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La Universidad Red y en Red
The University Network and on the Net

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Editorial

Editorial

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Media Education: An International Unstoppable Phenomenon. The Work of the UN, Europe and Spain in the Field of Edu-communication

La educación mediática, un movimiento internacional imparable. La ONU, Europa y España apuestan por la educomunicación

Dr. J. Ignacio Aguaded-Gómez

Despite the fact that media education scarcely appears reflected in school curricula all over the world, it is becoming more necessary in our societies. As Vallet stated decades ago, communication is the air we breathe; and it is therefore essential to train and educate the new generations to understand the new languages and its new active and recreational learning processes, codes and discourses to be implemented by the educative authorities in each country.

Media education should be also approached from other perspectives. The role of families as main educators and the media itself have a decisive edu-communicative influence on the children, as well as civil society and the citizenship in democratic societies. The citizenship should take part in associations and organizations with the aim to build a responsible and critic society in which the power of the media is increasingly pervasive.

The importance of media education at an international level is an indisputable reality. Since the 70s, some organizations such as the UNESCO have claimed the importance of media education as a transverse discipline which requires specific attention in school curricula, in teachers training, in family education, and should be also addressed to adults, the elderly, housewives, unemployed people, etc.

Today, with more organizations involved (European Parliament, European Commission and UN-Alliance of Civilizations- UNAOC Program) new actions and strategies are being implemented. An outstanding initiative by the Media Literacy Education Program (MLE) is a web portal called «Clearinghouse» (www.aocmedialiteracy.org), with more than 2500 registered users each month, with a wide range of resources, information and material available.

UNAOC also develops a multicultural project of video graphic production «Plural+», aimed at the elaboration of audiovisual products by young people all over the world, focusing on thematic areas related to migration, diversity and social inclusion (www.unaoc.org/pluralplus). UNAOC also works on a platform in «Media Literacy» in partnership with advisers, teachers and researchers from the five continents. The final design will be presented in Doha (Qatar) during the «Global Junior Challenge» (www.gjc.it/2011/en), to be held as a next step after the «I International Forum on Media and Information Literacy», held last May 2011 in Fez (Morocco) (www.fls-usmba.ac.ma) and after the «World Summit on Media for Children and Youth» (Karlstad, Sweden), co-organized with Nordicom.

Another remarkable initiative is «Mapping Media Education in the World», a publication released by UNAOC in collaboration with Grupo Comunicar. This publication has been distributed worldwide, presenting the most meaningful experiences in media education found in different countries.

At a European level, many experiences are being developed supported by the guidelines presented by the European Parliament, focusing on the implementation of edu-communicative policies in all educative systems. We would like to mention five countries in particular: Belgium, United Kingdom, Italy, Portugal and Spain.

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Editorial

Under the umbrella of the Belgian Presidency of the Council of the European Union, more than 300 experts from 30 countries gathered at the end of 2010 in the Conference «L'Education aux Médias pour tous», organized by the «Conseil Supérieur de l'Education aux Médias de la Communauté française de Belgique». This meeting was decisive to emphasize the importance of media education in Belgium and in the European Union. As a result, a declaration was released, the «Déclaration de Bruxelles pour l'éducation aux Médias tout au long de la vie» (www.declarationdebruxelles.be). This document is a clear and precise declaration that can be signed by any European citizen. Média Animation actions in Belgium are decisive for boosting media education in the country.

By the end of 2010 another important meeting took place in the UK. The «Media Literacy Conference» (MLC 2010) contributed to lay the foundations for future works on media education in the UK. Due to the economic crisis, the next meeting to be held in Nottingham will be postponed, but the Media Education Association (MEA), together with the Centre for the Study of Children, Youth & Media (CSCYMNM) and the prestigious British Film Institute (BFI) continue carrying out activities on this field.

In Italy, the MED (Associazione Italiana per l´Educatione ai Media e alla Comunicazione) has started to release «Revista Education» and is also organizing training activities along the country.

At the beginning of 2011, an important national conference took place in Portugal: «Literacia, Media e Cidadania». Educative authorities, the media, universities, research centres, teachers and other agents were gathered in this conference. Despite the economic crisis, this meeting was essential to discuss the implementation of future actions.

Finally, in Spain, generally, media education remains a pending task. Even if there are more and better qualified researchers and teachers working everyday on media education and the researches and publications evidence the necessity to teach and learn the media, our current curricula, the educational TV, and our control boards are still far from the outcome reached in other European and American countries. However, in 2011, two exceptional events on the field of media education took place in Spain: the «I Congreso de Alfabetización Mediática», organized by the Gabinete de Comunicación y Educación de la Universidad Autónoma de Barcelona: this initiative became an international forum for reflection with a remarkable representation of Arabic, European and American cultures. On the other hand, the «Congreso de Educación Mediática y Culturas Digitales», held in Segovia and organized by the Universidad de Valladolid and other organizations (among them, Grupo Comunicar). This innovative conference has been a turning point to re-activate in Spain the discussion on media education as a crucial element in the daily life of citizens.

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Dossier

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Introduction

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The Net on Teaching Processes at the University

La Red en los procesos de enseñanza de la Universidad

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Higher education has undergone some very significant changes in recent decades: access to it has been democratised, major progress has been made both in terms of research and of relationships with business and society, new teaching methodologies have been introduced, laws have been amended, quality assurance systems have been incorporated, the European Higher Education Area process has been implemented and so on. All of these changes are a consequence of the impact that an increasingly open and dynamic society –the information and knowledge society– has had on higher education. Moreover, we have experienced –and continue to experience– the rise of technologies that were first described as «new», then referred to as the 'Internet' and are now known as the «Web». The Web has spread into all areas of society and makes it more open. The social networking phenomenon is changing how we communicate with each other and how we value the present. However, technologies are not responsible for bringing about these changes in society in general and in higher education in particular; the changes were already there, bubbling under the surface until the time was right for them to happen. What the Internet has done is speed up the pace of change and enabled these changes to happen, while at the same time promoting new ways of communicating and disseminating ideas. These dynamics generate and are generating a real change in society and all of its institutions, not only in the field of higher education.

The introduction and use of the Internet in higher education has transformed its organisational, technological, communication and educational models. While the early Internet-related changes affected organisation and communication (institutional websites, access to grades, online libraries, access to teaching plans, folders of virtual documents, etc.), nowadays it could be said that that major change affects education; it is the outcome of a model that integrates technology into teaching and learning processes. According to currently available data, teaching staff constitute one of the collectives that most uses the Internet on a personal level. However, we find that only slightly more than 50% of teachers in the Spanish education system use the Internet in teaching (although they make widespread of the Internet for research). These data also show that the uses to which the Internet is put in the classroom tend to focus on searching for and accessing information, and on communicating via e-mail. It would therefore seem that what is worthwhile in their personal lives and for research is of no use in classroom dynamics. Something similar happens when analysing the student collective, although we consider that students should not be held responsible for the low level of Internet use in higher education teaching.

Today, we also know that Internet use in the classroom does not, in its own right, help to improve

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learning results. It is essential to integrate Internet use into learning plans in order to achieve positive results. Thus, we propose that the following principles should be taken into account: a) Awareness of the profile of university students today; b) Defining a learning model that integrates the use of technologies; c) Centring the educational model on learning activities; d) Avoiding any confusion between information and learning; e) Hybridising educational action to achieve a communication continuum between students and lecturers. Each of these principles is assessed in the paragraphs that follow.

Knowing the student is crucial to any educational process. Learning is a personal process of acquisition, and we should therefore know the individuals to whom we are going to relate. Today, training cannot be understood solely from a unidirectional, lecturer-to-student knowledge transmission perspective; nowadays, students are people who are very much aware of Internet dynamics, who have their social networks, who have their identities on the Internet and who also have their own systems for searching for and accessing information. They are, therefore, people with Internet-use competencies. To overlook in the classroom the use that students make of the Internet outside the classroom is not beneficial to the teaching-learning process.

Furthermore, we find that few higher education institutions have an institutional educational model. The most common approach is that each lecturer independently defines his or her own educational model in the classroom. However, today if a higher education institution wants to have a teaching system that integrates technologies, it is crucial to have the right institutional technological support. Higher education institutions should provide lecturers and students with technological systems to enable an educational model that integrates technologies to be developed. In the early days, an institution merely had to provide a Virtual Campus or a Learning Management System (LMS), but now it needs to go much further and facilitate access to open source information, the creation of knowledge networks, online participation, etc. Generally speaking, these systems should enable an increase in standards of information competencies and online relational competencies, and foster the creation of an institutional educational model that integrates technology use.

Learning activities should be at the centre of any educational model. Neither is this new, nor is it a consequence of Internet use, though it could be said that Internet use can indeed help to situate learning

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activities at the centre of the learning model. Learning activities are based on students' learning objectives and not solely on teaching objectives, and this is precisely the point where multiple aspects need to be related and integrated: learning resources (available on the Internet), accompaniment by lecturers (both in class and online) and collaborative work among students (synchronous or asynchronous, with a more or less intensive Internet use).

Knowing is not the same as learning. Being connected to or taking part in social networks does not necessarily mean that learning is taking place. Connectivism is not, in our view, a theory of learning. We need to do a lot of research and have sufficient data available in order to observe and analyse the impact of connectivity on learning processes. Without these data, we consider that the most significant aspect is the acquisition of competencies to enable an appropriate use of social networking. Indeed, it is in the competent use of social networking – and not so much in access to technology – where the digital divide now manifests itself.

Currently, the big challenge for higher education institutions resides in the hybridisation of their organisation and their teaching-learning methodologies. To hybridise is to integrate, that is to say, to combine traditional teaching with Internet-based teaching. It is not simply a matter of complementing traditional teaching with access to information on the Internet. Rather, it is a question of planning the educational process in an integrated way right from the start, and teaching staff play a key role in this challenge. Hybridisation also entails the configuration of a continuum in the learning process that goes beyond the amount of time spent in face-to-face classes. Students and lecturers remain connected and continue learning outside class time.

Finally, it should be pointed out that the big challenge today is the teaching staff's capacity to acquire the necessary competencies to adapt teaching methodologies to the reality of the present, a time when students are actively involved in social networks and in the network society.

The monograph presented here includes important contributions to each of the issues and assessments that have been mentioned. Some of the most important contributions contained in the selected articles are detailed in the paragraphs that follow.

The article by Martínez, Cabecinhas and Loscertales, which draws on an empirical survey-based study, shows that older people are very familiar with the Internet, highlights the importance of the motivational use of the Internet by older people and corroborates basic uses such as information searches and e-mail. It is an important contribution to the study of this collective's social inclusion in the network society.

The article by Collis and Moonen presents a very interesting review of the processes of higher education flexibilisation through Internet use. The authors assess flexibility from institutional, technological and educational viewpoints; they place particular emphasis on the latter and highlight the role of students and lecturers. They also portray several future scenarios for higher education.

Along similar lines, the article by Steinbeck points to creativity as an important component in Internet-based learning processes. The author introduces this component by analysing global programmes and by drawing on the results of a research project conducted at several universities such as Stanford (California) and Pontifical Xavierian (Colombia). It is a very interesting contribution, with a new methodological and design proposal for learning activities.

Open content repositories are also an object of analysis in this monograph. Marcelo, Yot and Mayor present the Alacena repository and perform a detailed analysis of its use for higher education teaching.

The article by Burkle analyses the specific nature of e-learning in technical higher education institutions. The author presents a study that particularly focuses on the use of Web 2.0 tools by lecturers at technical institutes. One of the important conclusions drawn from the study suggests that there is a need to deal with the diversity of competencies required for students to use Web 2.0 tools by creating environments that enable competency imbalances to be redressed.

Sloep and Berlanga's contribution to the monograph is an interesting article on learning networks and networked learning. This is an important, well-documented reflection on the role of the Internet in the field of education. Indeed, it is one of the hot topics of debate in the sphere of higher education whenever there is talk of the role of social networks in learning processes. The article by Sloep and Berlanga brings crucial criteria and assessments to the debate.

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The contribution made by Osorio and Duart is an analysis of interaction in hybrid learning environments. On the basis of a study conducted with the collaboration of students and lecturers taking part in a master's degree programme, the importance of the learning environment was observed and, furthermore, the hybridisation of models was found to contribute to the training-communication continuum between students and lecturers.

Along similar lines, the contribution made by Gómez-Escalonilla, Santín and Mathieu is a case study on journalism e-learning from the students' perspective. The authors highlight the importance of the profile of students on the e-learning programmes and underscore the differences between them and other students taking a face-to-face journalism course.

The final article in the monograph is by Torres and Infante, which analyses Internet use by university students in Ecuador. It is a study within a geographical area that confirms some of the key evidence of similar studies conducted in other countries. In particular, the study highlights the existence of a relationship between social status and Internet use. This confirms the existence of digital inequality, which is dependent on the socioeconomic status of the family to which an Ecuadorian university student belongs.

The monograph draws attention to some of today's most important elements of analysis on Internet use in higher education. As already mentioned, this is just the start of a process of change in teaching and learning methodologies that is and will be highly beneficial. However, it is and will be a complex process because it affects people in particular and higher education institutions in general. Like any other process of change, it requires reflection, investigation and analysis. The monograph presented here seeks to contribute research, studies and assessments to aid such a necessary reflection.

The University Network

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Flexibility in Higher Education: Revisiting Expectations

Flexibilidad en la educación superior: revisión de expectativas

ABSTRACT
We have studied the construct of flexibility in higher education for many years, as researchers and practitioners. In this context we define flexibility as offering the student choices in how, what, where, when and with whom he or she participates in learning-related activities while enrolled in a higher education institution. In a textbook we wrote on the topic in 2001 we identified options that could be available to students in higher education to increase the flexibility of their participation. We studied these from the perspective not only of the student but also in terms of their implications for instructors and for higher-education institutions and examined the key roles that pedagogical change and technology play in increasing flexibility. Now is it nearly a decade later. We will revisit key issues relating to flexibility in higher education, identify in broad terms the extent to which increased flexibility has become established, is still developing, or has developed in ways we did not anticipate directly a decade earlier. We will also review our scenarios for change in higher education related to flexibility and contrast these with a more-recent set from the UK. Our major conclusion is that flexibility is still as pertinent a theme for higher education in 2011 as it was in 2001.

RESUMEN
Llevamos bastantes años estudiando la construcción de la flexibilidad en la educación superior, tanto desde la óptica de la investigación como de la práctica. Entendemos por flexibilidad la opción de ofrecer a los estudiantes la posibilidad de elegir cómo, qué, dónde, cuándo y con quién participan en las actividades de aprendizaje mientras están en una institución de educación superior. En el libro que escribimos sobre esta temática en 2001 identificamos opciones posibles para los estudiantes de educación superior con la finalidad de incrementar la flexibilidad de su participación. Lo estudiamos no sólo desde la perspectiva del estudiante sino también desde las implicaciones para los profesores y para las instituciones de educación superior, y examinamos el papel fundamental que desempeñan el cambio pedagógico y la tecnología en el aumento de la flexibilidad. Ahora, diez años después, revisamos los temas clave relacionados con la flexibilidad en la educación superior e identificamos, en términos generales, hasta qué punto se ha ido estableciendo el incremento de la flexibilidad, si todavía está evolucionando o si ha evolucionado de una forma que no pudimos prever hace diez años. Revisamos también nuestros escenarios para el cambio en la educación superior relacionados con la flexibilidad y los contrastamos con un estudio más reciente llevado a cabo en el Reino Unido. Nuestra conclusión principal es que la cuestión de la flexibilidad en la educación superior sigue siendo tan pertinente en 2010 como lo era en 2001.

KEYWORDS / PALABRAS CLAVE
Flexibility, higher education, technology, change, pedagogy, implementation, scenarios.
Flexibilidad, educación superior, tecnología, cambio, pedagogía, implementación, escenarios.

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1. Introduction

For many reasons –political, social, philosophical, economic as well as educational– there has long been an interest in increasing the flexibility of participation in higher education. Rapid developments in computer and network technology, particularly the escalation in Internet use during the latter decades of the 20th century and the emergence of the World Wide Web in the mid-1990s not only intensified the motivation of institutions and governments to offer more flexible forms of participation in higher education but also led to a surge in experimentation with new pedagogical methods and new forms of digital learning resources and interactions. In this context we wrote a book about flexible learning in higher education which was published in 2001 (Collis & Moonen, 2001). The purpose of this reflection in 2010 is to revisit the concept of flexible learning in higher education a decade after our book was published, and consider the extent to which our conceptualizations and expectations have been realized or need to be re-examined. The questions we will address are:

• Conceptual: Has the concept of flexibility in higher education evolved since 2000 and if so in what ways? Is increased flexibility still a major characteristic of change in higher education? What are the key scenarios in describing a university's position with respect to flexibility?

• Realization-oriented: To what extent have our expectations about flexibility been realized? In what ways would we alter our expectations in the 2010 context? What factors constrain the possibilities for flexibility in higher education?

2. Flexible learning in higher education revisited

In the 2001 book we conceptualized flexible learning in terms of four key perspectives: institutional, implementation, pedagogy, and technology as well as combinations of these perspectives. In this section we will compare the emphasis on flexibility in 2001 and 2010 in terms of these perspectives and their 2010 updates. We will also contrast scenarios for universities in terms of flexibilization in our 2001 book with other scenario suggestions that have occurred in the past 10 years.

2.1. Flexibility from the institutional perspective

During 1999 and 2000 decisions makers in universities were confronted with a wave of threats to their core businesses and identities. Newspapers and magazines routinely were making comments such as: «Traditional universities and colleges face a bleak future unless they significantly alter their instructional methods to keep pace with development spurred by the Internet» (Financial Times, 2000), and «Undergraduates are as interested in a college's Net resources as its curriculum (Bernstein, 2000: 114). The demographics of the student body were expected to alter dramatically, away from the traditional undergraduate entering university directly after secondary school toward uncharted numbers of post entry-level learners, such as those whose work situations require them to update themselves or prepare themselves for new careers. The possibility for learners, via technology, to participate in units or programmes from higher-education institutions where they would have little or no physical presence was seen as a threat to traditional enrolment patterns. Increased flexibility was seen as a key to the operations if not survival of higher-education institutions and flexibility required technology investments. The term «virtual university» began to be used in the mid 1990s to describe an institution where some amount of its services and interactions took place on-line, via network technologies and associated software applications (for a review, see Schreurs, 2009). Our main conclusion in 2001 based on interviews with decision makers in a number of European but also North American, Australian, and Asian universities was «You can't not do it»: Institutions had to make heavy investments in technology and explore strategies for change in their methods of operations in order to increase flexibility of participation.

In 2010 institutions have made substantial investments in network technology (see Section 2.2). However the extent to which they have become virtual universities with a new demographic of student is not clear although certainly there is much on-line activity. In an analysis of virtual universities worldwide carried out by the Re.ViCa Project supported by the European Union (Schreurs, 2009: 15-16) a conclusion is that «the virtual campus concept has changed since it first came into use, because now more and more universities see the possibilities inherent in offering courses off campus. We see an increasing number of universities offering courses themselves on a virtual campus basis... While there are some institutions adopting fully on-line courses, it is now most common for courses to be blended. In the last few years there has been an apparent decline in usage of the term 'virtual campus', but a continuing growth in the phenomenon... Every campus becomes a virtual campus. (However) 'blended models' gain more and more interest and attention».

This is reflected in a survey in the USA of more than 2,500 higher-education institutions (Allen & Seaman, 2007). In this survey an on-line course was defined as one in which at least 80% of course content is delivered on-line, thus including blended variations. With this definition more than 3.4 million students, nearly 20% of all higher-education students, were taking at least one on-line course during the 2006 academic year, an increase of approximately 10% over the previous academic year. This 9.7 % growth rate for on-line enrolments is much more than the 1.5% growth rate of the overall student population (Allen & Seaman, 2007).

However, despite the availability of some courses or programmes in on-line (blended) form, a conclusion of a UK review (Jameson, 2002: 32) gives a more nuanced view of overall change in higher education: It is not uncommon for institutions to make a commitment to new technologies in their strategy documents but in reality they are watching the field and hope they are ready to 'switch on' quickly if and when necessary. In a very person-to-person oriented learning system (e.g. Oxford/Cambridge) technology has a limited impact on teaching and learning, but it does make resources available.

Thus the move many predicted for higher-education institutions in terms of increasing flexibility by offering (some) courses or programmes on-line has been modestly accomplished but the fact that many of these courses are in fact blended with some element of physical presence required means that the degree of flexibility of location offered by traditional higher-education institutions is still constrained. This relates to an institutional trend related to flexibility that we did not anticipate in 2001 but which has emerged strongly during the last decade: a growing interest and level of expenditure on on-campus physical learning spaces. In the UK and also Australia there has been a substantial redesign of physical learning spaces at many universities. In a summary (2006: 2) by HEFCE, the Higher Education Funding Council for England, the point is made that «Increasing investment in estate and learning technologies, combined with the need for more cost-effective space utilisation, is making it increasingly important for senior managers and decision-makers to keep abreast of new thinking about the design of technology-rich (physical) learning spaces».

Physical buildings need to be designed so that their individual spaces are flexible – to accommodate both current and evolving pedagogies and changing needs (HEFCE, 3). Technologies that are as far as possible mobile and wireless will make spaces more easily repurposed (p. 5). In addition to the practical value of flexible physical learning spaces supported by technology individual universities report positive results of redesigned physical learning space relating to learning. At the University of Brighton «the strongest finding to emerge so far has been an almost unanimous agreement from facilitators and learners alike that the flexibility of the space has had a very positive effect on the learning process» (Martin, 2008). At Canterbury Christ Church University also in the UK extensive research has taken place as to what learners do and where they go (their «learning footprints» (Collis, 2010) in a new technology-rich physical learning centre where learning flexibility is enhanced by the fact that «learners can borrow notebook computers with full Wifi network connectivity as easily as picking a book from a shelf» (Steadman, 2010: 2) and thus move about the facility as they wish while maintaining on-line network contact. The initiative, the first in higher education successfully to introduce on a large scale, self-service thin client notebooks on loan for

Advances in technology since 2001, particularly Web 2.0 tools and applications, mobile technologies, Wifi networks, different forms of group and individual work-support systems and personalisable digital environments to simultaneously support learning, work, and private activities, have changed the landscape of how learners (and instructors) communicate and share outside of formal educational situations. The extent to which these new flexibilities will be translated for use in formal settings for learning is still to be seen.

student use, also involved location-tracking software within the notebooks, providing on-going data on the numbers, time and duration of use, and location of the notebooks. The tracking data coupled with other data sources such as interviews, surveys, and observations, gave empirical evidence of different learning interactions than took place in the previous physical learning centres of the university library and classrooms (Collis, 2010; Steadman, 2010). Parallel to this in the USA, there is the acknowledgement that «campuses should develop an interrelated strategy that takes into account a range of types of learning spaces, including virtual spaces, and a range of support services (Brown & Lippincott, 2003: 16).

For flexibility to move beyond logistic – and personal-usage options to more-fundamental aspects of higher-education participation and pedagogic change will continue to require strategic incentives and appropriate support. In a time of financial constraint, the resources needed for appropriate support will be increasingly hard to allocate.

Thus rather than moving toward the 2001 conception of increasingly virtual universities it is our observation that provision for technology-rich flexible physical learning spaces has become a major focus for many university decision makers. Some learning may be taking place partially or fully on-line but enhancing the flexibility, and attractiveness, of on-campus learning spaces is a larger focus, at least in countries including the UK, Australia, and the USA.

2.2. Flexibility from the technological perspective

In our 2001 analysis we indicated a variety of ways that technology could enhance the flexibility of learning in higher education, ways related to the logistics of engagement in a higher-education institution (including accessing course materials and organisational information on-line, submitting assignments and getting feedback on-line) and also ways related to new forms of learning. We saw the emergence of course-management systems (called by different names in different contexts, including virtual campus environments, VLEs (virtual learning environments) or ELO (electronic learning environments) as offering many possibilities to increase flexibility. In later research (De Boer, 2004) we noted that the logistic aspects of flexibility were being enhanced, but not the pedagogic aspects.

In 2010 this has remained the case: Web-based course-management systems (VLEs) are now common in the majority of universities, but tend to be used primarily for logistic flexibility. In terms of the technology systems with which students interact universities are gradually moving away from the current generation of proprietary course-management systems toward open source systems or even more-personalisable digital desktop environments, making use of portals, customisable interfaces, and user-selected combinations of tools and applications (generally related to the so-called Web 2.0; Hermans & Verjans, 2008). Such combinations include possibilities for individual or collaborative creation and sharing of content (via Weblogs, bookmarks, photos, or other resources); for the support of social networks both within the learning context and outside; for presence-related services that take into account where the users are and who they will allow into their virtual space; and aggregators and mash-up tools to help users know about new sources of input and to organise these for personal needs. Although prototypes of this sort of Personal Learning Environment (PLE) are beginning to emerge in technology-related research projects in higher education, user-adaptable functionality is already common in the personal digital environments of many higher-education students (Atwell, 2007). Students indicate that «technologies used in their (university) courses are much less adequate than their personal technologies (Heo, 2009: 295).

The Web 2.0 applications that have emerged in the last several years were beyond what we discussed in our 2001 book. The use of Wikis (see for example Anzai's account of Wiki use in Japanese higher education, 2009) and of social networks (Anderson, 2009) are examples of what in the US has been predicted as key emerging technologies for learning in higher education (New Media Consortium, 2008). This Consortium, which every year produces a report on key emerging technologies for higher education, indicates «collective intelligence» and «social operating systems» as follow ups to the now already present «collaboration webs» could have a major impact on learning in higher education by somewhere around 2013.

But will they? In our 2001 book we noted that the potential of technology to enhance the learning experience in higher education depends on whether it is being used as a core or a complementary technology. A core technology involves the major artefacts around which a course is designed. These are institutionally embedded. In much of higher education the core technologies remain as they have been prior to 2001: lectures, classrooms, written examinations in physical, monitored situations, and textbooks. An addition has become the course-management system, used to provide resources and information and manage some forms of interaction (typically submission of assignments and provision of feedback and marks). Other sorts of technologies, such as the Web 2.0 applications, are what we call complementary technologies: some instructors choose to use them as supplements or enrichments but they are not mainstreamed nor are they essential to overall academic progress for the student. Collectively we still are far from the «learning web» view of technology use in higher education, where «the role of information technology is modelled as one of providing knowledge support systems that expedite the processes of knowledge formation and dissemination» (Gaines, Norrie & Shaw, 1996) or what we called «technology as a learning workbench» (Collis & Moonen, 2005).

2.3. Flexibility from the teaching and learning perspective

Teaching and learning involves instructors, learners, and the pedagogy of instruction, particularly learning activities. The perspective also includes those who support instructors and learners in higher education institutions.

2.3.1. Pedagogy and learning activities

In our 2001 book we elaborated a pedagogical model for course and learning-activity design based on two key principles: learning situations should be designed for flexibility and thus options for the student, and learning situations should involve not only acquisition of skills and concepts but also opportunities to participate in and contribute to a learning community. This «contributing-student» pedagogical approach fits well with the affordances of Web 2.0 technology which have emerged since 2001 and is indirectly reflected in many of the studies and projects involving Web 2.0 technologies and new forms of learning activities that have emerged in the literature in the last decade. Hall and Conboy (2009: 232) for example describe exploratory projects involving blogging as a reflective learning activity, student development of course Wikis as social knowledge-building, and the use of a social network that learners could customise and use for the management of their group learning activities. Their conclusion is that «the learner can be empowered to make effective decisions about their learning where read/write Web tools are used to catalyse pedagogic innovation». At the Nanyang Technological University in Singapore a pedagogical and organisational model called University 2.0 has been implemented with an emphasis on learner engagement (»teach less, learn more», Tan, Lee, Chan & Lu, 2009: 517) and on empowering students to take charge in shaping their own learning experiences. Learning activities such as self/peer evaluation, project work management, student construction of questions for peer learning, and on-line portfolio creation are examples of the emphasis on student engagement. Even during self study, learners are encouraged to link up with other classmates for learning support using a locally made application (aNTUna Connect) for the support of virtual learning communities. In addition, and still unusual in higher-practice, «students are involved and also consulted in a decision-making process about learning focus and assessment outcomes». From a conceptual perspective Conole, Dyke, Oliver & Seale (2004) show how different learning activities (brainstorming, gathering resources for a particular task, and self assessment of level of competence) can be made flexible by offering students options relating to individual or social participation, as well as reflective or skill-oriented orientations, and information-based versus experience-based emphases.

Thus supported by Web 2.0-type technological developments the potential for pedagogic flexibility is even stronger in higher education than it was in 2001. However, in our more-recent analyses (Collis & Moonen, 2008) we have identified many barriers to the realisation of this potential. A major set of barriers relates to the willingness of instructors in higher education to change their teaching practices.

2.3.2. Instructors and support staff

There is no widespread evidence that mainstream higher-education instructors are any more likely to be incorporating innovative pedagogies in their course designs in 2010 than was the case in 2001. As before, the instructor is the key figure in pedagogic change.

And as before instructors lack sufficient time, motivation, and support to move beyond their level of tolerance for innovation and use of technologies in learning. As noted by Collis and Messing in 2001 instructors make personal decisions about how much time and effort they can make available for important elements of interaction-oriented pedagogies such as feedback and individualisation and thus set their own limits for time commitment. In 2005 Gervedink Nijhuis analysed the many time – and labour-intensive implications for instructors of offering more flexibility to students in learning activities and concluded that the time burden for instructors of managing flexibility in learning activities is too much for many instructors in balance with the many other burdens on their time and effort. Simons (2002) feels part of the problem is that instructors lack insight into «digital didactics» and thus are reluctant about or resistant to pedagogical change through lack of understanding as to what it can offer or how to proceed with its implementation.

As has been the case with previous generations of technologies and their potential for learning the need for more effective and efficient professional development of instructors is still acknowledged and the importance of support staff for teaching and learning remains high. Support staff include persons in university teaching –and learning centres who focus on curriculum– and pedagogical innovations in teaching, technical staff who support instructors and students in their uses of technology, and also other staff such as librarians who may be involved in supporting instructors, for example with issues relating to digital information access and management relevant to their teaching activities. On-demand support for instructors, thus highly flexible and contextualised, was one of the major components of improved learning and cost reduction in a series of case studies in course redesign in the USA (Twigg, 2004). Simons (2002) calls for new methods of professional development and guidance for instructors and thus in turn new methods and skills for support staff. A new method of staff development, based on flexibility and contextualisation, that has shown good promise is that of Canterbury Christ Church University in the UK (Westerman & Barry, 2009). Instructors can choose which of more than 20 types of technologies they wish to become familiar with and for each of the types different sorts of self-study learning methods were developed. While each instructor had a personalised approach emphasising gaining technical literacy before attempting pedagogic changes, social interaction among the instructors and the support staff was also an important form of learning and attitude change.

Despite their importance support services are particularly vulnerable to internal reorganisations and budget cuts when universities face economic challenges. Jameson (2002: 33) notes that «In the UK a number of universities have felt the need to re-organise their teaching and learning support services. In some cases these services have been broken up and removed to other parts of the administration, e.g. placed in the «Estates» division. This is a dangerous move as these support services have a special role in teaching and learning and they will find themselves in competition for resources with services supplying general institutional requirements».

Unfortunately this is happening in many universities and constitutes a serious constraint to enhanced pedagogic flexibility.

2.3.3. Learners

In our 2001 book we did not have a specific chapter relating to the learner's perspective on flexibility. This was because we considered the entire analysis to be grounded on the learner and the desirability of making more options available for him or her in terms of participation in learning-related activities. In the subsequent decade however a new cycle of interest in learner experiences as a key component of transformation of institutional practices has evolved. Sharpe (2009: 178) indicates that there is a shift occurring to research on the learner experience that is «more holistic, including that which examines the impact on the pervasive use of technology in learners' lives...with attempts to conceptualise the observed variation in learners' experience». Learner-experience research now goes beyond institutional technology provision but also considers the influence of the rise of personal ownership of technology and use of on-line tools and applications. For example at the University of Bradford in the UK the awareness of students' substantial use of on-line social networks has led to new and highly flexible approaches to on-line support to help learners during their period of transition into higher education (see the tool at www.brad.ac.uk/developme). At Oxford Brookes University a personalised learner-centric model of technology-enriched education based on the belief that students should be skilled at handling information, managing human interactions, and knowledge building using digital tools is being developed and personalised also per academic study programme (Benfield, Ramanau, & Sharpe, 2009). Because students are competent technology users does not necessarily mean they are critical users, with information-literacy levels necessary for the learning goals of higher education. Comrie, Smyth and Mayes (2009: 210) note that at the three Scottish universities involved in the TICEP project (Transforming and Enhancing the Student Experience through Pedagogy, see www2.-napier.ac.uk/transform) priority is given to scaffolding learners' «self-regulation and what is being increasingly referred to as learning (or academic) literacy...with institutions...focusing their resources on preparing their learners rather than on their 'provision'». These and other learner-experience studies suggest that the learner's personal experiences with technology and more importantly his or her critical maturity with dealing with information and diverse human opinions are important components of his or her response to increased flexibility relating to learning in higher education. This leads to the conclusion that preparing students to respond effectively to flexibility is as important as flexibility provision itself.

Thus, in summary, there is mixed progress in terms of increasing flexibility in learning and teaching in the decade since our 2001 analysis. Personal and socially oriented technologies have become common in the personal worlds of many students in higher education and there is experimentation with pedagogies that build on sharing, collaborating, and contributing to the learning of one's peers. But beyond exploratory projects there does not appear to be widespread changes in pedagogical methods. The reasons remain those which have been the case whenever innovation in teaching practices are being considered: instructors do not have time, skills, or incentives to make substantial changes in their familiar approaches to instruction. In parallel to this support staff who could stimulate such innovation are under resource constraints themselves.

Our main conclusion in 2001 based on interviews with decision makers in a number of European but also North American, Australian, and Asian universities was «You can't not do it»: Institutions had to make heavy investments in technology and explore strategies for change in their methods of operations in order to increase flexibility of participation.

2.4. Scenarios for universities

In 2001 we identified four scenarios for higher education and flexible learning for «2005 and beyond». These scenarios emerged from the combination of two key dimensions, one relating to the location of learning provision (with two extremes, where local and face-to-face transactions are highly valued and the other where network-mediated transactions are the heart of the learning setting) and a second related to quality control (with two extremes, one where the expert at the university is responsible for the quality control of the learner's experience and the other where the learner himself becomes increasingly responsible for the quality of his own learning decisions). These gave rise to four scenarios:

• Back to the Basics: Where local and face-to-face transactions are highly valued and the institution determines its curricula and programmes and ensures their quality

• The Global Campus: Where the university maintains quality control but programmes and learning are increasing available via network technology, not a physical campus

• Stretching the Mould: Where the learner still focuses on the local campus and face-to-face transactions but gradually makes more personal choices and thus assumes more responsibility for the quality of his or her experience

• The New Economy: Where individuals pick and choose their own learning combinations, via global and network-mediated transactions, from a number of sources of learning resources

As we predicted in 2001, the New Economy option has not moved beyond the informal-learning setting. Traditional universities are still primarily positioned in the Back to the Basics scenario but with institution-supported options for some courses in a Global Campus setting, and with a gradual increased presence in a Stretching-the-Mould scenario. What is interesting is that the latter is occurring generally outside a specific institutional strategy; the Stretch occurs in an organic way as more options for flexible participation are available for learners.

In the ensuing decade other scenarios have been suggested. A particularly interesting set of scenarios emerged from a 2008 study under assignment from Universities UK, a membership association of the executive heads of all the UK university institutions and some colleges of higher education (www.universitiesuk.ac.uk/AboutUs/WhoWeAre/Pages/default.aspx). The study focused on the size and shape of the higher-education sector in the UK in 20 years' time (Brown & al, 2008). Based on an analysis of key uncertainties and drivers of demand and the recognition that funding cuts are likely to be the context for any future scenario three scenarios were developed:

• Slow adaptation to change: Few significant new sources of student demand are expected, only modest investments in e-learning will be made so that it remains a relatively small part of the total learning experience for most students. Some institutions will merge or close due to decreasing funding.

• Market driven and competitive: Increased competition in all student markets between and among traditional higher-education institutions and new providers, more widespread investment in e-learning particularly by larger institutions in partnership with the private sector, and a major reconfiguration of the sector with fewer large multi-mission institutions and a larger number of small, specialist higher-education institutions.

• Employer-driven flexible learning: Employer demand for accreditation of work-related experiences and co-funding of programmes by groups of employers and their supply chains, most students study part-time on a virtual basis while they continue to work, leading to a highly stratified higher-education sector with a small number of elite institutions, some major regional centres, some predominantly virtual institutions, some traditional local universities for undergraduates, and some institutions offering programmes franchised from regional centres (summarised from Brown & al, 2008: 5-13)

In the second and third scenarios flexibility mediated by technology will play a major role. It is interesting that this UK scenario exercise did not seem to explicitly refer to the experience of the Open University of the UK. It, like other large-scale distance-education institutions (including the Open University of The Netherlands and the Open University of Catalonia) have long been offering flexible forms of course participation, particularly to non-entry level learners, with large numbers of students selecting this model of higher education. However, given the changing landscape of the higher-education sector as envisaged by the Universities UK study perhaps the mega distance-education providers will be challenged to offer their students options with regard to blends of face-to-face and online learning rather than only a distance model in order to compete with the sorts of new situations suggested in the second and third scenarios of the UK future analysis.

3. Conclusion

We believe that flexibility is still as pertinent a theme for higher education in 2010 as it was in 2001. We affirm our position from 2001 that flexibility relates to making choices available to the learners, choices that they need to be able to make use of and use wisely. We see a change in the momentum for flexibility in traditional universities in 2010 compared to 2001: less emphasis on «global campus» opportunities for participation (beyond those already established) and more attention to enhancing the flexibility of learning spaces, as a blend of on-campus and technological spaces and the support that students can call on as they make use of the flexible spaces. The motivation for this attention is partially as incentive for new and continuing students, partially for the new learning opportunities that can be realised, but also for economic reasons – to make more flexible (i.e., cost-effective) use of physical facilities. Advances in technology since 2001, particularly Web 2.0 tools and applications, mobile technologies, Wifi networks, different forms of group and individual work-support systems and personalisable digital environments to simultaneously support learning, work, and private activities, have changed the landscape of how learners (and instructors) communicate and share outside of formal educational situations. The extent to which these new flexibilities will be translated for use in formal settings for learning is still to be seen. The risk is always there that a «lowest common denominator» of usage will settle in for these new technologies during the next decade as it did for Web-based course-management systems over the last decade. For flexibility to move beyond logistic – and personal-usage options to more-fundamental aspects of higher-education participation and pedagogic change will continue to require strategic incentives and appropriate support. In a time of financial constraint, the resources needed for appropriate support will be increasingly hard to allocate.

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Building Creative Competence in Globally Distributed Courses through Design Thinking

El «design thinking» como estrategia de creatividad en la distancia

ABSTRACT
Helping students think creatively is consistently cited as one of the key goals of education. Yet, across universities around the world, alarms have been sounding off suggesting that students are not prepared for a world where they are expected to solve messy, unstructured problems that don't have easy answers. This paper introduces design thinking, a human-centered innovation methodology that has been implemented in a design innovation program at Stanford University as well as at one of the most successful design consultancies. After a brief overview of design thinking, the author illustrates the key elements of this innovation pedagogy through its implementation at a university in Colombia. Realizing the potential of this methodology for building creative competence and confidence among students from all disciplines, and recognizing the power of the next generation of information and collaboration technologies and social media, the author proposes new research and development projects that will bring more creativity to traditional distance and blended learning programs through an infusion of design thinking.

RESUMEN
Ayudar a los estudiantes a pensar de forma creativa suele considerarse uno de los objetivos clave de la educación. Sin embargo, muchas universidades de todo el mundo muestran cierta preocupación al respecto que sugiere que los estudiantes no están preparados para un mundo en el que necesitarán resolver problemas desordenados y desestructurados que no tienen fácil solución. Este artículo presenta el «design thinking» como una metodología para la innovación centrada en las personas, que se ha implementado en un programa para la innovación en el diseño de la Universidad de Stanford, así como en una de las consultoras de diseño más exitosas. Después de un breve resumen del concepto de design thinking, se ilustran los elementos clave de esta pedagogía para la innovación a través de su aplicación en una universidad en Colombia. Rendida cuenta del elevado potencial de esta metodología para la construcción de confianza y capacidad creativa en los estudiantes de todas las disciplinas, y del evidente poder de la próxima generación de tecnologías de la información y la colaboración, así como de los medios sociales, el autor propone nuevos proyectos de investigación y desarrollo que aportarán más creatividad a los programas de educación a distancia y semipresenciales gracias a la aplicación del «design thinking».

KEYWORDS / PALABRAS CLAVE
Design thinking, distance education, international education, project based learning, creativity.
Design thinking, educación a distancia, educación internacional, aprendizaje basado en proyectos, creatividad.

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1. The Need to Bring Creativity and Innovative Thinking Back into Education

Educators across the educational system agree that helping students think creatively and understand what is necessary to make innovative ideas feasible is becoming increasingly important. Yet, research shows that children enter the education system with a natural ability to be creative and innovative, but lose that ability as they move through the system.

George Land and Beth Jarman illustrate this with a longitudinal study conducted between 1968 and 1985 (Land and Jarman 1993). Land and his colleague gave 1,600 five-year old children a test on their ability to think divergently –generating ideas by exploring many possible solutions, a key to creativity and innovation– and tested the same children when they were 10 years old, and again when they were 15 years old. The researchers also tested 280,000 adults. The test they used was based on a NASA test to measure divergent thinking in engineers and scientists.

When the children were first tested at age five, 98% scored at 'genius level', meaning in the highly creative range. Ten years later only 12% of the same children scored at 'genius level'. Of the adults who had taken the same test, only 2% scored at the same level.

Age group tested	Number of subjects	Year of testing	'Highly creative'
5 years	1,600 children	1968	98%
10 years	1,600 children	1973	30%
15 years	1,600 children	1978	12%
25 + years	280,000 adults	1985	2%

Test results from the Land and Jarman study.

Although based on a study that was published almost 20 years ago, its alarming findings and its call for designing new learning environments and opportunities that give our students the knowledge, skills and tools to bring out new and innovative ideas and solutions to complex challenges couldn't be more relevant today.

Sir Ken Robinson, a British researcher, educator and creativity expert, made a strong case for «creating an education system that nurtures (rather than undermines) creativity» at the 2006 annual TED Conference in California (Robinson 2006). In his talk, Robinson laments that «we are educating people out of their creative capacities», and argues «that creativity now is as important in education as literacy, and we should treat it with the same status».

Stanford University's president, John Hennessy, has been collaborating closely with IDEO, a design consultancy based in nearby Palo Alto, and an ever growing core of Stanford faculty and researchers to make «creative confidence a requirement at Stanford, just like a foreign language» (Tischler, 2009).

2. Innovation and Creativity through Design Thinking - The IDEO Success Story

IDEO is not your run-of-the-mill design consultancy. It's one of the top ranking innovative companies in the world. The company has close ties to Stanford University, and some might even say that IDEO is one of the many spin-offs of Stanford University, and yet another great example for the unique role the university has played within the innovation ecosystem known as Silicon Valley.

At the core of the success of IDEO is an innovation method called 'Design Thinking'. Summarized briefly, design thinking is a lens through which to view challenges and solve problems. Tim Brown, IDEO's CEO, defines design thinking as «an approach that uses the designer's sensibility and methods for problem solving to meet people's needs in a technologically feasible and commercially viable way. In other words, design thinking is human-centered innovation» (Brown, 2010).

Design thinking focuses on the design process, rather than the final product, and integrates expertise from design, social sciences, business and engineering. It brings together strong multidisciplinary teams to:

- Acquire basic knowledge about the users and the general situation/problem (Understand);
- Gain empathy with the users by closely watching them (Observe);
- Create a typical user persona for whom a solution/product is being designed (Define Point of View);
- Generate as many ideas as possible (Ideate);
- Build real prototypes of some of the most promising ideas (Prototype); and
- Learn from users' reactions to the various prototypes (Test).

Throughout this iterative process, teams may take new insights gained from continuous observations and prototyping, and sometimes may reframe the problem entirely new.

Over the years, IDEO's multidisciplinary teams of cognitive psychologists, anthropologists, engineers, MBAs, medical doctors, sociologists, and other experts have teamed up with their clients to design some of the

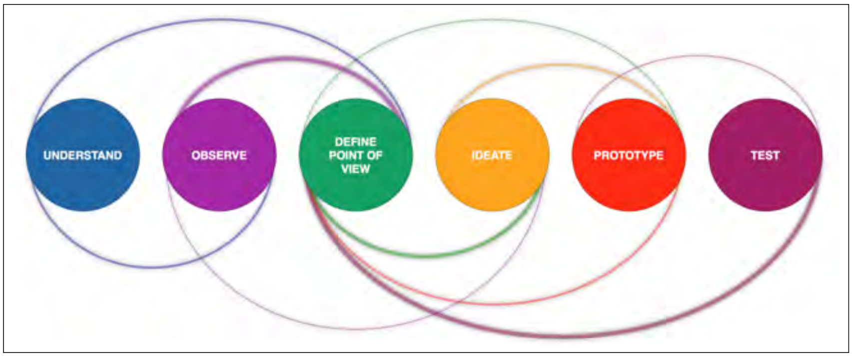

Figure 1. The Design Thinking Process (H.P.I. 2009).

most innovative products, such as the first computer mouse (Apple Inc.), the Palm V Personal Digital Assistant/PDA (Palm Inc.), or the LifePort Kidney Transporter (Organ Recovery Systems Inc.).

Moving beyond products and having applied the methodology to services and organizational processes, such as revamping nursing shifts at Kaiser Permanente hospitals, IDEO designers are now bringing design-thinking to bear on some of the world's largest and most complex challenges such as poverty, public health, clean water, economic empowerment, education reform, access to financial services, and the need for basic services. For example, the Acumen Fund and IDEO, with backing from the Bill and Melinda Gates Foundation, joined forces to tackle the issues of water transport and storage in India which has already resulted in new distribution models, automated water vending machines, and better vessels for existing businesses.

3. Design Thinking as an Innovation and Creativity Pedagogy

ME310 is Stanford University's flagship design course, offered through the School of Engineering's product design group. It is a yearlong graduate-level course in which between 35-40 Stanford students participate in corporate-sponsored real-world design projects. Teams of three to four students tackle the corporate problem or opportunity and move through the entire engineering design process with plenty of support and guidance from industry liaisons, faculty, and team coaches. Example corporate partners include SAP, Autodesk, Panasonic, Telefonica, General Motors, and Volkswagen.

ME310 has its origin in the school's efforts, reaching back to the 1960s and 1970s, to offer its students a hands-on design experience that integrates analytical skills with creative skills (Carleton and Leifer 2009). It has also been informed by the growing body of research in project – and problem-based learning and small-group student collaboration. General findings for these methodologies indicate that they can promote a range of important educational outcomes, including: more favorable attitudes toward learning and increased motivation (Springer, Donovan & al. 1999), higher levels of achievement (Slavin 1996), higher order thinking (Cohen 1994), improved communication and conflict management (Johnson & Johnson 1993), and strategic problem-solving skills (Barron 2000).

Larry Leifer, Professor of Mechanical Engineering Design and founding Director of the Center for Design Research (CDR) at Stanford University, who has lead the ME310 course since the late 1980s, describes it as a «radical course» and a «cross between a senior capstone course, prototyping laboratory, and microcosm of Silicon Valley. The course combines the best of interdisciplinary teaching and problem-based learning for engineering design. ME310 also offers a successful formula of global networked innovation and provides a documented test bed of engineering education» (Carleton & Leifer, 2009).

