
- "The JPN should consider whether to invest more in journalistic genres such as interview and invest in large timeless themes, not only at daily news"[75].
- "I never felt that the JPN doors were open. I thought it was an elitist space, only for those who were in the last year, but I now recognize that the initiative should part from the students and I don't understand how there are so few people interested in writing in JPN since the first year"[76].

[71] Posse, Patrícia (2007). "Relatório de Estágio". p. 9

[72] Posse, Patrícia (2007). "Relatório de Estágio". p. 10

[73] Posse, Patrícia (2007). "Relatório de Estágio". p. 10

[74] Posse, Patrícia (2007). "Relatório de Estágio". p. 11

[75] Posse, Patrícia (2007). "Relatório de Estágio". p. 18

[76] Queiroz, João (2007). "Relatório de Estágio". pp. 15-16

Quotes from internship reports of the academic year 2013/2014:

Strengths

- "JPN's journalist is out of his comfort zone not only in terms of media (video, audio, etc.) and working with different editorial subjects, because there is no specialization which encourages the diversity of work and prepares the trainee for the labour market"[77].
- "Its scope should be cherished and preserved so that future generations can understand the importance of the collaborative spirit, solidarity and creative journalism"[78].

Weaknesses

- "It should cover hard news too, that would make the trainee gain more experience. It, should reintroduce political issues, for example"[79].
- "Editorial conservatism (by not using long narratives)"[80].
- "The site was an obstacle to the use of available resources, it is rudimentary and does not follow the current needs that are taught during the course"[81].
- "The site has discrediting limitations that do not allow the enhancement of resources"[82].

[77] Couto, Ricardo (2014). "Relatório de Estágio". p. 9

[78] Couto, Ricardo (2014). "Relatório de Estágio". p. 20

[79] Gerivaz, Sara (2014). "Relatório de Estágio". p. 38

[80] Couto, Ricardo (2004). "Relatório de Estágio". p. 9

[81] Couto, Ricardo (2004). "Relatório de Estágio". p. 10

[82] Couto, Ricardo (2014). "Relatório de Estágio". p. 20

- "The editorial statute should be clarified"[83].
- "The evolution of the editorial line part is directly influenced by the views of the editors rather than obey the collective identity built by all"[84].
- "The site needs urgent revision, the current image has more than seven years, which in the online environment is an eternity, it lacks a complete turn, and adaptation to new devices because it is not the public that has to get to us, we who have to get to the public"[85].
- "JPN was born in a phase where it could innovate, which it did, but it didn't change with the times"[86].

For the JornalismoPortoNet 10th anniversary, in 2014, the senior students made a special multimedia coverage not only on the anniversary but also about online journalism practiced in the last decade. Former students, professors, and founders that worked on the project were interviewed, as well as the media managers that provide jobs for graduates or host the trainees. Here follows some of the most significant quotes.

The first JPN newsroom hosted around 20 senior students. One of them, Ana Rodrigues, an anchor at a local television from the north, says that at that time "everything was new, nobody had experience or knew how a newsroom or news website functioned,

[83] Lau, Afonso Ré (2014). "Relatório de Estágio". p. 12

[84] Couto, Ricardo (2014). "Relatório de Estágio". p. 20

[85] Lau, Afonso Ré (2014). "Relatório de Estágio". p. 12

[86] Lima, Ricardo (2014). "Relatório de Estágio". p. 14

but it worked"[87]. JPN's first editor, Pedro Rios, is now online editor at a national radio and he refers to it as building a project from the scratches: "it was an innovative project, there was nothing like; it was very exciting doing something that depended only on us and live to it; it was a challenge, an adventure"[88]. Both former students highlight the editorial line for adopting a different view of the city, its culture, the education and the University. It was another way of doing journalism perhaps more dynamic, free from prejudice and more independent, actually the advantages of having such a young team[89].

As for the experience, they recognize that JPN's daily work was important to realize "the routines and matters speed before going to do internships in a media organization". Another 2004 student, Ana Pereira, now editor of a local online newspaper, says it was an "opportunity to be a journalist without bad habits, aided by the monitoring of professors"[90].

Eleven years later, how do these former students of Communication Sciences of the UP look upon JPN? "I continue to watch the webpage and follow what is being done"; "It evolved into a news media that makes regular updates during most of the year and it is clear that JPN is more important to the journalism courses now than it was at the beginning"; "When I read the JPN I realize

[87] In http://jpn.up.pt/2014/03/21/10-anos-jpn-uma-viagem-no-tempo-com-os-pioneiros/

[88] In http://jpn.up.pt/2014/03/21/10-anos-jpn-uma-viagem-no-tempo-com-os-pioneiros/

[89] In http://jpn.up.pt/2014/03/21/10-anos-jpn-uma-viagem-no-tempo-com-os-pioneiros/

[90] In http://jpn.up.pt/2009/03/20/video-recuperamos-o-primeiro-video-do-jpn/

the difference between what we did in the first year with less means, and what is done now"[91].

Conclusions

Since 2004 JPN has particularly evolved in terms of structure, functioning and contents. The first trainees pointed failures that have been corrected since then, such are the case of audio and video recording equipment, computers and other essential equipment for current journalistic practices. The guidance in the daily work was also corrected by hiring a full-time editor, and later a second half-time editor, which evolved into the current two full-time editor team. As for the contents, if early critics were focused on the absence of major reports or special subjects that require more planning and preparation time, today we are faced with the opposite criticism, because JPN gives more attention to the major matters or timeless dossiers and less focus on hard news. However, this criticism is not always justified. It was exactly the exhaustive coverage of a current event that gave JPN one of the Cyberjournalism Academic awards. Nevertheless, it is recognized that an increase of daily news on the city might be necessary.

JPN site was redesigned eight years ago and the content management system (MT-Movable Type Publishing Platform Version 5.04) has proved itself to be limited considering the evolution of online journalism, even if it needed almost no maintenance, which is made clear by the fact that JPN has not a computer or multimedia department. The version of MT that

[91] In http://jpn.up.pt/2014/03/21/10-anos-jpn-uma-viagem-no-tempo-com-os-pioneiros/

was being used failed in terms of updates so it was necessary to think of a short-term solution. The solution was to include a new multimedia expert in the team, Pedro Candeias, a former student and responsible for the first JPN design. His initial task was to migrate all content produced over ten years on a new platform, WordPress, and adapt the new working environment to the needs and specificities of its functioning demands. Renewing the site will be the next big task. The testimonials and data we gathered about the 11 years of JPN existence led us to make a SWOT analysis presented as a conclusion.

Strengths

- Semi-professional structure that puts students in close contact with routines and journalistic practices, but not necessarily meaning the temptation to replicate the real-life environment of a large newsroom. As students state the daily production of news content creates rhythm of work, routines, and produces journalistic culture and professional experience. The pedagogical purpose is still preponderant over the news logics when guiding the student's production so that they may consolidate their skills.
- Editorial line and subjects focused on different approaches of the national media are referred by students that enhance the thinking of an alternative way to explore stories. The JPN aim is not to compete with national media. It has no means to do so and its goal is to treat events in a journalistic manner but with a different approach from the other media. The aim is to encourage students to see the daily events from multiple

perspectives and thus tackle them from diversified point of views.

- Hypermedia contents are also seen as crucial because JPN allows experimentation and alternative narratives.
- Great reports and dossiers are also cherished because students are given the opportunity to work in different editorial subjects.
- Being a University of Porto project adds credibility, which students realize when they acknowledge that JPN is in the favourites' list of some journalists from quality media.

Weaknesses

- Attracting students/ trainees in order to maintain a more or less permanent flow of contents and updates. For students in the 1st and 2nd years, JPN is an extra-curricular activity, therefore depending on their availability and willingness, and not always engage with it due to incompatibility schedules or lack of motivation.
- Website: unattractive design; rigid structure; inflexible segmentation. These factors also influence the content and its image because the website has technical constraints that do convey with innovations in this area. The site has been criticized many times and it is pointed out that it needs revision. It is also out of date in terms of image, more than seven years, which in the online environment is an eternity. The site needs a complete redesign and adaptation to new devices because it is not friendly and it is not attractive.

- Not a consistent team and production, often leading to consequences in editorial consistency. This makes students criticism in terms of editorial guidance, either because they see it as conservative, or they claim it lacks hard news. This factor is naturally related to the changing of newsroom teams and editors which is the normal cycle in the university environment and, moreover, in an extracurricular activity.
- Delays towards reality and some trends, e.g., unresponsive site designs for mobile devices. This comes as particularly relevant, since the age group that produces JPN, but also its readers engage with news contents through mobile devices.
- Being in the University of Porto - dilution in the UP universe.
- Lack of disclosure and marketing campaigns, also limited by the lack of financial resources.

Opportunities

- Experimentation in an academic environment. To tackle the opportunity given by the particular shape of this degree, namely by gathering the research produced by professors from the different faculties, in areas related to journalism and which have proven fundamental to the design of new and old media, news consumption and journalistic contents studies.
- Laboratory space on a more expanded concept, e.g., not just focusing on content but also in software tools that enhance the production and consumption of news, and the study of these processes, their effects and potential.