While ME310 provides corporate partners with a unique opportunity to explore new 'innovations' in a safe environment outside their own corporate structures, the main goal of ME310 is to apply the design thinking process and ME310's unique course framework as a design innovation pedagogy to prepare the next generation of 'innovators'. The hope is that these innovators will be globally aware, system thinkers, able to function across cultures and multidisciplinary teams, and increasingly design for sustainability (Figure 2).

4. ME310 Goes Global: Collaboration with Colombia

In recent years, project teams at Stanford were increasingly paired with a global academic partner, reflecting the need to prepare students for a world of globally distributed teams, and by 2005, ME310 has become a completely globally distributed and blended course. All projects are now supported by global teams consisting of a total of six to eight globally distributed

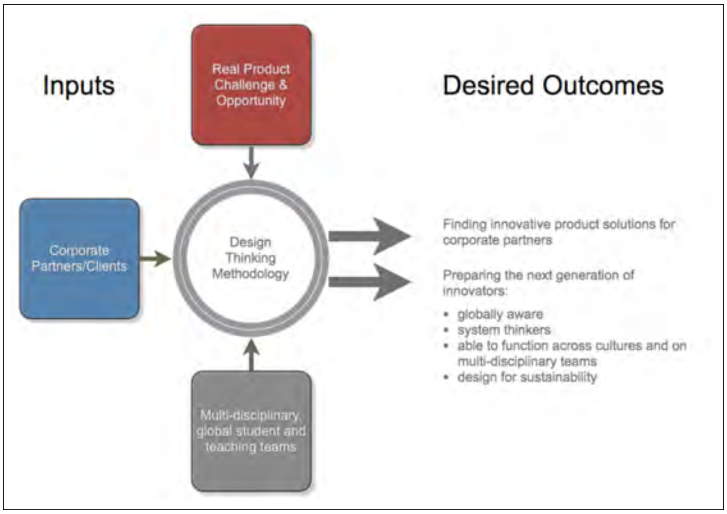

Figure 2. ME310 Framework.

students, three to four students at Stanford, and three to four students at the global partner university (figure 3). During the 2007-08 and 2008-09 academic years, global academic partner universities included: Hasso Plattner Institute, University of Potsdam, Germany; Helsinki University, of Technology, Finland; University of St. Gallen, Switzerland; Universidad Nacional Autónoma de México (UNAM), Mexico; Pontificia Universidad Javeriana (PUJ), Cali, Colombia; Technische Universität München, Germany.

A series of structured and sequenced milestones, prototype reviews and presentations to the corporate partners help guide students through the learning and design process, from project kickoff, when all the participating global teams meet at Stanford University, to defining design requirements to constructing functional prototypes to user testing and technical evaluation and extensive documentation. The course concludes with a final 'Design Fair' where all the project teams come together at Stanford and present their final solutions to their corporate partners.

One key element in the ME310 course sequence is a two-week warm-up design exercise at the beginning of the course. This activity leverages the idea that students improve their understanding between theory and practice through multiple experiential iterations (Leifer, 1998). During this fun activity, student teams design and build a fully functional paper bike and then race it against each other during the kickoff event at Stanford. The exercise allows them to work in teams and experience all the elements of the design thinking process, which they then apply increasingly during the main corporate project phase.

Besides the structured sequence of key activities and events throughout the course, ME310 and its innovation pedagogy emphasize the following general key features:

• Diversity and multiple channels for interactions: A key principle of Stanford's ME310 Design Innovation course is that diversity can have a significant influence on innovation outcomes (Carrillo, 2003). ME310 teams are characterized by a high level of interaction and open exchange of diverse ideas from a multitude of viewpoints, as well as guidance and suggestions from experts from outside the academic community.

• Student teams: Students in ME310 are Master-level students and bring a wide range of disciplinary expertise to their respective teams, including engineering, industrial design, economics, and business. Each global partner university has a minimum of two student teams that work in the same open space. This exposes students to even more perspectives, while at the same

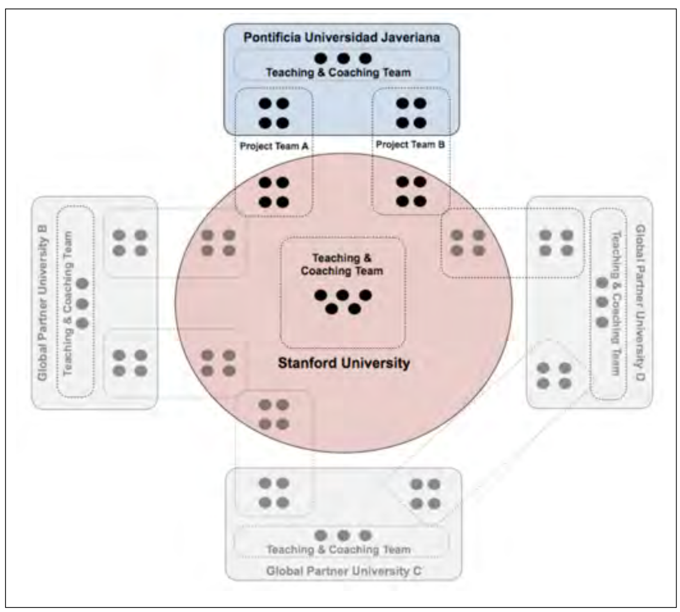

Figure 3. Globally Distributed ME310 Design Innovation Network (ME310, 2010).

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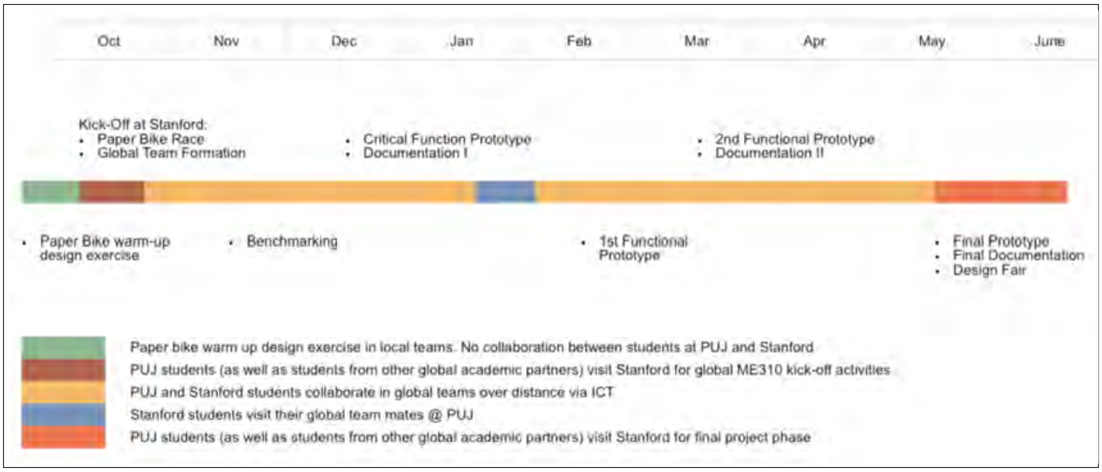

Figure 4. PUJ - Stanford Collaboration: ME310 Sequence of Key Activities and Events.

time creating a sense of competition.

• Teaching teams: The teaching teams are as diverse as the student teams, and consist of professors, instructors, and teaching assistants from Stanford as well as all participating global partner universities.

• Industry liaisons and coaches: Since ME310 is a project-based course, interactions between students and industry partners are an integral part of the teaching and learning process. Liaisons are members of the industry partners and interact with the students through regularly scheduled meetings or conference calls. Coaches are usually course alumni with relevant professional experience in the area of the project. Coaches act as process experts, advise the students based on their technical expertise, and help with general project and team management.

• Rich virtual and physical innovation and learning environments: Since work and learning environments affect creativity and innovation, each university provides its teams with a dedicated physical space which they own and which they can design in a way that meets the teams' working style. These spaces are equipped with flexible furniture and tools and technologies that support face-to-face as well as virtual collaboration, visualization, and rapid prototyping.

In 2007, facilitated by Stanford's International Outreach Program (IOP), ME310 expanded for the first time to a university in South America, the Pontificia Universidad Javeriana (PUJ) in Cali, Colombia. Founded in Bogota in 1623, PUJ is the oldest university in Colombia. PUJ's sectional division in Cali was opened in 1970, and currently has about 5,200 undergraduate and graduate students spread across five schools (Engineering, Business Administration, Health Sciences, and Humanities and Social Sciences). The fact that PUJ Cali is a small and private university has proven to be an advantage for starting a fairly nontraditional program, as these types of universities tend to be more flexible. Furthermore, the lead instructor at PUJ responsible for the ME310 collaboration was a member of PUJ's product design department and knew about IDEO and was already familiar with the design thinking methodology.

The selection process for PUJ students to participate in the ME310 program was very competitive and rigorous. Only six students were selected per year out of a total pool of 50 applicants to join two global teams, each team consisting of three PUJ students and three Stanford students. The PUJ candidates represented all four engineering disciplines: computer science, civil engineering, industrial engineering, and electronic engineering. All applicants had to submit an essay and participate in a group interview with the Dean of the School of Engineering and the ME310 lead instructor. All students had to be fifth-year engineering students, with a high grade point average, speak English well, and demonstrate a strong interest in product design.

During the first two years of the PUJ-Stanford collaboration, four global PUJ-Stanford student teams worked on the following real-world design challenges:

• 2007-08 – «EveryoneIn». A digital camera system that can be controlled through a cell phone. Corporate Partner: Kodak. «IdeaSpace». A dynamically shared digital whiteboard that creates the experience of standing at the same physical whiteboard with a remote teammate. Corporate Partner: Autodesk

• 2008-09 – «TeleCardea». A healthcare service that combines remote blood pressure monitoring with mobile telephony in order to transmit, store and analyze data that will be used to evaluate and monitor the condition of a patient from their own home. Corporate Partner: Telefonica. «EmBracelet». A wirelessly connected accessory that allows friends to easily share simple gestures like a hug and the gentle squeeze of the hand. Corporate Partner: Panasonic

In 2009, the author spent Spring Quarter on the Pontificia Universidad Javeriana campus in Cali. The focus of the visit was to gage the impact ME310 was having on students, but also to get an initial glimpse into how an innovative design program such as ME310 could be implemented at a South American university.

Eleven PUJ students from both years participated in an informal program review, using individual 60-minute semi-structured interviews. The interviews focused on how the ME310 experience affected their own learning and their innovation success. The students were also asked about specific elements of the ME310 program, and how these elements influenced their overall experience (course structure, team setup and team meetings, infrastructure, teaching teams, industry liaisons and coaches, etc.).

The overall response from all the students about their experience with ME310 was very positive. One student summed this up by saying that «for me it is the most spectacular and awesome experience. I am not here in this to just learn about academic things, also I am learning a lot of things about relationships, about experience with life, about process, about the university, about countries, this is something that involves your life».

The general feeling of a successful implementation of ME310 in Colombia was also supported by the fact that the teaching team placed the Stanford-PUJ projects for both years in the top field among all the teams. And one of the teams won third place in the Stanford software fair.

One of the key recurring themes throughout all the interviews was the notion that students had to take responsibility for their own learning. One student clearly expressed this by stating that «here in Colombia Engineering Schools are so rigid and structured... [ME 310] is based in great freedom and on a couple of guidelines, but you are the person in charge to get the result». Another student explained that «I like to learn in different ways... in ME 310 you have problems, you have to understand these problems, you have to find answers to these problems, everything is based on you, why is this working with this, or what does the user prefer?».

All of the students commented on how ME310 enabled them to be more innovative, helped them to appreciate different perspectives, and connected their learning with the 'real world'. «[In ME310 I had to] share my experience with different types of people with different points of views ... [this is] important because when you work in engineering sometimes you are so involved in knowledge and maybe you could think that you are right all the time, but sometimes this is not true and you need other people to open your mind». Others stated «you don't have innovation without diversity» and argued «your brain makes more solutions when you have prototypes».

Several students recognized the importance of connecting theory with practice. As one student said «we are working with real problems, and we are working with solutions that maybe can go out... I think this is the best way to create a closer relationship between academic and professional companies».

People and interactions are crucial elements of the ME310 program. The value of guidance and formative feedback provided by the coaches and industry liaisons is illustrated creatively by one of the students who said that as a student in ME310 «you start with closed eyes and then you go out and you can see the sunshine. But sometimes that sunshine blinds you, because it's so strong, and you go ahead, but you can't see everything you have to see. So in that moment, those people appear and give you sun glasses. And then you can observe everything better».

5. Future Directions for Research and Development

As ME310 evolved over the years by going thorough its own iterative process, its various key components formed the foundation for the design-thinking methodology. Design thinking not only became the dominant pedagogy for teaching design at Stanford's School of Engineering, the model also served as the seed for what would become the design consultancy IDEO. It is no coincidence that David Kelley, IDEO's founder and Professor in Mechanical Engineering, graduated from Stanford's original product-design program.

In 2004, with support from Stanford University president John Hennessy, Kelley and other faculty members led the creation of the Hasso Plattner Institute of Design at Stanford, also known as the «d.school», taking the design thinking methodology beyond ME310 and the School of Engineering by offering design courses to students from all disciplines (http://dschool.stanford.edu/). The d.school has become one of the most popular programs on campus

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where students and faculty in engineering, medicine, business, the humanities, and education learn design thinking and work together to create innovative solutions to complex problems.

One such course connects students form Stanford's d.school with their counterparts at the University of Nairobi in Kenya. This course, called 'Designing Liberation Technologies', explores the use of mobile phones as a technology for solving some of the challenges facing the world's poor. The international student teams work closely with community health organizations in Nairobi's largest slum as well as local mobile phone companies to find better solutions for collecting patient information or for locating clean water courses, while applying the d.school's methodology of design thinking (Driscoll 2010).

Along with expanding the design thinking methodology beyond the engineering disciplines and engaging students in projects that have a stronger social impact, programs increasingly leverage the potential of the Internet and social media platforms to support open innovation processes on a larger scale. The d.school at Stanford is providing a free online guide that describes the design thinking process used at Stanford University. IDEO developed OpenIDEO, an online platform that is guided by the design thinking process and brings together creative thinkers to find solutions to global challenges (http://openideo.com/). Another effort by IDEO to integrate design thinking into the work of NGOs and social enterprises that work with impoverished communities in Africa, Asia, and Latin America is a comprehensive Human-Centered Design toolkit, downloadable as a free PDF from IDEO's web site (http://www.ideo.com/work/human-centered-design-toolkit/). And the Massachusetts Institute of Technology's (MIT) Global Challenge is a competition that uses an online platform to match MIT students and faculty with MIT alumni and local mentors and community organizations across the globe to apply their creative problem-solving skills to create solutions to global problems (http://globalchallenge.mit.edu).

It is encouraging to see how these new programs are trying to infuse creativity and innovation back into teaching and learning across the entire education enterprise, and how several of them provide students with a unique opportunity to gain an optimistic and practical understanding of their roles in addressing some of the most challenging problems in underdeveloped communities around the world. It is exciting to think about how the next generation of information and collaboration technologies can play a crucial role in engaging more people in rediscovering their creative confidence and becoming active and curious participants in designing better solutions for the social good.

There are many indicators that suggest that the design thinking methodology and the design innovation pedagogy as implemented at Stanford University can advance creative confidence and competence among students, and boost innovation in other disciplines, environments, and cultures. Stanford's Center for Design Research has been conducting scientific research on understanding and augmenting design innovation practice and education in engineering for many years. And the list of successful entrepreneurs who have graduated from the ME310 program or participated in project courses at Stanford's d.school is rapidly growing.

Educators across the educational system agree that helping students think creatively and understand what is necessary to make innovative ideas feasible is becoming increasingly important. Yet, research shows that children enter the education system with a natural ability to be creative and innovative, but lose that ability as they move through the system.

However, as the design thinking methodology is expanding beyond the engineering disciplines and is being embraced by an increasing number of programs around the world, there is an opportunity and a need for additional rigorous research that looks into how these methodologies can be implemented in new cultural, institutional, and technological contexts, and how they can build creative competence and confidence among students.

The Escola de Artes, Ciências e Humanidades (EACH) at the Universidade de São Paulo (USP) in Brazil is currently setting up a new project that will focus exactly on such a research project. The new Laboratório de Design, Inovação e Criatividade, a.k.a.

d-USPLeste, is infusing design thinking into PBL courses (project-based and problem-based learning) where students from various disciplines work with community organizations in São Paulo's Zona Leste, one of the most underdeveloped urban regions in Brazil. Furthermore, d-USPLeste is working with the Universidade Virtual do Estado de São Paulo (UNIVESP) to establish a pilot program that will explore how the design thinking methodology can be integrated more formally into distance learning programs.

To look at the promising synergy between PBL and Design Thinking within the context of designing for social impact, some of the research questions that d-USPLeste is exploring include:

• How do we best teach the key mindsets (human centered, bias towards action, radical collaboration, culture of prototyping, show don't tell, mindful process) and the central tools and techniques (understand, observe, define, ideate, prototype, test) of design thinking outside of the engineering discipline?

• How do we develop a pedagogic framework for design thinking to support co-located learning teams distributed in time and place?

• What are the best proportions of problems, projects, teamwork, student – and partner teams, and technology?

• What are the characteristics of successful design innovation projects that have a social impact?

• How do we manage multidisciplinary design-learning teams?

• How do we develop a comprehensive design thinking assessment system including new metrics to measure the effect design thinking has on the learning process and learning outcomes of students from different disciplinary backgrounds.

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«Alacena», An Open Learning Design Repository for University Teaching

«Alacena»: repositorio de diseños de aprendizaje para la enseñanza universitaria

ABSTRACT
Being a teacher means being involved in the design of learning activities. The teaching profession has become a «profession of knowledge», not because knowledge was or is the legitimate component of the profession, but because the teacher is the designer of learning environments and has the ability to design the spaces where knowledge is being produced. But these learning environments have long been regulated to the privacy of the classroom environment with student complicity. One positive aspect of the launch of the European Higher Education Area has been to bring greater transparency to the process of designing teaching and student learning. Our objective in this study was to identify, represent and document a wide variety of learning designs made by experienced and innovative teachers. We hope this repository will be available and accessible to every teacher through the Internet. The participants in this study were 58 teachers mainly from universities in Andalusia and the five branches of knowledge. From interviews we proceeded to represent all the learning sequences, available in the repository of sequences that we named «Alacena». This repository is accessible on our research group's website (http://prometeo.us.es/idea). The conclusions of our study were that there are innovative learning designs aimed at promoting a greater understanding of what students learn through their involvement in processes of inquiry and/or collaboration, and they are representative of good teaching practices in universities.

RESUMEN
Ser docente significa estar implicado en el diseño de actividades de aprendizaje. La profesión docente se ha transformado en una «profesión del conocimiento» no ya porque el conocimiento haya sido o sea el componente legitimador de la profesión, sino porque el docente es el diseñador de ambientes de aprendizaje y tiene la capacidad de rentabilizar los espacios donde se produce el conocimiento. Ahora bien, estos ambientes de aprendizaje durante mucho tiempo han quedado regulados en el ámbito de privacidad del aula y a la complicidad con el alumnado. Uno de los aspectos positivos que ha tenido la puesta en marcha del Espacio Europeo de Educación Superior ha sido aportar una mayor transparencia a los procesos de diseño del aprendizaje de los alumnos. Nuestro objetivo en este estudio consistió en identificar, representar y documentar una amplia variedad de diseños de aprendizaje realizados por docentes con amplia experiencia innovadora y que pudieran estar disponibles y accesibles a través de Internet. El profesorado que ha participado en este estudio lo han conformado un total de cincuenta y ocho docentes principalmente de las diferentes universidades andaluzas y de las cinco ramas de conocimiento. A partir de entrevistas procedimos a representar el total de secuencias de aprendizaje que están disponibles en el repositorio de secuencias que hemos denominado «Alacena». Este repositorio está accesible en la página web de nuestro grupo de investigación http://prometeo.us.es/idea. Como conclusiones del estudio se constata que existen diseños del aprendizaje innovadores y universitarios que pretenden promover en el alumnado una alta comprensión de lo aprendido a través de su implicación en procesos de indagación y/o colaboración y que son representación de buenas prácticas de enseñanza.

KEYWORDS / PALABRAS CLAVE
Learning design, repository, learning activities, sequences of learning, patterns, higher educaction.
Diseño del aprendizaje, repositorio, actividades de aprendizaje, secuencias de aprendizaje, patrones, enseñanza.

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1. Introduction

One of the most evident consequences of the gradual introduction of the European Space of Higher Education is the change in the processes of planning and design of the teaching carried out by university teachers. The emphasis on ensuring the quality of teaching and learning for students is requiring university teachers to anticipate the learning processes in which the students will be involved. The systems to guarantee the quality of new university degrees, as well as the procedures for their verification and future accreditation, demand high levels of transparency from university teachers with regard to the teaching and learning processes that the students will be part of.

In order to encourage autonomous learning, we need to design and promote formative actions that involve the students in active learning (Huber, 2008). From this point of view, the students are the ones who construct their own knowledge through learning activities (Benito Capa & Cruz Chust, 2007) which, in order to maximize the quality of learning results, according to Meyers & Nulty (2009), should be authentic, real and relevant; constructive, sequential and related to each other; require the students to use and participate in progressively more sophisticated cognitive processes; be aligned with the desired learning results, and generate interest and motivation to learn. Herrington, Reeves, Oliver & Woo (2004), influenced by the constructivist theory of education and advances in technology, call these authentic activities.

Being a university teacher means being involved in designing learning tasks. But if learning is now understood not as consumption but as production of knowledge and, consequently, teaching does not transmit knowledge but leads and facilitates it, university teachers should no longer take the role of a leading actor, and should become the set designer instead (Murillo, 2006). This makes us reaffirm, as Bain (2007) points out, that university teachers should think of teaching as the promotion of learning, and should create a critical learning environment that is natural, and where people learn by tackling important, attractive or intriguing problems – authentic tasks that provide them with a challenge when it comes to dealing with new ideas, reconsidering their assumptions and examining their mental models of reality. Along the same lines, Hannafin, Oliver and Land (1999) suggest that suitable learning environments are characterised by the encouragement of student participation in complex cognitive learning activities that include problem solving, critical thinking, collaboration and/or self-adjustment.

Consequently, the didactic planning of a topic or subject should not be limited to distributing the contents throughout a schedule using the European credit system as a calculation system for teaching activity. Instead, the central element of this planning should be to present sequentially the whole set of activities and tasks to be done in order to guide the experiences that the students will have to cover throughout the teaching-learning process (De Miguel, 2006: 17).

Our role as teachers will involve long hours of designing and preparing learning activities and situations or scenarios that allow active and cooperative learning, where the development or execution of the complex actions that constitute each competency take place, rather than preparing and imparting the disciplinary contents of our specialty (De la Cruz Tomé, 2003; Kiss & Castro,2005). It should be remembered that adopting a teaching approach that guides students in their learning also means taking on the role of a facilitator who should respond to the needs of the group and of particular students (Borthwick, Bennett, Lefoe, & Huber, 2007).

In summary, the teaching profession has become a «profession of knowledge», not because knowledge has been or is the validating component of the profession, but because the university teacher is the designer of learning environments and is capable of making the spaces where learning takes place profitable (Marcelo, 2001, Marcelo & Vaillant, 2010).

However, for a long time these learning environments have been controlled by the privacy of the classroom and the students' involvement (Guerra, González & García, 2010). One of the positive effects of the introduction of the European Space of Higher Education has in fact been to make the design processes of the students' teaching and learning more transparent, as it asks that we, though perhaps too far in advance, inform them of how we are going to ensure that our students acquire competencies by developing what have been called «teaching guides» (Marcelo & Yot, 2010).

1.1. Designing students' learning

Design is a critical task that is a characteristic of the role of a teacher. As Schön (1990) affirms, professionals design situations in which they apply their tacit knowledge, as well as improvising. Learning design is the human activity in which people outline and plan learning activities, units of learning that a subject must carry out in order to learn (Koper & Tattersall, 2005). As a synonym of instructional design, it involves, according to Horton (2006), selecting, organising and specifying the learning experiences necessary to teach something to someone.

As Cameron (2007) clarifies, the term learning design refers to a general and comprehensive method of description of the teaching-learning process. «Learning design» is a representation of the teaching-learning practice set out in some form of notation through which it can be shared between teachers, replicated by a new teacher or used as a basis in creating new learning activities (Conole, 2008). These forms of representation are defined by Conole (2008) as mediation devices, thus emphasising their role as mediator in terms of how they are used as part of the design of new learning activities and/or to help other university teachers make informed decisions with regard to learning design (Conole, 2007). This leads Masterman, Jameson, & Walker (2009) to question whether the designs should be prescriptive, that is to say, used to communicate to teachers a list of steps to follow, or descriptive in the sense of offering teachers information about what others have done, from which they may be able to discover their own variants.

The idea of using learning designs as a means of sharing good teaching-learning practices is gaining interest. Beetham & Sharpe (2007) provide a valuable description of the current development of this line of investigation by revising the aspects relating to learning design, its exchange and reuse. However, as Falconer & Littlejohn (2006) suggest, a learning design can only be shared if the representation provides all the information that teachers need in order to understand it, often giving details of component elements of each learning activity, such as the learning tasks and the necessary resources and support (Conole, 2008; Oliver, Herrington, Herrington, & Reeves, 2007). In addition, according to Koper (2005), it should provide the means for illustrating the underlying design inherent in each learning practice, which is more widely applicable than the practice itself.

2. Creation of a repository for learning sequences for university teaching

After establishing and highlighting the importance of student learning design in the new context of the European Space of Higher Education, we will describe the investigation we have developed, which has enabled us to design a repository for Learning Sequences. Our objective in this investigation was to identify, represent and document a wide variety of learning sequences planned by university teachers with extensive innovative experience and make them available and accessible through the internet.

2.1. Looking for innovative learning designs

Fifty-eight teachers have participated in this study, from the various universities in Spain as well as from the University of Chile, specifically from the Faculty of Medicine. The largest numbers of teachers are from the University of Seville (23) and the University of Huelva (12).

Of the total of participating university teachers, twenty-four correspond to the branch of Health Sciences, mainly Medicine and Nursing qualifications. In second place are the Architecture and Engineering university teachers with a total of fifteen university teachers participating in the study. There is a smaller presence of university teachers corresponding to Social Sciences (Teaching, Psychology, History…), and to Sciences (Biology, Maths, Chemistry…).

As we have mentioned, the selection of the university teachers was deliberate, since we were interested in having access to university teachers with a strong university career as well as a proven capacity for innovation. In order to choose participants we used various methods, including selecting university teachers participating in teaching innovation projects in

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Spanish universities, and university teachers who had received prizes for their activity in innovation.

2.2. How did we obtain the information?

The data collection has been carried out through semi-structured individual interviews with each university teacher who was part of our study sample. Once we had identified a university teacher with an outstanding career in teaching innovation, we arranged an interview with them. The purpose of the interview was for the participants to describe a learning sequence that they habitually plan and implement for the development of the subject that they teach, focusing in the activities carried out by the students, the role played by the students and the university teacher, and the resources that are used to support the students' learning. In the course of the interview we aimed to discover and identify at least the following elements of the learning design:

First Context: competencies to be taught with the sequence, expected learning results, prerequisites for carrying out the sequence, study content covered, time needed to complete it and level of difficulty.

Second the Activities performed by the students and university teachers: tasks that are involved (assimilatory, managing information, adaptive, communicative, productive, experiential, evaluative), type of interaction required (individual or in groups), roles adopted (student as an individual, student as part of a group, advisor, mentor, facilitator, moderator…), necessary resources (demonstrations, texts, audiovisual resources, web pages, email…) and evaluation system (diagnostic, formative, summative).

As interviewers we used an interview guide, with direction on questions to ask, and all the interviews were recorded in audio and had an average duration of approximately 90 minutes, depending on the complexity of each sequence.

Once each of the learning sequences had been reformulated, in separate reports, they were sent to the teachers for them to review and validate the report that had been produced. All the contributions that the university teachers made about the representations of their sequences and their own learning designs were then incorporated.

Following this, all the learning designs were edited in HTML format to be published on the internet and produced with the LAMS tool. The next stage was the creation of the repository on the investigation group's web page.

Although it is not the purpose of this article, it should be made clear that the study proceeded with a complex process of data analysis. After the reports had been returned and validated, a first analysis was carried out to describe the various learning activities and classify the tasks involved. In order to do this we set out a system of categories.

Subsequently, in order to specify the relationships between the learning activities described, and thus to find out what patterns of learning activities were frequent in the totality of the sequences, a second data codification was carried out. The results showed us that patterns of learning activity exist based on the minimal combination or structuring of activities.

3. The result: The Storage Space for Learning Sequences

All fifty-eight learning sequences are available in the sequence depository that we have called Alacena. This repository is available on our investigation group's web page, as indicated above, http://prometeo.us.es/idea

Since its creation, Alacena has been an open resource available to university teaching staff with the sole purpose of allowing them to find the representation of a variety of highly innovative learning sequences that can help them to effectively design their own courses. Furthermore, it has been conceived as a resource to be permanently constructed and added to, as it receives contributions from those university teachers who choose to share their own experiences. Nevertheless, we are aware that there is not a tradi-

Figure 1. Screenshot of the web page and the Alacena repository: http://prometeo.us.es/idea.

tion of making formal plans in education, and in general the design is a very local and even individual aspect (Koper, 2005; Oliver, 2007). For this reason, there follows a detailed description of the notation system, the learning design we have developed, and the authorised uploading tool.

In order to develop the representations of the learning sequences, a standardised design language is required, i.e. a notation that describes the learning design in an interpretable way (Koper & Bennett, 2008). By notation, the system of conventional signs that is adopted to express concepts is understood. A number of attempts are now emerging to comprehensively document learning designs, with the effect that there are currently many types of representation that can serve a wide range of different purposes. As examples of these initiatives, Agostinho (2008) highlights: E2ML, IMS Learning Design, Learning Design Visual Sequence, LDLite, Learning Activity Management System and the design patterns. Richards & Knight (2005), McAndrew, Goodyear & Dalziel (2006), Cameron (2007), and Falconer & al. (2007), have also offered their review of the existing representations.

Our learning design provides all the information that teachers need in order to understand and reproduce any of the learning sequences, giving details of the component elements of each learning activity, such as the learning tasks and the necessary resources and support (Conole, 2008; Oliver, Herrington, Herrington & Reeves, 2007), represented as:

1) An account of general and identification information that can help to contextualise the sequence, such as the qualification, the subject and the student-teacher ratio. In those cases in which the university teacher implementing the sequence and reporting it to us has decided not to remain anonymous, their personal details have been provided and the contextual information has been extended to give the department, faculty and university.

2) A graphic that summarises the most important moments of the sequence – the different tasks that the students carry out in it. It is a simple representation in the form of an graphic, where just the tasks to be carried out by the students are illustrated, appearing in the order in which they are carried out, with arrows showing which task precedes and follows each other task.

3) An in-depth description of the sequence, detailing its phases. The text allows us to find out which activities (assimilatory, managing information, communicative, productive, application, experiential) make up the learning sequence, and helps us to understand the tasks that the students carry out. The learning activities and tasks are what form the main thread through the information collected. For each one of them, attention is drawn to the resources that are needed and used, the role played by the university teachers and students, the type of interaction and how students are grouped, etc. However, the information is kept brief in order to avoid making it tiring to read.

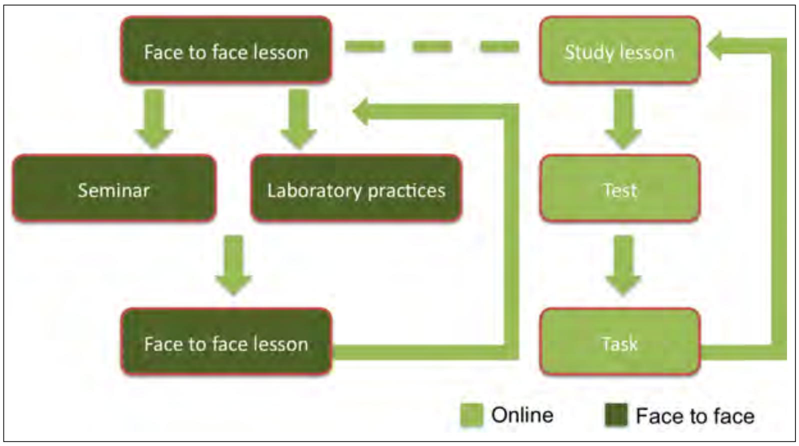

Figure 3. Graphic representation of a learning sequence.

4) A table focusing on three important aspects for understanding each sequence, namely: resources that are used, concrete tasks performed by the university teachers and students, in which they use the previously mentioned resources, and roles assumed by the teachers as well as the students in the carrying out of each of the tasks. The table therefore extends the information contained in the graphic and synthesises the detailed information in the description. The three representations (graphic, table and description) contribute to the overall understanding of the sequence.

5) A LAMS sequence, the image that represents the development of the sequence in the LAMS tool, taken in its own environment. It will soon be possible to download designs developed in and exported from LAMS to be reused. It is sufficient to mention that «Learning Activity Management System» (LAMS), is an

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Resources	Tasks	Roles*
Transparencies Blackboard LMS	Face to face lessons	S: Individual T: Presenter One to Many interaction (teacher to students) and group interaction
Laboratory and microscope LMS Practical protocol Samples	Laboratory practices	S: Individual T: Adviser Individual interaction
Computer room List of topics and references	Seminar: Explanation and assignment	S: Individual T: Presenter One to Many interaction (teacher to students) and One to one interaction (teacher to student)
PowerPoint Documents LMS	Exposition	S: Presenter or assessor T: Assessor One to Many interaction (student to class group)
LMS HTML Lesson PowerPoint	Study lesson	S: Individual
LMS and Test	Test	S: Individual
LMS	Tasks	S: Individual

* Interaction may always be one to one (student to teacher, individual tutorship) and group interaction (interaction in the forum)

Figure 4. Summary table of a learning sequence.

open source piece of software, which allows a university teacher to design as well as put into practice online learning activities, and which represents a sequence of activities illustrated visually in the form of a diagram that is easy to interpret (Agostinho, 2008).

The various learning designs are organised, so that they can be located easily, by the different field of knowledge, by teaching method and by learning format:

• By Field of Knowledge. Taking into consideration the five areas of knowledge, the designs have been categorised as relating to: Social Sciences, Mathematical and Natural Sciences, Arts and Humanities, Health Sciences and Technology, Engineering and Architecture.

• By teaching method. Although the majority of learning sequences incorporate a variety of activities for the students to complete, we have observed that one type of activity tends to predominate in each sequence.

Consequently, we have differentiated between: sequences based on practical work, sequences based on problems, sequences based on projects, sequences based on case studies, sequences based on group work, generic sequences.

• By learning format. We have differentiated between three sequence formats: face to face, online, and blended.

4. Conclusion

As a result of the process of analysis carried out in the study, and having created the Alacena repository, we were able to verify the existence of innovative university learning designs that attempt to promote high levels of understanding among students of what they have learned. This is done through students' involvement in investigative and/or collaborative processes, which represent good university teaching practices.

We also know that as teachers we have to facilitate learning of the competencies included in our teaching programmes and guides, and that learning activities are the necessary vehicle to achieve this. This means that our role as teachers will involve long hours of designing authentic learning activities.

The Alacena repository that we have created could become a useful tool to help with the planning of learning sequences, as it presents publicly what other university teachers do and provides knowledge of a variety of types of activities that we can design, the resources and support that we may need, the roles to be played, etc. so that they can then be carried out.

Since it is a tool that brings us closer to the reality of the classroom, and that allows us to discover different teaching-learning processes, it is consequently a tool that promotes professional teaching development

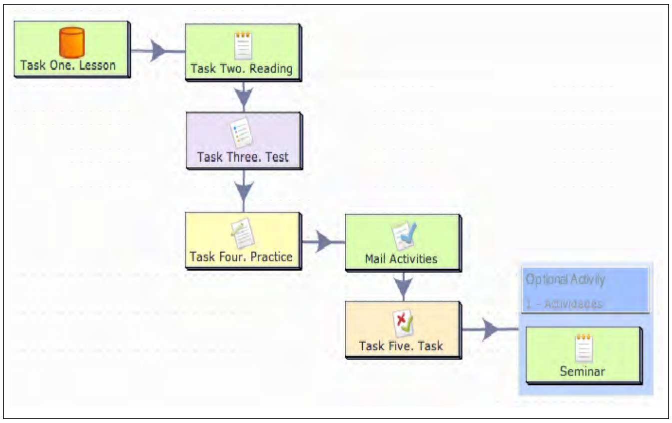

Figure 5. LAMS graphic representation of a learning sequence.

processes. The data derived from our research show that university teachers use a wide variety of activities and learning tasks. The different tasks included within learning activities are aimed at achieving certain objectives of student learning.

However, based on this variety of tasks, they find that the assimilative activities are most frequently found, and the tasks associated with it. We understand that it is from the students aware of the content or theme of the program, either by reading or by the listener, which he usually practiced by low-level cognitive tasks such as the application or information management.

At a time when university teaching is changing due to the enormous effort being made by teaching staff, it seemed to us that there was a need to publish examples of good practices carried out by university teachers. However, the fundamental aim of the project is for teachers to see Alacena as a useful and valuable resource that they can use in the process of planning and designing their students' learning.

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Apprenticeship Students Learning On-line: Opportunities and Challenges for Polytechnic Institutions

El aprendizaje on-line: oportunidades y retos en instituciones politécnicas

ABSTRACT

This paper presents the ongoing research on the challenges and opportunities of delivering on-line and virtual content to apprentices in a Polytechnic institution. Due to the current financial recession, apprentices are going back to academia in order to update their skills, but these potential students are not willing to leave their workplace or their personal lives behind to study. In this context on-line delivery represents an opportunity to provide access to content without leaving the work environment. However, in order to be successful in providing on-line materials for apprentices, polytechnics around the world are facing two challenges: How to transform hands-on Learning skills to online Learning material, and how to provide a rich-engaging environment for this group of learners. But not only the learner expectations should be taken when designing on-line learning. Instructors play also a crucial role in this endeavor, as Web 2.0 technologies offer the instructor an entirely new role in teaching: that of a facilitator. In order to analyze apprenticeship students' on-line learning, 57 on-line surveys were distributed among a group of students registered for on-line apprenticeship programs. The paper presents research findings and a comparison of these with a what the literature states regarding the new generation of learners and their use of technologies, and the behavior (learning preferences, learning styles, use of IT) presented by the research sample. Innovative opportunities for learning at the workplace (such as recommendations and future areas of research) are suggested.

RESUMEN

Este artículo presenta los retos y las oportunidades actuales respecto a la distribución de contenidos virtuales y online en el marco de la institución de educación superior politécnica. Debido a la recesión económica actual, se está produciendo un retorno de estudiantes aprendices al mundo académico con el fin de actualizar habilidades y conocimientos. Sin embargo, a menudo los estudiantes con este perfil no están dispuestos a dejar de lado el trabajo o su vida personal para volver al estudio. En este contexto, el aprendizaje on-line representa una magnífica oportunidad para acceder a contenidos académicos sin tener que dejar de lado el trabajo. No obstante, para garantizar el éxito en la provisión de materiales on-line para estudiantes aprendices, las instituciones politécnicas de todo el mundo deben enfrentar dos retos: la transformación de contenidos de aprendizaje práctico en objetos educativos en línea, y la creación de ambientes educativos en los que los estudiantes se sientan involucrados y participativos. Más aún, en un ambiente de aprendizaje en el que el uso de tecnologías Web 2.0 es primordial, es importante considerar también el nuevo rol del profesor, que se ha convertido en facilitador del aprendizaje. Con el fin de analizar la experiencia educativa on-line de estos estudiantes, se distribuyeron 57 encuestas entre los estudiantes registrados en programas de formación on-line. El artículo presenta las conclusiones de la investigación y las compara con las aportaciones que se han hecho en lo relativo a la nueva generación de estudiantes y su uso de las tecnologías, así como el comportamiento registrado por la muestra de la investigación (preferencias y estilos de aprendizaje, su uso de las nuevas tecnologías). Se plantean igualmente oportunidades innovadoras para conectar aprendizaje y contexto laboral y recomendaciones para futuras investigaciones.

KEYWORDS / PALABRAS CLAVE

Digital natives, Net Gen, on-line learning, student-centered environments, Web 2.0, hands-on learning.
Nativos digitales, generación net, aprendizaje on-line, aprendizaje significativo, tecnologías Web 2.0, interactividad.

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1. Introduction

Educators around the world are uncertain if their educational institutions are ready to respond to student needs and expectations as they see 21st century students arriving to colleges and universities. The reason for this uncertainty is clear: these students are carrying with them an entirely different approach to learning, entertainment and life in general. The majority of students in today's classrooms are the first generation to grow up with such a vast array of information technologies. They have spent their entire lives surrounded by and using computers, video games, digital music players, video cameras, cell phones, and all the other toys and tools of the digital age. As such, they are known as the Net Generation, or Net Gen-ers.

In parallel to this challenge and due to the current working environment, apprentices are going back to colleges and universities in order to update their skills. But these potential students are not willing to leave their workplace or their personal lives behind. In this context online delivery represents an opportunity to connect content to the workplace context. However, in order to be successful, this connection should be done in the context of an engaging environment, where learners can interact with other learners in a rich virtual environment.

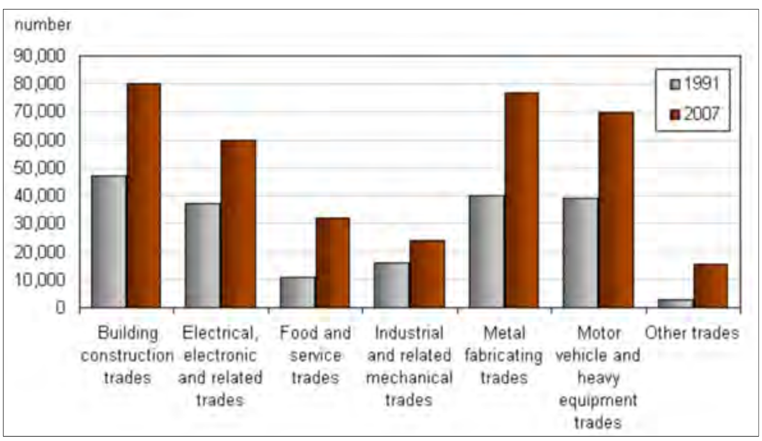

Table I. Registered apprenticeship registrations, by major trade group, 1991 and 2007 (Source: Statistics Canada, 2010).

Table I presents a comparison of the growing number of Apprentices in Canada going back to continue their training. This, together with the fact that apprentices are now expecting content to be mobile, has encouraged higher education (postsecondary) institutions in the country, to provide different ways of accessing content.

This article is about the learning needs and opportunities that students apprentices from the Net Generation are bringing with them when they go back to higher education. Possibilities that online learning and virtual environments offer to transform teaching and learning are presented and a case study, the online apprentices project, is analyzed in detail.

2. Digital Natives: The New Student Generation in the 21st Century

According to some authors in North America, average college graduates have spent today less than 5,000 hours of their lives reading, but over 10,000 hours playing video games. Computer games, e-mail, the Internet, cell phones and instant messaging are integral parts of their lives (Gibson et al, 2008; Prensky 2001; Wesch, 2007). As a result of this ubiquitous technology, a number of social scientists sustain that today's students think and process information differently than their predecessors. Even more so, their entire system of beliefs and values are different from those in previous generations, and these differences usually go further and deeper that most educators recognize. This is why Marc Prensky has named today's students «digital natives». Digital natives are those who have always known the Internet and a digital environment. Others have called this new generation of students the Net Gen, where Net refers to either networking or Internet use. Whether Digital natives or Net Gen-ers, this generation was born at a time when computers were an important part of the dynamics of a home, and where the Internet had become an integral part of daily activities.

Some argue that even if the digital natives have slight differences in speech and social interactions, they are fluent in digital communication forms that are prevalent in the new land (Jukes & Dosaj, 2004; Toledo, 2007). Oblinger (2005) characterizes the «millenials» (as she calls the generation of students born after 1982) this way: «They gravitate toward group activity and social networking; they identify with their parents' values and feel close to their parents; they spend more time doing homework and housework and less time watching TV, they believe «it's cool to be smart», they are fascinated by new technologies; they are racially and ethnically diverse…» (2005: 2).

Academic colleagues from different countries have begun to consider whether students around the world have similar experiences to those in North America. For example, Oliver and Goerke (2007) researched undergraduate students in Australia to find out whether their students confirm these assertions. They found that «ownership of laptops, mobile phones and music devices appears to be growing rapidly among this group, along with their use of tools such as instant messaging, blogs and podcasts» (Oliver & Goerke, 2007). Another example of this is the work done by Creanor et al. (2006) and published as the Lex (Learner Experience of E-learning) Report. A total of twenty-two interviews and six focus groups were conducted that evaluated students' experiences with e-learning in the UK. Findings of the report include the fact that learners involved in the research tended to be highly skilled networkers and often use technology to pull support when needed.

The changes that today's students bring with them – with some of these changes evident even in their brain structures, according to Tapscott (2008) when they start their post-secondary education creates an urgent call to understanding the different ways they learn. In turn, this fact calls for a change in the way institutions provide educational opportunities to them. It is time not only to radically change the way teaching takes place, but also to redesign curriculum, graduation processes, evaluation methods, infrastructure needs, etc.

3. Web 2.0 technologies and the changing role of the instructor

Web 2.0 technologies are the foundation of the new pedagogical model, where the instructor has become a facilitator of knowledge and is no longer the «knowledge holder» (Anderson, 2007; Evans and Nation, 2000; Deal, 2007; Daniels, 1998; Mason, 1998). Laurillard (2002) analyzes the transformation of the instructor from a knowledge source to a facilitator, as he/she provides a conversational framework for the evolution of learning. In order to enable the evaluation of the effectiveness of learning, Laurillard identifies the key elements of the process: discussion, interaction, adaptation, and reflection (on the student's performance by instructor and student). Laurillard believes that this framework can be applied to the evaluation of technologies in learning. In fact, one of the main goals for the use of technologies for teaching and learning should be to provide student-centered situations where instructors facilitate access to content in a horizontal, sharing environment.

Sfard (1998) examined the changing role of the instructor from a knowledge holder into a facilitator through the use of information technologies. He identifies two teaching and learning models: the «acquisition model» and the «participation model». In the acquisition model, the role of the instructor is to deliver, suggest, and clarify knowledge and concepts. With the acquisition model, the focus of learning goals is on acquiring pre-specified knowledge and on developing understanding of predetermined concepts.

In the participation model, he/she is a facilitator, mentor, expert participant, and guardian of practice/discourse. With the participation model, the focus of learning activities is on becoming a member of a community of practice, learning from the community but also contributing to it.

The collaboration (transformation) framework emphasises individual thinking and construction of meaning. Teaching with this approach is more tentative, flexible and experimental – hence it is student-centred. In this context, a community of learners will improve learning through their interaction (Burkle, 2003; Perry, 2003).

Collis and Moonen (2001) and Sloman (2001) conclude their comparison of the two models by stating that a pedagogical theory means little if instructors do not apply it, and also that technological resources have no value if they are not used. In fact, the authors stress the fact that the number of instructors who chose to be innovators in technology and pedagogy is limited.

Sloman (2001) maintains that the acquisition model could be associated with behaviourist theory, while the participation model is related to a constructivist approach. This assumption is based on the fact that in the transmission model, a teacher (lecturer or instructor) can pass on a fixed body of information and the «student or learner interacts with a pre-packed content» (Sloman, 2001: 114), while the transformation framework implies individual thinking and constructing of meaning.