Threats

- Lack of independent financial resources – therefore back autonomy for making decisions without relying on other decision levels, in particular the technical and human resources. The JPN has no financial independence but its semi-professional structure depends on external entities (an institution within the Rectorate and the four faculties directors) that manage the budget.
- Professional Journalist Certification Commission (*Comissão para a Carteira Profissional* - CCPJ) that grants the professional journalist certification – JPN is a semi-professional organization, thus it is mandatory to be certified by this commission. Sometimes CCPJ raises questions regarding the professional certification of JPN editorial board and the resident editors. The main reason is that only certified journalists can sign news - trainees cannot contact sources or sign the texts they produce.

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RELATIONSHIPS BETWEEN STUDENT INTERDISCIPLINARY TEAMS AND THEIR MEDIA INDUSTRY LIAISONS: DESIGN THINKING METHODOLOGY IN A UNIVERSITY LABORATORY

Beñat Flores, Txema Egaña & Aitor Zuberogoitia

(Mondragon University)

Introduction

The Internet and the digital revolution are completely changing the communication and journalism paradigm (Zuberogoitia, Arana & Bidegain, 2013). Shute and Becker (2010: 3) predict that communication and journalism professionals will need to face a constant recycling process, in order to develop creativity, innovation and collaboration skills. According to Müller and Trüby journalism and communication as part of the "Creative Industries" are considered as "one of the most promising fields of economic activity" in highly developed economies (2009: 2) and state that they are among the most innovative sectors (2009: 28). That is why in a 21st century market that is demanding innovation, knowledge of technology (AACCU, 2007), creativity (Vidal, 2004) and innovation (European Commision, 2011) will play a key role in society.

What do we understand by creativity and innovation? On the one hand, it is not an easy task defining creativity, and there can be as many different interpretations as people (Robinson, 2010). However, it is commonly agreed that creativity refers to an innate skill that everybody possesses (Keung, Cheng, & Belinda, 2006) that serves to create something novel and appropriate, because while at an individual level it can be helpful in solving problems at work or daily life, at a social level it is a conductor towards scientific findings, new artistic movements, inventions and new social programs (Sternberg & Lubart, 1999: 3). Is there any way to measure such ability? After many decades trying to develop an appropriate tool that would measure creativity (Jackson *et al.*, 2012), there are nowadays some different models and procedures (Keung, Cheng, & Belinda, 2006), although they exhibit the lack of a unified methodology. On the other hand, innovation refers to the notion of "doing"; either doing something new, or giving a new application to something that already exists, but it will only be an innovation for as long as it has an added value (Kearney, 2004).

Need for creativity and innovation in communication studies

Some universities and other education institutions have already begun questioning their teaching methods (AACCU, 2007), and they are attempting to introduce new educational practices in order to prepare their students for the new creative paradigm (Nobell & Bengoa, 2013). With this in mind, creativity and innovation in education are not just seen as an opportunity, but as a necessity, although as of yet creativity is not at the centre of education

(Ferrari, Cachia & Punie, 2009). Razzouk and Shute (2012: 343-344), state that the fostering of creative skills depends "substantially on the development of curricula", by specific actions such as, giving to creativity the same importance as to every subject, "defining it coherently throughout the curriculum, allowing freedom and time for discovery, and taking learners' interests into account" (Ferrari, Cachia & Punie, 2009: 3-47). According to Gorzka (2012), by putting into practice these actions, the result would be a modern university whose main task is training innovators for an innovation knowledge society.

Projects such as the *Collaborative Learning through Functional Responsibility* (Sánchez Cid & Pueo, 2012) are evidences of the concern about the importance of creativity and innovation in communication studies. In this project the learning process is focused on strengthening practice through teamwork, in order to prepare communication students properly for the real world. Another example is the project *Solidarity Marathon Corporate Communication: Protagonists of Chance,* the main goal of which is to get university and organisations working together on real projects (Nobell & Bengoa, 2013). Finally, in the *Cinema Industry Alliance for Knowledge and Learning* project different universities include innovation and entrepreneurship in their curricula, putting it into practice in collaboration with enterprises through an innovative Project Based Learning process (Valencia, Crespo & Gómez, 2013). These three different projects are approaches of how to introduce a creative thinking, innovation and multidisciplinary mindset into communication studies, as well as involving the communication industry in working with students.

Applying design thinking at university

As universities seek a formula to train media students to develop their creativity and innovation skills, Design Thinking has emerged as a new path in the field (Platter, 2010; Zuberogoitia, Arana & Bidegain, 2013). Design thinking was originated and first applied at the Institute of Design (d.school) at Stanford University (Steinbeck, 2011). According to Razzouk and Shute design thinking is not just a skill, but a way of thinking, and they believe that by improving students' design thinking skills, students will be "more ready to face problems, think outside of the box, and come up with innovative solutions" (Razzouk & Shute, 2012: 343).

Understanding Design Thinking as a "meta-disciplinary methodology" has loosened its link to the design profession, and nowadays it is regarded as relevant to all disciplines and professions (Lindberg, Noweski & Meinel, 2010). For this reason, the number of universities and other institutions of higher education using this methodology has increased considerably (Withell & Haigh, 2013). Opinions differ on what Design Thinking is. Rauth *et al.* (2010), for example, give two different definitions of Design Thinking, comparing Stanford's d.school teachers (USA), who see Design Thinking as an open concept or a culture, with teachers from Potsdam University (Germany) who are more likely to understand it as a set of rules or as a toolbox. Furthermore, ideas vary on how Design Thinking should be applied and there does not seem to be a single process.

Melles (2010) analyzes five universities where Design Thinking is being used as an approach, which are the Open University UK,

North Carolina State University, University of Minnesota, Simon Fraser University and HPI: Universitat in Potsdam. Due to the wide variety of different Design Thinking models found, he calls for the readings and projects which make up the models to be unified in a common curriculum (Melles, 2010). Donar also notes the diversity of Design Thinking approaches when analyzing five Canadian universities that use it in teaching but, in contrast, variety is seen as a positive feature because as she says, "otherwise, any singularity derived would contradict the spirit of design, which is innovation itself" (Donar, 2011: 98).

How design thinking affects creativity and innovation skills

As the number of universities applying Design Thinking progressively rises, results have become available with which to evaluate its initial effects on student creative and innovation skills. Experience at Tampere University in Finland and Magdeburg in Germany shows that multidisciplinarity improves students' understanding and fosters the ability in them to think in a completely new way (Lugmayr, Stockleben & Zou, 2013). On completing the course, students perceive an improvement in their Design Thinking expertise (Withell and Haigh, 2013) that helps them create mindsets from which to build "creative confidence" (Rauth *et al.,* 2010: 7). Design thinking also challenges students to take risks and to think in new ways (Carroll *et al.*, 2010), principally due to the variety of disciplines that are likely to be found within one same team (Lugmayr, Stockleben & Zou, 2013).

In addition, Gestwicki and McNely (2012) underline another two important aspects of their experience with Design Thinking at Ball State University. In the first place, the iterative approach of this methodology permits students to understand failure as a part of the learning process, although it seems that they need some time to get used to it. Secondly, as it is a user-orientated design process which is based on regular empathy towards the user, Design Thinking allows students to build a better understanding of the problem domain, and thus, to create much more effective designs. Lastly, the methodology appears to make it easier for students to move into innovative processes that otherwise would be beyond their capabilities (Kangas, Seitamaa-Hakkarainen & Hakkarainen, 2013).

However, Melles, Howard and Thompson-Whiteside (2012) reveal that far from being always successful, there are some negative aspects in applying Design Thinking that need to be improved, citing the case of the Design Thinking course developed by Swinburne University in Australia. Three major obstacles were found in this course: first, it proved difficult for students to see the broader picture so they tended to solve the challenges quickly, defining the solution as a product. The second difficulty was in relation to the participants' study skills, because it was the first time that they had to read and reflect on scientific articles. Finally, the third major obstacle found was in relation to the administration of time, which impacted on the completion of the whole design thinking process and prevented students from developing and testing their prototypes.

Overall Design Thinking seems to be a suitable methodology for developing university students' creativity and innovation skills. Taking this premise as a basis, this report aims to answer the following

research question: how does a design thinking based innovation media laboratory contribute to the creativity and innovation skills of Audiovisual Communication students carrying out their Degree Final Project?

Methodology

In order to conduct our research we recruited the participation of six fourth-year students, who were in their final year of a degree in Audiovisual Communication at Mondragon University. We were also able to count on the collaboration of two academic tutors from the university, one tutor from the Basque Autonomous Government (Eusko Jaurlaritza) and a further tutor from the Provincial Government. Additionally, two expert seminars were available for feedback towards the end of the process.

This research was carried out at the interface between two paradigms. The principal paradigm employed was an interpretative one, based on the perception of all participants as they improved their creativity over time by using the newly available design laboratory. However, it also makes use of the critical paradigm, whereby on-going improvement is fostered in order to meet ever-changing global demands.