Holley & Haynes (2003: 4) suggest that «such changes are most visible in the ongoing erosion of individual or small group teaching, and in the attempts to change the nature of contact time away from delivery of information towards more active participation». The development and implementation of widely accessible communication and information technologies has been a key driving force in the move towards the adoption of social constructivism as a guiding principle in Higher Education Institutions HEIs (Laurillard, 2002). In other words, this change has resulted in a change in the role of the instructor from the «sage of the stage», where transmissive, didactic learning took place, to the «guide on the side», where more student-centred learning takes place[1] (Harasim, 1990).

4. Web 2.0 technologies and learning at the Southern Alberta Institute of Technology (SAIT Polytechnic)

SAIT Polytechnic is a public two-year institution in Alberta with approximately 52, 000 learners distributed in full-time programs, apprenticeship programs, continuing education, and corporate training. Its annual budget is in the order of C$200 million (Bates, 2007).

SAIT introduced the use of technologies for education in 1997 when it started delivering courses through the so-called «laptop program». Since then, laptop programs have been running in four of the seven Academic Schools (Business, Information and Communication Technology, Construction and Transportation). The laptop program strategy was part of the institution's vision to innovate the way teaching and learning processes took place and introduce a blended approach to learning.

By 2009, most of the seven academic schools at SAIT had a number of courses in the laptop program, or were using another learning technology such as the video iPods, YouTube videos, or Second Life virtual spaces to deliver courses and lab procedures. There are more than 90 fully wired classrooms at SAIT, and the number of computer ports on campus rose from 2,000 in 1997 to more than 15,000 in 2008.

In order to provide the leadership which resulted in SAIT's achievement of international recognition in the use of technologies for teaching and learning, and with the financial support of CISCO Systems, in 2004 SAIT opened the position of a research Chair (CISCO Chair in e-learning) and appointed Dr. Tony Bates to the position. Dr. Bates immediately reviewed e-learning strategies across campus and developed a strategic plan. At the end of the year, Dr. Bates produced the «SAIT Strategic e-Learning Plan», which proposed 82 recommendations to support student engagement with the use of e-learning technologies (Bates, 2007)[2].

> Educators around the world are uncertain if their educational institutions are ready to respond to student needs and expectations as they see 21st century students arriving to colleges and universities. The reason for this uncertainty is clear: these students are carrying with them an entirely different approach to learning, entertainment and life in general. The majority of students in today's classrooms are the first generation to grow up with such a vast array of information technologies. They have spent their entire lives surrounded by and using computers, video games, digital music players, video cameras, cell phones, and all the other toys and tools of the digital age. As such, they are known as the Net Generation, or Net Gen-ers.

5. Research Project

In February 2010, and with the support of AIT (Apprenticeship Industry Training , SAIT decided to explore the possibilities of using mobile technologies/online learning for apprenticeship students willing to combine work and learning. This decision was based on the following institution's needs and expectations:

- Facilitate a flexible environment where registered students could learn at their own pace.
- Facilitate the combination of workplace and learning in an engaging environment.
- Facilitate collaborative learning among students, by promoting critical thinking in a challenging and unique environment.
- Reduce classroom time for students apprentices.

A team consisting of the academic coordinators for the Electrician and Welding programs, a project manager, an instructional designer, a multimedia expert, subject matter experts (faculty) and the CISCO Chair of e-learning was put together to design a working plan, redesigned the classroom taught courses and define the teaching plan.

With a plan in place, research questions and methodologies were designed for a «Pilot Research Project», between September 2010 and January 2011, with these research goals:

• To analyze student expectations of learning online

• To explore the impact of mobile content on students' learning

• To learn about online course efficiency and course engaging capacity.

The online course will combine access to learning materials through an LMS (Learning Management System), with workshop (lab) hours so that students will go the lab to test what they learned in theory.

The research population for the Pilot stage of the research project included all students registered in the Electric (17 in total) and in Welding (7 in total) Programs. Research tool and findings are analyzed below.

After the course was over, it was important to know the impact of the online materials and mobile content on students' learning. Research tools were designed in order to obtain information from instructors and students participating in the experience.

5.1. Research Methodology

Three research tools were used in this project: a survey, a focus group and an interview. This last one included students and instructors.

The first research tool to be designed and applied was the survey. In order to include the main issues regarding students' opinions about learning online several surveys were compared, such as the «Student instructional Report –SIR– designed by ETS. The survey was anonymous, and had a total of 23 questions (likert scale most of them). For the efficiency of the survey distribution and online resource was used: Surveymonkey.

A total of 23 online surveys were distributed and answered by students between November and December 2010. The survey had five different sections. Section one intended to obtain information on students' demographics and their previous experience with online learning. Section two was oriented to gather students' opinions with regard to learning goals and course usability. In section three students were asked about the online learning experience and their learning management processes. Section four gathered information on instructor-student and student-student interaction by using e-mail or the online discussion forums available in the course. At the end of the survey, students had an opportunity to write their personal comments in an open space.

Surveys were followed up by a focus group with students. Participation in the focus group was on a volunteer basis. Information gather from this focus group was compared with the one obtained from the survey.

Finally, a series of interviews with instructors took place at the end of the course. For these, a question guide was followed and the researcher tried to facilitate an open and free space for instructors to share their experiences teaching online.

5.2. Research findings

For the purpose of organizing the research findings, these have been classified under each of the survey sections. Below is an analysis of these.

5.2.1. Students' experience with online learning

The first questions in the survey were related to students' previous experiences with and previous information about online environments for learning. Even if a good number of them (41.4%) had experience using the Internet, only one of the students in the Electrician cohort and one in the Welding group had taken an online before this one.

Qualitative analysis of students' interviews showed that even if students were not familiar with the use of computers for learning, they were extremely enthusiastic about accessing course materials online. In their own words: «Having access to the course materials anytime, anywhere, I was able to learn at my own pace, without needing to wait to receive coaching from my instructor».

Another interesting finding from this research is that motivation was an important issue for students using the LMS (learning management system) to access course content. Motivation helped engage them in self-learning. Student participants in this research believed that their instructors encouraged their learning everywhere, breaking the limits of the classroom. These findings are similar to research carried out in the United Kingdom and published by BECTA (British Educational Communications and Technology Agency) in 2007, where students' motivation was a determinant factor for the successful use of Web 2.0 technologies.

5.2.2. Learning goals and course use capacity

The purpose of the next section in the survey was to provide feedback to the course development team

(Instructors, IDs, Editors, Multimedia, etc.) regarding the course's goals and use capacity. Using a likert scale, students were asked four closed-ended questions and one open-ended question, where they were able to provide further comments.

Responses show that students felt the course goals were clearly stated in the LMS. 28% stated the goal was very clear, while for 43% was clear and for 29% was moderately clear. In the framework of using an online tool to learn, stating the course goals is very important. Responses should give some feedback to developers to improved clarity in the future.

Regarding the course navigation, there was an even distribution between students who found the course very easy to navigate (29% of them), easy (29%) and moderately easy (29%). Only one student found the course «somewhat easy».

An important question was targeted to receive feedback on students' opinion regarding the function of links to websites, videos, PDF documents, etc. Only one student answered that all the links worked «perfectly», while another one stated they worked fine. 5 students said links worked «fine most of the time». One student commented that the quizzes did not work well all of the time, and another one stated he needed more info that was not available in the LMS. All of these comments should be taken in consideration when developing the next online course.

Students' opinions on this matter should be taken into consideration in future course development for apprentices. Issues of clarity of course goals should be reviewed by the instructor and the instructional designer before the course goes online.

5.2.3. Students' management of learning process

The next section in the survey was oriented to obtain information regarding students' experience as online learners, and their time management strategies. Using a likert scale students were asked six questions to evaluate these items.

The first question asked students how difficult the course was for them. None of them stated the course was very difficult, while six indicated it was somewhat difficult. Five students considered the level of difficulty as about right, and one of them stated that the course was somewhat elementary.

Regarding students' time management and workloads, half of the surveyed students stated the online capability of the course helped them to manage their time more effectively «most of the time». Five of them managed effectively their time sometimes. One of them said he managed effectively his time always.

Student at SAIT Welding Program during a Welding shop procedure.

A qualitative follow up of this question took place when interviewing the students. Two of them agreed that learning online is not for every student but for those who know how to manage their time properly, and are able to efficiently combine work and study.

For another student being able to access the course content online enable him to finish the course faster than planned in the academic calendar. In his own words». «I was able to complete my coursework in one month instead of three. This was fantastic!».

In regards the online course workloads, only two students stated that the online course was heavier compared with the classroom workloads. The majority of the research population (42%) indicated that the course was lighter, and 17% felt the course-work was heavier than the previous classroom courses.

In the current financial challenging times, a very important issue for the survey was to analyze if students were able to combine work with study. 42% said they were able to do both activities all the time, while 25% stated they combined work and study most of the time. The other 25% said they combined both activities only «some of the time», while one of them did not combine working and learning.

The last two questions of this section gathered students' information regarding their online experience and their willingness to take another course online. Responses in the likert scale tended to be in the middle as the majority of the students stated learning online was a good experience «most of the time» (58 %) or «some of the time» (25%). Two students found the experience a positive «none of the time». A qualitative follow up on this issue showed that the time students spent in the workshop (or lab) was very valuable for them. They were grateful with the fact that the instructor was always available to answer questions in the lab (in a face-to-face environment), and that they could practice immediately what they have learned in the online materials. Below is a photo of a student in the Welding program interacting with his instructor while he learns how to do metal cutting.

5.2.4. Instructor-student interactions

An important factor to analyze in this research was the impact online learning had on instructor-student interaction both inside and outside the lab. According to Collis and Moonen (2001), in order to use technologies for teaching and learning, universities have to transform themselves in a number of areas, including the interaction between students and instructors and the ways in which students' access knowledge.

For 57% of the students in the research, the online course provided them with a variety of opportunities to interact with the instructor. The majority of the students (86%) found that directions for contacting the instructor were always or most of the time clear and specific.

During the interview students were asked about the interaction they had with the online instructor and all of them agreed that having previous knowledge of the workshop (lab) procedures allow them to reduce the questions to the instructors inside the lab so that instructors could focus more on those students who will have more difficulty with learning the procedure. As one student expressed it: «Online materials allowed us to answer our own questions and therefore reduce the demands on the instructor».

These findings concur with what is stated in the literature with regard to what information technologies in general can do to facilitate interaction with instructors (Hiltz, 1990; Moller, 1998; Holley & Haynes, 2003). For example, Moller (1998) remarks that when using technologies to interact with their instructors, students feel they are more involved and that they have learned more.

Instructors played a crucial role to support the interaction with students learning online. When interviewed, they stated that they motivate the students to be critical and analytical with what they were learning online. Motivation has been noted in the literature with relation to the fact that technologies per se do not change settings, interaction, access to knowledge, etc. The use of technologies to facilitate instructor-student interaction depends on the instructors' input and attitude towards the students, as well as the students' disposition and skill in using the technologies. As Holley and Haynes (2003) have noted, students who actively contact their instructors and participate in collaborative activities tend to be more motivated and are actually more familiar with mobile technologies. If these students encounter a problem, they approach the instructor to solve it.

5.2.5. Instructor's perception of role change after the use of online content

Within the framework of this research, it was been clear that instructors played a crucial role in bringing online technologies to their teaching experience. Instructors interviewed for this research stressed the fact that the changes in students' learning did not come only from the use of the online materials, but from their use of different learning techniques. The fact that they knew that their students were familiar with the content review in the lab allowed instructors to let the students help each other solving problems in a collaborative way. Furthermore, instead of lecturing, instructors developed a «problem based» approach where students in the lab came to them only if they were not able to solve a particular problem on their own.

Instructors' pedagogic views are decisive when they use new technologies in teaching. For example, Bates (2000) underlines that new technologies need different teaching approaches and an understanding of

Student at SAIT Electrician Program practicing in the lab.

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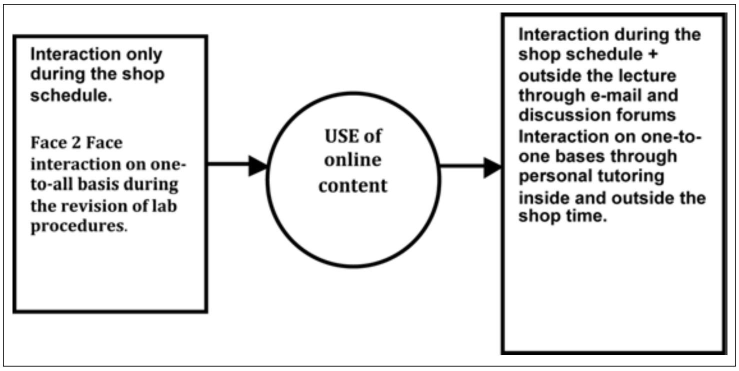

Model 1. Before using online content
Model 2. After using online content

the teaching process itself. The application of new pedagogic models has resulted in an ideological shift in the relationship between instructors and students (Collis & Moonen, 2001; Laurillard, 2002; Sloman, 2001). In this research, the application of a new pedagogical framework was crucial for the success of the use online learning technologies inside and outside the workshop (lab).

One instructor in the interview emphasized the fact that it was his personal challenge to use innovative pedagogic techniques that motivated him towards the use of online learning materials. It was with the application of innovative pedagogic techniques that he made valuable use of online content to prepare students for the workshop (lab): «My challenge is more related to an innovative pedagogic practice, not to the use online curricula».

6. Conclusions, Research Limitations Recommendations & Future Research Directions

Research presented in this chapter is only an example of how online learning can contribute to new pedagogical practices across colleges and universities and how these educational institutions are responding to the Net Gen students' learning expectations. The research population in this paper was rather small and researchers are aware of the fact that a larger group of students' opinions should be taken into when considering further actions in the design and use of online learning materials.

However, from the research findings analyzed in this paper, the following recommendations can be proposed:

• When changing from a classroom-based teaching environment to an online one, both instructors and students should be provided with the proper tools and training to be able to take advantage of the new teaching-learning environment.

• Instructors should be aware of the fact that teaching in an online environments requires from them to be able to interact with students using Web 2.0 technologies, such as social media, or e-mail. This interaction is crucial for students' successful completion of courses and programs.

• When teaching online, it is important to consider that not all the students have the same reading capabilities and learning style. Therefore, online environments should be customized according to individual learning differences and students' expectations.

What can institutions, instructors, and students expect to see over the next number of years as online learning technologies become an even greater part of education contexts? Although there is not a certain answer to this question, we suspect that changes will be seen in all the areas connected to students' learning, including pedagogical practices, learning styles, faculty development, mobile technologies use and appropriation. Further areas for research should then be:

• Effective training practices for both instructors teaching and students learning online.

• Analysis and measurement of students' motivation in relation to the introduction of online learning technologies should be further explored.

• Students' individual differences, such as age, gender, educational experience and learning style should also be explored when analyzing the potential use of online learning technologies.

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Notes

[1] Young (1998) maintains that there are three models that determine educational policies priorities. These models could be compared with the discussion of the transmission versus participative model discussed in this section. The three models that Young defines are the «schooling model», the «credentialist model», and the «access model». The 'schooling model' puts the emphasis on the transmission framework, where learners are expected to have a high degree of participation in post-compulsory schooling. The «credentialist model» places priority on the aim that learners should have the qua-

lifications to achieve future employment. The «access model» represents a vision of society where learners, freed from constraints, learn in any context they find themselves.

[2] In 2006 the author of this chapter was appointed as the new CISCO Chair in e-learning. Dr. Burkle has continued the work that Dr. Bates started.

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Redes de aprendizaje, aprendizaje en red

Learning Networks, Networked Learning

ABSTRACT
Learning Networks are on-line social networks through which users share knowledge with each other and jointly develop new knowledge. This way, Learning Networks may enrich the experience of formal, school-based learning and form a viable setting for professional development. Although networked learning enjoys an increasing interest, many questions remain on how exactly learning in such networked contexts can contribute to successful education and training. Put differently, how should networked learning be designed best to facilitate education and training? Taking this as its point of departure, the chapter addresses such issues as the dynamic evolution of Learning Networks, trust formation and profiling in Learning Networks, and peer-support among Learning Network participants. This discussion will be interspersed with implementation guidelines for Learning Networks and with a discussion of the more extended case of a Learning Network for Higher Education. Taking into consideration research currently carried out at our own centre and elsewhere, the chapter will close off with a look into the future of Learning Networks.

RESUMEN
Las redes de aprendizaje (Learning Networks) son redes sociales en línea mediante las cuales los participantes comparten información y colaboran para crear conocimiento. De esta manera, estas redes enriquecen la experiencia de aprendizaje en cualquier contexto de aprendizaje, ya sea de educación formal (en escuelas o universidades) o educación no-formal (formación profesional). Aunque el concepto de aprendizaje en red suscita el interés de diferentes actores del ámbito educativo, aún existen muchos interrogantes sobre cómo debe diseñarse el aprendizaje en red para facilitar adecuadamente la educación y la formación. El artículo toma este interrogante como punto de partida, y posteriormente aborda cuestiones como la dinámica de la evolución de las redes de aprendizaje, la importancia de fomentar la confianza entre los participantes y el papel central que desempeña el perfil de usuario en la construcción de la confianza, así como el apoyo entre compañeros. Además, se elabora el proceso de diseño de una red de aprendizaje, y se describe un ejemplo en el contexto universitario. Basándonos en la investigación que actualmente se lleva a cabo en nuestro propio centro y en otros lugares, el capítulo concluye con una visión del futuro de las redes de aprendizaje.

KEYWORDS / PALABRAS CLAVE
Learning networks, design, education, training, informal learning, lifelong learning.
Redes de aprendizaje, diseño, educación, formación, educación informal, educación a lo largo de la vida.

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1. Introduction

The knowledge society is characterised by the acceleration of knowledge production and the advent of knowledge-based communities (David & Foray, 2003; Sloep & Jochems, 2007). A central idea is that, ultimately, knowledge-intensive services and products will generate more economic value than do trade or the industrial production of bulk goods. However, knowledge intensive products and services demand highly-skilled people for their delivery. Also, the transition to a knowledge society is causing industrialized nations to experience fundamental changes in economic, political, cultural and social order. Consequently, citizens are experiencing various social and psychological effects (Sloep & al., 2011; Van Merriënboer & Brand-Gruwel, 2005). Other compounding factors include Europe's ageing population; new competences required for new ways of working and employability; relentless information overload; and the trend towards political and economic globalization. For Europe to retain global competitiveness it should speedily embrace multidisciplinary approaches and be flexible in deploying these (European Commission DG Research, 2009). Consequently, Europe cannot afford to stop educating its youth once they reach adulthood. It must invest in learning throughout people's lifespan, encouraging an ongoing exchange of knowledge across a diverse range of disciplines and levels of expertise. In other words, Europe must invest in lifelong competence development, from cradle to grave, i.e. in the initial education of learning children and adolescents as well as in the post-initial education of working professionals. If for economic reasons alone, we should invest more effort in the former but for the very same reason, we should pay even more attention to the latter (OECD, 2010).

We have a coherent system for initial education, but not for post-initial education. The imperatives of the impending knowledge society demand we develop such a system for the latter too. However, it would be a grave mistake to assume that our system for initial education fits the post-initial education's bill. The way we have organised initial education in our societies makes it ill-suited for the education of adult professionals. Curricula, classrooms and office hours do not sit well with the flexibilities of content, didactics and logistics adult learners require in order to acquire the exact competences they need, at their point of need and at their preferred pace, place and time. Indeed, many argue that our system for initial education badly needs reform as well (Robinson, 2001). We will not go into these arguments any further, but surmise that education in general and post-initial education in particular would profit from an approach that supports lifelong competence development and is flexible in several important ways.

Recently, several approaches have been developed that address these requirements. In our view they show much potential, even though they have not yet achieved the level of maturity of higher education institutions. Prominent amongst them is the idea of learning (building and exchanging knowledge) in technology-enhanced, networked settings (Dron & Anderson, 2009; Haythornthwaite, 2002; Jones, 2008; McConnell, 2005; Siemens, 2004). Our attempt at developing such networks goes under the name of Learning Networks (Koper & Sloep, 2002; Sloep, 2009a).

2. Learning Networks

Learning Networks are online learning environments that help participants to develop their competences by sharing information and collaborating. In this way, Learning Networks by their design aim at enriching the learning experience in non-formal educational contexts (professional education); with slight adaptations, they are useful in the context of formal education (school or universities) as well. In their efforts to acquire competences, the inhabitants of a Learning Network could for instance (Koper, 2009):

- Exchange experiences and knowledge with others.
- Work collaboratively on projects (e.g. innovation, research, assignments).
- Set up working groups, communities, discussions, conferences.
- Offer and receive support to/from others in the Learning Network (e.g., questions, remarks, etc.).
- Assess themselves and others, find learning resources, create and elaborate their competence profiles.

A Learning Network as a social network is comprised of people who share roughly similar interests; any Learning Network supports resources that the participants may use for their specific purposes (see the above list) and a variety of services that supports them doing so. The main actors of the Learning Network thus are its participants. They can be anybody and will play a variety of different roles: e.g. learner, teacher, coach, mentor, interested bystander, support seeker, etc. Resources consist of files or links that might help participants to do what they deem necessary in order to develop their competences. Resources include, for instance, entire courses, single learning objects, any kind of online documents, videos, blogs, wikis, etc. They are in part imported into the network, in part created by the participants themselves. Supporting services are software tools that increase a Learning Network's viability by facilitating the transactions of network members (Sloep, 2009a). These transactions permit participants to collaborate, to explore and to exploit the Learning Network. In terms of the above list, supporting services help participants to exchange knowledge, to work collaboratively and set up tools for that, to provide support and receive it, to assess themselves or others, to find learning resources, to work on their competence profiles, etc. Supporting services thus always concern a participant's (a) learning needs, (b) competences or (c) collective behaviour.

Such services could offer advice on the basis of the network members' collective behaviour (Drachsler, 2009). So if most people studied course Y after course X, a pertinent service could recommend a learner to do similarly. Or, if most people found document Y useful with respect to a particular issue X, a pertinent service could recommend participants dealing with issue X to consult document Y. These kinds of recommender system are useful in that they capture the collective wisdom of the Learning Network 'crowd'. They can be made more sophisticated by taking into account participant profile data, so that recommendations become more personalised. The strength of such recommendations is that they can be given without any human intervention, once the recommender system has been set up, it just continues to generate recommendations.

Alternatively, support services could consist of advice provided by fellow learners (peers), hand-picked through data-mining, via team and group formation or matching technologies (Kalz, 2009; Van Rosmalen, Sloep, Kester & al., 2008). Unlike recommender systems, they have the potential to strengthen the social cohesion of the network as they require human intervention. Thus, when peers tutor each other, reciprocal learning occurs: peers learn by discussion and explanation. Reciprocal learning occurs in small groups of about 4 to 5 people, called ad-hoc transient communities (Sloep, 2009b); ad hoc, because they are topic bound, transient, because their activity wanes once the problem has been solved. In the context of these ad-hoc transient communities, weak network links are transformed into strong community links. Initial research findings suggest that ad-hoc transient communities provide a mechanism for community growth within networks (Fetter, Berlanga & Sloep, 2008). This mechanism of community growth is important for fostering the emergence of social learning in Learning Networks (Chapman & Ramondt, 2005). The social learning which occurs within these Learning Networks is also important for the individual in their professional life: emerging learning communities will, over time, acquire the characteristics of communities of practice (Brown & Duguid, 2000; Wenger & Snyder, 2002).

The social character of a Learning Network, furthermore, fosters the social capital of the participants (Fetter, Berlanga & Sloep, 2010), promotes networking learning and has the potential of minimizing the isolation that participants (due to geographical, social or cultural reasons) might have.

Ever more it becomes evident that Higher Education Institutions should focus on managing the increasingly permeable boundaries among universities, and between universities and the world outside them (Benkler, 2009). In Higher Education contexts, Learning Networks could be an excellent means to ensure that faculties and students have the largest possible capacity to act freely, to innovate within the confines of the University, and to liaise with external parties.

3. Learning Network: design, implementation and impact

The design of a Learning Network is context-dependent, each one of them has its unique characteristics; there are no predefined designs or recipes. Designing a Learning Network is a matter of co-creation, an interactive process that considers the participa-

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tion and feedback of all stakeholders, such as the networks' patrons, its future participants, and possible other agents. One should decide to work with a user-centred approach, such as participatory design, which has the benefit of addressing not only tool use, but the learning environment in its entirety (Spinuzzi, 2005). Whatever the methodology used, it should include an analysis of the objectives of the Learning Network, the needs of the stakeholders, and an assessment of the technology already available.

After an initial design has been sketched, it then is evaluated and subsequently improved. The focus should be on solving the stakeholders' challenges by proposing solutions that will impact practice and provide an added value. One should avoid purely technological-driven approaches as these only address some of the stakeholders' problems.

Broadly speaking, the analysis of the objectives of the Learning Network should consider the type of participants and resources that will be interacting in the Learning Network. It should also take into account a variety of dimensions that may impact the Learning Network, such as the nature of knowledge the Network is expected to manage (in terms of complexity and actuality), or the organization of the learning process (formal, informal, non-formal). These two dimensions will influence the control participants will have in the Learning Network. Control could percolate from the bottom-up, as in approaches in which participants are expected to maintain the Learning Network themselves; or it could seep from the top-down, as in approaches in which the Learning Network will be maintained and controlled by an institution, as is the case in formal education or a company-based network. Another dimension pertains to the importance of knowing the initial position of the Learning Network, whether participants already know each other from face-to-face contacts, or whether they are expected to make first-time contacts through the Learning Network. Finally, the design of the Learning Network should consider if the access of the Learning Network will be open or restricted.

The analysis of participants should determine the type (prototype or persona) of users that will join the Learning Network, the benefits they expect to obtain from the Learning Network, their experience in online learning contexts, and their digital competences.

The way we have organised initial education in our societies makes it ill-suited for the education of adult professionals. Curricula, classrooms and office hours do not sit well with the flexibilities of content, didactics and logistics adult learners require in order to acquire the exact competences they need, at their point of need and at their preferred pace, place and time. Indeed, many argue that our system for initial education badly needs reform as well.

The analysis of resources delineates what knowledge, information and learning plans/paths a Learning Network will contain and how participants are expected to contribute to the well-being of the Learning Network; for instance, whether they are expected to create new resources individually or collaboratively.

Based on these considerations, the next step is to describe typical usage scenarios or use cases. These should describe the problems or issues participants have as well as the proposed solution: how the Learning Network will work. By means of these use cases, an initial design model is proposed. It details the communication and collaboration functionalities the network will have and the services it will contain. Additionally, interaction strategies needed to stimulate interaction and collaboration between participants will be elaborated. These strategies could comprise resources, methods, activities or functionalities.

The initial design is verified and validated with a group of stakeholders, to obtain feedback and suggestions for improvement. Afterwards, the Learning Network is launched, which includes training and dissemination activities. Training should target key stakeholders, to motivate them and set in motion the creation of relevant resources. Also, online or face-to-face sessions are needed to spread the word on the availability of the Learning Network and on its functionalities, but also to acquire new participants, and to fine-tune the network. When the Learning Network is running, monitor and evaluation activities should be conducted. They should include an assessment of the pertinence of the proposed solution, the competences acquired by the participants, an analysis of the social interaction (e.g., centralization versus distribution, number of contacts per participants, etc.), the number of active participants, the number of resources accessed, the impact of the services provided by the Network, and so on.

4. Learning Networks and Higher Education

Ever more it becomes evident that Higher Education Institutions should focus on managing the increasingly permeable boundaries among universities, and between universities and the world outside them (Benkler, 2009). In Higher Education contexts, Learning Networks could be an excellent means to ensure that faculties and students have the largest possible capacity to act freely, to innovate within the confines of the University, and to liaise with external parties.

For instance, let us take the example of a Learning Network for some Higher Education Institution whose objective it is to provide university stakeholders with opportunities to collaborate interactively with peers and tutors on specific issues.

This Learning Network might contain: 1) a profile service (Berlanga, Bitter, Brouns, Sloep & Fetter, 2010); 2) functionality for collaboration and sharing of resources between participants; 3) navigation services that will allow participants to search and receive recommendations for contacts and resources; and 4) supporting services to help participants to acquire answers for their problems/questions.

A profile service allows participants in the Learning Network to create and manage their own presence in the community, by means of a profile and contacts, as well as to manage their contributions for the community, by means of creating communities and learning actions (Berlanga, Rusman, Bitter-Rijpkema & Sloep, 2009). Profiling in Learning Networks enables understanding of the participant's context (Preece, 2000), gives security to build up trust between peers (Rusman, Van Bruggen, Sloep & Valcke, 2010), and provides safety within the conventions and boundaries of the community.

Functionality for collaboration and sharing includes creation of communities (which contain communication services such as email, chat or forum), and facilities to create and share resources as, for instance, bookmarking, rating, annotations, recommendations or tagging (Berlanga, Rusman, Bitter-Rijpkema & Sloep, 2009).

Stakeholders, therefore, are given the option of creating online learning communities within the Learning Network, in the form of online learning (sub) communities for formal or informal learning purposes. For teachers, this could mean that through them, they now can act on their common interest in new teaching methods. In this community they could have a navigation service that will allow them to personalize, share and find out information and relevant resources. ReMashed (Drachsler & al., 2009) is such a service. This service analyzes collaborative behaviour (using a technique called collaborative filtering) to recommend learning resources from emerging information of a Learning Network. Participants should specify the Web 2.0 services they use (e.g., del.icio.us, blog feeds, Twitter, YouTube), the subjects they are interested in, and their knowledge of these subjects. Based on these criteria, participants receive recommendations for relevant resources. Participants can also rate the recommendations they are receiving, and the service takes these preferences into account to fine-tune the recommendations.

This Learning Network could also broker learning offers available through the universities. Stakeholders (current and potential students, but also teachers and staff) could then search, find and compare learning opportunities that fit their interests or needs. To this end, learning opportunities should conform to a uniform computer interpretable language, as the Learning Path Specification (Janssen, Berlanga, Vogten & Koper, 2008) so a navigational support service could recommend relevant learning paths, considering learners' needs and preferences regarding competence level, delivery mode, time, and so on.

Finally, in this Learning Network stakeholders could use supporting services to be guided to solve their problems or questions. For instance, the Learning Network could contain a PhD community on research methods; in it researchers and PhD candidates could use a peer-support service to help each other (Van Rosmalen, Sloep, Brouns & al., 2008). Using such a peer-support service, a researcher posts a question, and the service finds out one or a few participants, depending on how the service is set up, who are best suited, in terms of their knowledge and availability, to help the question asking person to solve his or her problem. The service sets up a private working space (e.g. wiki) so participants can work together on solving the posted questions. Once the question is solved the working space is disbanded.

5. Future of Learning Networks

In the previous paragraphs we have attempted to sketch a picture of how Learning Networks operate, defined as online learning environments that help their users to develop their competences by sharing information and collaborating. First, we have acknowledged that the advent of the knowledge society is an important, though not the exclusive driving force behind them. Educational reform is another one. Then we have discussed how such networks are useful in contexts of formal, institutional learning and non-formal, workplace learning. We have established that next to participants, they contain resources and services. The services unlock the resources, but also foster the emergence of multiple, topic-bound communities through forging smart ties between network participants. We have urged the use of user-centred design approaches when creating concrete Learning Network instances, taking stakeholder objectives, participant characteristics, and locally available technologies into account. Finally, we discussed an example case of wanting to design a Learning Network in Higher Education.

What we hope to have conveyed is the understanding that:

• Educating people for the knowledge society requires an approach different than what we are accustomed to, certainly in post-initial, professional education, but likely also for initial, mandatory education.

• A Learning Networks approach provides a possible solution to this demand.

We would like to wrap up our discussion by listing a few opportunities for research on Learning Networks. In due time, the research outcomes should both deepen and widen the possible uses of Learning Networks as a promising learning environment for the future.

First and quite generally, Learning Networks heavily rely on online collaboration; they thrive in the environment the modern Internet provides: Web 2.0 (Berlanga, García Peñalvo & Sloep, 2010). However, the social web, as it is often called, is evolving rapidly. Natural language processing is becoming more powerful, whether it employs inferencing techniques based on ontologies and RDF or statistical techniques such as latent semantic indexing. Recommender systems are becoming ever more powerful, also because data sets become available on which they feed (Manouselis, Drachsler, Verbert & Santos, 2010). Open standards for online networking such as Open Social emerge and become implemented. This list may be extended almost indefinitely. So the precise elaboration of Learning Network instantiations may change rapidly, some technology being state of the art a few months ago now being replaced by today's, more powerful technology; or, some service being costly or even impossible a few months ago, becoming affordable and available today. Research that monitors technological development therefore pays off.

Second, much has been said about the way in which a Learning Network should be stocked with resources and services in order for it to function as a collaborative environment for learning and knowledge exchange. What has received little attention so far is how people actually learn in such contexts, what kinds of resources, services and interactions between people are needed to optimise learning and knowledge exchange in such environments.

This question borders on the kinds of questions addressed by the field of CSCL, computer supported collaborative learning, but is different in that Learning Networks do not presuppose the omnipresence of teachers and staff as CSCL seems to do. It is pertinent as, obviously, learning and knowledge sharing do not come about automatically (Kirschner, Sweller & Clark, 2006). So, if teachers do not assume their traditional role of organisers of the learning process, who or what does? The problem, of course, is that too much organisation up front hampers flexibility. But too little is likely to lower learning efficiency. So the problem is one of finding an optimum and determining how this can be achieved efficiently. Only research can provide such answers.

Third and focussing on Learning Networks for non-formal learning, research is needed at the organisation and business model level. Allowing for the obvious variety between different nations, normal learning has its organisational structures in place. They come in the form of schools, faculties, classes, levels (primary, secondary), orientations (vocational, academic), teachers or lecturers, teaching assistants, support staff, etc. Also the way initial education is paid has been sorted out, again allowing for some variation. Basically, governments are the largest funders, with some room for private initiatives (Guthrie, Griffiths & Maron, 2008). Non-formal education is an entirely different matter. Without even attempting to elaborate the possibilities that there are, let alone go into their various details, it should be clear that the range of possibilities is vast (Kollock & Russell Braziel, 2006).

At the least innovative extreme, a Learning Network could be fully internal to a single, large organisation that wants to organise its knowledge management and professional development along novel lines.

In this case, it is this organisation that imposes the structure and foots the bill. At the other most challenging extreme a Learning Network could be like a commons, owned by nobody really, but constituting the shared interest of many interested parties, even single individuals. Structure emerges and many costs could be deferred to the use of open source, software, by open content as in, say, Wikipedia and, more specifically, open educational resources. However, some costs, if only those of the server space and data traffic somehow need to be paid for. These could be covered by allowing the posting of advertisements or by selling users' profiling data. Clearly, privacy is a concern here that needs to be addressed (Gallant, Boone & Heap, 2007). In between these extremes a whole range of possible organisational and financial configurations lives. If Learning Network-based learning is to be a viable option, research needs to chart out these configurations and assess them for their viability.

Fourth, as the organisational model just discussed makes clear, Learning Networks for non-formal learning in particular naturally link with open content. However, for a learning environment that feeds on Web 2.0 developments, open standards and open source software applications are no less important. Open standards allow any one instance of a Learning Network easily to track and adapt to novel developments, such as for example to the advent of the Open Social specification for profiling data. Open source software developments allow for the easy expansion or rejuvenation of Learning Network services. Obviously, also Learning Networks for formal learning stand to profit from openness of software, standards and content. In terms of research efforts, Learning Networks research should not merely inventory from what kinds of openness Learning Networks profit, it should also actively contribute to relevant standards and tools.

Fifth and final, there is one member of the open family that has not been mentioned yet: open innovation (e.g. Von Hippel, 2005). It is a relatively new development that originally only included the advice for corporations not necessarily to develop all their intellectual property in house but, if more profitable, go out and simply buy it. Of recent, the notion has been extended to include collaborative innovation across companies in the precompetitive phases of the innovation process. Adopting a Learning Networks' approach would extend the playing field for open innovation even further (Sloep, 2009c), and that applies as well for Higher Education. After all, a Learning Network fosters the knowledge exchange that is a prerequisite of innovation. Also, it sports the kind of tools that facilitate collaboration. However, these are only the basics. For a Learning Network fully to support distributed (as in online), collaborative innovation, more is needed. For one, the Network participants should have a stock of creativity techniques at their disposal. Also, the Network should possess a collective memory that stores and retrieves, if one so wishes, the results of collaborative innovation sessions (Dolog, Lin, Grube & Schmid, 2009). Also, a service that handpicks networks participants best suited for a particular innovative job, should be available (Sie, Bitter-Rijpkema & Sloep, 2009). Innovation, parenthetically, should be conceived broadly, to include bold attempts at designing the next generation smart phones and more modest attempts to design a new environmental science curriculum that better suits societal needs. Although some work has been done in this area, a vast number of questions, fundamental and practical, need to be resolved.

In conclusion, Learning Networks are a promising means to innovate education, formal and non-formal alike, but also a fertile ground for exciting research.

Open standards allow any one instance of a Learning Network easily to track and adapt to novel developments, such as for example to the advent of the Open Social specification for profiling data. Open source software developments allow for the easy expansion or rejuvenation of Learning Network services. Obviously, also Learning Networks for formal learning stand to profit from openness of software, standards and content.

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Análisis de la interacción en ambientes híbridos de aprendizaje

Interaction Analysis in Hybrid Learning Environment

ABSTRACT
Interaction analysis in virtual and hybrid learning environments is a complex issue, since it is necessary to go beyond a quantitative approach (number of messages) and obtain information about interaction dynamics in the context of educational activities. This article presents a set of interaction analysis strategies, which were designed during the development of a doctoral thesis in response to the two challenges identified: First, how can interaction be observed? And second, how can interaction be related to academic performance? The strategies designed provide elements for the analysis of educational activities, of asynchronous on-line discussions, of interaction representation and of the relationship between interaction and academic performance. For the analysis of educational activities, elements of sociocultural activity theory were used. For asynchronous on-line discussions, a content analysis of discussion transcripts was performed using a group of categories reflecting the knowledge construction process. Interaction was represented using the forograma technique, which is an alternative strategy for evaluating on-line discussion forums. The relationship between interaction and academic performance was established by comparing interaction dynamics and the academic performance results of the groups selected. Finally, an example is given to show how the strategies are applied.

RESUMEN
El análisis de la interacción en ambientes virtuales e híbridos es un tema complejo, puesto que es necesario superar la aproximación cuantitativa, número de mensajes, y lograr información sobre las dinámicas de interacción, en el marco de las actividades educativas. En este trabajo se presenta un conjunto de estrategias para el análisis de la interacción, las cuales se diseñaron durante el desarrollo de una tesis doctoral, como respuesta a dos retos que fueron identificados: ¿cómo observar la interacción?, ¿cómo relacionar la interacción con el rendimiento académico? Las estrategias diseñadas ofrecen elementos para el análisis de las actividades educativas, análisis de las discusiones virtuales asincrónicas, representación de las interacciones y la relación entre la interacción y el rendimiento académico. El conjunto de estrategias permitió reconocer el fenómeno de la interacción en el marco de actividades educativas, así como el proceso o dinámica en la interacción grupal, que muestra la evolución del grupo hacia la construcción de conocimiento. Por otro lado, también permitió analizar los procesos virtuales de interacción y establecer comparaciones entre las dinámicas de los grupos y la relación entre éstas y los resultados de rendimiento académico. Si bien el grupo de estrategias surgen en un estudio específico, ofrecen herramientas que pueden utilizarse en otros contextos. La manera de utilizar las estrategias se ilustra en este artículo con un ejemplo.

KEYWORDS / PALABRAS CLAVE
Interaction, interaction analysis, hybrid environments, asynchronous discussions, forogramas, blended learning.
Interacción, análisis de interacción, ambientes híbridos, discusiones asincrónicas, forogramas, aprendizaje mezclado,

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1. Introduction

Hybrid learning environments are those that combine face-to-face learning and instruction mediated by information and communication technologies (ICTs) (Reay, 2001; Rooney, 2003; Sands, 2002; Ward & LaBranche, 2003; Young, 2002; Osorio, 2010). Dziuban, Hartman and Moskal (2004) consider that this combination optimises both environments, provided that the best of both worlds is put to good use. This concurs with the results of a study by Hinojo, Aznar and Cáceres (2009) on students' perception of this approach. It is important to explore new forms of interaction analysis in hybrid environments to ensure that they account for the quantity and, above all, the quality of participation, processes and conditions that favour knowledge construction (Gros & Silva, 2006; Meyer, 2004; De Weber, Schellens, Valcke & Van Keer, 2006; Rourke, Anderson, Garrison & Archer, 2001).

Interaction can be defined as cognitive and social actions among actors of the educational process (student-lecturer, student-student) while undertaking learning activities. Understood within cognitive and social frameworks, interaction requires an analysis of various aspects and several levels. According to Barberà and Badia (2004), interaction analysis should consider:

- An analysis of a joint activity in which a lecturer and students, and students alone, participate and interact while undertaking learning activities.
- In order to understand social interaction, account should be taken of the knowledge that is activated and produced by the group.
- While a joint activity includes various times and forms of interaction, various authors concur in recognising the value of asynchronous conversations as important expressions and manifestations of interaction. Thus, interaction analysis should be complemented with a careful analysis of asynchronous conversations.

This article presents a set of interaction analysis strategies designed during the development of a doctoral thesis, the purpose of which was to analyse interaction in hybrid learning environments on a case study of a hybrid learning postgraduate programme (Regional Development Management [RDM]) offered by a Colombian university.

2. Interaction analysis strategies and challenges

In the context of the research undertaken, the approach to interaction analysis raised the following challenges: First, how can interaction be observed? And second, how can interaction be related to academic performance? The strategies employed to deal with these challenges are presented below.

2.1. How can interaction be observed?

According to Onrubia (2005), in order to analyse interaction, it is necessary to identify the joint activity in which it occurs so that the context and meaning of interactions can be recognised. It is also necessary to identify how asynchronous discussions occur in the context of educational activities, in the knowledge construction process (Barberà & Badia, 2004).

In the case study of the RDM programme, the following strategies were employed to approach those two aspects:

a) Educational activity analysis.The design of learning activities was analysed in accordance with the components identified in activity theory (Jonassen & Ronrer, 1999). Recognition of an activity and its structure allows learning sequences to be identified in various hybrid learning space-times: face-to-face, e-learning and independent. In addition, bearing in mind that authentic educational activities foster the generation of spaces and times for individual and collaborative knowledge construction, the categories proposed by Oliver, Herrington and Reeves (2006) were used for the analysis of learning activities as authentic activities.

Analysing and, therefore, designing educational activities in accordance with the components of activity theory implies a revision of: The system: object, subject, mediating artefacts (instruments, resources), rules and division of labour (organisation and methodological design), activity structure (learning sequences), system dynamics (interactions).

In order to analyse activity authenticity, the criteria proposed by Oliver et al. (2006) were used. According to these authors, authentic activities: are relevant to the real world; are not very defined; students need to define the tasks and sub-tasks required to complete an activity; include complex tasks that cannot be undertaken over short periods of time; foster opportunities for students to examine a task from several perspectives; foster collaboration; promote reflection; go beyond a specific domain or result; are integrated into assessment; generate outcomes that have value in their own right; allow multiple solutions and diverse results.

This set of characteristics constitutes the categories on the basis of which learning activities can be analysed as authentic activities.

b) Asynchronous online discussion analysis. In accordance with various authors (Rourke et al, 2001; Schalk & Marcelo, 2010), content analysis is presented as a technique for analysing information obtained from transcripts of asynchronous discussion groups. In the literature, it is possible to find several publications on this issue, with different theoretical underpinnings and different conceptions of interaction (Henri, 1992; Zhu, 1996; Gunawardena, Lowe & Anderson, 1997; Garrison & Anderson, 2003).

In the context of the RDM programme case study, two sets of categories were used for the analysis of asynchronous conversations: those proposed by Gunawardena et al. (1997) and by Garrison and Anderson (2003). These were selected because their theoretical frameworks are based on knowledge construction. After applying the categories to several forums, it was found that they did not allow interaction dynamics and group work to be reflected, both of which are inherent to this set of courses. It was for this reason that a decision was taken to analyse interaction dynamics in order to identify the knowledge construction process that students followed on the RDM programme's forums. The transcripts of 17 forums of seven programme subjects were analysed in order to identify the process that students followed for collaborative knowledge construction, and it was found that messages of the three types suggested by various authors could be identified in the groups' interaction dynamics: affective/motivational, informative/ organisational, academic/knowledge construction (Barberà & Badia, 2004).

When analysing the collaborative knowledge construction process on forums, a set of sub-categories emerged in the academic/knowledge construction category. These sub-categories allowed messages to be classified as follows:

• Isolated contribution: a participant makes a contribution to the group without establishing any relationship with other messages.

• Opinion contribution or comment on other participants' contributions: this is when participants begin to read each others' messages and to give their opinions on other participants' contributions. These comments may be opinions, questions, replies or clarifications. The aim of this category is to reflect the process of a group's dialogue and negotiation.

• Contribution collecting and summarising a group's contributions: this is when, once a group has made its contributions and, in some cases, has had a discussion, one or several of the group's members collect those contributions and generate a group outcome based on them.

• Contribution completing and enhancing a group's construction: when a group has a collaborative construction outcome, this outcome goes through a process of enhancement through contributions made the group's participants.

Interaction in the context of authentic activities can strengthen individual and collaborative knowledge construction, and thus, in turn, can generate the conditions necessary for greater learning and better academic performance results. However, for this to be potentially so, a prerequisite is the presence of certain conditions and characteristics in the design and implementation of such activities in order to ensure that the greatest advantage is taken, not only of hybrid environments, but also of certain student and lecturer practices and characteristics in group work dynamics.

Following the protocol of analysis techniques for online discussions (Neuendorf, 2002; Rourke et al., 2001), the set of categories that emerged in the research was subjected to a process of validation by three researchers in order to identify the mean percentage agreement reached, which turned out to be 70%. This percentage agreement is considered acceptable and reliable for an analysis of asynchronous discussion content.

2.2. How can interaction be related to academic performance?

After managing to identify the interaction observation strategies, the challenge was to identify elements to represent those interactions in order to ensure that first they were comparable, and second that they could be related to academic performance results. To that end, the following strategies were employed:

Category	Representation in the forograma
Affective/Motivational	— ·· — ·· — ·· — ·· — ··
Informative/Organisational	– · – · – · – · – · – · –
Knowledge construction – Isolated contribution	....
Knowledge construction – Opinion contribution	━━━━━━━━━━━━
Knowledge construction – Collection and summary contribution	────────────
Knowledge construction – Completion and enhancement contribution	— — — — — — — — —

Categories used in on-line discussion representation.

a) Interaction representation. The forograma (Salazar, 2006) was used as a tool for discussion representation and analysis. The technique proposed by Salazar (2006) was adapted to the interests of the study.

The main input for the elaboration of forogramas is asynchronous discussion transcripts. To begin the graphic representation, each discussion participant is represented by a circle with his or her initials inside it. Each contribution is represented by a circle around its author, with a line colour representing the message type, which is classified in accordance with the categories identified. Messages are organised chronologically in the forograma; an arrow pointing from the author to the message allows the contribution time and author to be identified. When a message is addressed to another participant, the author and addressee of the message are connected by an arrow. If a message is addressed to the whole group, it is represented by a horizontal line that encompasses all participants. In the forograma, a representation colour is associated with each of the categories identified. Below is a table of the conventions used in forogramas.

b) Relationship between interaction and academic performance. An analysis of asynchronous discussion interaction dynamics was performed on the basis of a comparative analysis of the groups' forogramas. The comparison criteria emerge when analysing the results obtained in a set of forogramas, such as those aspects that discriminate and allow differences to be identified. The comparison criteria were:

• Quantity of messages: total number of a group's messages.