A production analysis approach (Moon & Thomas, 2013), plus in-depth interviews and focus groups techniques were used in the information-gathering process. Production analysis was used in order to read, analyze and interpret the three different writing tasks that the participant students had been required to produce: Firstly, a 1,500-2,000 word reflection on their expectations of the

experience; secondly, regular blog posts of 500 words describing their experiences, and finally, a 2,000 word final reflection evaluating the whole experience.

Apart from the aforementioned documentary analysis, a series of focus group discussions and in-depth interviews were also held. One year after the completion of their initial experience using Goikolab, four of the six original students participated in a focus group discussion via a video conference link. The virtual nature of this conference was deemed necessary due to logistical issues that made it impossible for all the participants to be physically present at the same time and place. In-depth interviews with each student were also carried out. In addition, both tutors from Mondragon University, and the two tutors from the Basque government institutions mentioned above, were also interviewed, in order to provide an outsider's perception of the whole experience and in particular, of whether the students' creativity and innovation skills had been measurably influenced in any respect by the opportunity to work in this newly established media laboratory, designed to encourage creative thinking and innovation.

Thus it can be seen that four measures were taken in order to ensure the quality and reliability of the results. The first measure, as mentioned above, was to base this research on the interpretative paradigm, whilst also, albeit to a lesser extent, employing the critical paradigm. The second measure consisted in the use of two qualitative information - gathering techniques, i.e. document analysis and in-depth interviews, as a means of triangulating results. The third measure allowed for source triangulation, as the participants were students, tutors from an academic background and also tutors

from a governmental background, providing the opportunity for the comparison of both internal and external perceptions. Finally, in order to guarantee veracity and accuracy in the interpretation of the information, there was a contrast phase in which the participants were able to review the results of the research and to provide feedback.

Goikolab: a case study of a media innovation lab based on design thinking methodology

The case study described in this section commenced in the academic year 2012-2013, when the Faculty of Humanities and Education (HUHEZI) at Mondragon University added a course entitled *Design Thinking* to the curriculum of their degree in Audiovisual Communication. This course was delivered to third-year students of this degree during the spring semester of 2013. The subject was aimed at training students in the design thinking process, thereby enabling them to create innovative group projects by the end of the course.

In the academic year 2013-2014, HUHEZI inaugurated Goikolab, an audiovisual laboratory based on design thinking methodology, in which fourth-year students would develop their expertise in design thinking while working on their final year projects. Goikolab is designed to encourage the flow of ideas, providing a flexible working space well supplied with movable furniture, such as tables, chairs, couches and poufs. Moreover, all the materials needed for the visualization of ideas and for the quick prototyping used in the design thinking process, such as whiteboards, paper sheets, scissors, colour pens and stickers, are readily available to all students working in the laboratory.

The experience started in February 2014 and six students participated in the first edition of Goikolab. Although student groups were initially intended to be multidisciplinary, unfortunately this was not possible due to timetable management issues among the candidate faculties involved. For this reason, the initial experience of Goikolab involved two groups, each made up of three audiovisual communication students. Each group was assigned a different project to be carried out in collaboration with a Basque governmental organisation. Group 1's project required them to conduct research into Basque intangible cultural heritage. This group was tasked with writing a research report and creating an audiovisual piece for the Basque Autonomous Government. Group two were asked to complete a project for the Provincial Government in which they were to analyze the use of the Basque language, Euskara, by Basque teenagers when using social networking sites, and furthermore, to develop a strategy to foster its use in this form of communication.

The student groups had a minimum of two tutors to guide them through the process: an academic tutor from Mondragon University and an external tutor from the organization with whom they were working. Although the main location for work on the projects was intended to be Goikolab, students were given total freedom to work according to their needs at all times. For instance, both groups and their tutors scheduled regular meetings, held at the respective government institutions.

In order to facilitate the execution of the projects, students were awarded a monthly grant, financed by their partner institution, lasting from February to June 2014. However, this subsidy was not without obligations for the students; they were asked to document

the entire process involved in carrying out their projects by means of diverse types of writing task: initially, before the process began, they were required to write a 1,500-2,000 word report concerning their expectations of the experience they were about to undergo. As well as this, they were asked to create a private blog and write a post every two weeks in order to record the entire process of the project. Finally, they were asked to write a 2,000 word final reflection describing their perception of the whole experience.

Results and data gathered

The aim of the present paper is to report on the findings from research carried out into how two teams of students studying for a degree in audiovisual communication were able to learn to meet real communication needs by following design thinking methodology, and whether they developed their creative and innovation skills during the process. Below, we provide the data gathered from the aforementioned document analysis, in-depth interviews and focus groups.

The principle outcomes of the experience are two major projects. Group 1, who worked for the Basque Autonomous Government, researched and wrote a report on intangible Basque cultural heritage. Furthermore, they produced a documentary about the traditional Basque dance of homage called the "Aurresku". Group 2, who worked for the Provincial Government, developed a communication and improvement plan for Ika-Mizka, an initiative that aims to encourage Basque undergraduates to reflect on the role that the Basque language plays in their everyday lives.

As regards the initial expectations of the experience of using Goikolab in its first edition, there is a stark distinction between the expectations of the tutors compared to those of the participating students. The expectations of the tutors from Mondragon University seem modest; they stated that their main goal was "to start up the laboratory". Tutors from both organizations remarked that, apart from the specific goals of the projects, there was a common desire for collaborative between university and institutions. Moreover, especially in the case of the Provincial Government, the tutor was concerned about not "living up to the expectations" of Mondragon University. These aspirations differ sharply from those expressed by the students. When asked whether the experience had met their expectations, students expressed their dissatisfaction, largely because some of the features of the original Goikolab project could not be implemented, such as interdisciplinarity. Tutors from Mondragon University point out that this "was due to the difficulty of scheduling an experience involving students following different degree courses, each with their own timetable". One of the tutors from the university argues that, although interdisciplinarity was not finally implemented, the results of the projects "met the needs of the organizations very well".

On the one hand, the tutors agreed that if interdisciplinarity had been applied, the final results would "of course have been different", but they doubted "whether they would have been better". On the other hand, the student responses reflect the disappointment of their initial expectations. One expressed his frustration at feeling rather "limited", because he had no choice but to make a "documentary or a similar audiovisual piece of work".

Had he had an engineer or a computer scientist as a colleague, he felt, this would have given the opportunity to create much more complex and interesting products such as "apps" or "web pages".

Another feature that failed to be implemented as planned was design thinking methodology itself, where the focus groups revealed a lack of clarity and differing opinions as to what level of implementation was finally achieved. For example, both tutors from Mondragon University agreed that, although they received training in design thinking, they felt it was insufficient to enable them to assimilate it and put it into practice. Moreover, all but one of the students claim not to have been informed that they were to follow the design thinking process in their Final Grade Projects, and one had been absent on Erasmus during key training. Furthermore, neither of the participant organizations' tutors had been trained in design thinking or its methodology due to their personal time constraints.

Both university tutors and participating students admitted that no checks were made to ensure that students were applying design thinking methodology. However, students agreed that they probably followed certain design thinking phases during the process, "even if it was unconsciously". Despite its particular characteristics, neither students nor tutors perceived a great difference when comparing design thinking with other research methodologies. Thus, when asked whether design thinking was the most suitable methodology, both tutors agreed that, rather than focusing on the laboratory, the methodology applied should be the most appropriate for each project. As a tutor explains, "design thinking seems effective for Goikolab, but in the same way as many others probably could be".

However, the university tutors suggest that there is a contradiction when talking about the final product after applying design thinking methodology. While design thinking offers a wide variety of possible results, it may be incompatible with the specific academic requirements of degree final projects, such as a research report or an audiovisual product. As one university tutor states, "a balance between these two demands has yet to be found", whilst another university tutor adds that a period of adaptation will be needed, allowing both tutors and students to embrace the methodology. In addition, one tutor feared that she failed to "give students enough time to experiment and test", limiting the opportunities that design thinking should offer by its very nature.

Regarding the research question, it seems difficult to assess whether students have developed their creative and innovation skills during the process. First of all, students show notable confusion about the definitions of innovation and creativity, although they were given an article precisely intended to help them to work on this aspect, and given this, students were found to have difficulties saying whether they felt more creative and innovative. On the one hand, the students working for the Basque Autonomous Government consider their documentary to be creative, which coincides with the opinion of their university tutor. In the case of the group working for the Provincial Government, one student admits that at the beginning of the process they "had innovative ideas" but she doubts the "innovativeness of the final product" they handed in, whilst the university tutor gave the communication plan full approval. All students and tutors agree that the alleged creativity and innovation

might not have been a result of design thinking methodology, keeping in mind that it was not applied as intended.