• Classification of messages: quantity of messages, discriminated by the categories identified and by messages sent by the lecturer.

• Group work dynamics: an analysis was performed of forum progress, of organisation and interaction dynamics, and of the spokesperson role (in cases where this role was present).

• Times: time spent on undertaking an activity.

• Activity assessment: academic performance results achieved by a group while undertaking an activity.

3. Exemplification of strategy application

Shown below is an example of the type of analysis performed in the context of the RDM programme case study. This example shows how each of the strategies described earlier was applied. The first two strategies allowed the activity design to be analysed, while the

Activity type	Group work – Case analysis
Activity object	To identify social groups and actors in various social contexts.
Subject	Students and the lecturer.
Mediating artefacts (instruments, resources)	• Notes from face-to-face sessions. • Bibliographical materials. • The course's virtual classroom, particularly the forum tool, as a mediating artefact in asynchronous discussions.
Rules (methodological design)	By approaching a topic globally in the face-to-face session, students – organised into groups – are expected to approach topics locally in e-learning sessions, from the region of the country assigned to them.
Outcomes	• A case analysis document for each region. • Information compiled for each region. • A society and development map of the country, constructed by all students on the course.
System dynamics (interaction)	Student-student interaction: students should construct, as a group, a local vision of the topic. Student-lecturer interaction: the lecturer monitors and provides feedback to the groups.
Context	The topic is applied to regional contexts, on which students report.
Assessment	The group work outcome is assessed, and an individual assessment is done after the activity.

Table 1: Activity design characteristics.

Face-to-face encounter	A lecture given by the lecturer. Formation of groups in accordance with their regions of origin.
Independent work	Review of materials and sources of information in the region.
Virtual group work	• Group discussion. • Lecturer feedback. • Group work to generate a regional document. • Publication of works on a public forum. • Feedback on the work. • New version of the document.
Face-to-face encounter	Presentation of group work.

Table 2: Activity action sequence.

other two provided elements of analysis of the activity and, in particular, of times of greatest interaction while that activity was being undertaken, in order to relate interaction to academic performance. The example is based on an activity of subject S2, which forms part of the RDM programme.

3.1. Educational activity analysis

Shown below are the general characteristics of the activity design (table 1), as is the action sequence when the activity was being undertaken in the face-to-face, e-learning and independent working spaces (table 2) of the hybrid environment. The activity was analysed on the basis of activity system components.

Below is the activity analysis in accordance with the categories proposed by Oliver et al. (2006) for authentic activities.

3.2. Asynchronous interaction analysis and representation

While undertaking the activity, the times of greatest student-student interaction and student-lecturer interaction were: the face-to-face session and times when there was group discussion of documents for each region.

In order to understand group work dynamics, two of the four groups were selected so that their asynchronous group discussions could be observed. The two groups selected corresponded to those that had the highest (group 1) and second lowest (group 2) grade for their respective group work outcomes. In this case, the group dynamics included the group spokesperson role, a specific role requested by the lecturer. The spokesperson was in charge of mobilising the group and guaranteeing the dynamics that would lead to the production of the group document. Shown below are the forogramas for the two groups.

3.3. Relationship between interaction and academic performance

The analysis based on forograma comparison criteria was as follows:

• Quantity of messages: Group 1 had a higher number of messages than group 2.

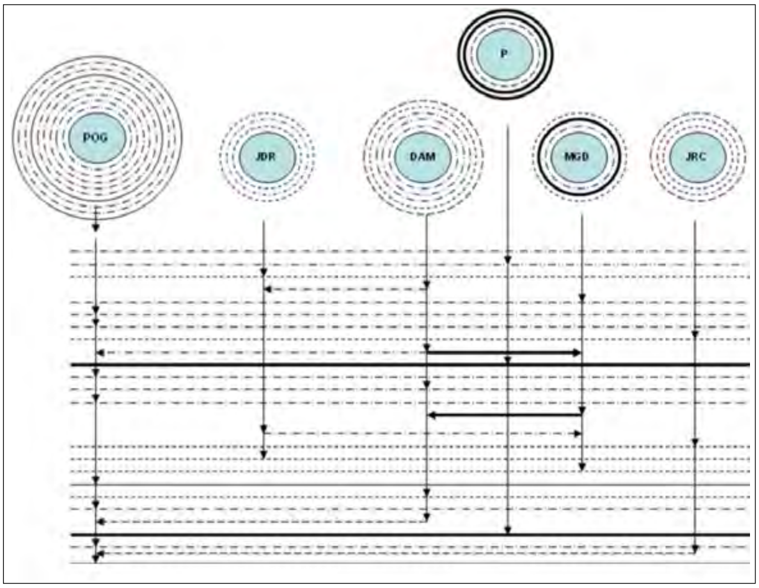
• Classification of messages: When observing the classification of messages, it was found that the two groups had a similar number of academic contributions. Regarding isolated contributions, group 1 had six messages of this type, while group 2 had three.

Characteristic of an authentic activity	Analysis of the course activity in relation to the characteristic
Relevance to the real world	The activity is totally relevant to the real world. The groups, organised by region and after globally analysing topics in the face-to-face session, have to apply those topics locally.
Not very defined	Groups have to agree on the aspects that they intend to analyse regionally, the instructions are general and they need to make them specific.
Includes complex tasks	Students assess the task as complex, they have to select certain aspects and then gather the necessary information, analyse it and contrast it globally.
Students examine a task from different perspectives	The task is analysed from various perspectives at a minimum of two levels: at the first level, each group puts the topic into the context of a different region, and at the second level, each group approaches the topic from various educational disciplines.
Fosters collaboration	The activity is designed to be undertaken through collaborative work.
Promotes reflection	The activity offers several reflection times: individually, students have to make contributions on questions or topics applied to the analysis of the region, and as a group, they have to put the global aspects into the context of the assigned region.
Goes beyond a specific domain or result	There is no specific result associated with the activity, each group defines its lines of analysis.
Is integrated into assessment	While undertaking the activity, the group work outcome is assessed.
Generates outcomes that have value in their own right	Each group's outcomes have a value in their own right, and all the groups' outcomes constitute the country's social map.
Allows multiple solutions and diverse results	Each group can have various aspects and several levels to their approaches.

Table 3: Analysis of the learning activity as an authentic activity.

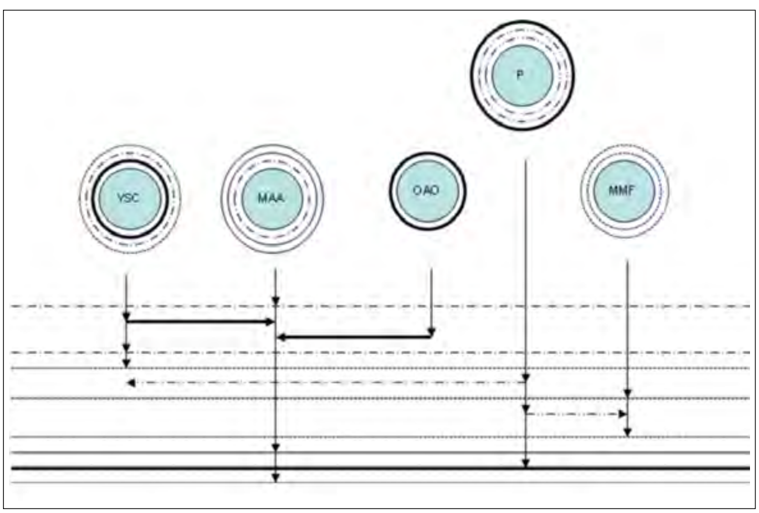
Affective/Motivational	
Informative/Organisational	
Knowledge construction – Isolated contribution	
Knowledge construction – Opinion contribution	
Knowledge construction – Collection and summary contribution	
Knowledge construction – Completion and enhancement contribution	

Graph 1: Forograma for Group 1 (Group 1 - Spokesperson POG).



Affective/Motivational	
Informative/Organisational	
Knowledge construction – Isolated contribution	
Knowledge construction – Opinion contribution	
Knowledge construction – Collection and summary contribution	
Knowledge construction – Completion and enhancement contribution	

Graph 2: Forograma for Group 2 (Group 2 – Spokesperson MAA).



Regarding outcome completion and enhancement contributions, group 1 had two messages of this type, while group 2 did not have any. There was a considerable difference in the quantity of informative/organisational messages; group 1 had 11 messages of this type, while group 2 had two. Each group had two affective/ motivational messages.

• Group work dynamics: The spokesperson role was included in the instruction given to the groups. The spokesperson was in charge of facilitating, organising and summarising the group's outcome. Between the two groups, there were major differences in these roles. The spokesperson for group 1 made several organisational contributions and proposed the group work dynamics. This spokesperson also took charge of the two versions of the summary documents. The spokesperson for group 2 only made one organisational contribution, and the group did not achieve good interaction for the production of the document.

• Times: Both groups had the same time available for undertaking the activity.

• Activity assessment: The following aspects of the activity were assessed: the group work outcome, the presentation in a face-to-face session, the spokesperson role.

Seeking the relationship between interaction and performance, the results of the two selected groups' final outcomes (analysis documents) were taken; by doing so, the result was not related to the interaction dynamics that the groups managed to achieve. It was found that: the group with the highest rate of interaction and better group work dynamics obtained the highest grade (5 out of 5), while the group with the lowest rate of interaction and greater difficulties in group work dynamics obtained the lowest grade (3.85 out of 5).

During the course, an individual exam was held after the activity analysed; this provided individual evidence of performance. When correlating this assessment with participation in the group's internal forum, a Pearson correlation coefficient of 0.76722215 was obtained. As this result shows, there is a significant correlation between the variables for participation in a group's internal forum and the grade students obtained in the assessment done by the lecturer to check the attainment of learning objectives. Bearing in mind that the students' participation was in the form of discussions, communication and group work, these data show the relationship between interaction and the attainment of learning objectives, and specifically between interaction and academic performance.

4. Conclusions on the strategies employed for interaction analysis

4.1. Educational activity analysis

Recognising the interaction phenomenon in the context of educational activities, and not just the messages exchanged in discussions, allows a closer, more detailed approach to be taken to hybrid learning environments, as environments that promote interaction.

Interaction in the context of authentic activities can strengthen individual and collaborative knowledge construction, and thus, in turn, can generate the conditions necessary for greater learning and better academic performance results. However, for this to be potentially so, a prerequisite is the presence of certain conditions and characteristics in the design and implementation of such activities in order to ensure that the greatest advantage is taken, not only of hybrid environments, but also of certain student and lecturer practices and characteristics in group work dynamics.

Examining joint activity and all its components from a sociocultural activity theory viewpoint allows aspects that determine conditions for interaction development to be identified, such as: the ultimate goal of interaction (interaction outcome), the actors and roles involved, and the mediating artefacts (instruments, resources), as well as the dynamics or sequences before, during and after times of interaction, thus recognising the continuous process (between face-to-face and e-learning times) within which interaction occurs.

4.2. Asynchronous online discussion analysis

As set out in the theoretical underpinnings, online discussion analysis needs to go beyond a quantitative focus and allow an approach to the dynamics, to the whys and wherefores of interaction and interaction process results. It was necessary to have a discussion analysis mechanism in order to identify group work dynamics and, in particular, to find relationships between these dynamics and academic performance results.

The set of categories used allowed group interaction dynamics or processes to be recognised, which identified individual participation, negotiation and exchange, and a group's progress towards group construction and synthesis. Following the protocol of analysis techniques for online discussions, the set of categories that emerged in the research was subjected to a process of validation by three researchers in order to identify the mean percentage agreement reached. A set of forums was selected and coded by the three researchers, and a percentage agreement of 70% was obtained. While these categories were constructed in the specific context of the case study, they may be an alternative for the analysis of knowledge construction processes in other contexts.

4.3. Interaction representation

Forogramas allowed information about discussions at various levels to be represented graphically in a single schema: the individual recognition of participants, the type and quantity of contributions, the chronological progress of discussions, the senders and addressees of messages, the dynamics and progress of negotiations, and the process of group construction and synthesis. All of this information expands the possibilities for analysing, comparing and contrasting discussions. The forograma technique and the categories identified may be used in different contexts and other research projects.

A limitation of this discussion representation technique is that the graphic representation becomes very complex when the number of participants is higher than eight.

4.4. Relationship between interaction and academic performance

The forograma technique for representing online discussions, and the categories that emerged from the technique for analysing the content of a large number of forums, allowed virtual interaction processes to be analysed, comparisons between group dynamics to be made and the relationship between those dynamics and academic performance results to be identified.

The forograma comparison criteria allowed discussion characteristics to be identified; these impacted on interaction dynamics and determined major differences between the groups and their academic performance results.

The four strategies as a whole offer the potential to observe and analyse interaction dynamics in the context of educational activities, and to establish relationships between those dynamics and academic performance results.

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Students' Perspective on On-line College Education in the Field of Journalism

La educación universitaria on-line en el Periodismo desde la visión del estudiante

ABSTRACT
The advance in new technologies has changed the educational model considerably. On-line education has arrived with a bang at university and those degree courses linked to the field of communication have adopted this type of technologies. In just a few years, the number of courses available in the communication field that include on-line subjects has multiplied. It seems that this tendency of proliferation will continue due to a high demand for degrees in the communication field as well as the possibility of completing these degrees on-line. This paper shows the perspective that on-line journalism students at the Rey Juan Carlos University in Madrid have on their studies. The results of a survey of students of the different courses that include the qualification allow us to gain a perspective of their experiences at the beginning and end of the studies. The questionnaire asks about socio-demographic traits from which we draw a sociological profile of on-line journalism student. It also delves into the motivations and expectations surrounding the decision to enrol in this mode and in its assessment both in terms of learning and the relationship between peers and teachers. Some of the conclusions point to the positive attitude of students and a satisfactory evaluation by the students.

RESUMEN
El avance de las nuevas tecnologías ha cambiado considerablemente el modelo educativo. La formación on-line ha aterrizado con fuerza en las universidades y las carreras vinculadas al mundo de la comunicación se han incorporado a ese modelo de enseñanza. En pocos años la oferta en las titulaciones de comunicación se ha multiplicado y parece que esta tendencia se pronuncie en un futuro ante la demanda que tienen las titulaciones de comunicación, por un lado, y las enseñanzas virtuales, por otro. En este artículo se da a conocer la perspectiva que los estudiantes on-line de Periodismo de la Universidad Rey Juan Carlos de Madrid tienen sobre sus estudios. Los resultados de una encuesta a los alumnos de los diferentes cursos que engloban la titulación nos permite ofrecer una perspectiva de sus experiencias al inicio y al final de la carrera. El cuestionario indaga sobre aspectos socio-demográficos a partir de los cuales se traza un perfil sociológico del estudiante de periodismo on-line. Asimismo, se profundiza en las motivaciones y expectativas que rodean la decisión de matricularse en esta modalidad y en su valoración tanto en términos de aprendizaje como de la relación con compañeros y profesores. Algunas de las conclusiones apuntan una actitud positiva de los estudiantes y una valoración satisfactoria de la enseñanza por parte del alumnado.

KEYWORDS / PALABRAS CLAVE
Education on-line, e-learning, journalism, student, case study, virtual classrooms, university.
Educación en línea, e-learning, periodismo, estudiantes, estudio de caso, enseñanza virtual, universidad.

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1. Introduction

The age of new technologies has brought with it a major transformation in the field of schooling and higher education. More and more centres of education are offering the chance to study on-line by means of a virtual teaching system. Internet-based (on-line) education has been on offer in Spain for some time now – the first wholly on-line university, the Universitat Oberta de Catalunya, (UOC), was founded in 1995 and the model has been copied by newer educational institutions. If, in addition, we take into account that many classroom-based universities that have extended their syllabi to include on-line courses it simply goes to prove that on-line education, adapted to the philosophy of today's information society, has been a success.

Having said that, whilst it is true that on-line education programmes have been developing both in Spain and elsewhere for some time, journalism studies have been a late starter in this area of education, since the practical content of many subjects and the use of technological equipment made it difficult to adapt the syllabus of these degrees to distance and/or virtual educational models. However, experience from other areas of knowledge, the development of pilot programmes which are the result of various pieces of research (Palomo, 2008), technological breakthroughs and existing demand in this subject area has allowed universities to launch on-line communication studies.

The Madrid-based Universidad Rey Juan Carlos (URJC), which in 2006 introduced studies in Journalism in the format of «blended learning», has carried out ground-breaking activity in this area. One year later this was extended to the Advertising and Public Relations degree course in response to the success of the initiative.

Additional on-line communication studies have been introduced, coinciding with the creation of the European Higher Education Area which aims to improve the international competitiveness of European universities. In this way, in the university year 2009-10 three exclusively virtual universities added the possibility of studying communication courses using the e-learning format. These were: the Universitat Oberta de Catalunya which offered a Degree in Communication and a Degree in Information and Documentation; the Universidad a Distancia de La Rioja (UNIR) offered a Degree in Documentation and the Universidad a Distancia de Madrid (UDIMA), a private autonomous university started a Degree in Journalism.

As can be seen, in a short space of time the number of on-line degrees available in the area of communication has multiplied and it seems this trend will continue into the future if the demand for communication degrees on the one hand, and virtual education on the other, are anything to go by. Given then, that the first tentative steps are being taken but that these are already proving to be successful (in fact this year will see the first cohort of graduates in journalism from the URJC's on-line course) it would seem appropriate to take a step back and consider this new experience – new in both the field of education and that of communication. Drawing upon the researchers' own personal experience in the URJC (itself a pioneer in this area), and seeking to develop knowledge in this field, research (needless to say, exploratory in nature) was carried out to gain an insight into these first ever students of Journalism on-line and their opinion and assessment of their experience of on-line education.

It must be added that, despite being a relatively new phenomenon, many research studies have already been carried out into on-line teaching. These range from theoretical studies to empirical ones and all from different areas of study. Some favour the technological perspective (Marcelo, Puente & al., 2003; Baggetun, 2006) or, more frequently, the teaching and educational field (Castaño, Duart & Sancho, 2010; Lara & Duart, 2005). There are even some studies which focus on the profile of the student and their evaluation (this is the case of this study), such as those undertaken by Cabrero, Llorente & Puentes (2010) dealing with the study of Philosophy and Physics in the Dominican Republic or about students taking a virtual Masters Degree (Justel, Lado & Martes, 2004). However, no studies of on-line communication studies (specifically journalism) have been documented as yet and certainly no research has been done about the profile and opinion of students. As such, this piece of work may launch a line of study for which some work has been done (Santin, 2009), in an attempt to consider not only the teaching practices which have been developed but also the challenges faced when teaching communication in the 21st century – these challenges inevitably include the use of new technologies.

Not all use of technology is the same in the field of education. Some terms should be clarified here because, as Grahame Moore (2001) says, there is a certain confusion when talking about «virtual teaching» given that there are many different teaching models encompassed within. First of all, it should be stated that the use of technologies does not necessarily mean we are talking about on-line teaching. Almost all universities have brought in some virtual elements in their education system. They all have, to a greater or lesser extent, some form of pilot projects for e-learning. There is a middle ground where we find the concept of «b-learning» which is understood to be a learning model which allows elements of virtual education to be brought in and exist alongside classroom-based learning formats (Coaten, 2003); for example, by using in-class sessions and face-to-face tutorials in conjunction with on-line activities such as forums, chats, downloads (all associated with e-learning). Although, as Llorente (2008) says, «b-learning» may be «introduced in a series of ways by means of a virtual and in-class design and also to an endless amount of contexts for which these models are feasible». Therefore it is not the same to use b-learning in the design of one subject for a particular degree as to use it in the context of an on-line degree course. The basis is different in each case and the opportunity for students and teachers to interact is totally different.

For the journalism degree the different models described are available but the one adopted by the URJC and which is the focus of our study, uses the b-learning model which diminishes the amount of face-to-face contact between student and teacher in an attempt to develop on-line resources to the full. Virtually all the activity for the course is carried out on the net and only those subjects which are essentially practical in nature or which require the use of and expertise in audiovisual technologies include some in-class activity. In the same way, the teacher is able to determine whether or not an in-class assessment method is used so it may well be that in the case of some subjects with on-line assessment, there is absolutely no face-to-face contact between teacher and student.

That is the main thinking behind some of the criticism aimed at this educational system, namely that it is automated, or, at the very least, de-personalised; whatever the case, totally different from the traditional model. Be that as it may, it is here to stay and journalists may now obtain their 3-year of 5-year degrees using this methodology. That being the case, it is well worth facilitating initiatives which attempt to understand what the system is like and what its players think about it.

2. Material and methodology

In Social Sciences the case study is generally used as a research method, because reducing the field means efforts are focused and research can be carried out which, although more modest than that which is performed using more elaborate methods, allows specific objectives to be met in a context with limited resources as is the case today.

Obviously, case studies are limited to one particular subject so it is not possible to generalise the findings to other contexts. Having said that, it is a useful tool for obtaining a reliable estimation in one specific context which is under study and to identify trends and what the thinking is, thus allowing us to describe and better explain the phenomenon being researched.

With all this in mind, our study set out to research the on-line teaching of journalism, specifically at the Universidad Rey Juan Carlos. The reason for this choice is that it is where the teaching took place, but also because it is a pioneer university for the teaching of on-line degrees in the field of communication - and specifically journalism - in Spain. The undergraduate degree has been taught since 2006. It should also be said that the first five years of the degree course have been completed and 2008 witnessed the transformation which was required by the Bologna process as a consequence of which the on-line degree option became available. We have carried out a survey among all students who are currently (2010/11) studying the 3-year or 5-year degree because we have direct access to these students and because they are the first.

However, no studies of on-line communication studies (specifically journalism) have been documented as yet and certainly no research has been done about the profile and opinion of students. As such, this piece of work may launch a line of study for which some work has been done, in an attempt to consider not only the teaching practices which have been developed but also the challenges faced when teaching communication in the 21st century – these challenges inevitably include the use of new technologies.

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The population of the study, ie., students of journalism on-line at the URJC numbers some 200. We have taken advantage of the attendance of students at semester one exams to guarantee a near-full turn-out. However, the fact that some assessment methods are done in groups and in some cases, on-line, together with a high number of students who failed to take the exam –a recurring phenomenon in the case of non-classroom-based subjects– has led to many null responses. Summing up, participation has been around 60% of the total. Altogether 121 surveys were completed. The distribution of interviewees per year is also irregular with more students from the first years of the course, not only because they have answered in a more optimistic way but also because in on-line courses, the percentage of students dropping out tends to be greater than in classroom-based courses. This means that the latter years of a course tend to have considerably fewer students than the first years.

The questionnaire has taken a series of socio-demographic variables into account and also questions for assessing the experience of teaching, with a semantic differential. The resulting data have been processed statistically and frequency and percentage analysis has been carried out for each variable where appropriate.

3. Results

3.1. Student profile

Certain socio-demographic features may be noted for students of journalism on-line at the URJC – although no pretence is being made to create a model. Firstly, it could be said that the proportion of male to female students is almost a 50-50 split. This ratio may be unusual given that journalism tends to have considerably more female students than male – 64% according to INE (National Institute of Statistics) figures. In the URJC's on-line degree courses, 57% of students are female. There are proportionally more female students, as tends to be the case in most journalism degree courses, but not many more.

Another socio-demographic characteristic of on-line students at the URJC –at least in journalism degrees– is that most students are also working – 80%. This percentage confirms that the target public of these degrees are students who already form part of the labour market. On-line degree courses are an appealing option for professionals who are seeking to resume or begin tertiary studies - for the obvious reason that the timetable is flexible.

In fact, the chance to combine studies with a regular job is the main reason why on-line students of journalism at the URJC chose that format, as opposed to the classroom-based one (and not that the entrance requirement is lower – which was one hypothesis, given that it is lower in the on-line format than the conventional degree). Neither can it be shown that living away from Madrid (or any other city) is another factor (an allegedly stronger hypothesis which had been put forward). As it happens, only 30% of students claimed that one motivation for choosing to study on-line was the distance from campus – as opposed to 90% who said their main reason for choosing an on-line course was that it allowed them to combine their studies with another activity.

As was to be expected, many students also work. But where they work is a relevant and significant fact, because students already working in the world of communication account for almost half of all students who work. This can be explained by the fact that in order to work in journalism it is not necessary to have the appropriate qualification (as opposed to other professions where entry requirements are stricter). However, many of those who are already working without any

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qualification are eager to obtain one – and the on-line option affords them better possibilities. So then, almost half of on-line students of journalism at the URJC are already working in the field for which they are training with a goal of obtaining official qualification and so progress in their professional career.

As a consequence of this, another socio-demographic trait of URJC journalism students is age. Students from all courses are mainly in the 18-23 age group. That is the natural age. However, the results of our study indicate that this age group accounts for only half of students in this field of study. The other half are older. That means that on-line education is an opportunity for students who, in their day left university for whatever reason, to go back and resume higher education.

However, it should be pointed out that that opportunity has a «deadline» because these «older» students are not much older – only several years older than the «natural» age. The vast majority are under 30. These data, whilst not conclusive, may be useful for people who organise or teach on-line courses because although these courses are available for students of any age or stage of life, if UNED (Spanish Open University) students are anything to go by, with almost 40% over the age of 40, as a general rule, students tend to come from the younger age bracket. On-line students are younger students who go to university or young people who have failed at school but the world of work has persuaded them to take advantage of their last chance to gain tertiary studies. Whether it be as a result of the technology barrier or the type of qualification, the on-line university does not have the same target public as the non-classroom-based university par excellence – the UNED (Spanish Open University).

3.2. The on-line learning experience

One thing which is more significant than the somewhat predictable socio-demographic trait of the students of journalism on-line at the URJC is the information about their educational experience. This is because, beyond the theorising about the benefits and challenges of on-line education and of what (we) teaching professionals research and experience in the area of educational innovation, is the perspective of the students themselves and what they feel about the experience.

This experience has been, by and large, very positive. Firstly, because expectations have been met. So say three of every four students – not only the initial expectation but also additional ones too.

Another positive indicator is the fact that, when asked directly for their overall assessment of their experience, only 3% had a negative opinion. Just over 30% were neutral but more than half (about 65%) were positive. To be precise, half of the students in the 4th scale of the semantic differential and no less than 13% classified their experience as very satisfactory.

One additional piece of data should be added to this excellent rating for the education process: the vast majority would do it again. Almost 96% of currently registered students would sign up again.

However, not everything is so positive when it comes to assessing the education experience. The survey brought to light other data – which, interpreted with the appropriate caution, allows us to point out some shortfalls in the system. That is because, even though on the whole the interviewees felt the on-line format –at least in journalism– is at least as demanding as the classroom-based model, they feel that conventional classes are an important part of the teaching process. This is the essence of the new on-line education system. It is true that there are no classes in the literal sense – and that is one of the major advantages as it means students can combine their studies with other activities and go at their own pace. Having said that, they are still important and on-line students miss them. For all the educational resources available to virtual classrooms: forums, chats, videos, virtual classes, etc. – these cannot substitute what for centuries has been the traditional (classroom-based) format. Perhaps it is simply a matter of time – or perhaps it is a question of working to improve the systems which are taking the place of lectures.

There is one further, perhaps more pessimistic detail in the students' evaluation in this case study: the relative inability of the university qualifications to prepare future professionals in the area they specialise in. Whilst almost half the students interviewed said that the on-line mode trained students as well as the classroom-based one, of the remainder, more are of the opinion that it prepares students worse than those who say it prepares them better. This opinion is not unsubstantiated given that these are the students who are working.

Finally, there is one question for which the study offers up an opinion trend which could be worrying: the students' opinion of teaching staff is not very flattering. In effect, only a small minority of around 10% say that teachers in the on-line option are more dedicated than their counterparts in classroom-based learning. This is worrying precisely because virtual teaching is more demanding for teachers. However that is not what students perceive: almost 25% think there is no difference but almost 65% believe teachers are less dedicated on-line than in conventional education.

To these data regarding how much time teachers spend we must add the assessment of the teachers themselves. Half of all those students interviewed believe teachers are neither good nor bad. This neutrality is far from ideal as the teaching and learning process should be centred on the teacher and it is particularly frustrating that, having given such a high score to the learning experience itself, they do not think the same of the people responsible for their tutoring. Not only that, but of the remaining half, even though more give a positive rating to their teacher-student relationship (30%), it cannot escape our notice that a considerable proportion of students (20%) rate it negatively. This may mean that – as one hypothesis suggests – half of the teachers are not particularly outstanding. But it could also mean that of the rest of the teachers of journalism at the URJC, a considerable proportion stand out for positive qualities – they work hard at their profession. But there are other teachers (and not just a few) who fail the assessment and it may be that these are the ones to blame for the perception which students have of the lack of dedication on the part of the teachers in their profession.

4. Conclusion

Even though the research carried out has certain limitations – particularly given that it is a case study – certain trends can be detected which give us some useful and reliable insight into a new phenomenon in the field of education. A phenomenon which will no doubt gain importance as it is expected to become a major player in university life and to feature strongly on curricular syllabi. The aim of this study was to find out more about what the first ever on-line students are like and how they think and the results – while they should not be generalised beyond the on-line. Journalism Degree at the Rey Juan Carlos University – speak for themselves and can be used as a launchpad for further research into this new format for teaching communication. In particular they allow us to reflect on what we are doing, bearing in mind that those of us who are part of the university system are committed to change, and to show us how to vastly improve current practice.

One thing which should not be forgotten is that on-line degrees, at least in journalism, are particularly geared towards professionals who, in the face of the established system which requires class attendance which for them is untenable due to work commitments, opt for the on-line format as the best possible way of combining the two.

It should be pointed out that many of these students who are already working in the field of journalism, are only trying to gain the degree to strengthen their professional prestige. This means there is a niche in the market as a consequence of the characteristics of the journalism profession, made up as it is of many professionals with no official qualifications. On the other hand, this also means that the teaching content and methodologies should be adapted to the professional expertise which the student has already obtained.

One of the other more outstanding features of the student population is they tend to be young, albeit a little older than students who attend class. Whether as a consequence of the new technologies employed or for other reasons, students enrolling for on-line degrees tend to be no older than 30 years old. Teachers should bear this in mind and adapt their teaching methods to students of that age, particularly in terms of their knowledge and use of communication in the context of new technologies.

In terms of teaching expertise, the positive feedback reflected in the study may serve to reinforce the educational system used for on-line Journalism studies at the Rey Juan Carlos University. Another, rather more critical explanation would be to say that initial expectations are not particularly demanding for on-line degrees – not only as a consequence of the newness of the offer but also because demand is low when

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compared with classroom-based degrees. Expectations have been met but this may be because there were not many to begin with and not much faith placed in this new and innovative format for obtaining a qualification. Whatever the case, with or without the original expectations, it is true that it has been a positive, satisfactory and beneficial experience for the students involved. That is a good result in every sense, not least because it serves to promote a product (in this case on-line education) which is still in its infant stage and has yet to generate positive publicity. Here, as in all advertising, what works best is «try it and see» – many universities are already using this method by offering subjects on-line so students can discover for themselves the benefits of the system.

But the system must be perfected. To do so, criticism must be levelled at teaching staff who have failed to adapt to these changing times, particularly those who simply made no adjustments when it came to moving from conventional practice to the virtual scene. Those of us who have experience of on-line teaching know that that is of no use and we also know that to say the on-line format requires less work is simply not true; rather, even more effort, dedication and commitment is required. Students are particularly sensitive to this attention, which, if it is not given properly, may jeopardise the very viability of the whole education process.

This should not lead to worry but rather to action and precisely now when we are at the beginning of this change in paradigm, we should take note and foresee future problems. There are important features and players in virtual teaching – the platform itself, the fit of demand and supply, the correct planning and programming to name but a few, but the key to it all, as in any learning process, is the teacher. It is not only a question of finding good teachers.

Professionals from the field of virtual technologies are also required, as too are teachers whose skill, time and availability allow them to commit to this activity. It is not only a responsibility of the teaching professional – the university, itself, must be aware of and aid in this task, be it by reducing the teacher-student ratio or being more considerate when it comes to allocating the teaching load for this type of course. On-line education may be a way of saving costs elsewhere and a source of added value for reaching other target «markets» –and this is vital as students become fewer and fewer in number– but it cannot be done for free. Universities must be aware of the stakes and aim to offer a quality service. Obviously this means selecting the best teachers and giving them as much help as possible for the task in hand. It is only by doing so that online degrees will reach the level of excellence which we all hope for in order to compete with the conventional system.

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Digital Divide in Universities: Internet Use in Ecuadorian Universities

Desigualdad digital en la universidad: usos de Internet en Ecuador

ABSTRACT
New technologies have transformed higher education whose application has implied changes at all levels. These changes have been assimilated by the university community in various ways. Subtle differences among university students have emerged; these differences determine that the resources the network offers have been used in different ways, thus creating gaps in the university population. This study seeks to determine the level of incidence of the variable of university students' incomes on the uses and intensity of use of the Internet tools and resources. Students were classified using factor analysis complemented through cluster analysis in order to obtain user profiles; these profiles were verified by means of discriminant analysis. Finally, chi-square was applied to determine the relationship between income level and user profiles. As a result, three profiles were identified with different levels of use and intensity of use of the Internet tools and resources, and statistically the incidence of income in the creation of those profiles was proved. To conclude, we can say that the income level falls mainly on the variables that define the access possibilities; gender has a special behavior; however, since the profile of the highest level has a double proportion for men, though women have better performance in general terms.

RESUMEN
Las tecnologías han transformado la educación superior impulsando cambios que han sido asimilados por la comunidad universitaria de distintas maneras. Como consecuencia, los estudiantes han presentado diversas formas y niveles de aprovechamiento de los recursos que nos ofrece Internet, delineándose brechas sutiles en la población universitaria. En este estudio se puntualizan algunas características de estas brechas; concretamente se analiza la incidencia de la variable ingresos del estudiante sobre los usos e intensidad de uso de las herramientas y recursos de Internet. Para lograrlo se clasificó a los estudiantes aplicando análisis factorial, complementado por análisis clúster para obtener perfiles de usuarios; estos perfiles se contrastaron con análisis discriminante y, finalmente, se aplicó chi-cuadrado para verificar la relación entre el nivel de ingresos y los perfiles de usuarios. Se determinaron tres perfiles con distintos niveles de las herramientas y recursos de Internet; y se comprobó estadísticamente la incidencia del nivel de ingresos en la conformación de estos perfiles. Se concluye que el nivel de ingreso incide mayormente en las variables que definen las posibilidades de acceso; el género tiene un comportamiento especial, puesto que, si bien el perfil más alto tiene el doble de proporción de hombres, las mujeres tienen un mejor desempeño en general.

KEYWORDS / PALABRAS CLAVE
Digital divide, university, Internet use, information, digital inclusion, internauts.
Brecha digital, universidad, uso de Internet, información, inclusión digital, internautas.

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1. Introduction

In spite of the widespread use of Internet, there are groups that are unable to take full advantage of the benefits that the Web provides. There are many reasons why the social and economic structure provides unequal access to knowledge and information. This assertion falls within the theory of knowledge gaps (Tichenor, Donohue & Olien, 1970) which states that the highest social-economic strata tend to have more rapid access to media-generated information than the lower strata. This theory was formulated with television and newspaper media in mind; however, traditional media are being absorbed by cybermedia and the Internet in general (Cebrián-Herreros, 2009) which leads to differences in how information is used, the tools deployed, and intensity of use, among other factors that constitute this so-called digital inequality.

DiMaggio, Hargittai, Rusell & Robinson (2001) point to differences in the NTIA[1] reports of 1995-2000 which indicate that the highest social-economic strata had greater access to Internet; studies on the digital divide find different variables that are determinants of the usage of Internet tools, which support the knowledge gap theory and the implications for the digital divide.

DiMaggio, Hargittai, Celeste & Shafer (2004) suggest that those who have Internet access use the Web in different ways; these researchers go beyond the focus on the possibilities of Internet connection to offer an analysis from a broader, more theoretical context that searches out differences in the effects of Internet use on people and society. The digital divide is not only about conditions of access to technology and connection; certain other aspects also come into play in determining good use of that technology and its resources. This new approach to what is known as the «digital divide» is also called «digital inequality» by some authors.

A review of the current literature on the subject shows that in general terms there are two approaches to digital inequality. In the first, the authors' analysis covers dimensions such as access, user competence, main uses and intensity of use (Castaño, 2010; Van Dijk, 2005; Warschauer, 2003). The second approach centres more on demographic variables that include income, education, race, gender, job, age and family structure among others (Castells, 2001; DiMaggio & al., 2004; Wilson, 2006). Beyond the segmentation of these dimensions of analysis, we find that the first approaches adapt to a relationship that depends on the second[2]; that is, access, user competence, main uses and intensity of use are variables that depend on income, education, age, gender, among other demographic variables. Of these variables, income and education are the uppermost when determining the extent of digital inequality (Van Dijk, 2005) and of user behaviour with technologies once access limitations are controlled (Keil, 2008)[3].

There is a direct relation between family income and levels of Internet use (Taylor, Zhu, Dekkers & Marshall, 2003), proving that digital inequality is an extension of social inequality and that its effects go beyond the dichotomy of being connected or not. The differences can affect digital natives. Livingstone & Helsper (2007) found differences in the take-up levels of the opportunities and resources available on-line in middle-class and working-class children, meaning that the incidence of factors such as the availability of an Internet connection at home and the time spent online, among others, can affect the level of Internet usage; in the case of university students, the socio-economic level affects Internet use which in turn influences student academic performance (Castaño, 2010). At the macro-economic level, there is also a direct relation between gross domestic product (GDP) and a country's digitalization rate (Iske, Klein & Kutscher, 2005), and although this is not the only reason, it is the most important in terms of analysing the dynamic of the digital divide (Keil, 2008).

There are significant differences that are determined by level of education. Users with a higher level of education make better use of their time on-line and Internet tools and resources (Graham, 2010; Van Dijk, 2006). The level of education is the variable that most affects Internet use for searching for information and communication (Iske & al., 2005; Graham, 2010), and differentiates the uses made of information, possibilities and resources by each user.

The digital divide depends on social and economic factors that reveal differences among internauts. These differences form a heterogeneous set with regard to their composition and the use they make of the Net. This paper analyses the differences in Internet use among university students in Ecuador; the relation between the income of the student's family and

Family income	From (US dollars)	To (US dollars)	Student percentage
Level 1	0.00	239.76	15%
Level 2	239.79	389.85	32%
Level 3	389.95	591.47	30%
Level 4	591.50	964.88	14%
Level 5	965.00	17,243.93	09%

Table 1. Income level distribution.

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Internet use. We aim to verify if there is a difference between students from low – and high-income families when utilizing Web resources, as well as their habits and levels of intensity of Internet use.

2. Method

Forty universities in Ecuador were surveyed for information on technological infrastructure, institutional policy and the level of use of on-line tools in student education. The five universities with the highest values were selected and a significant sample was taken of each; a total of 4,897 students answered the questionnaire. The survey managed to maintain a gender balance in accordance with the total number of students enrolled in each institution and specialism in order to obtain a broader sample representation as possible, the final spread being 50.5% men and 49.5% women.

The variables and instruments for data gathering were based on those used in the Proyecto Internet Cataluña[4], and adapted to Latin American needs. This investigation worked with 31 variables divided into the following groups: student family income, knowledge of and access to Internet, academic and social use of Internet, and student perceptions of the usefulness of the Internet. The variables are documented in table 2. Income level was calculated using a scale that included the country's quintile income values, as developed by the National Census and Statistics Institute (INEC)[5]; the other variables were classified on a scale of 1 to 5.

Variables	Components							
	1	2	3	4	5	6	7	8
Access to audio and video content	0.798267							
Download music and films	0.734067							
Vídeos on academic activities	0.704908							
Download programs	0.652960							
Sell on-line		0.853204						
Purchase on-line		0.836845						
Watch television		0.687774						
Listen to the radio		0.651684						
Play games on-line		0.439886						
Read the press		0.400843						
Computer knowledge			0.863554					
Internet knowledge			0.854897					
Days connected			0.519354					
Hours connected			0.502723					
Years as a user			0.258821					
Internet facilitates the learning process				0.782451				
Internet makes learning quicker and with less effort				0.758295				
Search for information on the Internet				0.633265				
Degree of confidence in information on the Internet				0.612349				
Course material in digital format				0.454430				
Blogs on academic activities					0.760879			
Wikis on academic activities					0.661079			
Social markers on academic activities					0.588764			
Time spent					0.474142			
Use of instant messaging programs (MSN, SKYPE)						0.805489		
Use of email						0.751879		
Meeting people (social networks)						0.464267		
Degree of interactivity with teacher							0.869870	
Degree of interactivity with students							0.856421	
Consult databases and journals available on-line								0.540424

Table 2. The resulting components of the factor analysis.

The information was collected and the students classified according to their uses of and intensity of use of the Internet. Factor analysis was used to reduce the number of variables to 8 factors covering the 62% variance. These were then used as initial data for the cluster analysis that produced classifications for three, four and five groups. Finally, the composition of the clusters was contrasted by a discriminant analysis of each classification. The aim of this analysis was to make the classification more accurate; the dependent variable was the cluster number to which the student belonged, and the independent variables were the remainder that was used in the factor analysis.

The relation between income and the use of Internet profile (cluster) was verified by the chi-square test that enables two quantitative variables to be related via a null hypothesis in which there is no relation between variables.

3. Results

3.1. Level of student family income

The student distribution according to level of income is shown in the following table. The levels correspond to each quintile of the student's family income.

3.2. Profile of Internet use

The factor analysis produced 8 factors (components) that justify the 62% variance, details of which appear in the table below.

The resulting components are described by the student characteristics, and are clearly differentiated:

• Component 1: Downloads. This component describes those students who download videos, programs and general software from the Web.

• Component 2: Transactions-leisure. This groups features buying and selling on the Internet, watching television, listening to the radio, playing online games and reading the press.

• Component 3: Knowledge. This covers characteristics that describe the user's level of knowledge and experience.

• Component 4: Usefulness. Referring to student perceptions on the usefulness of the Internet in academic activities.

• Component 5: Social tools. This groups those characteristics of the use of tools and social resources in academic activities.

• Component 6: Social networks. These variables refer to the use of live chat, email and social networks.

• Component 7: Interactivity. Describes the degree of student interactivity with the teacher and other students.

• Component 8: Databases. This refers to a single variable that describes the intensity of use of scientific databases and / or on-line journals.

A cluster analysis was applied to all these components, and classifications were obtained for three, four and five groups. The classifications are:

A discriminant analysis was applied to each classification to verify the validity of the clusters. The result of each case indicates that the element percentage is classified correctly; so, in the three-group classification 96.5% of the sample elements are correctly classified; 92.4% of the sample elements are correctly classified in the four-group classification, and 90.3% of the sample elements are correctly classified in the five-group classification. The results show that the classification with the lowest number of groups is the most accurate.

The decision to work with three groups was based on this analysis.

Figure 1 shows the classification results of the discriminant analysis.

The names assigned to the profiles forms part of a context in which the research is carried out, such that their names cannot be compared to other realities.

• High profile: Cluster 1 represents 11.6% of the students, with an average level of downloading of videos, programs and general software: they have the

Clasificación en tres clúster

Clúster	Número de estudiantes
Clúster 1	568
Clúster 2	1.940
Clúster 3	2,389
Total	4,897

Clasificación en cuatro clúster

Clúster	Número de estudiantes
Clúster 1	521
Clúster 2	2.094
Clúster 3	693
Clúster 4	1.589
Total	4.897

Clasificación en cinco clúster

Clúster	Número de estudiantes
Clúster 1	428
Clúster 2	1.465
Clúster 3	1.230
Clúster 4	587
Clúster 5	1.187
Total	4.897

Table 3. Classification in three, four and five clusters.

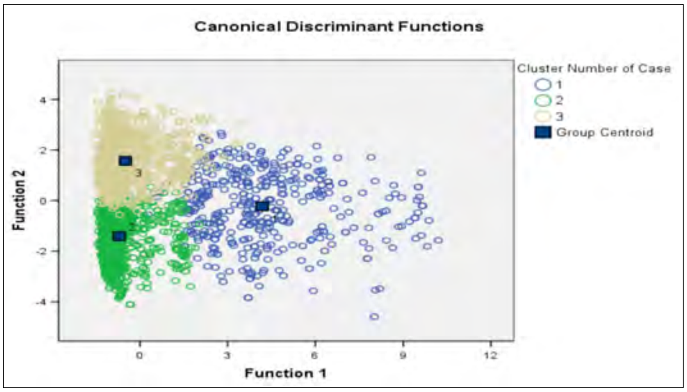

Figure 1. Classification in three clusters resulting from the discriminant analysis.

most experience and the broadest knowledge in terms of computer and Internet use; they see Web tools as useful for learning; they are the ones who most use social networks and interaction tools; and they use library databases with greater intensity than the other groups.

• Medium profile: Cluster 2 accounts for 48.8% of students; the members of this group have similar characteristics to those in Cluster 1. All Cluster 2 components present inferior values except for downloads; the perception of usefulness and level of interactivity are practically the same. The biggest differences between the two are found in the components that cover transactions, use of social tools in academic activities and use of databases. Here the values presented by the first group are palpably superior.

• Low profile: This group's values are less intense for the use of the various Internet instruments and it accounts for 39.6% of the students. The main characteristics of this group are that they have an average level of knowledge and experience in Internet use; perception that the use of Internet tools could be useful for their education is low, and they interact infrequently with their teachers and fellow students. This group downloads very little and hardly ever uses the Internet for transactions or gaming, and their use of social tools, social networks and interactivity is minimal.

3.3. Verification of relations between variables

The chi-square test was used to verify the null hypothesis, the critical value for the given parameters being 20.09. The chi-square value was calculated at 418.63, significantly higher than the critical value and which enables us to reject the null hypothesis.

To complete the analysis, we calculated the correlation indices between the level of income and the proportion of students on each level of the scale used to extract the information. The variables considered were: level of Internet knowledge, number of hours and days per week spent on the Internet and the number of years as an Internet user. There was a significant correlation between all the variables. The exceptions were the level of computer and Internet knowledge variables where there were two levels on the scale with no significant correlation, and the number of days connected to the Internet variable which showed no significant correlation. The same occurred in live chat, video and program downloads and the use of social networks.

4. Discussion of the results

The chi-square test result rejected the null hypothesis, demonstrating that level of income influenced the students' Internet use profiles; and there is further evidence to support this finding. The analysis of income distribution levels in each profile revealed that students with better economic prospects gathered mainly in the high profile while those with lower income con-

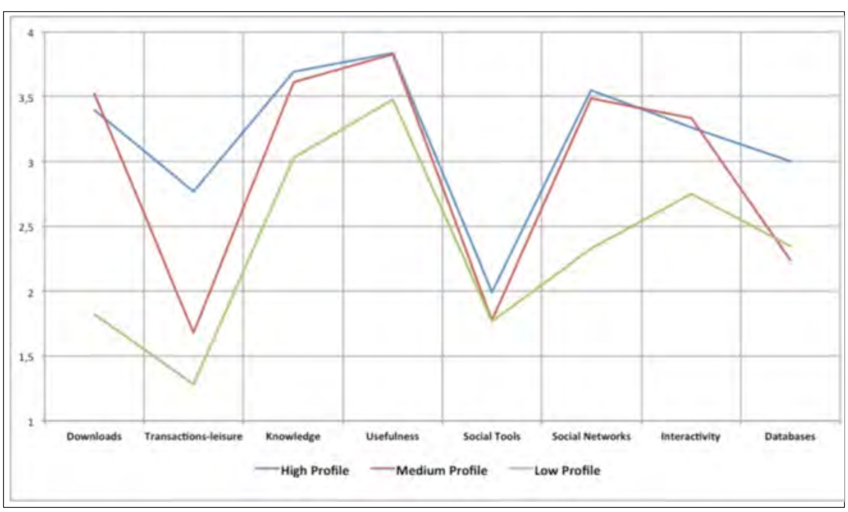

Figure 2. Profiles of Internet use.

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gregated around the low profile. This fits in with the differences found by DiMaggio & al. (2004) for Internet use and low income levels.

The coefficient correlation between income levels and the variables of the knowledge components[6] are significant. However, it can be deduced that the higher the student's family income level, the greater the possibility of computer use and Internet connection; and the greater the number of years' experience as an Internet user, the broader the knowledge and the longer the number of days and hours spent connected to the Internet. Yet when the correlation is ordered for income level, we find that income level has greatest influence on the user's years of experience followed by the number of hours connected per session, the days per week spent on the Internet and level of Internet knowledge and computer knowledge.

Turning to gender, we find that the proportion of men is twice that of women (66.5% to 33.5% respectively) in the high profile, which generally coincides with the findings of Chen & Tsai (2007). However, these shares differ in the medium and low profiles; in the former, accounting for 48.8% of the sample total, women are in a majority[7]; in the latter, representing 39.6% of the sample total, women are in a minority. In other words, it is women rather than men who tend to make more use of Internet tools. This enables us to picture a scenario that favours women, which is a significant finding in the investigation that shows a reduced female presence in the high profile, with its broader and more intense Internet performance, but a greater presence in the medium and lower levels. Further investigation is needed to acquire more precise information on the true incidence of gender in the uses and intensity of use of the Internet among university students.

Differences appear in the intensity of use of the various Internet tools. The profiles show low intensity use of Internet in 40% of the student total; 49% register an average intensity and only 11% classify their use as high intensity. This leads us to think that an adequate infrastructure and appropriate incentives would significantly increase student use of the Internet and the range of tools and resources, particularly for academic work.

The profiles present differences and similarities between them, with the biggest differences occurring in these components: transactions-leisure, knowledge, downloads and social networks. The transactions-leisure component consists of variables that measure sales and purchases via Internet, watching television and on-line gaming, among others. The differences found in this component coincide with the user's ability to access Internet and reveal a certain uniformity in relation to the profile; the knowledge component shows differences that are minimal and uniform while the higher the profile, the greater the number of years' experience, the time spent online and the level of knowledge, all of which is directly related to the level of income; the download and social network components behave in such a way that the high and medium profiles have similar values while they differ significantly in the low profile.

The similarities found were contained in these

> In spite of the widespread use of Internet, there are groups that are unable to take full advantage of the benefits that the Web provides. There are many reasons why the social and economic structure provides unequal access to knowledge and information. This assertion falls within the theory of knowledge gaps which states that the highest social-economic strata tend to have more rapid access to media-generated information than the lower strata. This theory was formulated with television and newspaper media in mind; however, traditional media are being absorbed by cybermedia and the Internet in general which leads to differences in how information is used, the tools deployed, and intensity of use, among other factors that constitute this so-called digital inequality.

components: usefulness, social tools, interactivity and databases. The first two have similar values in each of the profiles, the difference between them being that the usefulness component registers higher values than the social tools component, meaning that Internet is deemed useful for learning; yet the social tools are hardly used. The social tools component refers to the use of blogs, wikis and social markers in academic activities; the use of these tools is at a low level of intensity across the three profiles demonstrating that the culture of the use of resources and social tools could be better developed; something similar, although to a lesser degree, occurs with the interactivity and database access components whose intensity of use is low across the three profiles.

The low profile reveals several differences when compared to the other two profiles, which are limited to the download, transactions-leisure, knowledge and social network components. However, these limited differences do not necessarily mean that students can get better academic results from the time they spend on the Internet. The components that should best be developed for improving academic performance are: the use of social tools and resources, interactivity and access to databases.

One particular characteristic of the low profile is the level of database use, which is higher than those of downloads, transactions and social use of tools and resources. This reveals a profile of students who prefer to use the time and information resources available to them to do academic work; yet this could also be due to the lack of knowledge and experience as internauts so typical of this profile.

An analysis of the profile graphs shows that they are all similar in form; the differences and similarities relate to the level of intensity assigned to the variables of each component; this enables us to determine the potential areas in which Internet use can be better exploited, and it would be very interesting to research which particular areas would benefit students' academic performance the most.

Conclusions

The level of the student's family income influences the use and intensity of use of Internet tools, so there is a difference or a digital divide that corresponds to socio-economic reality. The biggest differences between users appear in the variables that measure buying and selling on the Internet, gaming on-line, watching television and listening to music. These variables reveal the differences that exist between users, and are in line with the number of years of user experience, the number of hours and days spent on the Internet per week and knowledge level; gender is ambiguous in that only a third of women in the high profile use Internet tools but they are in a majority in the medium profile and in a minority in the low profile; this reveals that women generally make better use of the Internet than men.

An analysis of the profiles shows that low profile Internet users spend most of their time and resources on academic work when on-line; this changes in the medium and high profiles, and is attributable to the level of knowledge of these users, and the fact that they have more time to indulge in other on-line activities. The distribution of users into profiles that measure Internet use works against high level users who only account for 10% of the sample total. Yet far from being a drawback, this is an opportunity to foment technologies among university students and by extension to the entire educational system.

Notes

1 National Telecomunications and Information Administration.

2 Van Dijk (2005) considers that physical access is motivational, dependent on age, gender, race, intelligence among other factors.

3 Keil (2008) experimented with users of different socio-economic strata who were given access to Internet, and the behavioural differences were later examined.

4 www.uoc.edu/in3/pic/cat/index.html.

5 www.inec.gob.ec.

6 Consisting of these variables: Internet knowledge, computer knowledge, number of days and hours connected to the Internet and the number of years as a user.

7 Of the medium profile total, 58% are women.

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University Senior Students on the Web

Mayores Universitarios en la Red

ABSTRACT
The Internet is increasingly prominent in all walks of life, and Web connection is a key factor in social integration. The rise in life expectancy and quality of life mean that our active seniors now represent a growing sector in society. This study analyses what senior citizens use the Internet for and why, as well as the main benefits of its usage and the perceived obstacles of those who are non-users. The results derive from a questionnaire completed by senior citizens enrolled on university courses for older people, and they show that university seniors frequently connect to the Internet –daily or 2 or 3 times per week–, and use it mainly to look up facts, contact family and friends, for course work and to read the press. They consider the Internet easy to use but they could survive without it. For those who do not have access to the Internet, lack of knowledge about how to use it is the main barrier; yet they do not consider themselves incapable of learning how to use the Internet if they wished to do so. The data gathered from the survey challenge negative stereotypes of older people, and encourage us to modify our view of active seniors as disconnected from and incapable of using the Web and instead see their progress and motivation to learn as something highly positive.

RESUMEN
Hoy día la relevancia de Internet es cada vez mayor en todos los ámbitos. Participar en la misma es fundamental para estar integrados socialmente. El aumento de la esperanza y la calidad de vida conllevan que los mayores activos supongan un volumen significativo de la población. En este trabajo se analiza el uso que personas mayores activas realizan de Internet, así como los principales beneficios o motivaciones de su utilización, y las barreras que encuentran aquéllos que no la utilizan. Se administró un cuestionario a personas inscritas en programas universitarios de mayores. Los resultados muestran que estos mayores universitarios se conectan a Internet frecuentemente, a diario o entre dos o tres veces por semana. Se destaca la relevancia de Internet para estar actualizados, contactar con la familia y los amigos, el uso académico, y consultar la prensa. La consideran fácil de utilizar aunque afirman que podrían vivir sin ella. Por otro lado, para los que no acceden a Internet no saber utilizarla es una de las principales barreras, si bien las personas que no la utilizan consideran que serían capaces de aprender. En su conjunto los datos animan a romper estereotipos negativos sobre los mayores y a no considerar a los mayores activos como personas incapaces o desconectadas de la Red sino a valorar positivamente los avances que realizan y la motivación por aprender.

KEYWORDS / PALABRAS CLAVE
Internet, elderly, university, ICT, technology, social inclusion, stereotypes.
Internet, mayores, universidad, TIC, tecnología, inclusión social, estereotipos.

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1. Introduction

The influence of Information and Communication Technologies (ICT) is increasingly evident worldwide as they permeate all aspects of our lives, from interpersonal communication to education, politics, health and the economy. The arrival and consolidation of ICT in our daily lives is undoubtedly one of the most distinctive features of these times (Cabero & Aguaded, 2003), as evidenced by the interest in and recognition of ICT by international organizations ranging from the European Parliament and Council of Europe, UNESCO and the UN (Aguaded, 2009; 2010a; 2010b).

The most important of these ICT is the Internet, whose influence on society has been immense. Internet has caused a true social revolution with its widespread use. It has transformed the exchange of knowledge and information, enabling access to any resource anytime anywhere. Internet allows us to perform any number of tasks traditionally associated to other technologies. We can talk and communicate, read, listen to music, watch films and television programmes; in short, it allows us to carry out a wide range of functions and activities. Internet also lets us interact with it in a passive way, like with other media such as television, or manage it in a more active way. The user can now interact with such media and this interaction is limitless. But Internet is not just about information transmission; it has become a potent socialization tool, a disseminator of ideas and values (Fainholc, 2006; Xavier & Cabecinhas, 2000). And just as with television, cinema and videogames in their time (Núñez & Loscertales, 2008; Loscertales & Núñez, 2008; Carnagey, Anderson & Bushman, 2007), Internet arouses curiosity and concern regarding the values that can be propagated via the Web and the impact it has on society. It potentially offers benefits and drawbacks in equal measure, and the scientific community is not immune to such debate. To take just one example of scientific interest in the Internet, the prestigious Annual Review journal has dedicated several issues to the Internet (Bargh & McKenna, 2004; Skitka & Sargis, 2006; Bennett & Glasgow, 2009; Strecher, 2007).

With the arrival of Internet, the main interest and concern of parents, professionals and society is the impact of the media in general and of the Internet in particular on children and young people (Villani, 2001). The influence of the Internet on the young has been analysed with some urgency as they are deemed to be the most vulnerable members of society. Numerous studies have tried to pinpoint the positive and negative effects of the Internet, and determine how young people use the Web (Livingstone & Helsper, 2010; Yang & Tung, 2007).

Although such attention is warranted as young people represent the future, this should not be at the expense of research into senior citizens and their attitude towards the Internet since they now represent an increasingly relevant sector of society. The number of senior citizens worldwide is on the rise, and in Spain they are already a considerable force in today's society, and will be even more so in the future (IMSERSO, 2009).

The Internet can provide senior citizens with innumerable potential benefits, helping to promote creativity, writing, sociability, memory, to communicate more and learn things they were unable to study before, etc (Pavón, 2000). However, senior citizens tend to be stereotyped negatively as being less capable of performing activities in general (Cuddy, Norton & Fiske, 2005), an attitude that extends particularly to technology (Cutler, 2005).

Old age is frequently cited in relation to the digital divide, which is defined as the inequalities in Internet access and the extent to which it is used, knowledge of the Web and its technical properties, social support and the ability to evaluate the quality of information and the diversity of its uses (DiMaggio & al., 2001).

We believe we should not subscribe to a negative association between senior citizens and Internet use. This negative viewpoint tends to cling to old people when they are perceived as disabled, inactive or suffering from some form of cognitive deterioration (Sheets, 2005; Manna, Belchiorb, Tomitac & Kempd, 2005; Slegers, Van Boxtel & Jolles, 2009). Not all senior citizens are disabled or inactive. The rise in life expectancy and quality of life mean that more and more elderly people stay active for longer and continue to offer a lot to and receive from society. As Gatto & Tak (2008) point out, technological progress makes it essential to find out how senior citizens use these technologies, and the barriers and benefits they perceive in these technologies to be able to adapt them to their own needs. However, as we have already indicated, scientific research into senior citizens and new technology is insignificant when measured against output for young people (Selwyn, Gorard, Furlong & Madden, 2003) and has tended to concentrate on seniors who are inactive (Hernández-Encuentra, Pousada & Gómez-Zuñiga, 2009).

This is a study of active senior citizens enrolled on university courses for older people at the University of Sevilla as part of its Aula de la Experiencia (Classroom of Experience) programme.

The aim is to analyse what active senior citizens use the Internet for, what motivates them to use the Internet and the main benefits of its usage, as well as the obstacles encountered by those who do not use the Web.

2. Method

2.1. Procedure and participants

The study analysed 165 senior citizens enrolled at the University of Sevilla on the Aula de la Experiencia programme which was developed by the university with the backing of the local Ministry of Equality and Social Welfare. This is a scientific-cultural and social programme aimed at people over 50, and is a good example of older people who want to keep active, having enrolled on a series of courses that promote scientific and cultural knowledge, and interpersonal relations among fellow students who are sufficiently motivated to sign up to the programme.

We enlisted the help of the university lecturers to distribute and gather in a questionnaire that the course participants completed, anonymously and voluntarily, regarding their use of new technologies.

Of the 165 participants in our study, 33.3 % were men and 66.7% were women. The average age was 62 with a standard deviation of 5.46. The majority of participants, 56.7%, were either married or lived with a partner, 22.6% were widowed and the rest were separated, 11%, or single, 9.7%.

2.2. Materials

An ad-hoc questionnaire that was voluntary and anonymous was used to obtain information on Internet use. We adapted the questionnaire in line with the recommendations of certain authors who had previously gathered data from older people, by using a larger font size (14 point) and greater spacing to make the document clearer to read (Boechler, Foth, & Watchorn, 2007). The questionnaire was designed to collect data on the following:

a) Socio-demographic information: the questionnaire asked the participant to state age, gender, civil status and educational qualifications.

b) Familiarity with the Internet. Certain indicators were used to collect information on participants' familiarity with the Internet, such as whether they used the Internet or not, how long they have been using the Internet and a computer for, if they had an Internet connection at home, what device they used to connect to the Internet and how frequently they used it, how they learnt to use computers, a self-assessment of their knowledge of the Internet, how they rate the Internet as a source of information (main source, secondary but important, secondary but unimportant, Internet not used as a source of information), whether Internet usage reduces the time spent on other activities, if they use it to search for information on health issues, to look up and communicate with friends, or if they had ever been so absorbed on the Internet that they had lost all sense of time.

We wish to highlight the vital importance of the Internet as a tool that generates social inclusion; Internet outsides are unable to take advantage of its myriad possibilities which leads to social exclusion and marginalization. Senior citizens are an important sector in today's and tomorrow's society, so their participation in the information society is crucial. The positive effects of their access to and usage of the Internet are many, both for them as individuals and for society at large.

c) The benefits of and motivation for using the Internet. To know how senior citizens perceive the benefits of the Internet and their reasons for using it, we asked them to grade 11 indicators on a 5-point scale ranging in opinion from total agreement to total disagreement. Examples of these indicators include: I find the Internet easy to use; Internet helps me to keep up-to-date; I have made new friends on the Internet; I like the anonymity of the Web; I cannot imagine my life without the Internet.

d) To know what senior citizens use the Internet for, we asked them to grade 25 indicators on a 4-point scale of responses: daily, weekly, monthly, never. Examples of these indicators include: e-mail, chat rooms, information search, music and film downloads, online banking, reading newspapers, discussion boards, phone calls.

e) The obstacles faced by those who do not use the Internet. To know the obstacles faced by non-Internet users, we asked the non-users to rate 16 indicators on a 5-point scale ranging in opinion from total agreement to total disagreement. These indicators include: I am not interested in the Internet or it does not motivate me; I am too young or too old to use the Internet; I don't know how to use the Internet; I don't have access to Internet at home

This study shows what senior citizens use the Internet for and why, and the main obstacles that hinder non-users. We find that senior citizens are optimistic and motivated, in that many already use the Internet, while non-users feel they are capable of learning how to use it if they chose to. As members of society, we have a shared responsibility to help those who already use the Internet to make the most out of it, and instruct them on functions and areas which they can explore to expand their knowledge. We are also bound to give those non-users that initial push to get them started.

3. Results

Descriptive analyses and the Chi square test were used to analyse the results.

3.1. Familiarity with the Internet

Of those surveyed for familiarity with the Internet, 64.4% defined themselves as users while 35.6% said they were non-users. The users stated they had started using a computer before venturing onto the Internet. They had been using a computer for an average of 12.01 years and the Internet for 7.88 years, and 100% of users had an Internet connection at home. Connection to the Internet in 98% of cases was via a computer, with link-up by mobile phone, television, personal digital assistant (PDA) and video game consoles negligible. Chi square test analysis showed that users connected to the Internet every day or two or three times a week ($X=96.580$; $p<.001$), based on four possible responses (every day, two or three times a week, once a month, never). When asked about how they had learnt to use the Internet (self-taught, family, courses, friends, others) the results showed that the family followed by self-taught as the most common factors ($X=54.701$; $p<.001$). Most participants' self-assessment of their computer knowledge (beginner, average user, advanced, expert) was either beginner or average user ($X= 172.601$; $p<.001$). The Internet was classified as a secondary but important source of information ($X=102.789$; $p<.001$) by those polled, from four possible options: main source, secondary but important, secondary but not important, I don't use Internet as a source of information. In terms of information search, 68.2% used the Internet to read up on health issues. When questioned about personal contact, 54.6% said they used the Internet to keep in touch with family members, followed by friends or colleagues (31.8%), while 13.6% stated that they did not use the Web to communicate with people. The seniors were asked whether Internet usage reduced time spent on other activities (friends, sleeping, work, studying, television, sports, family, radio, reading the press, other activities), of which television followed by sleeping were cited as losing out to Web use ($X= 112.326$; $p<.001$). The participants were also asked about the sensation of losing all sense of time when on the Internet (hardly ever, sometimes, quite often, almost always); 61.1% said they had hardly ever experienced losing all sense of time when on the Internet and 35.6% said they had sometimes lost all sense of time.

3.2. Benefits of or motivations for using Internet

Those surveyed declared that, in terms of the main benefits of the Internet and their motivations for using it, they found the Internet to be a useful tool that helped keep them up-to-date and that it was easy to use. However, they insisted that they could live without it. They also stated that they did not use the Internet to meet new people or to find people with similar interests or concerns; neither did they believe it was easier to express themselves via the Internet rather than speaking face-to-face. They were not comfortable with the anonymity of the Web, and had issues with Internet privacy (X=513.416; p<.001).

3.3. What do they use the Internet for?

The results show that the participants use the Internet principally to search for information, then to check e-mails, for course work, to read the press and to navigate for no particular reason and, to a lesser extent, to share photos and for online banking (X= 974.406; p<.001). The users send an average of 15.83 e-mails a week and receive 27.71.

3.4. Internet's non-users

The results were statistically significant for those participants in the survey who stated that they did not use the Internet, in terms of the obstacles they face as non-users (X=569.373; p<.001). They stated that their non-use of the Internet was not due to old age, or to the lack of time or because they were in bad health. Nor did they attribute their non-use to being unaware of what the Internet could be used for, or to the difficulty in finding a place to use the Internet. They said they had no home access to Internet and did not know how to use it, although they considered themselves capable of learning how to use the Internet if they put their minds to it.

4. Discussion

The aim of this study was to analyse the use made by active senior citizens of the Internet and to know what they considered to be the main benefits of and their motivations for using the Web, as well as the obstacles faced by non-users. For this study, we recruited senior citizens who had enrolled on university courses specifically for older people, and we now present the main conclusions from the results obtained from the data.

We note that the Internet users already had previous knowledge of computers, which was a significant factor in leading them to use the Web especially as virtually all the survey participants used their computers to connect to the Internet at home, with no other devices cited. As Hernández, Pousada and Gómez (2009) have shown, older people prefer to use a device for the specific reason it was purchased; for example, a phone to make and receive calls, a television to watch programmes and Internet connection only via the computer. However, we believe this attitude could change once the user becomes familiar with various devices and the new functions they were designed to be used for. All participants had Internet connection at home and generally used it once a day or several times a week. They first learnt to use the Internet through family members or taught themselves. The family seems to have played a key role in encouraging these new users and in helping them to adapt to Internet use. The results clearly show that they do not use the Web to start new social relationships but to connect with family and friends. The Internet is viewed as a tool that helps them keep in touch. Scientific literature has frequently shown concern about whether Internet use contributes to to social isolation (Nie, 2001). Our results show that Internet use among older people does not lead to social isolation rather it allows these users to communicate with family and friends. This is supported by their response to whether Internet use deprived them of time spent on other activities; the participants stated that their use of the Internet did not mean a reduction in time spent with family or friends, only less time spent watching television or sleeping.

It is noteworthy that the Internet was not used to join discussion boards to exchange opinions with other likeminded citizens. This is an area that could be promoted further since virtual communities can be of support to and have a positive effect on those who take part (Katz, Rice & Aspden, 2001; Ellison, Steinfield & Lampe, 2007).

Another interesting fact was that the Internet was considered an important but secondary source of news and learning. The participants stated that the Web enabled them to keep up-to-date and that they used the Internet to search for information, for course work, to read the press and also to navigate for no particular reason. We think that this motivation to use the Web as a learning and information tool is highly positive since the Internet allows the user to access a vast and wide range of information. However, we believe there is a greater need than ever for media literacy instruction to enable this type of user to filter information more critically on the Web. This is particularly relevant in light of the fact that a large majority of those polled stated that they use the Internet to search for information on health. Internet could be a useful tool for providing health-related information (Tse, Choi & Leung, 2008) although the quality of information often varies (Morahan, 2004). Hence, the need for instruction in media literacy, especially in matters of health, to enable the user to evaluate the credibility of the information found and to help the user to search more diligently.

Older people use the Internet primarily to look for information and, to a lesser extent, to read and send e-mails, for course work, to read the press and navigate for no particular reason, to share photos and for online banking. We believe that they use that latter type of functions less because of worries over anonymity and privacy on the Internet. Indeed, with regard to online financial transactions confidentiality is a common concern cited by the majority of users (Suh & Han, 2003). We think this concern will diminish as online security increases and the users become more familiar with the Web. As regards privacy, this is a distinctive feature of the Internet, but also highly controversial in generating both positive and negative effects (Christopherson, 2007).

As previously mentioned in terms of improving the user's ability to screen information on the Web, instruction in media literacy can enable the user to distinguish between contexts and to weigh up the advantages and drawbacks of anonymity and privacy, and to use the Internet with a greater sense of security for transactions and interactions on the Web.

Our study also deals with elderly non-users of the Internet whose numbers are still significant. However, it is important to point out that they do not attribute their non-user status to age or ill health but to not knowing how to use the Internet and having no connection. They consider that they would be able to learn how to use the Internet if they decided to do so. It seems that they only need a gentle push to get started. This is very important because, as we state in the introduction, older people are negatively stereotyped in terms of their ability to use technology (Cutler, 2005).

The fact that older people are optimistic about their ability to learn and that they do not consider age to be a barrier should help to break down the stereotype that links old age to incapability. We agree with Rodríguez (2008) in that old age is a stage in life that nobody prepares us for, and for which it is necessary to find and affirm different behaviours to the traditional stereotypes of senior citizens when using technology. We believe that the data in our study reveal that active senior citizens do not see themselves as conforming to this negative stereotype.

Future research could focus on comparing various age groups with similar inactivity and disability levels to determine if the negligible Internet use seen among inactive older people is also found in data on younger people in a similar situation.

In sum, we wish to highlight the vital importance of the Internet as a tool that generates social inclusion; Internet outsides are unable to take advantage of its myriad possibilities which leads to social exclusion and marginalization. Senior citizens are an important sector in today's and tomorrow's society, so their participation in the information society is crucial. The positive effects of their access to and usage of the Internet are many, both for them as individuals and for society at large. This study shows what senior citizens use the Internet for and why, and the main obstacles that hinder non-users. We find that senior citizens are optimistic and motivated, in that many already use the Internet, while non-users feel they are capable of learning how to use it if they chose to. As members of society, we have a shared responsibility to help those who already use the Internet to make the most out of it, and instruct them on functions and areas which they can explore to expand their knowledge. We are also bound to give those non-users that initial push to get them started.

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Children and New Media: Youth Media Participation. A Case Study of Egypt and Finland

Niños y nuevos medios: estudios de caso en Egipto y en Finlandia

ABSTRACT

This article focuses on a single case study; the first findings of a qualitative part of the Youth Media Participation (YMP) project in Argentina, Egypt, Finland and India (2009-11) on 10-18 year-old children's participation through media. Youth Media Participation is funded by the Academy of Finland (2009-11). It collects and analyses three kinds of data from children and young adults; 1) focused interviews collected in Egypt, India and Finland (24 in each country), 2) a questionnaire for statistical data collected from Argentina, Egypt, India and Finland (1,200 in each country, N: 4,800) and 3) media diaries for a separate publication about «One Day of Media» (100 collected in Argentina, Egypt, India, Finland and Kenya, N: 500). The purpose was to undertake an exploratory study to find new ways to approach research questions on children's participation through media in different countries. The YMP project was launched with focused interviews in Finland and Egypt. This paper focuses on the qualitative, explorative part of the project: the focused interviews that were used to test the original research questions, to explore the many forms of media participation, and to create the questionnaire needed in further research. The project aims at enhancing our understanding of media literacy and its connections to media participation and civic activity.

RESUMEN

El artículo recoge un estudio de caso único sobre los primeros resultados del análisis cualitativo del proyecto PJM (Youth Media Participation), desarrollado en Argentina, Egipto, Finlandia e India. PJM es apoyado por la Academia de Finlandia (2009-11). Se analizan tres tipos de información provenientes de niños y jóvenes: entrevistas focalizadas en Egipto, India y Finlandia (24 en cada país); cuestionarios para recolección de datos estadísticos de Argentina, Egipto, India y Finlandia (1.200 por país, 4.800 totales); y diarios de medios para una publicación adicional sobre «Un día de medios» (500 totales, 100 obtenidos en Argentina, Egipto, India, Finlandia y Kenia respectivamente). Se indagaba, mediante el estudio exploratorio, nuevos enfoques a preguntas de investigación sobre la participación de niños de distintos países en medios. El proyecto PJM se inició con entrevistas focalizadas en Finlandia y Egipto. Este artículo se centra en la parte cualitativa y exploratoria del proyecto: entrevistas focalizadas para ratificar las preguntas originales de investigación, explorar múltiples formas de participación mediática y crear el cuestionario necesario para investigaciones posteriores. El proyecto busca mejorar nuestra comprensión de la alfabetización mediática y sus vínculos con la participación en los medios y actividad cívica.

KEYWORDS / PALABRAS CLAVE

Media literacy, new media, children, civic, participation, interviews, youth.
Alfabetización mediática, medios, niños, actividad cívica, participación.

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1. Introduction

This article examines the first findings of the focused interviews on 10-18 year-old children's participation through media, held in Egypt and Finland, in the Youth Media Participation (YMP, 2009-11) project. The YMP project includes Argentina, Egypt, Finland and India (2009-11). It collects and analyses three kinds of data from children and young adults; 1) Focused interviews collected in Egypt, India and Finland (24 in each country); 2) A questionnaire for statistical data collected in Argentina, Egypt, India and Finland (1200 in each country, N: 4800) and 3) media diaries for a separate publication about One Day of Media (100 collected in Argentina, Egypt, India, Finland and Kenya, N: 500). This article focuses on part 1; the first results of the explorative focused interviews that were used to test the original research questions.

1) What kinds of common features and differences can be found in youth media participation –and non-participation– internationally, especially regarding Western and developing countries?

2) What kinds of prerequisites, possibilities and challenges are young people facing in their position as agents in relation to media in different regions of the world?

3) What kinds of media literacies are young people practicing and developing in different regions of the world? (Kotilainen, 2010).

The contemporary uses of media vary greatly, especially among children. Unlike radio, the new media provide more than one-way communication. Youth citizenship may be supported through media literacy education projects involving media production, media publicity and pedagogy understood as a learning community. The converging media offer local and global venues, networks and ways of productivity in civic activity on an unprecedented scale (Carlsson, 2009; Kotilainen, 2009; Jenkins, 2006a). We analysed the focused interviews of the YMP project through this background. This article is limited to analyzing the preliminary results from Egypt and Finland, to test the forthcoming comparative analysis of the interviews from India, Egypt and Finland.

2. The countries: Egypt and Finland

Finland and Egypt are geographically quite far from each other. They represent very different geographical areas, cultures, and mediascapes. The biggest Arab country, Egypt, with a population of over 80 million, lies mainly in North-Eastern Africa, with part of it in Asia. Finland has a population of 5.4 million between Russia and Sweden in Northern Europe. Egypt's capital city Cairo has a population of 18 million; almost 95% of the population live on only 3% of land. The metropolitan area around Helsinki has nearly 1.3 million people; over 65% of the Finnish population live in cities.

In Egypt, the number of students in schools and universities is 17 million. Education is compulsory for all under 12-year-olds. Governmental schools provide education with low fees for children over 6 years of age. There are also privately owned schools. Expensive schools provide high-quality education, some following American, French, British or German educational systems and curricula. After 12 years of education, children receive the General Secondary School Certificate which is one of the qualifications for university admission.

In Finland, elementary and higher education is free for all. There are few, mostly religious private schools. School is obligatory for all children aged 7-16. The elementary levels (classes 1-9) provide the pupils with qualifications required for vocational school or upper secondary school. They provide students with eligibility to broader education, and higher education level, i.e. universities and polytechnics. Practically everyone has computer access; schools offer email-accounts and home pages for their pupils and libraries are free offering also Internet. The Finnish school system today provides rather equal learning opportunities, including special education, although inequalities are already apparent due to the latest political decisions. So far Finland has gained excellent results in the OECD countries' PISA tests (PISA, 2010). Almost 65% of Finns have completed their vocational or academic education, and many Finns hold multiple degrees (Statistics Finland, 2010).

3. Media in Egypt and Finland

Egypt has a wide range of governmental and private media. Egyptian Radio and Television Union, which is a part of the Ministry of Information, supervise radio and television broadcasting. There are three national TV channels, six local channels and some private TV channels. The national Channel Two broadcasts mainly in English and French, and serves for expatriates living in Egypt.

Generally speaking, viewers in the Arab World are exposed to a great number of TV channels. In addition to the land TV channels, there are 696 satellite channels; 97 are owned by governments, and 599 are privately owned. They broadcast through 17 satellites working in the Arab World (Media Committee, 2010). Of the governmental channels, 49 are general and 48 are specialized, whereas 161 of the private satellite channels are general and 438 specialized. Most channels broadcast in Arabic (76%) and English (20%). They also broadcast in other languages such as French, Persian, Spanish, Indian, Hebron, and Urdu. Children in Egypt and other Arab countries are also exposed to satellite channels broadcasting from Europe, North America, and other parts of the world.

According to estimations regarding the new media, 58 million (nearly 75%) Egyptians have mobile phone services. The Internet reaches 65% of homes in Cairo and 40% of homes in other areas. Moreover, Internet access is provided by cafes in big cities.

There are seven radio networks people listen to all over the country. One of them, the Overseas Radio, broadcasts in more than 40 languages. In addition, there are local radio stations all over Egypt. There are also private radio stations (FM), which broadcast mainly popular music programmes favoured by young people.

Three important governmental publishing houses publish dozens of newspapers and magazines in Arabic, English, French and German. Newspapers are also numerous. It is estimated that there are more than 600 newspapers and magazines in Egypt (Higher Press Council, 2009). The publishing of private and partial newspapers is subject to the approval of the Higher Press Council, which is the regulatory organization for print media.

Egypt has a highly modern film industry, which plays in the Arab World a role similar to that of Hollywood in the West. Egyptian films and TV programmes are very popular all over the Arab World. Arab TV channels rely to a significant degree on these Egyptian programmes.

In Finland 70% of homes have broadband connections. Internet use is common in all age groups; almost 82% of people aged 16-84 have been online during the last three months. Still, traditional media have retained their popularity: 80% of people over 12 years of age read newspapers daily. Libraries, movies, and TV are still popular. There are 2.1 million library users, and 863 public libraries providing Internet connections, databases, and services to all, free of charge. Most of the over 60 radio stations can be heard on the Internet. Everyone seems to have several mobile phones; there are 8.1 million mobiles in use in Finland.

Publishing and broadcasting in minority languages, especially Swedish, is supported by the Finnish government, but rarely in minority languages spoken by immigrants. Children's media use is regulated through special measures, such as age limits and scheduling. Children's programming is supported in all media. There are two state-owned TV channels, five other national and 10 commercial TV channels; many of their programmes are also available online. A variety of satellite and cable channels are available in most of the parts of the country. Over 200 newspapers and 3300 magazines are published in the country. (Statistics Finland 2010)

What kinds of common features and differences can be found in youth media participation –and non-participation– internationally, especially regarding Western and developing countries? What kinds of prerequisites, possibilities and challenges are young people facing in their position as agents in relation to media in different regions of the world? What kinds of media literacies are young people practicing and developing in different regions of the world?

The mere comparison of the media available in the two countries, the educational possibilities, including the national strategies of children and media and media literacy, reveal an unbalanced situation from which it is difficult to draw comparisons. Thus, at this point we aim to understand the complex mediascapes of children, and especially the differences between the countries when it comes to the media use of individuals.

4. The Study Sample

The preliminary test interviews (Egypt: 14 children; Finland: 12 children) included children between 9-17 years of age from cities and rural areas, connected to art and media projects, and children with immigrant backgrounds. The final interviews, 24 in each country were done in small groups (1-4 people) of 12-14 and 16–17 year old children. In practice, some older and younger children were also among the interviewees. The preliminary interviews were included in the analysis of the final data.

The final interviews. The total amount of the children in the final interviews was 85:

• Egypt: 24 interviews, 38 children; 19 boys (10 from the metropolitan, 9 from rural area); 19 girls (10 from the metropolitan, 9 from rural area)

• Finland: 24 interviews, 47 Children: 21 boys (8 from the metropolitan, 13 from rural area); 26 girls (12 from the metropolitan, 14 from rural area)

In Egypt Cairo represented the metropolitan area, Fayoum (100 kilometres south of Cairo) the rural area. All the interviews were carried out in homes, with the consent of the parents. In Finland, Helsinki represented the metropolitan area, and the countryside of Northern Central Finland the rural area. The interviews took place mainly in schools, but also once in the private facilities of a public library and three times at home.

Finnish results express the importance of the early accessibility and availability of media, also through schools and libraries. They also indicate the positive results of media education. The results hint at certain cultural differences within Finland – such as in the case of the children of immigrant families, and the special individual uses.

5. The procedure

In Egypt the interviews were carried out with the help of two PhD students from the Cairo University. In Finland one researcher conducted all the interviews.

The principles of the research were approved by the Academy of Finland, and the Ethical committee of the University of Jyväskylä. The consent forms to the administration, schools, parents, and children were created, and each country followed also its own procedure of administrative and ethical practices. The interviewees were informed about the tasks of the project, about anonymity and reporting practices and the voluntary nature of the interviews before the interview.

In Finland most of the interviews were done next to a computer with Internet access. In Egypt that was done whenever possible. In Egypt, on average, each focused interview lasted for an hour. In Finland, the shortest interview lasted for half an hour, and the longest more than two hours, and the average length of the interviews was 1.5 hours. All interviews were recorded and transcribed.

6. Methodology

The preliminary interviews were used for testing the focused interview as a method of approaching children about their participating through media. The final interviews used the tested strategy covering questions of media literacy and media participation through those interests. Focusing on the special interests, desires, needs, and activities seemed to bring up the most valid results in the preliminary interviews.

The focused interviews concentrated on all children's uses of media. The focused interview has proved successful for collecting qualitative data on every day practices (Merton, Fiske & Kendall, 1990). The conversation can be carried out flexibly, thus giving space for unexpected themes or issues. This also offers possibilities for reaching the deeper structures of the conversation as well as the meaning-making processes (values, identities, feelings and attitudes etc.). Practically, due to the explorative nature of the interviews the study embarked on 'grounded theory' (Glaser & Strauss, 1967; Glaser & Holton, 2004). We aimed at coming up with 'rich description' (Geerz, 1973) that would help to create more specific questions for the questionnaire later in the research project.

Our analysis was multi-sited in nature (Marcus, 1995: 117) for describing research where spaces and landscapes are analyzed simultaneously in a larger social context. Multi-sited approach is useful when people from different socioeconomically classes, of different sex and gender, of different age group and in different social contexts are interviewed. Marcus (1995, 105-106) stresses the ability of multi-sited research to highlight the complex chains, paths, relations, and positions as well as the processes (Appadurai, 1990: 21-24) – in our case in the personal, social, global, and local media participation and its meaning-making processes.

Along the main issues coming up in the close reading, the data was classified into three main categories:

• Mediascape: access to the new media on a national level; how and in what quantity media were available, and also the frequency of media use.

• Socioscape: the larger contexts, and social aspects of media use.

• Genderscape: the possible differences in media use between girls and boys.

These aspects will form the starting point in the forthcoming final analysis of all interviews from Egypt, India and Finland. In this article, the main question in all the categories is the nature of media literacies of children different regions.

7. Findings

7.1. Mediascape

In the Cairo metropolitan area, the interviewed children had access to all media, except for one young boy (S, 9 years) who mainly had access to television and the Internet, and used his mother's or his grandmother's mobile phone to make calls. All interviewees had access to the Internet at home; their parents mainly use DSL connections, and also usually pay for all Internet use.

In the rural area, only one interviewed girl (F, 13 years) reportedly did not have a mobile phone, but she told getting one from her father after passing that year's exams: «I think I will need it then so that my parents can contact me and know where I am». One of the girls in Fayoum did not have a computer at home, but used Internet either in her friends' or relatives' houses. The other two interviewed girls had Internet access at home.

The children in the rural area used other traditional media, i.e. newspapers, magazines, television, and radio more than those in Cairo. In the rural area, television was more important for the interviewed children than any other medium. These support the findings of previous studies carried out on Egyptian children (Kamel, 1995; El Semary, 1995; El Sayed, 1996; Asran, 1998).

The frequent use of traditional media is normal for children in the rural areas, who do not have as many out-door activities as the Cairo children. Also this support the findings of previous studies (Tayie 2008). Age factor emerged as an important difference, with respect to children's uses of the new media. Younger children were more interested in games and being visible online. They saw this as a kind of prestige and showing off. They also created more content online than the older children. Older children were mainly interested in listening to music, watching films and downloading them.

In Finland, children's main media uses in general have shifted rapidly during the last two decades from listening to radio and watching TV to gaming and using the Internet. Belonging to virtual communities and groups is usual; expanding the special skills starts early and is many times completely separated from the children's school identity; chatting, sending text messages and gaming area part of everyday life – as has been seen in national surveys (Kangas, Lundvall & Sintonen, 2007).

The interviews of Finnish children also show how fast media use has changed in general, on a national level. In 1997, 94% of Internet users used Google weekly. In our small sample, all children in 2010 practically used it daily. Indeed, spending time online throughout the day is a norm. Watching YouTube seems to have increased; however, uploading content to the service (in 1997 8% of the population) has stayed the same – just like in our small sample shows. Compared to the 1997 study, downloading movies (52% of the population) and TV programmes (45% of population) is very common now among our interviewees. Our Finnish interviewees –like Finns in general– clearly use the Internet more than people did on average in 1997. Our material also supports the recent study on children's active media use, which includes very young age groups (Kotilainen, 2011). Our interviewees seemed to have a clear notion of their own limits and dislikes concerning media use, especially about age limits or pornographic material in media. (Kangas, Lundvall & Sintonen, 2007).

It was to be expected that there are differences not only in media policies but also on the technological level of media influence, access and use of media in Egypt and Finland. The differences in media use between the rural and metropolitan areas in Egypt, and between different groups inside the metropolitan area in Finland, opened more complicated questions.

7.2. Socioscape

Social background was influential in the Egyptian children's access to and relationship with media. In our case, children from high-income families had access to all media, especially the new media. Some children from low-income families, as in the cases of girls interviewed in Fayoum (F, F and R), did not have access to the new media. They used newspapers and particularly TV more than children from high-income families. Their preferred programmes were mainly religious and educational.

The parents of children from low-income families (for instance the girls from Fayoum) were more involved in their children's media use. The children also mentioned that they tend to discuss some contents of newspapers and magazines with their parents, mainly fathers.

The children from high income families talked more openly about many things, including the private and personal uses of mobile phones or Internet. However, it took the interviewers a bit of time to encourage the children to talk about personal matters. They did not mention sex or sexuality at all. Instead, children talked about having friends (boyfriends or girlfriends, but without mentioning sexual relationships). Children from low income families were less open in an interview situation and sometimes even very reserved compared to other interviewees.

In Finland, the availability of media was understandably good amongst all children due to schools and libraries. Old and new media, as well as social media, were part of their everyday lives through the day. Generally, their media use appeared quite similar to that described by the Egyptian children; many children followed some newspapers, practically all read several magazines. Almost all followed TV programmes and watched movies, some listened to music on the radio; everyone used more than one device for listening to music. In general, there were no clear divisions between girls and boys or children from rural and urban areas. However, a closer look at the uses of new media made it clear that there are big individual differences in Finland.

First of all, the age factor became crucial in our sample. Playing and learning by doing was a major factor at the age group of 10-year-olds and younger, and so was the social factor –playing with friends. Still, the children aged 11-13 used new media mainly for pleasure– for gaming and being in contact with friends and the family. In the interviews of the older children, especially from the age 14 onwards, the change from visibility to privacy, as well as gaining special skills becomes central. Young people gain pleasure from specialized media uses connected to one's own interests, such as making music videos for YouTube, collecting fashion items to a picture gallery, or arranging football fan info on a website. However, the social uses, the importance of communication, and the frequent use of mobile phones are prominent in all age categories also in Finland.

Secondly, the social factor made some difference when the Finnish interviewees talked about owning or purchasing media. There were few examples of economic inequality; however, it did not follow the geographical distribution, but became visible when comparing the groups of children of immigrant families with others. The other clear distinction was a religious one: a certain evangelical wing of the Finnish Lutheran church prohibits all TV use. However, within this religious group children and young adults were allowed to watch movies, TV-series, or TV-programmes online, as did one of our interviewees.

Thirdly, in Finland there was a special aspect connected to families' social situations. This aspect of media use focused on reducing the distance between family members and relatives. This was apparent in two different situations: one is divorce (more than half of marriages end in divorce after c. 12 years) – the other the situation of the children of immigrant families. For them social media provides contacts to their own culture and relatives, but also a way of learning a new culture – 'doing a special identity work', as our interviewees called it. In Finland it has become common practice that children of divorced parents stay with both of their parents, for example on alternate weeks. In this situation social media provides a possibility and neutral place for contacts of old and new siblings and parents.

Fourthly, being a fan, or having particular hobbies seem to support participation in international networks, such as websites, groups or communities. Football fans –and especially the fans of Japanese popular culture– seemed to skip the national websites and go straight to the major English or Japanese sites. Also, gaming lowered the children's threshold of using international sites, supporting the learning and using of English. As Jenkins (2006a) has showed, joining international fan-based communities is clearly something worth following in national and international studies on children and media (Jenkins, 2006a; Hirsjärvi, 2010).

Surprisingly, according the interviews of our sample, participation in Finland –in the traditional sense of the term– is not fostered through the media themselves, but locally, in everyday social worlds – at school or in community activities.

7.3. Genderscapes in media use

• Egyptian girls. Gender emerged as an important factor when comparing the media use of girls and boys in the rural area. In the urban area, no such striking gender differences emerged. However, the variation between the responses of the urban (Cairo) and rural (Fayoum) areas was remarkable.

In the urban area, both girls and boys frequently used the Internet, iPods, and mobile phones. Only one girl (I) claimed that she did not need a mobile phone; this was a matter of principle rather than an economical issue, as she is from a high-income family. All girls mentioned that they mainly used mobile phones to keep in touch with parents, relatives, and friends. The father paid the phone bills in all cases. Boys used the mobile phone more than girls; however, girls were more frequent Internet users.

Radio and newspapers were hardly used by this group of girls. All girls had email accounts. They also mentioned that they used the Internet to download music and movies. Friends were the main source of the information on media.

Among the traditional media, the interviewees mentioned television most often. This matches the findings of previous studies (Reda 1994; El Shal 1997; El Abd 1988). All girls had satellite receivers at home. The most popular TV programmes were mainly films and serials. One girl (I) also indicated that she liked programs which encourage viewers' participation, and added that she would like to see more programmes open for viewers' participation through landline, not just via mobile phones. This girl did have a mobile phone, but an anti-mobile phone attitude. One girl (M) preferred religious programs, which educate people on the basics of religion.

The girls in the metropolitan area could use new media without limitations, but watching TV at home was controlled. One girl (M) said that she herself avoids the programs that are not in tone with her culture and traditions (apparently programs dealing with sexual matters/relations).

When asked about their hopes or expectations concerning media, the girls said that they would like to see TV programs tailored for specific age groups, not just children and adults generally. The girls in rural areas indicated that they expected more serious and educational programmes, and more programs which reflect the reality in their own geographical area.

The girls from Cairo talked openly about their media uses, though at the beginning of the interviews they were reserved. However, girls from the rural area were more cautious, and did not talk about private or personal matters. They used media for education and informative purposes, and they used mostly traditional media, especially television. Still, all except one had access to the Internet (F). Two girls (F & R) had mobile phones they had received recently.

Girls in the rural area used newspapers, magazines, and television more than the girls in Cairo. They also mentioned that in most cases they watch television with other members of the family, i.e. parents, brothers and sisters, and that they talk frequently about media contents with their parents. Conversely, the Cairo girls said they never talk with their parents about media contents.

• Boys. All, but especially Cairo boys were avid users of the new media. All boys from Cairo (10) had an Internet connection at home, paid by their parents. Internet was used mainly for gaming or chatting with friends, most commonly on Facebook and YouTube. One boy from the rural area (A) had had an Internet connection for only three months. Before that, he had used his friends' or relatives' web access.

The Internet was mainly used for chatting, especially among younger boys. Only one boy indicated that he went online to do his school assignments. Downloading programmes and films was common. One boy indicated that he watched downloaded films on TV. Facebook was the most visited website. All boys indicated that they had learnt about it and other websites from their friends. All boys except for one (S, 9 years) had mobile phones. S used his friends' or his grandmother's and mother's mobile phones. Boys from Cairo had owned and used mobile phones for many years, whereas the boys from the rural area had been using theirs for a shorter time.

The differences of media uses were clearly not so much connected to the interviewee's sex but to the availability of the media, children's personal interests, and the support available on everyday media use and its purchasing. Similarly, boys and girls alike spent plenty of time on using media, including the Internet, and for both the mobile phone was the most important single medium.

The Cairo boys had state-of-the-art mobile phones, whereas the rural boys had older models. All Cairo boys indicated that they used the mobile phone on a daily basis and at any time of the day. Boys used mobile phones more than girls; however, they used the Internet less frequently.

All children in Cairo indicated that they used mobile phones during the breaks, though it was forbidden, telling that they put their phones on silent mode so that the teachers would not find out. Boys in the rural area said that they never took their mobile phones to school as it was forbidden.

Boys in Cairo used mobile phones for surfing the Internet. One boy even indicated that he always views films on his mobile phone. Boys in the rural area used the mobile phone only for making calls: «I use it only in cases of emergency, the mobile phone was meant to be used only for these cases».

The Cairo boys frequently used their mobile phones for messaging their friends. Even at home they never used landlines, preferring their mobile phones. Rural boys used SMS less and they used landline at home.

Boys in Cairo hardly mentioned newspapers, magazines, or even TV; in rural areas these media were frequently mentioned. Two boys from Fayoum told they usually watch television with the other family members. The Cairo boys usually watched TV alone, as all of them had TV sets in their own rooms.

All boys listened to radio. Cairo boys used radio and musical services on their mobiles. Boys in the rural area listened to radio at home, not on their mobile phones. They liked listening to religious, educational, and news programmes. All Cairo boys used the iPod, whereas boys in the rural area had never even heard about it.