Nonetheless, the participating students coincide in their assessment of the experience as positive. They felt comfortable in the laboratory, and in general they admit to having enjoyed carrying out their degree final projects. Both the tutors from Mondragon University and those from the participant organizations declare themselves very satisfied with the results of the projects. Both agree that the results were more professional than expected and "very valuable" to their organizations. In addition, the university tutors remark that the first edition of Goikolab has achieved three main positives. The first is that this experience of "learning by doing" has proved to be an enriching one for audiovisual communication students. The second is the importance to the university of "building bridges with enterprises and organizations" in order to offer students the chance to have "real contact with the professional communication field". Finally, the start-up of Goikolab demonstrates the policy of Mondragon University to experiment, innovate and try out new educational models for the benefit of its students.

Final conclusions and discussion

In the present study, we have described the initial implementation of a media innovation laboratory based on design thinking methodology, called Goikolab, at Mondragon University. The results and data obtained have allowed us to identify the strengths and weaknesses of the experience, and thus make some suggestions in order to improve future editions.

First of all, there is a need for a stronger definition of creativity and innovation within Goikolab. As Robinson (2010) warns, there are as many different interpretations that can be adopted about creativity, as there are tutors' and students' doubts about its meaning. Both creativity and innovation require an agreement on and internalization of how they are understood within the context of Goikolab. In addition, it is considered that the lack of a strong definition of creativity and innovation made it impossible to assess whether, or to what extent, the participating students developed such skills. Thus, according to Jackson's statement about measuring creativity (2012), this report proposes developing a specific measuring tool in order to make a reliable evaluation of the students' development in creativity and innovation skills.

As regards design thinking methodology, the answers provided by the university tutors and the participating students suggest that there is a need for further training in order to avoid any obstacles or resistance that could impede its full implementation. In the case of the university tutors, they express the need for more sessions to help them internalize the methodology and thus enable them to monitor and guide its application throughout the process. The students had already received training as a subject in their third year. Nonetheless, there is a perceived need for a refresher course prior to the execution of their degree final projects in the fourth year in order to enable them to recall and apply design thinking methodology in a more consistent and effective way.

It has also been found that not all the participants involved had received the same level of information regarding the dynamics

of Goikolab. In fact, the tutors from the participant organizations, the Basque Autonomous Government and the Provincial Government, had received no training in design thinking and thus were disassociated from the methodology and the laboratory itself. This is regarded as a key contributor to the somewhat haphazard nature of the application of design thinking methodology in the execution of their projects by the participating students. Thus, in addition to the preparation of the students and university tutors, the familiarization of the organization tutors with design thinking methodology is deemed necessary.

In conclusion, and in line with Melles, Howard and Thompson-Whiteside (2012), the case study of Goikolab demonstrated a lack of sufficient time being allocated to the design thinking phases, which led to an insufficient application of this methodology by the students, who tended to resort to the quickest solution. As the first two months of the degree final project were carried out alongside other courses, they were regarded by the students as "non-productive". This points to the need for more time to enable students to understand failure as a part of the learning process and to build a better understanding of the challenge, as remarked by Gestwicki and McNely (2012).

Thus, although students, university tutors and organization tutors were all satisfied with the final result, "creative confidence" failed to be tested, as described by Rauth *et al.* (2010: 7). Neither was it possible to reliably assess the ability to think in a new way, as explained by Lugmayr, Stockleben and Zou (2013). Further research is now required as some of the recommendations made in this paper have already been applied. For instance, in the second

edition of Goikolab, held in the academic year 2014-2015, two students from the Bachelor's Degree in Entrepreneurial Leadership and Innovation (LEINN) and one student from a Master's Degree in Education in Multicultural and Multilingual Contexts (Ekomu) have joined the laboratory, making interdisciplinarity possible. Apart from this, in order to strengthen design thinking methodology and to ensure its correct application, a training course has been designed consisting of 6 lessons of 3 hours each. These preparatory lessons are being delivered every two weeks by an expert in design thinking to all the participating students. The results of the development of Goikolab will be reported in an on-going PhD, where different editions of this experience will be analyzed and compared.

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FINAL REMARKS

Shaping the Future of News Media aims at covering new perspectives of media ecosystems and promoting interaction and discussion among academics, professionals and educators interested in fostering quality and innovation in the field of journalism as well as expanding research networks among scholars working in the field of digital journalism, media education and journalistic praxis.

The journalistic profession is facing a time of change, experimentation and restructuring. One of the principal driving forces behind the changes in newsrooms today is media convergence. European universities face the challenge of adapting their curriculum to fit the new educational, economic and professional environments. Higher education institutions should actively research and promote new dynamics and innovation in newsrooms in order to train a generation of "integrated journalists". How are universities anticipating the changes that media convergence is bringing? What is the profile of the young trainee journalist? Is it the same one the industry is demanding?