In sum, the data indicates that in Egypt, the social and geographical factors emerged as important influences on children's new media literacy, their media use, and participation.

• Finland. In Finland there was striking equality in the access and ownership of media among the interviewed girls and boys. However some smaller differences were apparent in this sample. The IRC gallery, an online forum that is based on uploading one's pictures to a profile (it has also other qualities of social media, such as chat) was used more by girls than boys. Also use of social media and for example commenting on blogs or websites etc. was more common among girls.

Producing content for public sites was connected to special interests. Those few girls who were active fans of certain genre (fantasy, anime) were also very productive, like makers of anime music videos on YouTube, writing and publishing fan fiction (fiction written about certain media texts, such as movies or TV series) and attending discussions on web pages. This supports the findings that fans of science fiction literature (Suoninen 2003, Hirsjärvi 2009) or fandom in general (Jenkins 2006a, 2006b) tend to be exceptionally active in their media use.

The gender factor became most apparent in the group of younger girls from immigrant families of the metropolitan area. In particular, only a group of four girls of the single interview had the least opportunities of influencing their purchase of media, and their media uses seemed to be more strictly supervised that those of the other Finnish children. Their competing with the quality and the style of mobile phones as well as the knowledge of using the media (especially social media) became evident during the interview.

The differences of media uses were clearly not so much connected to the interviewee's sex but to the availability of the media, children's personal interests, and the support available on everyday media use and its purchasing. Similarly, boys and girls alike spent plenty of time on using media, including the Internet, and for both the mobile phone was the most important single medium.

However, one particular gender factor came up in both preliminary and final interviews. The children interested in Japanese popular culture, especially anime, seemed to use media a versatile manner, such as writing fan fiction or creating fan pages of music videos. One 14-year-old interviewee talked about her identity work involved in seeking her lesbian identity. The questions of sex and gender came up also in other interviews in a very natural way.

• Media Budgets. All the girls in Cairo mentioned that they were allowed to use mobile phones, which were paid by their parents. The situation for boys was somewhat different. Three of them (in Cairo) were given a certain amount of credits (paid by their fathers); after those ran out, they bought prepaid credits with their pocket money. These children spent most of their pocket money on credits for their mobile phones, and for going out with their friends during the weekends. Two boys in Cairo were allowed unlimited credit, paid for by their fathers. The youngest boy (S) did not have a mobile phone, or any money for any other media.

Boys and girls from the rural area had limited mobile use, paid for by their fathers. They had what they called «controlled lines», meaning that they could use them only for speaking for a limited number of minutes per month. Newspapers and magazines were mainly bought by their parents. In Finland parents usually supported the notion of buying children mobile phones. Certain limits were set, either by using prepaid connections or by setting the limit that the parents would pay. It was usual that children got gadgets, games, or programmes as a reward for good school grades or for taking care of small chores at home. If they needed computer programmes –for example for creating websites– the children could find what they needed online. The interviewed children usually got the magazines they wanted, as well as books. However, as the children pointed out, the Finnish library system gave the interviewees equally access to the magazines and books they were interested in.

8. Conclusion

The results discussed above show clearly that media in Egypt –especially the Internet– set the agenda for children. The Internet provided them with conversation topics with peers and friends, and the social element of media use is important. Media was hardly used for educational purposes. The younger children were more active than the older ones in creating and producing online content. Moreover, there were traces of addiction for the new media among children.

Finnish results express the importance of the early accessibility and availability of media, also through schools and libraries. They also indicate the positive results of media education. The results hint at certain cultural differences within Finland – such as in the case of the children of immigrant families, and the special individual uses.

The deeper analyses of the interviews of all three countries are on the way. They shall also compare the meaning-making processes of media uses, identity work and participatory culture – especially in connection to the converging media (Jenkins 2006a, 2006b).

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Consumption Patterns and Uses of Photography in Digital Era among Communication Students

Hábitos de consumo y usos de la fotografía en la era digital entre estudiantes de Comunicación

ABSTRACT
This paper presents the results of a research study exploring consumer behaviour and uses of photography among first-year students of the Degrees in Journalism, Audiovisual Communication, and Advertising and Public Relations in four Spanish universities (University of Malaga, University of Santiago de Compostela, University of the Basque Country and Universitat Jaume I in Castellón). As it is well known, the emergence of digital technologies has caused far-reaching transformations in the field of photography. These changes have affected production, distribution and circulation processes. However, digital technology has particularly changed the concept of photography itself as a means of expression and communication, above all among young people. Changes in how photography is perceived nowadays, brought about by the onset of digitalization, in turn raises a series of questions that merit reflection. To this end, a survey was designed and administered to a total of 467 communication sciences students in Spain. The results of this research reveal, on the one hand, how these communication students relate to the use of photography today; on the other hand, and more importantly, the results throw some light on how to approach the teaching of digital photography in a higher education context.

RESUMEN
Se presenta una investigación sobre los hábitos de consumo y usos de la fotografía entre estudiantes de primer curso de las licenciaturas en periodismo, comunicación audiovisual y publicidad y relaciones públicas, en cuatro universidades españolas (Universidad de Málaga, Universidad de Santiago de Compostela, Universidad del País Vasco y Universitat Jaume I de Castellón). Como es sabido, la aparición de las tecnologías digitales en el campo de la fotografía ha provocado profundas transformaciones en el panorama fotográfico. Estos cambios han afectado a los procesos de producción, a los modos de distribución y circulación de las imágenes. Pero, sobre todo, ha tenido notables consecuencias en la forma misma de conceptualizar la fotografía como forma de expresión y comunicación, y en los usos de la fotografía, en especial entre los más jóvenes. La digitalización ha contribuido a transformar, asimismo, la propia percepción del medio fotográfico, que merece una reflexión en estos momentos. A tal fin, se ha diseñado una encuesta que ha sido realizada a un total de 467 estudiantes de ciencias de la comunicación de nuestro país. En definitiva, el análisis de las respuestas que ofrece la presente investigación nos ha permitido, por un lado, tomar conciencia sobre cómo se relacionan estos estudiantes de comunicación con el medio fotográfico en la actualidad. Pero, sobre todo, se trata de una investigación que nos ofrece algunas pistas sobre cómo abordar, en plena era digital, la enseñanza de la fotografía en el contexto educativo universitario.

KEYWORDS / PALABRAS CLAVE
Photography, digital, consuming, audiovisual education, digital culture, image analysis, postphotography.
Fotografía, digital, consumo, educación audiovisual, cultura digital, análisis de la imagen, postfotografía.

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1. Introduction

It is well-known that the dramatic emergence of digital technologies in the field of photography, which began twenty years ago, has ultimately achieved a far-reaching transformation of the means of producing images. Still more importantly, this revolution has led to an extension and generalisation of images without precedent in human history. In order to fully understand this fact, there is nothing better than looking at a few figures.

According to the statistics published recently by institutions like the Photo Marketing Association (PMA)[1], around 755 million digital cameras were sold in 2006 and 85% of these were integrated into mobile phones. The forecast for 2011 is for the number of mobile phones worldwide to reach 4.2 billion, and that 75% of these will have an integrated camera. Meanwhile, the Camera and Imaging Products Association (CIPA), an organisation bringing together the main manufacturers of photographic equipment in Japan, indicates that, in that country alone, almost 120 million digital cameras were manufactured in 2008, most of them intended for export. This represents a 19.3% growth in sales compared to the previous year and a 29.7% growth in the sale of digital reflex cameras compared to the previous financial year[2]. Sales forecasts are optimistic for 2010 and 2011, with forecast increases of 2.4% every year, although this represents a considerable reduction in the strong growth of previous years due to the far-reaching economic crisis affecting all international markets since 2007.

No less surprising are the data offered by the GFK-Emer consultancy[3]. Every day in the United States, more than 500 million photographic images are taken (which gives us the astonishing figure of 182,500 million photographs a year). In Germany during 2007, around 7,102 million photographs were taken, of which 3,390 received a digital photo editing, while just 47% (that is, about 1,605 million photographs) were printed (or digitally developed).

These figures clearly show the extraordinary way in which digital technology has popularised the production and consumption of photographs. Alongside this technological revolution, a double suspicion has been growing up around the photographic medium. Firstly, digitalisation has accentuated the capacity to manipulate photographs, which means that photography as a procedure has less and less value for «certifying the real», in the words of Bazin (1990) or Barthes (1990). This compromises the commonly accepted nature of photography as a record. Meanwhile, and as a logical development of this idea, doubts have even been cast on the nature of the photographic image itself (Marzal, 2007). This even affects its validity now, as many scholars of the image in the sphere digital visual culture, such William Mitchell (1992), Nicholas Mirzoeff (2003), Hans Belting (2007) or Fred Ritchin (2009), speak openly of «the death of photography» as a result of the appearance of digital photography. This is understood as an occurrence that has transmuted the very nature of the photographic medium in such a way that photography has been diluted in the universe of the digital image.

One of the main references for this research is the study carried out in the mid-1970s by Bourdieu (2003) on the social function of photography in France, a moment when photography was extended to millions of citizens of the whole world with the appearance of compact and reflex cameras. That study demonstrated that very little relating to photographic activity by enthusiasts is improvised or spontaneous: even the most modest photography reflects a way of understanding the society in which it exists.

Both Chalfen (1987) and Spence and Holland (1991) have approached the study of the uses of domestic photography based on a visual anthropology approach. These scholars focus their attention on analysing family photographs and their personal and social significance, in that, despite the deep subjectivities they express, domestic photographs are a faithful reflection of public conventions, supported by the existing technologies at each historical moment. In the last few years, the appearance of digital photography and the integration of photographic cameras into mobile phones have stimulated much research into the new uses of photography and user behaviour. From this, we would highlight the studies by Van House, Davis and others (2005) of the uses of photography on the Internet and the effects of sharing images on young people, and by Van House and Ames (2007) on usage habits for mobile phones with integrated cameras as instruments for affirming identity, constructing everyday memory and as a banalising communication tool among young people and teenagers.

In this sense, the appearance of phenomena like Flickr, a website for sharing photographs used by tens of millions of Internet users throughout the world, has provoked reflections from many researchers. Cox, Clough and other (2008) stress that Flickr cannot be understood as just another expression of the consumer culture in which we live. Instead it is also a symptom of the cultural changes occurring at the moment. Its ease of use and the reciprocal comments among users of this virtual community cause moral dilemmas, generate states of opinion and stimulate interaction and communication. Murray has a great deal to say on this idea, highlighting how digital photography and sharing photographs deeply condition the way we perceive reality and construct the idea of everyday life, in that small details or anecdotes can become much better known that would be possible without the use of photography to witness them (Murray, 2008: 147-163).

Finally, the work of Martin Lister, a first-class reference for the analysis of the social and cognitive effects of digital photography, must be highlighted. We would like to stress two fundamental ideas from his work. Firstly, digital photography has occurred at a socially very complex time that has made us forget that photography «it is, above all, a cultural object» (Lister, 1997: 17). Secondly, the digitalisation of photography constitutes a fairly logical evolutionary step in the information economy: as happens with capital on financial markets, photographs are exchangeable objects whose circulation reveals, above all, that «very important changes in photographic practices» are occurring (Lister, 2007: 272).

As can be seen, the research we present forms part of a tradition of uses of photography studies, which is particularly prolix in the Anglo-Saxon scientific sphere.

The dramatic emergence of digital technologies in the field of photography, which began twenty years ago, has ultimately achieved a far-reaching transformation of the means of producing images. Still more importantly, this revolution has led to an extension and generalisation of images without precedent in human history.

2. Methodological design of the research

In our opinion, it is necessary to discover the current perception of digital photography of communication science students when they begin their studies. For this purpose, we believed it was necessary to design a survey to be completed by students on the three degree courses of audiovisual communication, journalism, and advertising and public relations. The initial idea was to extend the research to a total of ten centres, but positive responses were obtained from only four out of a total of 44 university centres offering communication studies in Spain. The sample we have finally been able to determine consists of first-year students at several universities, mentioned below:

- Universitat Jaume I (Faculty of Human and Social Sciences, Castellón): first-year students on the audiovisual communication, and advertising and public relations degree courses.
- University of the Basque Country (Faculty of Social Sciences and Communication, Leioa, Vizcaya): first-year students on the audiovisual communication, advertising and public relations, and journalism degree courses.
- University of Santiago de Compostela (Faculty of Communication): first-year students on the audiovisual communication and journalism degree courses.
- University of Malaga (Faculty of Communication Sciences): first-year students on the audiovisual communication, advertising and public relations, and journalism degree courses.

The creation of the questionnaire, consisting of twenty closed-answer questions, has been based on the type of questionnaire implemented in several of the studies already mentioned. It touches four basic aspects: material conditions for students taking photographs; questions on consumption habits concerning the taking of photographs; specific knowledge about photographic culture and perception and conceptualisation of photography among communication students.

The final sample consists of 467 surveys. To process all the information and carry out the interviews, we have had the cooperation of the heads of the aforementioned university centres[4]. Excel spreadsheets and the SPSS statistical data processing program have been used as computer tools.

Based on the details requested at the top of the survey, the following information has been extracted about the sample of students who have filled it in. Of the total number of people surveyed [467], 66% are women [308] and 34% [159] men. The distribution of students by degree courses is as follows.

3. Results of the research

3.1. Material conditions for students taking photographs

Firstly, the general trend towards purchasing

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UNIVERSITY	TOTAL	ADVERTISING	JOURNALISM	AUDIOVISUAL COMMUNICATION
University of the Basque Country	76	16	49	11
University of Santiago de Compostela	96	0	72	24
University of Malaga	156	83	27	46
Universitat Jaume I	139	74	0	65
	467	173	148	146

domestic digital cameras is confirmed, with a large percentage of students using compact digital cameras (78.59%), while the vast majority own neither a photochemical reflex camera (83.51%) nor a digital reflex camera (75.37%). Our attention is drawn by the fact that, out of the total of 467 responses, 153 students (32.75% of the total) state that they never or hardly ever take photographs, while the majority take between 1 and 5 a week (56.96%), with only a really small percentage taking more than 5 a week (10.29%). Meanwhile, half those surveyed never use retouching or photo processing programs and, among those who do, the majority use the Adobe Photoshop program. Finally, the responses confirm the general trend for students to store photographs (61.7%), with only a quarter of students taking their photographs to the laboratory to be developed and few printing them at home (13.5%). The data examined makes it possible to confirm that the differences between degree courses and university centres are, in principle, not very significant.

3.2. Photographic culture consumption habits

The questionnaire then included different questions about the photographic culture consumption habits among communication science degree students. The study reveals that 51% of the students in the sample analysed never visit photography exhibitions. Meanwhile, when it comes to expressing their preferences for photographic genres on a 1 to 5 scale, a majority interest in artistic photography is shown (with an average score of 4.17 points out of 5), followed by advertising photography (with a score of 3.78). Press photography receives a score of 2.89 out of 5 points. There is no relationship between this difference in results and the students' courses.

We find the analysis of the responses on what is considered most important when it comes to judging the value of a photograph, also on a scale of 1 to 5 (5 = greatest interest) more significant. The highest rated aspect is «surprise», with 4.11 points on a 5-point scale; «composition» appears in second place (3.77 points), almost equal with «quality» (which, spelt out like this, referred to technical quality, although it is a difficult item to interpret as it is fairly ambiguous). The «viewpoint» –in the sense of «way of looking»– appears with a score of 3.61 points, while «the historical value of the photograph» appears in fourth place, with a score of 3.20 points, with the «economic value of the photograph» bringing up the rear (2.05). Something similar happens concerning students' preferences for photography in black and white (B/W) or in colour. A preference for colour photography (40.6%) as against B/W (33.1%) is confirmed, while the option «either» is favoured by only a quarter of students (23.6%).

Finally, the students state that they regularly use social networks such as Flickr, Facebook or MySpace to share their photographs, with a really very high percentage (81%), that is 4 out of every 5 students. By university centre, we should highlight the fact that between Universitat Jaume I (85.6%) and the centre where fewest students use social networks, the University of Malaga (77.6%), there is a difference of just 8 points, which does not seem a very great one to us. Concerning distribution by sexes, it is significant that the percentage of social network users is higher among women (86%) than among men (73.6%), a difference of 13 points.

3.3. Specific knowledge of photographic culture

When students were asked to mention 3 photographers whose work particularly interested them, their answers revealed a lack of clear references. Of all the photographers mentioned, the following names stand out in terms of the number of references from those surveyed: Annie Leibovitz (47), Chema Madoz (31), Robert Capa (21), David Lachapelle (15), Oliviero Toscani (14), Andy Warhol (11), Henri Cartier-Bresson (11), etc. In total, more than 150 names appear mentioned, many of whom are not actually photographers and many of whom either do not exist or have been invented.

Meanwhile, the students state that they largely know little about leading magazines in the field of photography studies, such as «Enfocarte» (96.8%), «PC Foto» (89.9%), «Revista Foto» (94.6%), the website «Masters of Photography» (95.3%) and «La fotografía Actual» (web-site) (95.3%). Although the survey was carried out at the end of the 2008-09 academic year, when they had already studied at least one subject directly related to the field of photography, such as image theory, communication and audiovisual information, audiovisual media technology, etc., the students' memory of leading scientists such as Roland Barthes (33.6%), Susan Sontag (25.5%) and Walter Benjamin (22.1%) was quite vague. Finally, the confirmation that very few of those surveyed (17.6%) state that they have any idea about whether they know the rights and duties of a professional photographer in terms of the authorship and reproduction of a photograph is significant.

3.4. The perception and conceptualisation of photography among communication students

The last five questions in the survey focused on aspects related to the importance of photographic culture in relation to working as a professional communicator.

The first significant aspect is that, despite some responses offered at other points in the survey, the majority of students (95.1%) stated that «having knowledge of photography could be important for their future professional development in the communication sphere» in any field. Meanwhile, when it comes to giving an opinion over whether «press photography has lost credibility as a result of the advent of digital technologies in the field of photography», the students show themselves to be quite divided in their responses: while 54.8% state that credibility has been lost, 45.2% believe that digital technology has not under mine credibility of press photography.

Thirdly, a very large majority of students (79.9%) consider that «the quality of photographic production, in general, has undergone a substantial improvement with the application of digital technologies in the field of photography». Fourthly, the majority of students (77.3%) reject the idea that «thanks to the technical improvement in photography, with the arrival of digital photography, it will no longer be necessary in future to have professional photographers, as it is becoming increasingly easy to obtain good results at a technical level».

Finally, the vast majority of the group of students surveyed (86.7%) reject the idea that «the improvement of the quality of digital video and the generalisation of its use, as well as the growing influence of other forms of entertainment, such as video games, Internet use, etc., point, in the medium or long term, to the end of photography as a form of expression and communication».

In this way we complete the presentation of the results of the fieldwork we have carried out among communication science students. We now propose to make an assessment of selected aspects of the research and draw a series of conclusions.

4. For discussion: assessment of the uses of photography

4.1. Main reflections for debate

From the results presented above, we consider it is necessary to pause and consider certain responses that deserve some kind of qualitative assessment. In our opinion, it is worrying that, among a group of communication science students from four university centres, there should be 27.42% who state that they hardly ever take photographs and 5.33% who never take photographs. This is an indication of quite a widespread perception among the students (at least in practice) of the unimportance of taking photographs for their future professional development as communicators.

Meanwhile, the fact that 80% of communication students never use computer programs to create digital albums draws our attention. We relate this with the generalised trend towards accumulating captured photographs in computers (61.7%) without preparing them to be shown to other users, at least not in traditional album format. This situation coincides with the general trend towards not developing or printing photographs, largely for financial reasons. This was detected years ago by the principal manufacturers of photographic products –Kodak, Fuji, Nikon, etc.– (in their annual reports), by consultancy firms such as GFK and by other agents in the photographic sector (Soler Campillo, 2005, 2007).

In our judgment, it is very worrying that 51% of students never visit photographic exhibitions. It should be pointed out that the centre where there is the greatest percentage of students who never visit photographic exhibitions is the Universitat Jaume I, with 59.7%, whereas at the University of Santiago de Compostela this percentage is 57.89%, at the University of the Basque Country it reaches 47.92%, and at the University of Malaga, the percentage falls to 41.67%. There is a difference of 20 points between Universitat Jaume I and University of Malaga, which is quite a considerable one.

In this sense, we believe that the disparity and, in many cases, incongruence of their responses when they were asked to mention three photographers whose work particularly interested them, points towards a worrying lack of photographic culture among communication science students, which must be related to the lack of general culture that we have been seeing for years. Meanwhile, it also seems worrying to us that the majority of communication science students are not interested in all photographic genres, as we believe the average should have been higher. The survey has not made it possible to establish a correlation between the speciality studied and interest in the most closely related photographic genre (photojournalism, advertising photography and artistic photography and their respective specialities), which we relate to the lack of strong motivation among communication science students for their own courses.

The analysis of the answers to the question about what is considered most important when it comes to judging the value of a photograph deserves particular attention. The fact that the majority give the highest rating to «surprise» (4.11 points out of 5) is a response that must be related to the society of spectacle in which we live. This figure is above the value of «viewpoint» (with 3.61 points out of 5, which seems a worryingly low score to us for future communication professionals).

With the formulation of the question about students' preferences for B/W or colour photography, we expected to find a very high percentage of responses in the «either» option, as this is a choice between representational options making it possible to communicate very different information, emotions, etc., depending on the context and the specific communication objectives. The fact that the «either» option should have been picked by just 23.6% of those surveyed points to the low cultural level of our students in terms of visual culture.

4.2. The conceptualisation of photography among communication students

The analysis of the answers to the last questions on the questionnaire deserves particular attention. Firstly, despite the fact that many answers might make one think of the students' lack of interest in photography, the vast majority of communication science students in any of the three specialities perceive that the study and knowledge of photography are very important for their future professional development. It must be remembered, in this sense, that many communication science curriculums at Spanish universities do not include the study of photography as a compulsory subject.

Secondly, there is a division of opinion concerning the idea that press photography has lost credibility in information terms as digital technologies have burst on to the scene in this field. In our opinion, this lack of agreement in the answers could be interpreted in two ways: either the perception of the manipulation capacity of digital technology in photography is not sufficiently widespread or it is considered that, as a representational device, all photography, whether it is photochemical or digital, always involves a form of manipulation of reality. Thirdly, although a majority of students (79.9%) coincide in indicating that digital photography has broadly achieved improvements in photography, a large majority of those surveyed (77.3%) believe that the digitalisation of photography is no threat to the profession of photographer and that these professionals should survive in communication sectors.

Finally, quite a large majority of communication students (86.7%) do not have the perception that photography is going to disappear as a form of expression differentiated from other media. This contradicts the supposedly widespread belief in the death of photography, an expression belonging to a certain current of sensationalism of which the academic world is not entirely free.

4.3. Limits of the research carried out

The following aspects should be highlighted as main problems involved in the research. Firstly, the survey has been carried out in April/May 2009, that is, at the end of the academic year, so it does not offer us information about students' levels of prior knowledge, but rather what they have learned during the first year of their degree courses.

Secondly, as their curriculums are not homogeneous, we find that, depending on the university, students may or may not have studied photography-related content in the first year. Even in core subjects with content directly related to «Image theory» or «Audiovisual media technology» it is possible that the study of photography has been purely tangential. In some cases, students may have studied an optional subject with content directly related to the photographic medium. In the 2008-09 academic year, the journalism and audiovisual communication degree courses at the University of Santiago de Compostela contain, in the first year, the year-long core subject «Communication and audiovisual information»; at the University of the Basque Country students on the three degree courses have studied the one-semester core subject «Audiovisual media technology»; at the University of Malaga the three degree courses include the year-long core subject «Image theory, history and technique», while at the Universitat Jaume I audiovisual communication and advertising and public relations students take the compulsory year-long subject «General image theory», and they may also study an optional subject called «Introduction to photographic theory and technique». On new degree courses, this is likely to become even more complex, with very considerable changes in all curriculums.

We are fully aware of these problems, but, beyond them, we consider that this field work constitutes a valuable source of information about the level of knowledge of communication science students, as we have been able to show. This research has been approached as a pilot study in the form of a bank of tests for future application in better conditions, once the new degree courses are fully established (in about 2014).

4.4. Conclusions

By way of a final summary, a majority of current communication science students have adopted digital photography, are users of social networks, have a low level of visual culture and have little motivation to study or look in depth at the field of photography but they are aware of the importance of studying photography for their future professional development.

Meanwhile, the research makes it possible to see, not without a degree of frustration, the low level of visual culture these students have when they begin their studies (even at the end of their first year, which is even more worrying). It is clear that, based on the lack of visual culture among our communication students – a vocational, strongly motivated group – we have an education system which, even today, in the age of the image, continues to ignore education about/with images. This situation is still more alarming in the field of the photographic image, historically very much ignored in all educational environments, even universities, but which should be promoted from infant school (Granado, 2008) and which could be very effective in visual education (Alfonso, 2002).

It is clear that, based on the lack of visual culture among our communication students – a vocational, strongly motivated group – we have an education system which, even today, in the age of the image, continues to ignore education about/with images. This situation is still more alarming in the field of the photographic image, historically very much ignored in all educational environments, even universities, but which should be promoted from infant school.

In fact, it can easily be confirmed that few studies of photography are published in scientific journals, that very few PhD theses are written on photography and that photography subjects are present on current journalism, audiovisual communication and advertising and public relations curriculums only in very isolated cases at most Spanish universities. This contrasts with the considerable volume of photographic production and activity that surrounds us (exhibitions, publication of catalogues, presence and importance of photography in newspapers and magazines, on websites, etc.), but also with the more than 175 years of history of the photographic media and with the considerable economic and commercial activity driven by the photographic sector in our country and throughout the world.

Along these lines, we must remember the genealogical value of photography when it comes to historically conceptualising the contemporary image. In this context, photography continues to occupy a very important position. We do not believe it is possible to approach the study of the cinematic, televisual and videographic image seriously and rigorously without starting from a solid base of photographic knowledge (composition, photometry, colorimetry, densitometry, etc.). In our judgment we must accept that photography has to play a much greater role on communication science degree course curriculums if we want to train more competitive professionals.

Carrying out research of this nature makes it possible to discover the cultural level of communication science students as both consumers and as creators of images. In our opinion, the critical analysis of the results offers some keys on how to focus teaching in the subjects making up the degree courses we are involved in.

If this type of study was carried out at a broader sample of educational centres and if it was expanded to other aspects of communication (cinema, press, radio, advertising, etc.), the information extracted would be very used for the academic management of degree courses and even for educational administration. It is clear that we cannot remain inactive in the face of the clearly low cultural level and deficient audiovisual competence of students in our faculties, even at the end of the first year at university.

Ultimately, this study we have presented has helped us to become aware of the important educational deficits in photography suffered by our students and to take the appropriate measures to correct these problems, particularly at such a complex and delicate time, when the new degree courses are being implemented in the context of the creation of the European Higher Education Area (EHEA). It seems clear that such problems cannot be eradicated without all levels of the education system working together. In this context, universities can provide our resources, capabilities and knowledge to promote education in/about the communication media.

Notes

1 See the website www.pmai.org (16-03-2009).

2 See the website www.cipa.jp/english (16-03-2009).

3 See the website www.gfk-emer.com (16-03-2009).

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Values Perceived in Television by Adolescents in Different Cross-cultural Contexts

Valores percibidos en el medio televisivo por adolescentes en contextos transculturales

ABSTRACT
This study was carried out on a sample group of 1,238 adolescents from eight different cultural contexts, and aimed to determine the values perceived by subjects in their favorite television characters. It also aimed to identify any possible differences between cultural contexts. The basic hypothesis for the study was that television conveys values and constitutes one of the forces for socialization at play during adolescence. The total sample group was made up by: three Spanish sub-groups, four Latin American sub-groups and one Irish sub-group. The instrument used for exploring perceived values was the Val.Tv 0.2, which is an adaptation of Schwartz's scale. The data were collected both by means of an on-line platform and in person. In relation to the results, in general, the values most commonly perceived by adolescents are self-management and benevolence. As regards contextual differences, although significant differences were observed in all values, in no case were they particularly notable. The only exceptions were hedonism and achievement, for which no significant differences were found at all between the different contexts. The most relevant differences were found in the values of conformity, tradition, benevolence and universalism. From an educational perspective, we can conclude that the measurement instrument used may constitute an adequate tool for decoding the values perceived by adolescents in their favorite television characters.

RESUMEN
El objetivo general de este trabajo fue conocer los valores percibidos en su personaje favorito de televisión en una muestra de 1.238 adolescentes pertenecientes a ocho contextos culturales y establecer las posibles diferencias entre dichos contextos. Se parte de la hipótesis básica de que el medio televisivo trasmite valores y es una agente de socialización, entre otros, en la etapa de la adolescencia. La muestra total estuvo constituida por: tres submuestras españolas, cuatro latinoamericanas y una irlandesa. El instrumento utilizado para indagar los valores percibidos ha sido Val.Tv 0.2 que es una adaptación de la escala de Schwartz. La recogida de datos se realizó a través de una plataforma on-line y presencialmente. Respecto a los hallazgos encontrados, tomados globalmente, los valores que más perciben los adolescentes son autodirección y benevolencia. Respecto a las diferencias contextuales los datos nos indican que, a pesar de que existen diferencias significativas en todos los valores, éstas no son muy destacables. Hay que exceptuar los valores de hedonismo y logro, donde no se encontraron diferencias significativas entre los diferentes contextos. Las diferencias más relevantes se hallaron en los valores de conformidad, tradición, benevolencia y universalismo. Desde una perspectiva educativa se concluye que el instrumento de medición utilizado puede ser una herramienta adecuada para decodificar los valores percibidos por los adolescentes en sus personajes preferidos.

KEYWORDS / PALABRAS CLAVE
Adolescence, cross-cultural study, favorite character, television, perceived values, socialization, measurement.
Adolescencia, estudio transcultural, personaje favorito, televisión, valores percibidos, socialización, medición.

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1. Introduction

We currently have enough data to enable us to state that adolescents watch television for a wide range of different reasons, such as: to entertain themselves, to learn about life or to identify with their own concerns and interests. In other words, they identify with the contents of television programs, and in turn, as with any other development context, the contents seen on the screen have both a positive and negative effect on adolescent viewers. In general, the media contribute to the development of adolescents' identity in a reciprocal and multi-directional manner, and teenagers learn different values through media content (Aierbe, Medrano & Martínez de Morentin, 2010; Castells, 2009; Fisherkeller, 1997; Pindado, 2006).

We should not forget that, as a recent study indicates (Fundación Antena 3, 2010), adolescents spend an average of 4 hours a day engaging with different screen-based media, with television accounting for the majority of that time, despite not always being watched on a traditional TV set; and this screen time, as we may call it, affects and influences adolescents' socialization and value acquisition process (Asamen, Ellis & Berry, 2008).

The analysis of the values conveyed through television has been the object of empirical research for over three decades now. Nevertheless, these values have changed over time, not only internationally, but within our own context also, as demonstrated by a number of recent studies (Bauman, 2003; Bryant & Vorderer, 2006; Del Moral & Villalustre, 2006; Del Río, Álvarez & del Río, 2004; Murray & Muray 2008). In general, a review of previous papers reveals a tendency to find fewer prosocial values and more materialistic values in television contents (Dates, Fears & Stedman, 2008; Méndiz, 2005), although other studies also highlight, for example, the fact that American television tends to convey altruistic behaviors (Smith, Smith, Pieper, Yoo, Ferris, Downs & Bowden, 2006).

However, a more detailed review of published findings regarding the values conveyed by television reveals that the results are disparate and complex. For example, Potter (1990) and Tan, Nelson, Dong & Tan (1997) found that television conveys the conventional values of the American middle class, and other authors such as Raffa (1983) calculated that antisocial values appeared more intensely than positive ones in television contents. However, the results found by other authors (Pasquier, 1996) indicate that television transmits both positive values and negative ones (or counter-values). In this sense, Pinilla, Muñoz, Medina & Acosta (2003) found that Colombian adolescents perceived mainly anti-values such as: jealousy, intrigue, hypocrisy and lack of respect.

Nevertheless, and this is relevant to our study, empirical evidence exists (derived from our previous work) to suggest that television viewers select the contents they watch in accordance with their own values (Medrano, Aierbe & Orejudo, 2010; Medrano & Cortés, 2007).

However, the assessment of the perception of values is a complex undertaking. In this study, we refer to the values perceived by adolescents in their favorite character, not to the values conveyed by the medium itself. In this sense, values are much more difficult to measure than other aspects of development, and moreover, the values of adolescents are particularly unstable, since these individuals are still at a stage in which their system of beliefs has yet to be consolidated. Adolescents exist in a neutral, interim phase, in which they no longer adhere to the beliefs of their previous stage, but have not yet adopted their adult views. This explains the vulnerability of the adolescent phase, and why it is so difficult not only to identify the value perceptions related to teenagers' favorite characters, but also to work on these perceptions, due to the moment of transition through which subjects are passing. Adolescents have, without a doubt, become an important group to be considered in relation to the media (EDEDA, 2010). They are a strong presence and account for a large percentage of prime time viewers. Consequently, the offer has been expanded and adjusted to suit their tastes, among which we could highlight topics such as love, adventure, paranormal activity and music (Guarinos, 2009).

This study aims to explore the values perceived by adolescents in their favorite character, within the framework of reception theory (Orozco, 2010). Prior research into the perception of values is scarce, which is why this cross-cultural study is, in some ways, a pioneering piece of work in this field.

Despite the empirical difficulties of exploring the perception of values in television, we have based our work on the model developed by Schwartz & Boehnke (2003) and on the 10 dimensions established by these authors for their value scale, both in the 21 item and the 41 item versions. These 10 dimensions can be grouped into four large dimensions. Although this structure has a good degree of conceptual consistency, it also poses verification problems when the usual dimensional reduction techniques (Exploratory or Confirmatory Factorial Analyses) are applied. The technique used by Schwartz himself to demonstrate the consistency of his model is that of multidimensional

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analysis, which is a purely spatial solution to the circular configuration of this structure.

It is based on the existence of universal aspects of human psychology and interaction systems, which results in some of these compatibilities and conflicts between value types being present in all cultures, thus constituting the articulatory backbones of human value systems. In relation to the theoretical applicability of the model to different cultures, the authors highlight the existence of values which prevail not just in Spanish society, but in different cultures and countries also, such as Germany, Australia, the United States, Finland, Hong Kong and Israel. The differences between different cultures lie in the fact that some attach more importance to individualism, while others tend to prioritize collectivism. Thus, Schwartz's values provide an empirical and conceptual framework for working in and comparing different cultures (Schwartz, Sagiv & Boehnke, 2000).

From an educational perspective, since our aim is to explore the values perceived by adolescents in television, and moreover, to do so with a cross-cultural sample group, we believe that the model proposed by Schwartz constitutes a valid, rigorous tool for the research being undertaken.

In this sense, insofar as it helps form adolescents' personal identity, television also fosters the construction of values. The research data currently available in relation to these values are by no means homogenous. Community-type values appear least frequently during this period, although data does exist to indicate that they are in fact present, pointing to the existence of young people concerned about social justice (Jonson & Flanagan, 2000), social engagement (Bendit, 2000) and altruism as a kind of happiness akin to vertical collectivism.

Consequently, the situation in relation to current research and Schwartz's model can be summed up as follows:

• Television, both in Spain and at an international level, provides contents which include both individualistic and collectivist values.

• Scarce empirical evidence exists regarding the values perceived by viewers in television contents.

• Adolescents tend to perceive their own values in television.

• Schwartz's model is an adequate tool for exploring the values perceived by adolescents from different cultures in their favorite television character.

• Differences regarding values in different cultures are polarized between individualism and collectivism.

In accordance with the prior review of the literature, this study has a twofold objective:

• To identify the values perceived by a cross-cultural sample group of adolescents in their favorite character, within the framework of Schwartz's model.

• To analyze similarities and differences in the values perceived by adolescents in different cultural contexts.

Prompting adolescents to explicitly identify and reflect upon values is an important strategy within the psychoeducational field. The instrument presented here may help us translate the implicit messages conveyed by television, share them with others and develop a critical attitude to them. As shown by a number of different authors, television may have an enormously constructive effect on the dissemination of values which render learning attractive and which promote the need to make an effort to acquire knowledge. There can be no doubt that teaching about and sharing television is much more effective than restricting or limiting it.

2. Materials and method

This research project is an ex post-facto, descriptive-correlational, cross-cultural study. It explores the values perceived in the characters of the favorite TV programs of a group of adolescents aged between 14 and 19. 44.6% of the sample group were male and 55.4% female.

2.1. Participants

Once all the extreme cases (such as subjects who

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Cities	Frequency	Percentage	Valid percentage	Accumulated percentage
1 San Sebastián	184	14.9	14.9	14.9
2 Zaragoza	183	14.8	14.8	29.6
3 Málaga	125	10.1	10.1	39.7
4 Dublin (Ireland)	106	8.6	8.6	48.3
5 Guadalajara (Mexico)	150	12.1	12.1	60.4
6 S, Fco. Macoris (Dominican Rep.)	148	12.0	12.0	72.4
7 Oruro (Bolivia)	197	15.9	15.9	88.3
8 Rancagua (Chile)	145	11.7	11.7	100.0
Total	1.238	100.0	100.0	100.0

Table 1: Distribution of the sample group by city of residence.

gave inconsistent responses) had been eliminated from the different cultural contexts, the sample group was distributed as follows.

The total sample group encompassed 1,238 subjects from 8 different cultural contexts; three from Spain, four from Latin America and one from Ireland.

The gender percentage was balanced for all cities. Nevertheless, in San Francisco de Macorís and Rancagua, the percentage of male subjects was 28.1% and 35% respectively. In total, the sample group was comprised by 545 boys and 676 girls. Some cases were lost, since no information was provided regarding this variable.

The sample group was selected on the basis of convenience, in accordance with the following criteria: age, academic year and type of school. Subjects were from the 4th year of secondary school or the 2nd year of the Spanish Baccalaureate (higher education) system, equivalent to the Latin American PREPA and/or Baccalaureate years 1 and 3 and the 3rd year of Junior Certificate and 2nd year of Leaving Certificate in Ireland. As regards type of school or college, the sample group was taken from two or more schools for each sub-sample (city), both state and private, or with different socioeconomic levels (although no extreme cases were included).

The 23 schools and colleges from which the sample group was selected were distributed as follows: Málaga (2 schools, one private and the other state); San Sebastián (2 schools, one state and the other private but with some state funding); Zaragoza (2 schools, one state and the other private); Rancagua (Chile) (2 schools, one state and the other private); Guadalajara (Mexico), (one private middle-class school); Macorís (Dominican Republic) (2 schools, one state and the other private); Oruro (10 state and private schools) and Dublin (2 schools, one state and the other private).

2.2. Variables and measurement instruments

The instrument used to assess the values perceived in the character of subjects' favorite TV show was the Spanish language version of the PVQ-21 scale by Schwartz (2003), called Val.Tv 0.2. The scale measures the values perceived in subjects' favorite characters, grouped into 10 basic values: self-direction, stimulation, hedonism, achievement, power, security, conformity, tradition, benevolence and universalism. The scale consists of 21 items, the responses to which are scored on a Likert scale, from one to six.

In order to check the reliability of the instrument, the spatial configuration of these items was verified using the «multidimensional scaling» technique presented by the SPSS, which is very similar to the SSA (Small Space Analysis). The configuration obtained was circular, very similar to that proposed by Schwartz and Boehnke (2003). Nevertheless, one exception should be highlighted: the value «power» was found to have an inadequate spatial configuration.

This spatial configuration, which is similar to that proposed by Schwartz, coupled with the fact that this instrument is comparable to those used in international studies, enables us to calculate the scores for each subscale or dimension. The analysis of the internal consistency of each dimension using Cronbach's alpha coefficient resulted in reliability indexes of over 0.50 (the maximum was obtained for universalism $\alpha=.798$ and the minimum for security $\alpha=.529$), with the exception of the value «power», which had an $\alpha=.389$.

2.3. Procedure

For the data collection process, the first phase consisted of adapting the Val.Tv 0.2 scale from the Spanish version to a Bolivian, Chilean and Mexican version. Also, the original version was translated and adapted to an English version. These adaptations were all carried out without changing the meaning of the values. The scale was revised by eight experts prior to its definitive approval. In addition to other aspects, the experts were asked to assess whether the definitions of the values were applicable to each culture. The majority of participants completed the questionnaires on-line. In the Bolivian and Dominican samples, the data were collected on paper, due to the lack of computer facilities required for this kind of on-line questionnaire. Subsequently, the data gathered on paper were entered into an on-line version, in preparation for their statistical processing.

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Between 20 and 30 minutes are required for the application of this scale. In relation to the data analysis, the SPSS program was used and a number of different descriptive and inferential analyses were carried out, mainly the means comparison test and parametric tests (Anova). These not only enabled the identification of the different means, but also verified the significance of these results and the effect size, or in other words, the magnitude of said differences.

3. Results

The analysis of the results focused on the study's two established objectives. Thus, first of all, the means of the values perceived in subjects' favorite characters were analyzed for the whole sample group, along with their significance level. This was then followed by an analysis of the differences between the eight sub-sample groups studied in relation to the values perceived in each one.

If we focus on the first objective, as shown in table 2, only some items presented asymmetries higher than 1, and almost none of them were over 1.5. It was therefore considered that these variables were susceptible to processing using parametric tests. In the first analysis, as shown in table 2, the highest means were obtained for self-direction (items 1 and 11), with means of 5.03 and 5.01 respectively, followed by benevolence (items 12 and 18), with means of 4.70 and 4.79 respectively. On the other hand, the values with the lowest means were item 2 (power), with a mean of 3.14 and items 7 and 16 (conformity), with means of 3.41 and 3.96, respectively. We believe it is important to highlight the fact that self-direction can be understood as an individualistic value, while benevolence is conceptualized as a collectivist value.

Thus, self-direction is defined as applying to «an active person with independent thought. Also a person who stands out for their creativity, freedom and for choosing their own goals. The value 'benevolence', on the other hand, is understood as applying to a person who values the preservation and enhancement of the welfare of people with whom they have frequent personal context; a benevolence person is helpful, honest, indulgent, loyal and responsible».

Thus, the two values with the highest scores effectively reflect two different dimensions which are

	N	Mean	SD	Asymmetry	Kurtosis
1. It is important for him/her to have new ideas and be creative. He/she likes doing things originally and in his/her own way.	1177	5.03	1.197	-1.509	2.240
2. It is important for him/her to be rich. He/she wants to have a lot of money and expensive things.	1165	3.14	1.545	.157	-.952
3. He/she thinks it is important for everyone in the world to be treated equally. He/she believes everyone should have the same opportunities in life.	1166	4.53	1.455	-.900	-.024
4. It is very important for him/her to demonstrate his/her skills and abilities. He/she wants people to admire him/her for what he/she does.	1169	4.40	1.466	-.761	-.242
5. It is important to him/her to live in safe places. He/she avoids anything that might jeopardize his/her safety.	1157	3.91	1.586	-.387	-.866
6. He/she likes surprises and is always eager to try something new. He/she thinks it is important to do many different things in life.	1165	4.69	1.377	-1.043	.409
7. He/she believes that people should do what they are told. He/she believes that people should abide by the rules all the time, even when no one is watching them.	1155	3.41	1.551	-.074	-.992
8. He/she thinks it is important to listen to those who are different, even when you do not agreement with them.	1154	4.28	1.456	-.634	-.445
9. It is important for him/her to be humble and modest. He/she tries not to call attention to him/herself.	1156	4.19	1.606	-.610	-.729
10. Having a good time is very important to him/her. He/she likes «treating» him/herself.	1150	4.61	1.443	-.931	.014
11. It is important for him/her to make his/her own decisions about what to do. He/she likes to be free and not to depend on others.	1150	5.01	1.202	-1.400	1.644
12. It is important to him/her to help those around him/her. He/she is worried about their wellbeing.	1159	4.70	1.351	-1.018	.362
13. Success is important to him/her. He/she expects people to acknowledge his/her achievements.	1156	4.31	1.477	-.690	-.346
14. It is important to him/her that the government protect him/her against danger of all kinds. He/she wants the state to be strong in order to be able to defend its citizens.	1154	3.73	1.591	-.293	-.918
15. He/she is always looking for adventure. He/she loves risk. Having an exciting life is important him/her.	1149	4.58	1.442	-.913	.013
16. He/she believes it is important to behave correctly at all times. He/she tries to avoid doing anything that people believe to be wrong.	1149	3.96	1.661	-.433	-.999
17. It is important for him/her to be respected. He/she wants people to obey him/her.	1146	4.16	1.474	-.562	-.554
18. It is important for him/her to be loyal to his/her friends. He/she gives him/herself totally to those close to him/her.	1146	4.79	1.346	-1.135	.661
19. He/she firmly believes that people should protect Nature. He/she believes that it is important to look after the environment.	1154	4.21	1.530	-.592	-.627
20. Tradition is important to him/her. He/she always tries to follow the customs of his/her religion or family.	1152	3.95	1.597	-.426	-.882

Table 2: Means of the values perceived by the whole sample group in their favorite TV character.

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not necessarily contradictory, as explained in the conclusions.

However, both the value «power», which is defined as applying to a person who values social status and prestige, and who seeks to gain control or dominance over people and recourses, and the value «conformity», which is defined as applying to a person characterized by their restraint of those actions, inclinations and impulses likely to upset or harm others and violate social expectations or norms, obtained the lowest means. The value «power» is also an individualistic value, while «conformity» is collectivist and refers to a person who is excessively conventional or concerned about living up to others' expectations.

In relation to the second objective, as shown in table 3, following an analysis of the differences between contexts, in general terms we can state that significant differences were found between the eight cultural contexts studied. Nevertheless, it is important to remember that the value «power» was not included in the calculations, due to its low level of reliability.

On an initial reading, clear differences emerge between the different cities; thus, San Sebastián, followed by Zaragoza, have the highest means (5.097 and 5.003 respectively) in the self-direction dimension in Spanish sub-groups..

If we look at benevolence (items 12 and 18), another of the values with the highest scores, San Fº de Macorís has a mean of 5.162, followed by Oruro with a mean of 4.875. These scores are the highest of all those obtained on a scale where the maximum score was six. We should remember that when we talk about benevolence, we are talking about people who value the preservation and enhancement of the welfare of the people with whom they have frequent personal contact.

However, the lowest values were found for conformity (items 7 and 16). Thus, the mean for Dublin was 3.332 and the mean for Zaragoza 3.385. Conformity is understood as referring to a person characterized by their restraint of those actions, inclinations and impulses likely to upset others. It was important to determine the statistical significance of these differences, and their magnitude. The Anova revealed that all differences were statistically significant (p= .000) except in the dimensions of hedonism F (7.1165 =.753; p=.627) and self-promotion F (7.1158= 1.834; p=.077).

Nevertheless, when the effect size was analyzed taking these differences globally, they were found not to be great enough to be notable. Having conducted the «eta» coefficient analyses, it can be stated that the differences between the eight contexts studied are hardly relevant at all. The highest results were found for universalism ($\eta 2$=.073), followed by tradition ($\eta 2$=.068) and conformity ($\eta 2$=.042), and the lowest results were found for hedonism ($\eta 2$=.005), followed by stimulation ($\eta 2$=.021).

In other words, the greatest differences were found in items 7, 16, 9, 20, 12, 3 and 8, which belong to the values of conformity (which scored very low in all contexts), tradition (with a mean of 3.804 in Dublin and 4.910 in San Francisco de Macorís) and benevolence (with a mean of 4.688 in Málaga and 5.162 in San Francisco de Macorís). In relation to universalism, the mean for Dublin was 3.592, and the mean for San Francisco de Macorís was 4.983.