Young versatile journalists should be competent to work cross-platform, to control production processes, to carry out news coverage with any tool carried in a backpack, and to edit material choosing the most appropriate language for each kind of information. They must have knowledge of how to address the audience, data visualisation and statistics and all without forgetting

the basic principles of journalism. With this in mind, the conference aimed to discuss the challenges that the profession is facing due to innovative practices and how these are transferred to journalism education.

This book is a concluding compendium of reflections from the participants in *Shaping the future of news media*, and includes communications in two thematic areas: challenges on new practices of news production and challenges in the field of journalism education.

In the first article, Díaz Noci offers an explanation about the major changes that have occurred in the intellectual property systems of the Common and Civil law from the arrival of World Wide Web to nowadays in the field of journalism. The standpoint of the article is to reflect about the way that these issues should be taught to future journalism practitioners.

In the second text, Mogos is also interested in the changes in the information environment and in the way contemporary societies relate to data. In her paper, the author examines new approaches to digital data analysis and communication and explains how data visualization tools present data from various fields and how they produce knowledge.

In the last chapter of this section, Carvajal, García-Avilés, de Lara and Árias take into account the innovation in journalism, which is not only focused on products, but also on the processes that create those products. In their article, the authors study the initiatives of audience participation in Spanish most innovative media using the content analysis as a methodology.

The part *Challenges in journalism education* starts with a summary by Asbjørn Slot Jørgensen of the Work Package 4 of the Integrated Journalism in Europe (IJIE) project, focused on teachers, academics and researchers in the field of journalism with the aim of improving and enhancing teaching in crossmedia and integrated journalism. The intention of the output of WP4 and of this chapter is to share inspiration and ideas among European universities and journalism schools.

The next chapter of this section explores an experience of broadcast-online integration in the last year of the bachelor's degree in Journalism at the University of Navarra. In the paper, Negredo, León and Amoedo consider the possibilities to develop it further because of the beneficial results for the students in the context of a highly fragmented study plan.

Afterwards, Meza focuses his article on the context of shrinking revenues from the advertising market and on the difficulties for a journalist to get job in the traditional media institutions. This paper reviews the most important aspects of computation thinking for the future of journalism education by looking at scholarship in the field and assessing abilities associated with computational thinking in the context of journalistic work, from topic identification, to data collection and interpretation, to information presentation and content aggregation and distribution.

In addition, Palomo and Sánchez take into consideration the engaging audiences as a key factor to survive in media business. Taking into account that academia has also been concerned with these new practices, this chapter presents an analysis of where and how subjects such as Participatory Journalism or Citizen Journalism

and Social Networks can be studied in Spain. In these terms, the authors identify strengths and weaknesses in the learning of social media management by new generations of journalists.

In another chapter, Reis and Lima present the characterization of the project of *JornalismoPortoNet*, a teaching experience of different laboratorial units on the news digital platform of Communication Studies in University of Porto. The article includes the teaching results of the experience and the validation in terms of learning from the student's point of view.

Closely linked with the previous texts, the last article is focused on innovation and entrepreneurship in journalism education in order to promote the necessary contact between students and other agents. As an example, Flores, Egaña and Zuberogoitia describe a media innovation laboratory called Goikolab. The authors report on the findings from research questions that addressed how the interdisciplinary student teams were able to learn to meet real communication needs following a design thinking methodology, and whether they developed their creative and innovation skills during the process.

The journalistic profession is facing a time of change, experimentation and restructuring. One of the main driving forces behind the changes in newsrooms today is media convergence. European universities face the challenge of adapting their curriculum to fit the new educational, economic and professional environments. How are higher education institutions anticipating the changes that media convergence is bringing? What is the profile of the young trainee journalist? Is it the same one the industry is demanding?

The book *Shaping the Future of News Media*, edited by the Integrated Journalism in Europe (IJIE) consortium, is a concluding compendium of reflections from the participants in the International Conference on Integrated Journalism Education, Research and Innovation, held in Barcelona from 17 to 19 June 2015. The book explores two broad areas: the challenges on new practices of news production and the challenges in the field of journalism education. The relevant issues examined by the contributors include intellectual property, data visualization, audience participation, computational thinking and innovative experiences of journalism training at university level.

Contributors: Jacques Guyot, Javier Díaz Noci, Andreea Mogoș, Miguel Carvajal, José Alberto García-Avilés, Alicia de Lara, Félix Árias, Asbjørn Slot Jørgensen, Samuel Negredo, Bienvenido León, Avelino Amoedo, Radu Meza, Bella Palomo, María Sánchez, Ana Isabel Reis, Helena Lima, Beñat Flores, Txema Egaña and Aitor Zuberogoitia.

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