4. Conclusions

If we carry out a global assessment, taking all the data into account and focusing on the pre-established objectives of the study, we can state that adolescents perceive both individualistic values (self-direction) and collectivist values (benevolence) in their favorite TV

	CITY								
	San Sebastián	Zaragoza	Málaga	Dublin	Guadalajara	S. Fº de Macorís	Oruro	Rancagua	Total
Self-direction	5.097	5.003	4.880	4.648	4.966	5.406	5.153	4.816	5.019
Stimulation	4.500	4.679	4.622	4.402	4.558	4.644	4.992	4.537	4.640
Hedonism	4.757	4.632	4.726	4.709	4.738	4.695	4.594	4.478	4.663
chievement	4.204	4.121	4.193	4.250	4.357	4.624	4.645	4.359	4.353
Security	3.707	3.591	3.725	3.418	3.980	4.273	3.862	3.985	3.823
Conformity	3.587	3.385	3.483	3.332	3.728	4.352	3.732	3.793	3.677
Tradition	3.799	3.768	3.835	3.804	4.088	4.910	4.247	4.115	4.071
Benevolence	4.767	4.806	4.688	4.203	4.493	5.162	4.875	4.722	4.742
Universalism	4.212	4.228	4.238	3.592	4.162	4.983	4.582	4.493	4.341
Openness to change	4.783	4.771	4.749	4.586	4.754	4.912	4.916	4.601	4.774
Self-promotion	3.896	3.834	3.946	4.111	4.127	4.074	4.132	3.963	4.006
Conservatism	3.708	3.584	3.691	3.501	3.937	4.495	3.942	3.975	3.857
Self-transcendence	4.428	4.460	4.424	3.826	4.295	5.053	4.700	4.584	4.500

Table 3: Cross-cultural differences in perceived values: means.

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character, while the values «power» and «conformity» seem to be perceived less by the sample group on the whole. Cross-cultural differences were found in all values, with the exception of hedonism and achievement. However, these statistically significant differences are not particularly relevant, as shown by the analyses of the results. It is likely that this is due to the size of the sample, since in a detailed analysis of the data, these mean differences are not particularly extreme, and no clear differentiating trends can be detected between the different cultures. In other words, our data do not enable us to state that some cultural contexts are more inclined to perceive individualistic values, while others tend more to perceive collectivist ones.

These results coincide with those of the studies cited in the introduction to this paper (Bendit, 2000; Dates, Fears & Stedman, 2008; Del Río, Álvarez & Del Río, 2004; Méndiz, 2005). As in previous research projects, our results also indicate that television conveys individualistic or presentist values, while at the same time transmitting prosocial values. Nevertheless, it is important to clarify that our data refer only to the values perceived by adolescents.

Prior research concludes that television conveys both individualistic and collectivist values, values which are not only typical of adolescents, but which also constitute one of the characteristics of postmodern society (Castells, 2009; Goldsmith, 2010; Maeso Rubio, 2008). In our research, however, although we define the value self-direction as the achievement of personal goals, we should not necessarily interpret this to imply that self-direction clashes with benevolence. Both values, self-direction and benevolence, enable a person to be competitive and to develop their abilities to the full (achievement), while at the same time being concerned about others. These tendencies are perfectly compatible from the perspective of value development.

Nevertheless, one aspect of our data that does warrant attention is the absence of major contextual differences; this may indicate a globalization of the values conveyed and perceived through television. Although this claim requires further exploration through more qualitative studies using semi-structured interviews with young people from different cultures, the working hypothesis is of enormous interest in our attempt to understand how television may foster socialization and the acquisition of values during adolescence, a phase of particular vulnerability. Could it be that in the global village, the perception of values by adolescents is becoming increasingly similar? An initial reading of our data indicates that this is indeed the case, and moreover, the value «power» and the value «conformity» are those perceived less frequently. Bearing in mind that a relationship exists between our values and the values perceived through television, this would seem to indicate that the adolescents in our study evince little interest in becoming successful, ambitious and/or influential people (power). Furthermore, they perceive those characters they «like best» as fairly unconventional. Bearing in mind the age range of the sample group and that one of the characteristics of adolescence is the transgression of conventional norms, this last result is consistent with the assessment instrument itself.

Do these findings indicate a trend in the values of today's society? Many authors have already warned of the ambivalence of value transmission; however, the adolescents in our study did not perceive ambivalent values and curiously enough, one of the quintessential individualistic values, power, was found to be one of the least perceived. The fact that values such as conformity, defined as restraint of those actions, inclinations and impulses likely to upset or harm others and violate social expectations or norms, as well as courtesy, obedience, self-discipline and honoring one's parents and the elderly, scored lowest in our study is extremely interesting, and to some extent contradicts the findings of other research projects. These data are not consistent with the results of other research studies carried out in the American context, which assert that television conveys the conventional values of the middle class (Potter 1990; Tan, Nelson, Dong & Tan 1997).

Before concluding, we would like to highlight some limitations of the study, and to add a comment which goes beyond the scope of the specific results. As regards the limitations, might it not be that the design of the trial itself (a six-point Likert scale with the definition of the values in each item) fosters the social desirability bias? In other words, could it be that respondents give what they consider to be politically correct answers, rather than state what they really feel? Moreover, we should not forget that, in accordance with the reception theory (Orozco, 2010), adolescents do not perceive messages as blank pages, open to any manipulation, but rather interpret them in accordance with their own prejudices, values and ways of thinking, etc.

As regards the comment, we should point out that, in addition to its assessment function, the Scale of Television Value Domains (Val.Tv 0.2) can also be used as an instrument for fostering the explicit expression of the values perceived by adolescents in the characters of their favorite TV shows. Prompting adolescents to explicitly identify and reflect upon values is an important strategy within the psychoeducational field. The instrument presented here may help us translate the implicit messages conveyed by television, share them with others and develop a critical attitude to them. As shown by a number of different authors (Lejarza, 2010; Rajadell, Pujol & Violant, 2005), television may have an enormously constructive effect on the dissemination of values which render learning attractive and which promote the need to make an effort to acquire knowledge. There can be no doubt that teaching about and sharing television is much more effective than restricting or limiting it.

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The Cyber Media in Latin America and Web 2.0

Los cibermedios en América Latina y la Web 2.0

ABSTRACT
Technologies 2.0 are changing the spaces dedicated to interaction and participation in cyber media. The goal of this research is to determine the adoption of cyber journalism features and web 2.0 in media in Latin America. To achieve this objective this paper analyses 19 digital media in the region, based on two studies held in 2010 and framed on the project «Cyber media in Colombia and Latin America», which is supported by the Universidad del Norte (Colombia) and recently by the Universidad de los Andes (Venezuela). The study uses the method proposed by Rodríguez-Martínez, Codina & Pedraza-Jiménez (2010), which has been tested in previous research by the authors of this paper. According to the results, a good part of digital media in Latin America are incorporating web 2.0 tools, but there still exists notable quality differences in the ranking proposed between the best rated media (Colombia and Mexico) and the worst rated (Chile and Bolivia). This ranking allows, for example, to clearly identify how digital media in Latin America have important weaknesses in their general indicators, like accessibility mistakes, popularity and visibility levels; and in their specific indicators, in special those related to available resources for information deepening and interaction tools. As authors state in the article, showing these evidences of inequality can orientate future plans of Latin-American cyber media, especially if indicators related to users' active participation are considered.

RESUMEN
Las tecnologías 2.0 están transformando los espacios destinados a la interacción y la participación en los cibermedios. El objetivo de esta investigación es determinar el grado de adopción del ciberperiodismo y de las web 2.0 en América Latina. Para ello se analizaron 19 medios digitales de la región, a partir de los resultados obtenidos de dos olas de recopilación de datos llevados a cabo durante 2010, en el marco del proyecto «Los cibermedios en Colombia y América Latina», realizado desde la Universidad del Norte (Colombia), con el apoyo de la Universidad de los Andes (Venezuela). El estudio parte del modelo de análisis propuesto por Rodríguez-Martínez, Codina & Pedraza-Jiménez (2010). Los resultados apuntan que los medios latinoamericanos están apostando por la incorporación de herramientas de la web 2.0, pero que sin embargo existen notables diferencias de calidad entre los medios mejor calificados por el «ranking» del estudio (Colombia y México) y los peor valorados (Chile y Bolivia). Este «ranking» permitió, por ejemplo, identificar claramente cómo los medios digitales analizados en América Latina, aún siguen perdiendo importantes puntos en lo que se refiere a los aspectos relacionados con los indicadores generales, como por ejemplo los errores de accesibilidad, los niveles de popularidad y visibilidad de sus portales; y los indicadores específicos internos, en especial en lo que respecta a los recursos puestos a disposición para la profundización de la información y las herramientas de interacción.

KEYWORDS / PALABRAS CLAVE
Cyber media, cyber journalism, Web 2.0, index, develop, ICT, digital, media, ranking.
Cibermedios, ciberperiodismo, Web 2.0, índice, desarrollo, TIC, digital, medios, ranking.

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1. Introduction

The rapid transformation of digital media requires a constant monitoring of their quality and especially the influence that new tools and platforms has on content. The so-called Web 2.0 technologies are a good example of how the cyber media are struggling to offer their users spaces for interaction and participation (Briggs, 2007; Fumero & Roca, 2007; Flores, 2008), even in academic spaces (Codina, 2009). In Latin America, efforts are underway to develop the follow-up to this evolution (Castro, 2008). The monitoring in Colombia (Said, Arcila & Méndez, 2011) and in Venezuela (Said & Arcila, 2011) is worthy of comment especially if we take into account that this follow-up can contribute to the improvement of media practices.

This monitoring and follow-up of cyber media in the Latin American sub-continent opens up comparative strategies, new fields for the empirical verification of the theoretical-methodological proposals being developed in scientific literature (Díaz-Noci, 1997; Zamith, 2008; Palacios & Diaz-Noci, 2009), taking as reference designs which have already been tested such as that carried out by Rodríguez-Martínez, Codina & Pedraza-Jiménez (2010). This article aims to contribute to this research line within the framework of the «Cyber media in Colombia and Latin America» project started by the authors in 2008 and developed at the Universidad del Norte (Colombia) with the support of the Universidad de los Andes (Venezuela). The classifications proposed allow us to have a clearer and more updated view of how fast media are adapting to the dynamics imposed by technology and, above all, what the deficiencies in this domain are.

2. Materials and methods

The objective of this work is to analyze and measure the development level of cyber journalism and the Web 2.0 in 19 countries of Latin America based on the comparison of the data collected between the periods of April-May and October-November 2010. The set of data shown and analyzed in this article will be articulated around a development index, which will serve for understanding and ranking Latin America within the digitalization process of communication media. This study was developed with the most accessed and visible digital media of the countries of the region according to Alexa's «Web Ranking» (http://www.alexa.com). That is, 19 digital media of Latin America (one per country, except for Venezuela, which is represented by two) and two control media from Spain and the United States, for a total of 21 media. Even though there are many important differences between the countries where these media are produced, we consider a significant factor that our study collects the characteristics of the cyber media analyzed to be able to obtain a common measuring or reference point.

For the measurements developed in April-May and October-November 2010, «The New York Times» from the United States and «El País» from Spain were taken as control or reference. The selection of these two cyber media was based on the criterion that both are the main digital communication media in the world, according to Alexa's Web Ranking.

The study used the analysis model for cyber media proposed by Rodríguez-Martínez, Codina & Pedraza-Jiménez (2010) where a set of indicators are taken as referents: 1) general, which measure the accessibility of the Web site, its visibility and popularity, among other aspects which all web sites of digital media must have; 2) internal specific which account for the deepening of the information, the interaction tools used in the digital media as well as the personalization of the information and those elements that should be included in the site of a digital medium; and 3) external specific related to the impact of the social webs in digital media, where the loyalty mechanisms of users through the Web 2.0 and other tools available in digital media are measured as well as the diffusion mechanisms of the contents generated in the digital media.

The study analyzed the main page and all the sections of the 21 selected digital media. The data measurement was developed on alternate days (from Mondays through Sundays) during the two months of analysis: the first one from the 25th of April to May 25th and the second one from October 4th to November 5th of 2010. During these periods repetition and verification measurements were developed which guaranteed the consistency of data.

3. Results

3.1. General indicators

3.1.1. Access

There are three adequacy levels of Web pages according to the access possibility of the contents emitted to people with impaired vision, hearing or movement or those using limited capacity technology (electronic agendas and mobile phones): A, double A (AA) or triple A (AAA). Each of these levels is regulated through the fulfillment of the standard norms elaborated by the Web Accessibility Initiative (WAI) of the

World Wide Web Consortium (W3C)i. The adequacy levels correspond to: web sites «without» errors or with a «reduced» number of them (less than 45); sites with a moderate number of errors (45-85); sites with a «great number» of errors (85 to 200) or with an «excessive» number of errors (more than 200).

According to the data obtained, most of the studied media (including control media) had a great number of errors, showing up to a maximum of 1519 errors as was the case of «La Prensa» (Honduras). The exceptions correspond to «Las Últimas Noticias» (Chile) and «Listin Diario» (Dominican Republic) which reflected a «moderate» number of errors (51 and 83, respectively) and «La Prensa» (Panama) which was the only one to reach the category «without» errors or with a reduced number of errors (42).It is surprising, therefore, to see how the national diffusion digital media which are referents in each of the countries of Latin America are located in the last and lowest accessibility level which could mean that for them, the improvement of access to their contents is not a priority.

3.1.2. Visibility and popularity

The visibility and popularity of a cyber medium can be measured by the number of links received from other web sites, the number of pages published or indexed by this medium as well as by the number of visitors received by the site and the number of pages it serves. The averages obtained from the descriptive data extracted from the measurements of April-May and October-November of 2010 allow us to classify the analyzed Latin American digital media with a high level of visibility and popularity as we observe how 73% of the digital media of the study presented in 2010 an average value of 7 to 8/10 points, according to Google's PageRank. From the world popularity point of view, according to «Alexa's TrafficRank», the digital media with the highest number of visitors was Globo (Brazil) which was ranked 102 at world level, very near from «New York Times» which was ranked 92. On the other side, «El Deber» (Bolivia) was the least visited and is ranked in position 35,361.

According to the popularity of the analyzed digital media at national level, data allow us to identify digital media with a high popularity (they are located in the Top 10 of the most seen portals in each country) as for example «Globo» (Brazil), «Las Últimas Noticias» (Chile) and «ABC» from Paraguay. The rest of the media obtained a medium popularity. The data referring to the links and indexed pages received lets us see the impact that each of these media have from internet, highlighting that a group of these media have a high number of indexed pages in «Yahoo! Search», (100,000 or more) and they also have a high number of links related with their contents (with a difference of 500,000 or more pages related with respect to the indexed ones). This is the case of «El Clarin» from Argentina, «El Tiempo» from Colombia, «La Nación» from Costa Rica, and «La Prensa» from Honduras.

3.1.3. Access to information

Part of the general indexes related to digital media is their capacity to offer fast and easy access of users to information. For this study, four aspects were taken as referents: they have simple search, advanced search, online newspaper library and a sitemap.

The results are rewarding (Chart 1) since along with observing the generalized presence of the simple search tools in all the media analyzed, in most cases, the use of other tools, such as advanced search, online newspaper library and sitemaps are also found to a greater extent. At the same time we can also state that during 2010 an improvement process was observed when making use of the applications considered in this part of the study. We noticed a slight

	I-2010							
	Simple search		Advanced search		Online newspaper library		Sitemaps	
	Digital media analyzed	Percent	Digital media analyzed	Percent	Digital media analyzed	Percent	Digital media analyzed	Percent
Yes	19	100	8	42.1	13	68.4	9	47.4
No	0	0	11	57.9	6	31.6	10	52.6
N	19	100	19	100.0	19	100.0	19	100.0
μ	1.00		1.58		1.32		1.53	
	II-2010							
	Simple search		Advance search		Online newspaper library		Sitemaps	
	Digital media analyzed	Percent	Digital media analyzed	Percent	Digital media analyzed	Percent	Digital media analyzed	Percent
Yes	19	100	9	47.4	15	78.9	9	47.4
No	0	0	10	52.6	4	21.1	10	52.6
N	19	100	19	100.0	19	100.0	19	100.0
μ	1.00		1.53		1.21		1.53	

Chart 1. Percentage of use of simple search, advanced search, digital newspaper library and map of the web site. Data: 1 = Yes, 2 = No. The control media considered in this work are not included in the chart.

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increase between the first and the second measurement in the use of the advanced search and the online newspaper library.

3.2. Specific internal indicators

Rodríguez-Martínez, Codina & Pedraza-Jiménez (2010) consider a total of 25 indicators to analyze the degree of adoption of cyber journalism and the Web 2.0. As in our former studies (Said, Arcila & Méndez, 2011; Said & Arcila, 2011), these indicators were increased to 37 and they were divided in three categories: deepening of the information, interaction tools and personalization of the information. The total number of indicators measured in this section was decided based on the fact that the presence or absence of certain resources in the web portals of the analyzed Latin American media was not only important, but also to measure the degree of use of computer graphics, multimedia, podcast and other aspects. Except for the numerical indicators which were used to measure media and other descriptive statistical procedures, affirmative answers in the indicators formulated as questions will show us a positive trait, while a negative answer will show a lack that should be provided by each media analyzed.

3.2.1. Deepening of information

The results let us see how, in general, the evolution of digital media analyzed in Latin America in 2010 shows a low deepening of information context and generally centered in the use of news links of the same section and the inclusion of photos/digital graphics as a contextual element of published contents. The rest of the resources related with deepening of information show a very low use level if we take as referent the data observed on both charts at the moment of comparing the use of these tools with the median of the news published on the main page of these media, during the two measurements made and what was observed on the digital newspapers taken as control media (www.nytimes.com / www.elpais.com).

3.2.2. Interaction tools

With the aim of measuring the use of the interaction tools available on the cyber media we have partially followed the recommendations of Rodríguez-Martínez, Codina & Pedraza-Jiménez (2010), with respect to the use of a set of indicators, such as: the statistical follow up of news, the use and creation of blogs, the inclusion of comments on the web portals, availability of Web 2.0 tools and the existence of forums among other aspects included in the 18 indicators used for approaching this section.

The results obtained in this work (Chart 2) along with the opportunity to observe the variations made on the portals of the media analyzed during 2010, also allow us to highlight the low-moderate level of use of the interaction tools. Of the 19 digital media analyzed, 58% («El Clarín» from Argentina, «ABC » from Paraguay, «La Prensa» from Nicaragua, «El Universal» from Mexico, «La Prensa» from Honduras, «El Tiempo» from Colombia, «El Salvador» from El Salvador, «La

	Does the newspaper blog?	Does it offer its users the possibility of creating blogs?	Can comments be published?	Does it have Web 2,0 tools to share contents?	Can readers contact the authors of the news?	Does it accept contributions of readers?	Does it have discussion forums?	Are there options to send corrections of the news?	Do the news have comments?	Are there chats for readers?	Is there a section of the most read news?	Is there a section of the most valued news?	Is there a section of the most sent news?	Is there the option to vote the news?
El Clarín (Argentina)	1	1	1	1	1	2	2	2	1*	2	1	2	2	2
El Deber (Bolivia)	1*	2	2	1	2	2	2	2	2	2	1	2	2	2
Globo (Brasil)	2	2	2	1	2	2	2	2	1*	2	2**	2	2	2
Las Últimas Noticias (Chile)	2	2	2	2	2	2	2	2	2	2	2**	2	2	2
El Tiempo (Colombia)	1	2**	1	1	1*	1	1	2**	1	1*	1	2	2	2**
La Nación (Costa Rica)	1	2	1	1	1	2	2**	2	1	1	1	2	2	1
Juventud Rebelde (Cuba)	1	2	1	1	1	2	2	2	1	2	2**	2	2	2
El Universo (Ecuador)	2	2	2	1	2	2**	1	1*	2	2	1	2	2	2
El Salvador (El Salvador)	2	2	1	2**	2	1	1	2	1	1	1	2	1	2**
La Prensa (Honduras)	1	1*	1	1	1	1	1*	2	1	1*	2**	2	2	1
El Universal (Mexico)	1	2	1	1	2**	1	1	2	1	1	1	2	1	2
La Prensa (Nicaragua)	1	2**	1	1	2	2	2	1	1	2	1	1*	2	1
Prensa (Panama)	2	2	1	1	1	2**	2**	2**	1	2	1	2	2	2
ABC (Paraguay)	1	2	1	1	1*	1	2	1	1	2	1	2	2	2
El Comercio (Peru)	1	2**	1	1	2	1*	2	2	1	2	1	1	2	2**
Listín Diario (Dominican Rep.)	1	2	1	1	2	1	2	2	1	2	1	2	2	2**
El País (Uruguay)	1	1*	1	1	1*	2**	2	1	1	1	2	2	2	1
Noticias24 (Venezuela)	1*	2	1	1	2	1*	2	2	1	2	1*	1*	2	2
El Universal (Venezuela)	2**	2	1	1	2	2**	2	2	1	2	2**	2**	2**	2**
El País (Spain)	1	2	2**	1	1	1*	1*	2**	2**	2	1	2	1*	2
The New York Times (USA)	1	1	1	1	2	1	1	1	1	2	1	1	1	1

Chart 2. Evolution of the use of interaction tools.

* These media presented an improvement in the use of tools for the deepening of information in the II-2010 compared to the I-2010. ** These media presented a draw back in the use of tools for deepening the information in the II.2010 when compared with the I-2010.

	Do news have any comments?	Average of comments published by news, during 2010	Total comments of the cover news of the digital newspaper, in 2010	Is there an option to vote the news?	Average of votes emitted in the news, during 2010	Total number of votes in the news, 2010	Average of the news published during 2010
El Clarín (Argentina)	1*	0.94	44	2	0.00	0	47
El Deber (Bolivia)	2	0.00	0	2	0.00	0	30
Globo (Brasil)	1*	1.23	37	2	0.00	0	30
Las Ultimas Noticias (Chile)	2	0.00	0	2	0.00	0	58
El Tiempo (Colombia)	1	241.13	7,234	2	1.70	51	30
La Nación (Costa Rica)	1	2.96	71	1	0.25	6	24
Juventud Rebelde (Cuba)	1	7.48	187	2	0.00	0	25
El Universo (Ecuador)	2	0.00	0	2	0.00	0	49
El Salvador (El Salvador)	1	0.86	24	2	0.00	0	28
La Prensa (Honduras)	1	12.21	476	1	1.36	53	39
El Universal (Mexico)	1	13.13	420	2	0.00	0	32
La Prensa (Nicaragua)	1	19.81	317	1	1.88	30	16
Prensa (Panama)	1	1.16	44	2	0.00	0	38
ABC (Paraguay)	1	28.75	230	2	0.00	0	8
El Comercio (Peru)	1	14.32	444	2	0.23	7	31
Listín Diario (Dominican Republic)	1	0.25	7	2	0.00	0	28
El País (Uruguay)	1	13.47	1,307	1	4.32	419	97
Noticias24 (Venezuela)	1	71.90	2,804	2	0.00	0	39
El Universal (Venezuela)	1	200.90	4,219	2	9.10	191	21
El País (Spain)	2**	4.60	543	2	0.00	0	118
The New York Times (USA)	1	24.48	979	1	68.45	2,738	40

Chart 3. Evolution of the levels of users' participation in the areas of comments and voting of news.

Note: 1=Yes / 2=No. The averages exposed in this chart come from the formula: ni (number of comments/votes of each section during I-2010 and II-2010/ N total (total average of news exposed on each front page of the media analyzed in this study in 2010).

* These media presented an improvement in the use of tools for deepening of the information in I-2010 when compared with I-2010.

** These media presented a draw back in the use of tools for the deepening of information in the II-2010 when compared with I-2010.

Nación» from Costa Rica, «El País» from Uruguay, «Noticias24» from Venezuela, «El Comercio» from Peru) used at least half of the tools considered in this study. The other 42% do not use them or use them poorly.

Even though Rodríguez-Martínez, Codina & Pedraza-Jiménez (2010) only proposed the measurement of the use of the interaction tools in digital media, we have considered pertinent to analyze the participation levels exerted by users in the media analyzed through the inclusion of comments and news voting in spite of the clear limitations of a study like this, centered in the analysis of the media rather than on the news; additionally of the potential variations of the participation levels generated by the appearance of a news which will promote an increase in comments and the votes of certain news published and socialized by a given digital medium analyzed in this study.

The data in Chart 3 show the low levels of participation of users of the digital media analyzed concerning news published. We can see how the media studied mainly aim at offering users the option of introducing comments in their news and not in the evaluation of the news contents by the users. We see how only 21% of the media analyzed have applications oriented to voting for evaluating contents. It is also worth mentioning the total lack of participation tools in some of the media analyzed as for example, «Las Últimas Noticias» from Chile, «El Deber» from Bolivia, and «El Universo» from Ecuador; among others, during 2010.

3.2.3. Personalization of information

According to the data obtained, 57% of the digital media analyzed in Latin America present a medium level of use of tools that allow the personalization of the information by users and the most used options are the RSS, the sending of news by e-mail and the printing option. In 42% of the media analyzed we still observe a low level of use of this type of tools, which shows that a high percentage of media in the region have not been able to potentiate in their users the opportunity to have a maximum access to information.

3.3. External indicators

The capacities allowed by the Web 2.0 and the advances in ICTs open new opportunities for cognitive appropriation coming from the alternation of roles assumed by journalists and users. In chart 6 we can see, in general, a high level of use of this type of tools in the Latin American cyber media. In this respect we can say that according to the data obtained in 2010, these media seem to be applying a strategy of using the Web 2.0 as scenarios for participation, personalization and deepening of information.

3.4 Cyber media ranking in Latin America

Just as in the study we developed about Colombian cyber media (Said, Arcila & Méndez, 2011), the former results allowed us to design a new quality ranking and this time with a wider coverage. In this sense, this qualification tries to appreciate the

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degree of development of Latin American cyber media. For this measurement we did the following calculation: DC-AL (Development of Cyber media in Latin America) = IG (general indicators) + IEi (Internal specific indicators) + IExt (external indicators – Web 2.0). All the sections that form the DC-AL give a value of X over 100 points which correspond to the total of points taken for the measurement (see Chart 4).

Digital media analyzed	IG's points (Max. 27)	IEi's points (Max. 50)	IExt points (Max. 23)	Total DC-AL's points (Max.100)	Ranking Cyber medias in Latin America
El Tiempo (Colombia)	19	38	23	80.46	1
El Universal (México)	20	36	23	78.97	2
La Prensa (Nicaragua)	16	38	23	77.49	3
El País (Uruguay)	19	34	23	75.98	4
El Comercio (Peru)	16	37	23	75.65	5
La Nación (Costa Rica)	16	36	23	75.14	6
Prensa (Panama)	18	30	23	71.3	7
La Prensa (Honduras)	16	32	23	70.96	8
El Clarín (Argentina)	20	26	23	69.3	9
El Universal (Venezuela)	17.5	29	23	69.3	9
ABC (Paraguay)	17	27	23	66.63	10
El Salvador (El Salvador)	14.5	28	23	65.98	11
Noticias24 (Venezuela)	17.5	23	23	63.96	12
El Universo (Ecuador)	16	23	23	61.64	13
Globo (Brasil)	17.5	29	12	58.82	14
Listín Diario (Dominican Republic)	6	28	23	56.63	15
Juventud Rebelde (Cuba)	11.5	22	23	56.48	16
El Deber (Bolivia)	14.5	18	23	55.48	17
Las Últimas Noticias (Chile)	16.5	15	0	31.15	18

Chart 4. Ranking and development index of Latin American cyber media.

The weight of each section varied in relation with the number of variables taken in each one; the 100 points were distributed as follows:

• General indicators (IG): 26 maximum points, from which: 3 points correspond to accessibility errors of the digital media analyzed; being the highest point (3 points) for those media with an error range lower tan 45; the media that presented 45 to 85 errors were assigned 2 points; the media with 86 t0 200 errors were assigned 1 point in their accessibility while the media with more than 200 errors were assigned a reference value of 0.5 points. 20 points were assigned to all concerning visibility and popularity of digital media according to the «Google's» PageRank and the world and national «Alexa's TrafficRank», links received in «Yahoo! Search» and pages indexed in Yahoo! Search. Each section was assigned a maximum value of 4 points. 4 points were assigned to the presence of simple searchers, advanced searchers, digital media library and map of the web site in each of the digital media analyzed in this work.

• Internal specific indicators (IEi): 50 points distributed as follows: 28 points for the variables taken for its measurement with respect to deepening of the information, specifically the presence of updating hours, identification of authors of the news, average of news with internal and external links, digital media library, photos and videos, among other aspects. 15 points for the variables considered for measuring the level of use of interaction tools in the Colombian digital media analyzed.

Here 1 point was given for the presence of aspects such as the presence of tools for statistic follow up of news, blog disposition, web 2.0 tools disposition, among other aspects. 7 points for those variables that measured the personalization capacity of the information exposed on the digital media analyzed, as for example, the presence of RSS alert, sending news by e-mail, among others.

• External indicators (IExt): a total of 24 points distributed as follows: 23 points for those digital media that make use of the Web 2.0 to allow their users share and disseminate information in other platforms; 12 points for those digital media that only make use of the Web 2.0 to enable their users to add the information published in those portals; and 0 points for the analyzed media which do not make use of the Web 2.0 in any of their modalities.

Chart 4 shows us how the top 10 of Latin American cyber media is composed by «El Tiempo» from Colombia (80,46/100 points), «El Universal» from Mexico (78,97/100 points), «La Prensa» from Nicaragua (77,49/100 points), «El País» from Uruguay (75,98/100 points), «El Comercio» from Perú (75,65/100 points), «La Nación» from Costa Rica (75,14/100 points), «Prensa» from Panama (71,3/100 points), «La Prensa» from Honduras (70,96/100 points), «El Clarín» from Argentina (69,3/100 points), «El Universal» from Venezuela (69,3/100 points), and «ABC» from Paraguay (66,63/100 points).

This ranking allows the clear identification of how the digital media analyzed in Latin America are still losing important points with respect to the aspects related to general indicators, as for example accessibility errors, the popularity and visibility levels of their portals and the specific internal indicators, especially with respect to the resources available for the deepening of information and the interaction tools.

4. Discussion

The scenario observed in Chart 4 leads to the presentation of the state of cyber media in Latin America where it seems that the conditions for transcending are not given to realize the process of appropriation and transformation of the opportunities offered by internet and the ICTs in spite of the advantages mentioned by Briggs (2007), Fumero & Roca (2007) and Flores (2008). This is not only regarding how digital media are being produced in these countries (at least at the level of structuring of their web portals), but also from the lack of users interested in developing communicative processes emphasized in transversal production and knowledge nets, exchange of ideas and particularly the evaluation of the news published by the journalists of each media.

The classification developed in the ranking, to measure the development level of the cyber media in the region lets us complement the measurements developed by Said, Arcila & Méndez (2011) in Colombia and Said & Arcila (2011) in Venezuela, and to clearly identify the strong and weak points of these media to advance at the same pace of the opportunities offered by the ICT advances in internet. In this sense, even if we know that some of the most visited media of these countries are aiming at quality and citizens' participation, as is the case of «El Tiempo» from Colombia (P= 80,46)* or «El Universal» from México (P= 78,97). The difference between them and those in the lowest positions of the ranking is very big, as are the cases of «Las Últimas Noticias» from Chile (P=31,15) and «El Deber» from Bolivia (P=55,48). The evidence of these inequities can contribute to the elaboration of a Route Guide for the regional media, especially if we pay attention to the indicators referring to the active participation of users.

Notes

[1] Check the Web accessibility test on (TAW) in www.tawdis.net.

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Television Fiction Series Targeted at Young Audience: Plots and Conflicts Portrayed in a Teen Series

Las series televisivas juveniles: tramas y conflictos en una «teen series»

ABSTRACT

This paper presents the main findings of a research project on teen series, which are television fiction series featuring teenagers and specifically targeted at a young audience. The analysis of the portrayal of young people in television fictional series specifically targeted at a young audience has a meaningful value both for television production and for audience reception. In fact, the potential consumers of the teen series –the teenagers– find themselves at a key moment in the construction of their identities. First, the article presents a review of the background literature on young people's portrayal in television fiction series. Secondly, it discusses the concept of teen series and their relationship with youth consumption. Finally, the article presents a case study that consisted of a content analysis of the North American teen drama Dawson's Creek. Content analysis was conducted on a representative sample of three seasons of the show, in order to analyse two groups of variables: the variables of the characters' personalities and those of plot and story characteristics. The article discusses the results of the second group of variables, focusing on the main characteristics of the plots and on the characters' roles in the development and resolution of the conflicts. Acceptance of one's personal identity, love and friendship have been identified as the most highly recurring themes. In addition, the importance of social relationships among the characters in the development of plots and conflicts has been highlighted.

RESUMEN

Se presentan los principales hallazgos de un estudio sobre las «teen series», es decir las series de ficción televisiva protagonizadas por personajes adolescentes y dirigidas expresamente a una audiencia juvenil. El análisis del retrato de los jóvenes representados en productos específicamente dirigidos a un público juvenil tiene un valor muy significativo tanto por la producción de ficción como por la recepción, ya que los consumidores potenciales se encuentran en un momento clave del proceso de construcción de sus identidades. Después de repasar los principales antecedentes en el estudio de la representación de los jóvenes en la ficción televisiva, se describe el marco conceptual relativo a las «teen series» y se discute su relación con el consumo juvenil. Sucesivamente se presenta un estudio de caso que consiste en un análisis de contenido de la serie norteamericana «Dawson's creek», realizado sobre una muestra representativa de tres temporadas de la serie, para analizar dos grupos de variables: variables relativas a los personajes y variables relativas a las tramas y a los conflictos. Se discuten los resultados relativos al segundo grupo de variables, con particular atención a las características de las tramas y al papel de los personajes en el desarrollo y en la resolución de las mismas. La aceptación de la identidad personal, el amor y la amistad han resultado ser las temáticas más recurrentes. Además, las relaciones sociales entre los personajes han resultado ejercer un papel fundamental en el desarrollo de las tramas y de los conflictos.

KEYWORDS / PALABRAS CLAVE

Young people, teen series, television fiction, characters, content analysis, audience, adolescents.
Jóvenes, series juveniles, ficción televisiva, personajes, análisis de contenido, audiencia, adolescentes.

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1. Introduction

Research into television fiction and young people is of meaningful value when analysing a fiction genre in which young people are the main characters. The role played by television in portraying different kinds of roles is still a social and cultural phenomenon regarding influence and the way it perpetuates beliefs, stereotypes and values among audiences (Peterson & Peters, 1983; Gerbner & al., 2002). Identification with fictional characters (Hoffner & Buchanan, 2005; Igartua & Muñiz-Muriel, 2008) is a strategic communicative process that has interested both academics and producers in cultural industries. Teen series are television fiction products that portray a specific reality of youth culture in different contexts and settings to capture young audiences. That is why providing exploratory as well as analytical knowledge of a television format like teen series is a valuable opportunity to study the way in which teens are portrayed in fictional settings. This article presents the findings of a study conducted on the characteristics of teen series and the characters' interaction with the plots and conflicts in one of the most successful international teen series, the US teen drama «Dawson's Creek».

1.1. How young people are portrayed in television fiction

How young people are portrayed in fiction can be studied using research that either includes fiction as one of many other programme content types that focuses on the image of young people and/or teens, or by using research into specific television fiction programs. In the first reference framework we can highlight the work on young people's image on primetime TV (Signorielli, 1987; Heintz-Knowles; 2000). The study of young fictional characters' sexual behaviour has been of significant interest both in social and academic fields (Meyer; 2003; Aubrey, 2004). Gender character studies are also of interest in much research, both related to specific areas such as body image (Robinson & al., 2008; Barriga & al., 2009), and generally (Signorielli & Bacue, 1999; Glascock, 2001; Lauzen & al., 2008).

Some, though fewer, studies related to fiction and young people have also been carried out by analysing specific television productions. In this respect, the research gathered by Davis and Dickinson (2004) on teen series in the 90s is particularly important, as is that compiled on other fiction programmes such as «Beverly Hills 90210» (McKinley, 1997), «Buffy the Vampire Slayer» (Wilcox & Lavery, 2002) and «Dawson's Creek» (Andrews, 2001; Brooker, 2001; Crossdale, 2001).

In Spain the following studies are worth highlighting: the gender stereotypes analysis conducted on two Spanish series directed by Galán-Fajardo (2007); the study carried out by Belmonte y Guillamón (2008) on gender stereotypes in the most widely seen TV series amongst young Spanish people; and the study presented by Guarinos (2009) on teenage prototypes depicted in fiction television products broadcast in Spain and targeted at young audiences. Lastly, we must mention studies conducted in Spain on fiction analysis, but which are not specifically focused on young characters (Fernández-Villanueva & al., 2009; López-Téllez & Cuenca-García, 2005; Perales & Pérez-Chica, 2008).

1.2. Teen series as a consumer product for the young audience

The concept of youth culture in a media context has been partly generated by a merchandising approach that has ended up creating both TV and cinema products (Lewis, 1992). This fact has brought about the phenomenon of TV movies targeted at young and teenage audiences, which feedback the creation of serialised fiction. This feedback has supplied part of the programme offer of the general channels and taken over the thematic channels which target young people as a potential audience.

Teen series make up one of the star content formats of the youth culture media market. Although there is not enough theoretical background on the concept of teen series to enable us to talk of them as an independent and autonomous genre, there are certainly elements that allow us to characterise their content and presence in the TV offer. By way of synthesis, there is a common denominator in teen series, namely the teen target, and their relationship with generic teen TV, that is to say the set of television and multimedia products expressly devised for and targeted at teenagers (Fedele & García-Muñoz, 2010b). Teen series can be considered serialised fiction products, generally dramatic in style, targeted mainly and specifically at young people. They last 40 to 60 minutes and have been produced from the 90^{s}especially in English-speaking countries to narrate the stories and lives of teenagers. They may have a single main character or a group of lead characters; they occur during the high school period and have plots centred on interpersonal relationships, especially love and friendship (Guarinos, 2009).

Audiovisual products targeted at and acted out by young people basically came into being in 50^s films. They moved into television channels from the 60^s

onwards accompanied by music and young people and teenage characters (Mosely, 2001). These two elements appeared both in series and sitcoms which were placed in a family setting. However, it was the 80s fiction genres in which young people or teenagers were the main characters or co-stars. In this period, several internationally successful soap operas began to incorporate young characters in the cast and many sitcoms, initially US in origin, had teenagers as sole protagonists[1].

Without forgetting the financial aims of fiction products (Davis & Dickinson, 2004), the birth of the concept of teen series is related to television content targeted directly at teens and/or the young. This format chose contexts already commonly seen in other kinds of fiction that were of interest to young people, like family and school. The scenarios portrayed are therefore the home of one or several of the main characters and the settings, more interior than exterior, mainly in high schools[2]. These portrayals do not lead, however, to a greater interest in family plots, as it is precisely the social relationships within a group of equals, of friends, that becomes the themes of teen series. These audiovisual products recreate and offer the audience a symbolic transcription of reality that intervenes in some way in the construction process of the young people's identities, in most cases through parasocial relationships that are created thanks to the fictional characters (Livingstone, 1988). These relationships make up the social functions of fiction, like narrative, fable, ritual, bard, modelling, familiarising, community, socialising and identity (Fiske & Hartley, 1978; Davis; 1990; Casetti & Villa, 1992; Signorielli & Lears, 1992; Arnett, Larson & Offer, 1995; Keddie & Churchill, 1999; Buonanno, 1999, cited by Fedele & García-Muñoz, 2010b), and in some way influence audiences on the basis of meaning-making processes in reception studies (García-Muñoz & Martínez-García, 2009).

From a review of the background studies, the following hypotheses have been formulated leading to the analysis of the plots and conflicts portrayed in the US teen series «Dawson's Creek»: Hp 1: Most plots focus on themes related to love and friendship; Hp 2: Plot and conflict development is closely linked to the interactions and the relationships between the characters; Hp 3: Behaviour analysis of the characters within the stories reveals more complex and less stereotyped portrayals of these characters.

Therefore, the study of television fiction products specifically targeted at young audiences can contribute knowledge on what kind of images and portrayals of teenagers they will consume. In addition, teen series are products closely linked to global media and cultural phenomena, such as teen culture, teen movies and teen TV. As consumer products they are being consumed not only through television but also through multimedia and cross-media formats, and can therefore be adapted to new consumer formats for a typically multitasking audience as are young people.

2. Methodology

A case study was conducted on the US teen series «Dawson's Creek» as part of a research project on fiction series aimed at a young target. This fiction series is made up of six seasons broadcast for the first time from 1998 to 2003 in the United States on WB Television Network. In Spain, this series was shown on La 2 of Televisión Española, on ClanTV and on Canal+ as «Dawson crece»[3].

There are several reasons why we chose to conduct the case study on this teen series as a representative product of the teen series phenomenon that came about during the 90s. Firstly, the series has been internationally successful and broadcast in over 40 countries. Secondly, of all the teen series produced in the USA in the second half of the 90s, «Dawson's Creek» is highly realistic, if we leave aside the fantastic or science fiction elements which occur in other products. Lastly, in the seasons chosen for this study, the series affords the possibility of following a group of six teenage characters, equally distributed between the genders.

The study we present analysed a random sample of the episodes from seasons 2, 3 and 4 of the series.

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The main reasons why these three seasons were chosen is summed up in the following points: the presence of the same six characters; a common and regular setting throughout the sampled episodes (the fictional town of Capeside); the portrayal of the main teen years (15-18), coinciding with the US high school cycle; and the possibility of analysing the family typologies depicted in the series, as the main characters have not yet left home, unlike the last two seasons.

The sample brought together 18 episodes. Two researchers conducted a content analysis to measure a total of 29 variables, following prior instruction on cataloguing criteria. Variables were defined by the researchers and based on contributions from their previous works as well as from other authors, among whom we can include Pignotti (1976), Smith (1980), Pauwels (1998), Goddard and Patterson (2000), Seger (1990), and Robinson & al. (2008).

Analysis variables corresponded to the main characters' traits (physical, socio-demographic, social and psychological descriptors) and to categories concerning the characters' relationship with the stories and plots depicted. This article focuses on the findings in the second group of variables.

These variables allowed us to ascertain not only what the main themes and conflicts existed in the series, but also what attitudes and behaviour patterns the characters held in the plots. Among the variables in this group we can highlight: the kind of relationship established between the secondary and main character; the attitude adopted by the character in each episode; plot theme; plot origin; type of conflict; the character's role and involvement in resolving the conflict.

The data was gathered in a database of the SPSS program used by the Statistics Service at the Universidad Autónoma de Barcelona to obtain univariable, bivariable and multivariable analysis using SAS v9.1.3, SAS Institute Inc., Cary, NC, USA, taking the value 0.05 as the mean level.

In addition to this, character development was analysed over the three seasons. Finally, in order to complement quantitative statistical treatment, a qualitative analysis of the sample episodes was also performed, as was its relation to the whole set of episodes in the series.

3. Results

A total of 31 characters: 6 main and 25 secondary characters were analysed. Several findings related to the socio-demographic descriptors allowed for the affirmation that gender stereotyping persisted in the series «Dawson's Creek», where women tended to occupy less favoured social positions than men (Fedele & García-Muñoz, 2010a). This did not occur when analysing personality trait and stereotype variables, based on behaviour and attitude analysis in the development of the plot.

The most significant themes occurring in this series were personal acceptance (27.98%), love (26.94%) and friendship (17.1%), as shown in Table 1. Personal acceptance included those plots linked to growth processes and the formation or acceptance of character identity.

While love and friendship are usually the most commonly occurring themes in young people's series, as seen in the background review above, personal acceptance seems to be a specific characteristic of «Dawson's Creek». In this fiction series characters talked constantly of the internal processes they were going through, showed their anxieties, dreams, plans and problems and put them into words. Job expectations in the plots were less likely to be associated with main characters than with secondary roles. Finally, there were no plots directly linked to drugs and violence. Alcohol consumption and drug-taking, albeit rare, was almost always related to processes of personal acceptance and character identity. Therefore no problem of dependence on illicit substances per se was described in the series. Moreover, characters often explicitly condemned this kind of behaviour as being immature and not constructive at all.

In character analysis during the series, it was observed that character development was linked to the different plot themes unfolding throughout the three seasons. In the first two seasons, almost all the main characters were recurrently involved in themes relating to love and friendship and, to a lesser extent, family conflicts. However, in the fourth season, the most prominent themes dealt with acceptance and personal growth. Interestingly, the period narrated in this season corresponded to the main characters' last year at high school, a moment in which they had to take important decisions about their future after reflecting on their identity. At this time they asked themselves

PLOT THEME	Percentage	Accumulated percentage
Friendship	17.10	17.10
Love	26.94	44.04
Family problems	9.84	53.89
Sex	4.15	58.03
Personal acceptance	27.98	86.01
Job expectations	10.88	96.89
Discrimination	3.11	100.00

Table 1. Plot themes.

what they were passionate about, they questioned their childhood projects, considered getting into degree courses that might allow them to fulfil their dreams, and they even had full-blown identity crises, and didn't know what to do with their lives. Here we must highlight the theme revolving around personal acceptance that one of the main characters was involved in: the theme was linked essentially to the boy's sexual identity, in which he defined himself as a homosexual teenager who had to face twice the number of problems as other boys of his age. As Meyer (2003) has shown, the character defines his identity and homosexuality above all through conversational dynamics.

Character typology	Conflict type		
	Internal %	Social %	Contextual %
Main character	89.7%	64.2%	19.0%
Secondary	10.3%	35.8%	81.0%
TOTAL	100.0%	100.0%	100.0%
p <.0001			

Table 2. Conflict type according to character typology.

Plot origin was clearly social in nature (71.5%), but there were others of less quantitative value which must be mentioned including: personal (9.84%), when the character took the initiative and got involved in some kind of conflict; family (9.84%), when the conflict was sparked off inside the family; love (7.77%), when it was because of the partner or loved one; or financial (1.04%), when the reason why there was conflict was economic in nature. It is interesting to note that personal origin referred almost exclusively to teenage characters, while romantic conflicts were found amongst «teenagers» (53.3%) and adults (46.7%).

Conflict setting was also social in nature (54.92%), that is, it occurred in relation to the other characters. As indicated above, one of the characteristics of «Dawson's Creek» was indeed the constant interaction, especially verbal, among the characters. There was also a certain complexity in the language and dialogues used by the characters to build up their character, define their relationships with others and finally develop and resolve the plot conflicts. These statements were also supported by the findings on two descriptive character variables: explicit character responsibility and leisure activities. In both cases the most common occurring activity undertaken was social relations.

The least common types of conflict discovered in the analysis were internal in nature (15.03%). These were conflicts that the characters could not resolve by interacting with others, but through their own reflections and internal struggles.

Finally, 30.05% of the conflicts analysed were classified as contextual conflicts. These were incidental conflicts where the character had no real role. This conflict typology, where the character was a mere spectator in the narrative, was usually linked to secondary characters (81%) that were often in the background of the plots involving the main characters. This data is shown in table 2, which shows that internal conflict is more frequently associated with main characters than secondary ones.

Internal conflict was almost exclusively found amongst teenagers (93.1%), and was especially linked to plots on personal acceptance, and secondly, to romantic entanglements, as shown in table 3. However, social conflict type tended to be linked to romantic plots, although it was more equally distributed within the diverse plot categories.

A key element in personality stereotypes was in fact the role the characters played in handling conflict, especially with regards to active or passive involvement, as shown in graph 1.

An active role tended to be associated above all with stereotypes like tenacity (or stubbornness), idealism, activity or rebelliousness, i.e. to a series of personality traits that are intrinsically assertive, affirmative and proactive. Yet at the same time, this was also linked to other traits that involve greater reflection and reflexivity, such as maturity, tenderness, integrity and caution. On the other hand, a passive role in dealing with conflict was linked more closely to stereotypes that have passive connotations, such as fragility, immaturity or a passive nature. In this instance, apparently

Plot theme	Conflict type		
	Internal %	Social %	Contextual %
Friendship	10.3%	16.0%	22.4%
Love	27.6%	30.2%	20.7%
Family problems	.	15.1%	5.2%
Sex	3.4%	4.7%	3.4%
Personal acceptance	58.6%	16.0%	34.5%
Job expectations	.	13.2%	12.1%
Discrimination	.	4.7%	1.7%
TOTAL	100.0%	100.0%	100.0%
p = 0.0002			

Table 3. Conflict type according to plot theme.

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contradictory associations were formed, as the passive role is also linked to more positive and generally proactive traits like ambition, intelligence and reason.

This analysis verifies a three-dimensional, versatile and even contradictory portrayal of teens, thereby enhancing, to a certain degree, the realism of the characters in the series.

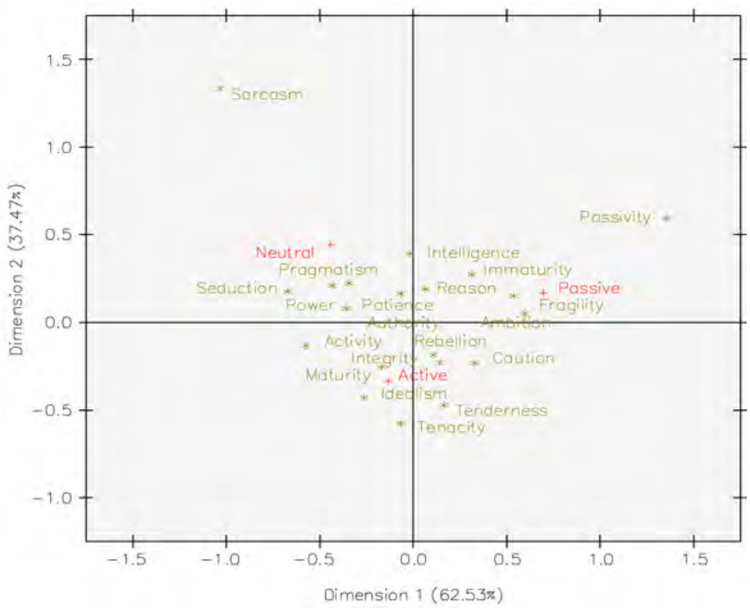
4. Conclusions

The teen years are a key, crucial stage in the development and construction of both individual and collective values and identities. During this sensitive and complex process, individuals usually turn to role models and examples of people important to them, i.e. the so-called socialising agents, like family, peers' group or school. But, besides models, patterns or real stereotypes, young people turn to others that are to be found in media. Though we are now in the digital era television still carries a certain weight in socialising young people, together with the new electronic media. In particular, its function as a role model becomes even clearer in fiction products, which are also placed at the top of teenagers' preference list (von Feilitzen, 2004; Livingstone, 1998; Garitaonandia & al., 1998; Ramírez de la Piscina & al., 2006; Medrano-Samaniego & al. 2007; Pindado, 2006). Therefore, the study of television fiction products specifically targeted at young audiences can contribute knowledge on what kind of images and portrayals of teenagers they will consume. In addition, teen series are products closely linked to global media and cultural phenomena, such as teen culture, teen movies and teen TV. As consumer products they are being consumed not only through television but also through multimedia and cross-media formats, and can therefore be adapted to new consumer formats for a typically multi-tasking audience as are young people (Jordan & al., 2007).

In particular, «Dawson's Creek» has been considered as a good example of convergence in relation to crossover and cross-media mobility (Brooker, 2001; Wee, 2004).

Furthermore, «Dawson's Creek» has been considered a high quality teen series due to the different characteristics of fiction narrative: self-consciousness, intense emotionality, high self-referentiality, analytical dialogues, and the hypertextual strategy that the series sets in motion with other media products or other communication media (Mosely, 2001). This series has also been analysed in accordance with the concept of mainstream cult, a fact that has allowed it to be described as a quality product for three reasons: the high reflexivity of the characters, the romantic relationship models depicted, which refer to the romantic relationship models proposed by Giddens; the authorship of the series, created by the director Kevin Williamson (Hills, 2004). Many of these elements have been highlighted in this analysis. In the study on characters relationship to plot, it has firstly been possible to identify the most highly recurring themes in the series, namely acceptance of one's personal identity, love and friendship. In addition, the importance of social relations among the characters, interpersonal dynamics, especially dialogue interaction, in the development of plots and conflicts, has been highlighted.

Finally, it has been shown that there is a certain complexity in the portrayal of young people, especially the main characters in the series. They are shown as multidimensional and versatile characters, with varied and variable personality traits and stereotypes, who offer an image that shies away from stereotype canons found in teen series and, more particularly, in sitcoms. They are people who develop constantly within the three areas commonly related to adolescence: first



Graph 1. Personality stereotypes by character role in handling conflict.

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love, first conflicts in the group of friends, first existentialist doubts and decisions regarding the future.

Nevertheless, the reality presented by teen series aims to capture the attention of an audience that is trying to create its own personal identity. At the same time, it does not ignore the permanent scrutiny of the cultural industry market producers.

Notes

[1] Televisión Española produced «Verano Azul», a fiction series starring teenagers and young people in 1981.

[2] Referential context which is explicitly present even in the title of some fiction, such as the Spanish produced series «El Internado» (The Boarding School).

[3] While this study was being conducted, the series was being broadcast as «Dawson's Creek» every day at 14.30 on the second channel of Televisión de Cataluña, channel 33/K3.

Aid

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Spaniards' Perspective of Immigration. The Role of the Media

Españoles ante la inmigración: el papel de los medios de comunicación

ABSTRACT

With the transformation of Spain into an immigration country, society has become a major change by setting up a social space characterized, increasingly, by cultural, ethnic and religious diversity. In this new frame is interesting to investigate the overall value of diversity into the Spanish society. The two aims for of this paper are, on one hand, to process feedback on Spanish opinion on immigration between 1996 and 2007, and, on the other hand, to find out the role of the media in the construction of that opinion. For the first aim, an index of anti-foreigner sentiments was constructed using data provided by the national survey on opinions and attitudes on immigration, published annually by ASEP. For the second, an analysis, using the Agenda-Setting Theory, of articles published on immigration that appeared in the newspapers, «El País» and «El Mundo». The results show that a negative sentiment towards the outgroup has increased over time. The main variables explaining these trends are a sense of threat, to the population and to identity, and competition for resources and political decisions in integration – legalisation. The media analysis has six dimensions, the main ones refer to the illegality of the phenomenon, linking immigration to crime, and the social integration policies, highlighting the role of the media in creating public opinion.

RESUMEN

Con la transformación de Spain desde hace unas décadas en país de inmigración, la sociedad ha experimentado un importante cambio configurando un espacio social caracterizado, cada vez más, por la diversidad cultural, étnica y religiosa. En este escenario novedoso es de gran interés indagar sobre la valoración que de dicha diversidad tiene la sociedad española. El objetivo de este artículo es doble, por un lado, conocer la opinión que tienen los españoles sobre la inmigración entre 1996 y 2007. Por otro, comprobar el papel que juegan los medios de comunicación en la configuración de ese sentir. Para el primer objetivo se ha construido el índice de sentimiento anti-inmigrante, a partir de los datos ofrecidos por la encuesta nacional sobre opiniones y actitudes ante la inmigración, administrada, anualmente, por ASEP. Para el segundo, se analizan, utilizando la teoría de la «Agenda Setting», las noticias publicadas por los periódicos «El País» y «El Mundo» sobre inmigración. Los resultados muestran que el sentimiento negativo hacia el exogrupo se va incrementado con el paso del tiempo. Las principales variables que explican esa tendencia son: el sentimiento de amenaza –poblacional e identitaria–, competencia por los recursos y decisiones políticas en el proceso de integración –regularización–. Del análisis de los medios resultan seis encuadres, los principales hacen referencia a la irregularidad del fenómeno, a la vinculación inmigración y delincuencia y a las políticas de integración social. Por tanto, se pone de manifiesto el papel que juegan los medios de comunicación a la hora de crear opinión.

KEYWORDS / PALABRAS CLAVE

Immigrants, xenophobia, communications media, threat, competition, insecurity, media framing.
Inmigrantes, xenofobia, medios de comunicación, amenaza, competencia, inseguridad, encuadre mediático.

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1. Introduction

In just a few decades Spain has seen a substantial increase in its immigrant population. According to the National Institute of Statistics (INE), there were only 542,314 foreigners in Spain in the mid-nineties. This figure rose to 1,370,657 at the beginning of the millennium and, according to the latest data published in January 2011, currently stands at 5,730,667. This is the sharpest rise in the number of foreign residents in any member state of the European Union.

The arrival of immigrants from all over the world, forming the largest cultural melting pot in the country's history, has not gone unnoticed by native Spaniards. The Centre for Sociological Research (CIS), in its monthly surveys, shows that Spanish attitudes towards immigrants have changed significantly in recent years. In 1996, a majority was in favour of immigration, judging it as necessary and not excessive in terms of the number of arrivals, whereas today there is more xenophobia directed at or rejection of the immigrant (Cea D'Ancona, 2009; Díez Nicolás, 2005; Pérez & Desrues, 2005), although this is not the result of a linear process. More specifically, in 2000 immigration was considered to be the fourth most pressing issue after ETA terrorism, unemployment and the economy. In 2006, 38.3% of Spaniards stated that immigration was the most important problem faced by the country, rising to second place after unemployment. According to the latest 2010 survey, immigration has dropped back to fourth place behind unemployment, the economy and the state of the mainstream political parties.

The transformation of a social phenomenon such as immigration into a social problem is a process in which many different agents play a part, the most prominent being the communications media. Cachón (2009) points to the media as responsible for turning immigration into a contentious public issue, since an event reported in a particular way can foment discrimination and social exclusion (Van Dijk, 2003). In the wake of the Agenda-Setting Theory, it has been shown that perception of social issues is largely conditioned by media reporting (Dearing and Rogers, 1996; Scheufele, 2000). This framing is related to two basic operations, selecting and emphasizing expressions and images to attribute a viewpoint, a perspective or a certain angle according to the given information. As understood by Valkenburg, Semetko and de Vreese (1999: 550), «A media frame is a particular way in which journalists compose a news story to optimize audience accessibility».

Studies developed from this theoretical perspective demonstrate that the greater the media emphasis on a certain subject or social issue, the greater the public concern it generates, such as in the case of migration (Brader, Valentino & Suhay, 2004; Igartua & Muñiz, 2005; Igartua & al., 2007). Igartua & al. (2004) found a significant positive correlation between the number of news items published in the newspapers and the percentage of interviewees who indicated that immigration was a problem for the country. This association demonstrates that news coverage can convert the migratory phenomenon into a perceived social problem and, thereby, into a source of prejudice and stereotyping that can lead to racism.

The dual purpose of this article is to present the evolution and variables that define public opinion regarding the outgroup using an anti-immigration sentiment index, and to find out how Spain's communications media cover this phenomenon, since we believe they represent the first step in cementing such feelings.

We have chosen two different time periods for this longitudinal analysis: 1997/1998, during which Spain was in economic recession but the immigrant population was small; and 2006/07, when the immigration rate was high and economic expansion was peaking but also showing signs of imminent stagnation and recession.

2. Method and data

For the first objective, we collected data from a national survey by the polling company «Análisis Sociológicos, Económicos y Políticos» (ASEP). Between 1995 and 2007, it carried out several statistically significant surveys, with the same items throughout, on the attitudes of the Spanish adult population towards foreigners. The sample was proportionally stratified by the number of immigrants settled in the various autonomous regions. The data were collected at random. For the two-year period 1996/1997, the aggregated sample comprised 2,413 people. In 2006/07, 2,405 people were surveyed. The matrix was completed with official statistics on the foreign population and unemployment rate.

The Anti-Immigrant Sentiment Index (Semyonov & al., 2006) was used to measure the attitude of Spaniards towards immigration. This model is based on the following four items, «Immigration will cause Spain to lose its identity» (Agree=1), «Influence of immigration on unemployment» (Increase=1), «Influence of immigration on Spanish salaries» (Decrease=1); and «Influence of immigration on delinquency» (Increase=1). The index varies from 0 to 4, where 4 represents the strongest anti-immigrant attitude.

However, as Cea d'Ancona (2009) points out, the measurement of xenophobia through surveys has limitations that exceed the technique itself, basically due to the social desirability bias defined by the stigma of admitting to racist sentiment. Any declaration or behaviour deemed to contravene the constitutional principles of equality and non-discrimination is liable to censure and even prosecution.

In order to find the variables that best predict this sentiment we carried out a regression analysis, taking into account the following dimensions: threat, insecurity and social rights (Cea d'Ancona, 2009). Threat is measured, on the one hand, by the real size of the foreign population, i.e., the rate of foreigners, and the perceived size (Quillan, 1995; 1996; Schenider, 2008; Schlueter & Scheepers, 2010; Semyonov & al., 2008), with a score of (1) for agreeing with the statement that there are too many immigrants in Spain, and on the other hand by identity threat, which is visible in the perception of conflict in questions of identity, measured by the extolling of either ethnic or civic virtues. To do this, we used the variable effects that immigration has on Spanish culture (bad or very bad=1), typical of an ethnic identity.

Insecurity, derived from threat, is expressed via two elements: one material, quantified by the attitude of only admitting immigrants when there are no Spaniards to carry out the activity (Agree=1), and the unemployment rate. And, political insecurity, referred to in two questions related to migratory policy and the granting of citizenship (Díez Nicolás, 2005). The first element is: «The economic situation is complicated enough for Spaniards let alone allotting money to help immigrants» (Agree=1) and the second: «The best attitude towards illegal immigrants» (legalize them=1).

Social distance, understood as the lack of interaction with immigrants, is constructed by three dimensions used in intergroup contact (Allport, 1954; Escandell & Ceobanu, 2009), that is, intense if they have a close affective relationship (No=1), occasional if they have ever had a long conversation (No=1), and at the workplace, when there is a labour relationship with foreign workers (No=1).

Finally, the variables on individual character are also extremely important in predicting anti-immigrant sentiment (Coenders & Scheepers, 2008): Sex (male=1), age (in years), education (university=1), income (lowest quartile =1), political orientation (right=1), activity (unemployed=1) and marital status (married =1).

Two national newspapers were chosen to gauge news treatment of immigration, «El País» and «El Mundo». All news items referring to immigration in the standard two-year reporting phases, 1997/98 and 2006/07, were taken as recommended by Lorite (2007), excluding new items from vacation periods. Also exempt from analysis were news stories about migration in which immigrants were not the protagonists. In all, the study used 217 news items from both newspapers.

Therefore, efforts must be made in increasingly multiethnic societies to strengthen a pluralistic view, and the communications media must modify their strategies, for example, by inserting other news frames that counterbalance the view of immigration as a perceived threat (identity or population), to reduce the rising trend of anti-immigrant sentiment that advances almost regardless of the real economic situation.

News frames were established by news type and factor analysis (Igartua & al., 2005; Muñiz & al., 2008). News items where the description of the event or its consequences could be judged undesirable for immigrants, for example crime, were coded negative. Information was coded neutral or ambiguous when no negative or positive slant towards immigrants was observed, and positive if the event or its consequences were desirable, such as legalisation.

3. Results

We first analysed the intensity and evolution of anti-immigrant sentiment and the variables that define it. Later, we examined the communications media's frame and treatment of news about immigration.

The initial result of the longitudinal study is the gradual increase in anti-immigrant sentiment in Spain. Whereas in 1997 the mean was 1.4, in 2007 it had risen to 2.1 (see Graph 1). In other words, the foreig-

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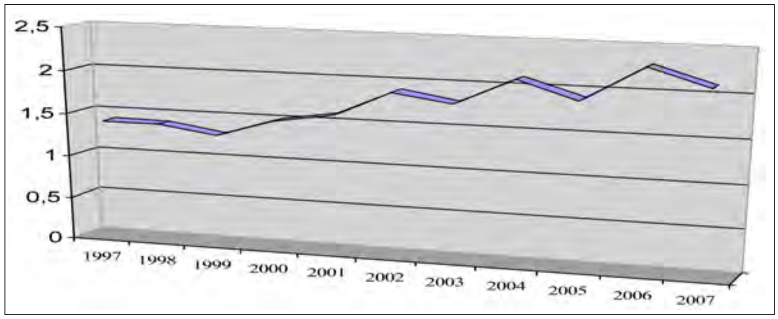
ner is identified more and more as a generator of unemployment, delinquency, lower salaries and an enemy of cultural identity. This evolution occurs during three distinct time periods within the 10 years analysed. Sentiment in 1997-99 remains almost constant at around 1.4. With the beginning of the new millennium, rejection jumps to 2.1, and from 2004 to 2007 it again increases, to 2.4. As Blalock (1967) suggests, there is no linear growth in Spanish attitudes towards the outgroup.



Graph 1. Evolution of anti-immigrant sentiment in Spain (1997-2007).
Source: ASEP Data: Authors.

In the second stage of the analysis, two regression models were estimated based on the individual and contextual variables (table 1). In Model 1, we examined the role of threat and insecurity, and intergroup contact variables in the construction of anti-immigrant sentiment. In Model 2, we added the individual variables.

In the first model, in 1997/98 both the threat and insecurity variables are seen as the best explanation for the sentiment, in this order of importance: perceived threat, money allotted to integration policies, negative effects on the host culture and allowing immigrants to enter when there are no Spaniards to perform the activity, all positively signalled, explaining 39.3% of the variance of anti-immigrant sentiment. In other words, the stronger the sensation of invasion and money allotted to integration policies, and the more they think that immigration has negative effects on the culture, and that immigrants should only be allowed to enter when no Spaniards can be found to occupy the job, the stronger the negative sentiment is. The size of the real population appears to have less weight, and negatively, legalizing immigrants. In the contact variables, only occasional contact appears statistically significant, so the more often they have a long conversation with a foreigner, the less negative the perception of the outgroup is.

In 2006/07, the variables increased their weight in explaining the sentiment. Rejection of allotting money to immigrant integration policies was important, followed by population and cultural threat, and admitting immigrants when there are no Spaniards to do the job. Legalisation again appeared in negative and, with fewer incidences than in the previous period, the unemployment rate. Concerning intergroup contact, statistically significant intense relationships appeared for the first time, such that the more intense contact is, the less xenophobia is aroused.

Therefore, the perceived threat created by various agents and institutions, and economic and political competition is more important in creating sentiment towards foreigners than the real population size or the unemployment rate, even when the immigration rates are relatively low, as occurred in 1997/98.

In the second model, the data corresponding to threat, insecurity and intergroup contact remained almost constant with the individual variables. In 1997/98, negative sentiment towards the outgroup was predicted by, in this order: age, political orientation, education, negatively, marital status, sex and unemployment. In other words, being older with a conservative ideology and low-level of education, married, male and unemployed revealed itself in anti-immigrant sentiment.

In 2006/07, unemployed and male are the most important socio-demographic variables, even though unemployment was at its lowest during the period analysed. Also, education and income lost predictive ability during this period.

How, then, is this sentiment constructed? The elements that contribute to constructing the view of otherness are multiple and of different depths. In our interest to discover the role of the communications media in configuring this process, as shown in table 2, we found that there was a considerable increase in the number of news items from the first to the second two-year period. There are two main reasons for this: the huge increase in the number of immigrants at that time, and immigrant demands and related political action. For example, in 2006, the fallout from legalisation passed the year before could still be felt, especially because of the so-called «call effect» it may have generated. In the space of 10 years, the migratory phenomenon went from being a matter of secondary importance to being a top priority on political and social agendas.

Delving deeper into the analysis, news items published in both periods were found to have had a distinctly negative character. In 1996/97, 65% of the news items had a negative profile and only 18% highlighted the positive aspects of immigration, and in 2006/07, negative news items rose to 69% and the positive to 21%. We find headlines citing undetailed affirmations by political and religious leaders, etc., such as: «An Islamic centre endangers coexistence in the Babel of Extremadura» (El Mundo, 17/8/2006); «Muslims ask for the «Moros y Cristianos» fiestas to be eliminated as unfitting for Spanish democracy» (El Mundo, 5/10/2006); «Islamic fundamentalism and immigration threaten Europe» (El Pais, 10/10/2006); «Living here is to die over a slow fire» (El País, 28/10/2006).

The increase in positive news also responds to migrations over time that aroused less suspicion in journalists, especially during times of economic expansion, such as the period from 1997 to 2007.

Six news frames resulted from the factor analysis: 1) illegal flows of immigrants (entering the country in makeshift boats, hidden inside lorries, etc.); 2) immigration and social opportunities (job market, housing, social services, etc.); 3) processing documents and legalisation of immigrants; 4) immigration and delinquency (crime, mafias, etc.); 5) racist and xenophobic acts, and discrimination; 6) social integration policies (central, regional and local governments). We might add that, with exceptions, each news item only fits into one frame.

The top frame in 2006/07 is illegal flows of immigrants, followed by document processing and legalisation, while immigration and crime appear most frequently in 1997/98; the third frame in both periods refers to social integration policies. The, smallest number of frames are for racist acts, xenophobia and legalisation on the one hand, and immigration and social opportunities on the other. The news frames say little about the positive effects of immigration on the host country, such as the economic contribution of immigrants to the State or its importance in a nation's development. Neither do they touch on the immigrants' experiences of discrimination or racism that they are subjected to almost daily, as reported by «SOS Racismo». However, the social opportunities frame increased considerably in 2006/07, coinciding with the economic boom.

4. Discussion and conclusions

This article analyses the image of foreign immigrants in Spain, since the opinions and attitudes towards immigrants represent new forms of racism and xenophobia. For this we took two different time periods, one that coincided with economic recession and low immigration rates, and the other at the high point of economic expansion and migratory consolidation.

The data show that hostility towards immigrants increased over a 10-year period. Whereas in 1997/98 the index showed a mean of 1.4, in 2006/07 it had risen to 2.4. However, this trend is not just explained by the increase in the real population over a short time. This is only the trigger at the beginning of immigrant

Variables		1997-98			2006-07		
		Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Threat	Real population	0.030**	0.022**	0.019**	0.038**	0.034**	0.036**
	Perceived population	0.190*	0.186*	0.166*	0.320*	0.312*	0.288*
	Effects on culture	0.170*	0.162*	0.159*	0.218*	0.220*	0.215*
Insecurity	Immigrants when there are no Spaniards	0.168*	0.162*	0.157*	0.100*	0.098*	0.106*
	Unemployment rate	0.001***	0.002***	0.001***	-0.030**	-0.032**	-0.031**
	Allot money to immigrants (no)	0.179*	0.177*	0.172*	0.377*	0.378*	0.374*
	Legalize	-0.082	-0.073*	-0.083*	-0.103*	-0.098*	-0.100*
Intergroup Contact	Intense (no)	0.004***	0.008***	0.012***	0.104*	0.107*	0.109*
	Occasional (no)	0.031**	0.026**	0.029**	0.018**	0.026**	0.039**
	Workplace (no)	-0.020***	-0.021***	-0.021***	-0.026***	-0.026***	-0.033***
Individual	Sex (male)		0.031**	0.035**		0.044**	0.043**
	Mean age		0.097*	0.104*		0.023*	0.030*
	Education (university)		-0.045**	-0.041**		-0.017***	-0.020***
	Income (low)		0.028***	0.033***		-0.027***	-0.027***
	Activity(unemployed)		0.019**	0.021**		0.040**	0.038**
	Political orientation (right)		0.061**	0.058**		0.024**	0.047**
	Marital status (married)		0.038**	0.032**		-0.005***	0.004***
Coefficient R^2		.393	.418	.422	.384	.392	.416

Table 1. Effects of the independent variables on anti-immigrant sentiment.
*P < 0.00; **P < 0.05; *** P <0.200

	1997/98	2006/07
Illegal flows of immigrants	28	53
Immigration and social opportunities	6	19
Document processing and legalisation	9	31
Immigration and delinquency	16	20
Racist and xenophobic acts and discrimination	3	6
Social integration policies	12	24
Total	74	153

Table 2. Number of news items per frame (1997-2007).

entry flows, as the variables predicting the sentiment in 1997/98 are not far from those 10 years later. Therefore, the sentiment responds to daily and/or institutionalised discursive practices dictated mainly by the communications media.

The construction of immigration is not per se through numbers or immigration inflows but responds to a symbolic construction, the product of speeches from a variety of actors and social scenes, in which the communications media are preeminent. Suffice it to recall that the top news frame in both periods referred to illegal entry flows. Thus when referring to figures on immigration, metaphors are used to quantify the flows as: a wave, avalanche, invasion, etc., descriptions that promote the idea that there are too many immigrants and which provoke hostility and fear. «El Pais» expressed it like this in an article (08/08/1998): «Immigration: the tide grows». As a result, the immigrant is transformed by the host's fear of hyper-foreignization. In other words, immigration is seen as a problem rather than a phenomenon typical of international society presented with a new challenge.

But the threat transcends the numerical to become consolidated in identity (Schiefer & al., 2010; Schwart, 2008). As we are reminded by Worchel (1998), any type of group identity serves as a basis for conflict, especially when ethnic content is assigned to it based on stereotypes;, so, certain groups come to be conceptualized as culturally incompatible. They are distinguished by the exaggeration of cultural differences through subtle prejudice. Culture is perceived as a hereditary trait that nobody can shed, or that, «there is a genealogical, and therefore, racial conception of the culture and its transmission» (Todd, 1996: 343). Immigrants are faced with open rejection or subordinate «integration» since the beliefs of the others are almost always seen as containing elements of fundamentalism, the equivalent of a focus of conflict, especially if this involves Muslims, who are the archetype. Therefore, the best response to this situation, according to native Spaniards, is cultural assimilation but denial of full citizenship rights, which is acceptable even to those locals who do not consider themselves racists.

Consequently, Spaniards believe that the continual arrival of foreigners has a negative effect on the national culture, and money should not be allotted to their integration, nor should they be legalized. Moreover, in the speeches of some politicians that appear in the communications media, semantic structures prevail that stress the difference in appearance, culture and behaviour, or deviation from norms and values, and which take the form of slogans such as, «defend your identity», «defend your rights». This is boosted by a nationalist awareness, one in particular that has an ethnic basis. They demand of others what the native Spaniard would not ask of himself. Spanish identity has been configured in opposition to the other and defined on the basis of dimensions of an abstract and symbolic nature rather than on quality.

The feeling of threat is complemented by competition for limited resources such as jobs, housing, healthcare, etc., which also leads to a magnification of the immigrant presence. This is a response to news frames, or in other words, to immigration and social opportunities, and not to positive aspects such as the contribution to economic development, rather to the negative, and the excess demand for resources. Thus most Spaniards think that foreigners should only be accepted in situations where there are no Spaniards to the job required. Following on from this, economic insecurity is accentuated in times of recession as, supposedly, it reduces labour market opportunities and lowers the quality of the jobs available. Nevertheless, our study shows this to be secondary in the case of a negative sentiment towards the outgroup, since in 1997 Spain was in the midst of an economic crisis that raised unemployment to record levels and the number of foreigners in the country was the lowest among the then 15-member European Union; however, xenophobia was lower than in the two later periods, especially in 2006/07 when the country experienced its highest ever economic growth and lowest unemployment rates but, by contrast, the immigration rate stood at over 10% of the population. This is also confirmed first by the fact that unemployment in the first period was statistically insignificant in predicting variability in anti-immigration sentiment, while it was statistically significant in the other two periods; secondly because being unemployed carried greater predictive weight during economic expansion and when the immigration rate is at its highest.

This is due to the fact that the labour market occupied by immigrants (mainly agriculture and construction) complemented that dominated by native

Spaniards. In fact, labour discrimination against the immigrants gave locals access to jobs for which they were initially unqualified. However, immigrants then started to move into other labour sectors (services, for example) in which they competed directly for jobs with the national population, especially with those nationals who were at a disadvantage in terms of social and human capital. At the same time, immigration featured more prominently as a newsworthy topic, and in the 10-year period analysed the number of news items on immigration doubled, especially those with a negative slant. Moreover, the national population also perceived competition for welfare state benefits (housing, education and healthcare). They would, therefore, be prepared to accept the award of a minor payment towards the integration of immigrants, or they would legalize them. This is what Zapata (2009) calls the governance hypothesis, such that if the government confronted immigrant integration inclusively, offering them civic instead of credentialist citizenship, or stopped reassuring the population about its efforts to control flows, the negative sentiment towards the outgroup would be even greater. That is why the media emphasize government actions to control borders.

According to Van Dijk (2003), these are the definitive stereotypes held by the majority of those who feel threatened by the presence of ethnic groups that concur with semantic structures that reflect racist discourse, and which Echevarría and Villareal (1995) summarise as: 1) different appearance, culture and behaviour; 2) deviation from norms and values; 3) competition for scarce resources; 4) perceived threat.

As we can see, the perception of immigration is also closely related to social position; young people show a more moderate anti-immigration sentiment, as do people with a higher level of education or income. They do not see immigrants as a threat or in competition for resources, and they also understand that some news stories and speeches by politicians on immigration respond to specific agendas and are far from objective. Relational experience (direct or indirect) with immigrants also affects perception, since attitudes towards the outgroup are rooted in prejudice and stereotypes which are constructed and consolidated due to lack of intergroup contact. In Spain, the results show that although contact has increased, relations between natives and immigrants hardly exist, be they affective or occasional in nature. This is not due so much to the lack of common spaces as to the instrumentalization of the immigrant as a degrading agent. There is no shortage of news referring to problems of neighbourhood coexistence among groups or the deterioration of environments where immigrants reside. Social cognitions are acquired and deployed, and transform within situations and social interactions, and social structure contexts (Van Dijk, 2003).

To judge by the results, there is a definitive and clear correlation between the variables that define anti-immigrant sentiment and the news frames of the communications media. As in other national studies already mentioned, and international studies on the subject, (Dursun, 2005; d'Haenens & de Lange, 2001; Ter Wal, & al., 2005), the results show that the migratory phenomenon is viewed in negative terms. Furthermore, media representation through news frames, such as those linking immigrants to violence and/ or delinquency, or illegal entry in «pateras» (makeshift boats), contributes to the development of prejudice through the legitimization of certain xenophobic and racist discourses. The error stems from the selection of the event within the paradigm and standardized parameters of what is deemed newsworthy, and impacts little or not at all on what is revealed. Such a journalistic strategy replaces balanced news reporting, and the progressive monopolization of this sector leads to content homogenization by prioritising commercial interests over journalists' vocational sense of social responsibility.

The educational system not only provides a space for intergroup interaction, as an important element in casting judgment on the outgroup, it must also impart values of equality and the acknowledgment of difference to counteract negative images disseminated by other institutions. To do nothing and allow the current situation to prevail is to tolerate a process that will lead to xenophobic acts against groups and individuals.

Therefore, efforts must be made in increasingly multiethnic societies to strengthen a pluralistic view, and the communications media must modify their strategies, for example, by inserting other news frames that counterbalance the view of immigration as a perceived threat (identity or population), to reduce the rising trend of anti-immigrant sentiment that advances almost regardless of the real economic situation. Likewise, the educational system not only provides a space for intergroup interaction, as an important element in casting judgment on the outgroup, it must also impart values of equality and the acknowledgment of difference to counteract negative images disseminated by other institutions. To do nothing and allow the current situation to prevail is to tolerate a process that will lead to xenophobic acts against groups and individuals.

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Bibliometric and Social Network Analysis Applied to Television Dissertations Presented in Spain (1976/2007)

Análisis bibliométrico y de redes sociales en tesis doctorales españolas sobre televisión (1976/2007)

ABSTRACT
This paper analyses the productive structure in Spanish television research. Data from theses about Spanish television which had been defended in this country over the period 1976/2007 was extracted. Two methodologies are used within this analysis: a bibliometric analysis and Social Network Analysis (SNA). Results show the production of theses by time period, university, these advisors and examination board members. The use of social networks leads us in the identification of notable academic groups operating in the present period as well as tendencies in the composition of the board in terms of university of origin and thesis advisor. There are 404 theses on television written in this period. The results indicate a general and constant increase in the number of theses, especially noticeable over the last 15 years. Regarding scientific production, the Complutense University of Madrid stands out as the most productive. The structural analysis shows that only the Complutense University of Madrid, the Autonomous University of Barcelona, University of Navarre and the University of La Laguna generate their own research groups. Professors shaping the Spanish research system for television are found through the analysis of social networks. Leading positions within the network structure are held by professors of communication from the Complutense University of Madrid and the Autonomous University of Barcelona.

RESUMEN
El presente trabajo es un análisis de la estructura productiva de la investigación española sobre televisión a través de los datos extraídos de las tesis doctorales sobre televisión en Spain en el período 1976/2007. Para ello se utilizan dos metodologías diferentes; el análisis bibliométrico y el análisis de redes sociales. Para localizar las tesis doctorales se ha utilizado la base de datos bibliográfica Teseo. Los resultados describen la producción según quinquenios, universidades, directores y evaluadores. Se generan redes sociales para identificar grupos académicos que caracterizaron el período estudiado y tendencias de selección en tribunales según director y universidad. El número total de tesis producidas en el período estudiado es de 404 títulos. La tendencia general indica un incremento constante en todos los períodos con un crecimiento exponencial en los últimos 15 años. Son las universidades históricas de Comunicación las que destacan en la producción, siendo la Universidad Complutense la que capitaliza el mayor número de tesis leídas. El análisis estructural demuestra que solamente la Universidad Complutense, la Universidad Autónoma de Barcelona, la Universidad de Navarra y la Universidad de la Laguna generan grupos propios. A través del análisis de redes sociales se localiza a los profesores que estructuran el sistema de investigación español en televisión. Las posiciones predominantes dentro de la estructura de la red son ocupadas principalmente por catedráticos de Comunicación de la Universidad Complutense y Autónoma de Barcelona.

KEYWORDS / PALABRAS CLAVE
Social network, bibliometric, dissertations, thesis, university, audiovisual communication, television.
Redes sociales, bibliometría, tesis doctorales, comunicación audiovisual, televisión, universidad.

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1. Introduction

The study of doctoral theses is extremely valuable, since they are one of the best reflections of research areas, trends and capabilities in university settings. Furthermore, it is an ideal way to understand the social structure of research, which allows us not only to analyse the evolution of research for a given area of study, but also to identify the main stakeholders and the existing relationships between them. Various factors influence and enable the processes of creation and subsequent evaluation of a successful doctoral thesis. In other words, the research topic, related discipline, department, thesis advisor and current university regulations may determine the final characteristics of a thesis. For a PhD candidate, choosing a thesis advisor may be one of the most important decisions, as students consider their advisor as someone who has the right research background to advise them throughout a long process, during which both theoretical and methodological doubts normally arise. University and research policies also play a crucial role. They are stimuli for boosting research production in most academic areas, resulting in an increasing number of theses. Finally, research tradition in university departments plays a decisive role in the quality and quantity of doctoral theses. Tradition articulates the ways of high education in the different universities, and therefore the postgraduate and PhD studies offered by each school. This factor becomes the motor that drives thesis production.

The fact that doctoral theses themselves are a research topic proves their relevance. Numerous studies on doctoral theses have been conducted in Spain. Fuentes and Arguimbau (2010) presented a classification of studies on theses based on the methodology used (either general or field-specific); up to 18 different topics were identified as research areas. Due to their similarities in terms of method and topic, it is worth mentioning studies in doctoral theses in the field of Bibliometrics (Delgado, Torres, Jimenez & Ruiz-Pérez, 2006), Public Relations (Castillo & Xifra, 2006: 141-161) (Xifra & Castillo, 2006: 302-308), and Radio (Repiso, Torres & Delgado, 2011). Nevertheless, similar studies have not been conducted in every field. No studies have addressed television research in Spain. Similarly, no specific descriptive studies have focused on television research in Spain apart from those carried out in the framework of broader studies on Communication. In this regard, the research carried out by Daniel Jones (1994, 1997, 1998, 2000) stands out, since it has triggered a massive interest in measuring and understanding research in the field of Communication, leading to a vast compendium of papers and books on this matter.

The aim of this study is to characterize the production of doctoral theses on television in Spain between 1976 and 2007, through two complementary methods: biobliometric analysis and social network analysis (SNA). Therefore, this paper has a two-fold aim: to quantify and track the production of doctoral theses per university, thesis advisor and participation in committees, and to identify the main stakeholders in television research in Spain and how they related to each other. The latter objective requires the use of two methods: bibliometrics and SNA. Existing relationships between the different stakeholders in the process of creating and evaluating a doctoral thesis are identified thanks to SNA. In particular, the advisors and members of committees are identified, thus making it possible to identify schools and faculties conducting research on television that were invisible at the moment. The social network relations can be extracted from the composition of the examining committees because as the committee composition is suggested by the PhD student and their advisor. The university will then endorse their suggestion. SNA has been used in this study to visualize the invisible structures underlying television research in Spain, as has been the case in previous group studies (Cross, Borgatti & Parker, 2002).

2. Material and methods

A descriptive longitudinal and retrospective study of doctoral theses on television that were defended in Spain between 1976 and 2007 was conducted. The Teseo database, kept by the Spanish Ministry for Education, was the main data source. This database consists of a compilation of information on doctoral theses presented in Spanish universities. One of the most important features of Teseo is that it comprises records of the theses produced over a long period of time (since 1976), together with exhaustive descriptions of bibliographical records, which include highly interesting data like the names of the members of committees. Nevertheless, there are some problems related to record standardization with Teseo, as has been mentioned in previous studies (Delgado, Torres, Jiménez & Ruiz-Pérez, 2006; Delgado, Fernández & Torres, 2011). In terms of inclusiveness, it is worth mentioning that not every doctoral thesis in existence can be found in the database: only those that have been submitted by the PhD candidate or university are included in the catalogue. However, the most problematic aspect regarding coverage, affects recent theses, since not enough time has elapsed from the submission/entry of every file. According to Fuentes and Arguimbau (2010: 76), it is estimated that Teseo contains 74.9% of the total number of theses produced in the academic year 2006-07 and 66.7% of those produced in 2007-08. These percentages were calculated in 2010, the year when the data for this study were collected. Despite such limitations, Teseo is the only tool compiling the theses presented in Spanish universities and virtually the only one used in quantitative studies.

The time period analysed covers three decades, starting in 1976, when the first records were entered in the database, and ending in 2007. Over the first two years only one thesis was recorded, the one written by Mariano Cebrian. Therefore, the first «five-year» period in this study actually includes seven years (1976-82). This enables a better time distribution. As shown in previous studies (Jones & al., 2000), only one thesis on television was written before 1976 (Moragas, 1974). This work can be considered the start of television research in Spain. This study covers the first thirty years of dissertation studies about television in Spain. Exhaustiveness in data retrieval was paramount in designing a strategy to search for relevant theses. For this reason, we opted to retrieve the data and create a targeted database of theses written on the field of Communication and to then narrow these down to those theses specific to television. To this end, all the theses written in departments of universities offering Communication studies were collected in the first «round». Next, analysis of the terms used in the theses titles was conducted by using the keywords «Televis*», «audiencias» [audiences], «series» [series] and «canal» [channel] in the fields «Title» and «Abstract» of the Teseo search engine. The number of resulting theses totalled 387. Inserting data manually solved the problem of absence of data in some fields, such as the advisor or the members of the committee. Results were contrasted with those obtained in Jones et al. (2000). As a result, 19 more theses absent in Teseo were included in the compilation, totalling 404 theses. Finally, all the records were exported to an ad hoc Microsoft® Access 2007 database.

The software program Pajek 2.0 was used to analyse social networks. The resulting social networks were mainly related by co-participation of the different stakeholders in committees of theses on television, namely the candidate, advisor and members of the examination committee. The analysis of social networks generated by exam committees required designing different symmetrical matrixes for type-1 networks. Members of the committee are represented by means of a node and co-participation or coincidence in the same committee is represented by means of a non-directed edge. In order to increase network visibility, edges with values exceeding two relationships[2] were used in medium networks (of up to one thousand nodes) and those exceeding three relationships in large networks (with over one thousand nodes).

It is relevant to identify existing relationships showing communication between nodes during the structural analysis. Research breakthroughs in this and other fields are highly dependent on communication between researchers (Cole & Cole, 1973).

In this study 404 doctoral theses on television written in Spain between 1976 and 2007 were identified. Most of them (67%) were defended between 1998 and 2007. This is probably due both to the massive increase of the potential of Spanish university for producing research and to the effect of different policies and reforms in the research arena. Likewise, the evolution of the number of theses compared to the total number of theses presented in Spain indicates that research on television has followed the same pattern as in other fields in Spain.

3. Results

3.1. Production of theses on television: evolution and universities

The total number of doctoral theses on television defended in Spain between 1976 and 2007 amounts to 404. Figure 1 shows the evolution of production in

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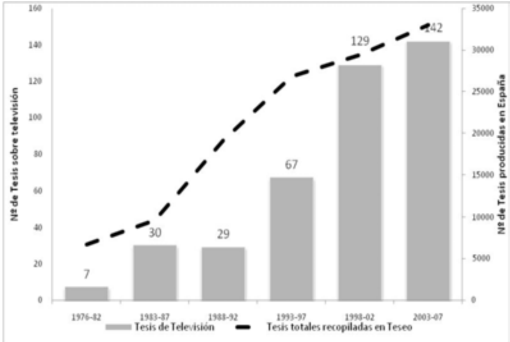

Figure 1. Evolution of theses on television written in Spain between 1976 and 2007 per five-year period.

five-year periods since 1976. There has been an ongoing increase in the number of theses written on this topic, which coincides with the increasing number of theses produced in the rest of academic fields. The first theses on television in Spain were written in the late seventies and the numbers increased in the eighties. However, a significant breakthrough was not registered until the late nineties, with 129 theses produced between 1998 and 2002. The highest production turnover was registered in the last period (2003-07) with 142 theses, although production increased less rapidly and seemed to stabilise around similar figures.

Regarding the schools where theses were presented, 41 different universities were identified in the analysis. The ten most productive ones generated 70% of the theses (table 1). The Complutense University in Madrid ranks first with 128 (32%) theses, followed by the Autonomous University of Barcelona with 56 (14%) and the University of Navarra with 27 (7%). Given their short tradition in Communication studies, the presence of the Universities of Seville, Malaga and Valencia in the ranking is worth mentioning. Regarding the evolution of the five most productive universities per five-year period, the Complutense University in Madrid stands out. It registers a constant increase in the number of theses and is systematically the leading university in every period.

Only those universities with at least four doctoral theses are included.

3.2. Doctoral thesis advisors and participation in examination committees

Table 2 shows the names of professors who have been the advisors of at least three doctoral theses[3]. The Complutense University of Madrid is the leading school, with 14 different advisors. Two notable advisors at this University are Mariano Cebrian Herreros, the advisor with the highest number of theses (10), and Jose Ramón Pérez Ornía, who has advised on five theses. The Autonomous University of Barcelona is the second school with the highest number of advisors, in particular six professors. Two of them, Emilio Prado Pico and Miguel de Moragas Spa, rank second and third, with eight and six theses, respectively. The Complutense University and the Autonomous University of Barcelona are the schools with the most productive advisors. The ten professors with at least five theses are from one of those two universities. Other universities have an important presence in the list, such as the University of Navarra with four advisors with at least three theses and the salient Juan José García Noblejas, as well as the universities of Malaga and La Laguna. The absence of advisors from the University of Seville is striking, since it ranks as the fourth most productive university in the period analysed. This gap is due to the fact that research production generated in this University is distributed among a large number of professors instead of being linked to one specific advisor.

Table 3 contains the names of scholars with the highest participation rate in exam committees. Prado Pi-

Universidad	Nº Tesis**	% Tesis	Nº de tesis defendidas según quinquenio						
			- 1975	1976-1982	1983/1987	1988/1992	1993/1997	1998/2002	2003/2007
Complutense de Madrid	128	31,7 %	1	2	12	9	28	35	41
Autónoma de Barcelona	56	13,7 %	1	0	6	7	9	23	11
Navarra	27	6,65 %	0	1	0	2	5	9	10
Sevilla	15	3,69 %	0	0	1	1	2	7	4
Málaga	14	3,45 %	0	0	0	2	2	4	6
Universitat de València (Estudi General)	13	3,20 %	0	0	2	1	0	4	6
País Vasco/Euskal Herriko Unibertsitatea	12	2,96 %	0	0	1	1	3	5	2
La Laguna	11	2,71 %	0	0	0	0	2	6	3
Nacional de Educación a Distancia	10	2,46 %	0	0	0	1	4	1	5
Politécnica de Valencia	9	2,22 %	0	0	4	2	1	1	1
Salamanca	9	2,22 %	0	0	0	0	1	3	5
Pontificia de Salamanca	8	1,97 %	0	0	0	0	0	0	8
Santiago de Compostela	8	1,97 %	0	0	0	1	1	6	0
Pompeu Fabra	7	1,72 %	0	0	0	0	1	3	3
Alcalá	6	1,48 %	0	0	1	0	1	1	3
Barcelona	6	1,48 %	0	1	1	2	0	0	2
Jaume I de Castellón	6	1,48 %	0	0	0	0	0	0	6
Granada	4	0,99 %	0	1	1	0	0	0	2
Murcia	4	0,99 %	0	0	1	1	0	0	2
Politécnica de Madrid	4	0,99 %	0	1	0	0	2	0	0

Table 1. Number, percentage and evolution of the number of theses on television written in Spanish universities between 1976 and 2007 per five-year period.

co, Fernández del Moral and Bustamante Ramírez have been appointed examiners on over 20 occasions. In this regard, the Complutense University and the Autonomous University of Barcelona are the leading universities. Apart from their participation in examining committees, we were interested in analyzing where this examining committees took place. This provides valuable information about the influence of the professor based on the number of theses that were discussed at the professor's own university, the number argued at other universities, and how many different universities the theses were argued at. García García presents an interesting case, since he has participated in 17 exam committees, six of them at the Complutense University in Madrid, where he teaches, and 11 committees held in seven different Spanish universities. This fact indicates that he is a figure of national renown. On the contrary, some researchers with a high participation rate like Palacio Arranz (Complutense University of Madrid), Moragas Spa (Autonomous University of Barcelona), or García Fernández (Complutense University of Madrid) have mainly participated in committees held at their universities.

Director	Nº Tesis	Centro	Director	Nº Tesis	Centro
Cebrián Herreros, Mariano	10	UCM	García Noblejas Liniers, Juan José	4	UNAV
Prado Picó Emilio	8	UAB	Franquet Calvet, Rosa	3	UAB
Moragas Spá, Miquel De	6	UAB	Rodríguez Bravo, Ángel	3	UAB
Pérez Ornia, José Ramón	6	UCM	Vilches Manterola, Lorenzo	3	UAB
Bustamante Ramírez, Enrique	5	UCM	Benito Jaén, Ángel	3	UCM
Esteve Ramírez, Francisco	5	UCM	García Fernández, Emilio Carlos	3	UCM
Fernández Del Moral, Alfonso Javier	5	UCM	Piñuel Raigada, José Luis	3	UCM
García Matilla, Agustín	5	UCM	Torán Peláez, Luis Enrique	3	UCM
Orive Riva, Pedro	5	UCM	Acirón Royo, Ricardo	3	ULL
Palacio Arranz, José Manuel	5	UCM	Álvarez De Armas, Olga Margarita	3	ULL
Balsebre Torroja, Armand	4	UAB	Pablos Coello, José Manuel De	3	ULL
García García, Francisco	4	UCM	Aguilera Moyano, Miguel De	3	UMA
Lara García, Antonio	4	UCM	Díaz Nosty, Bernardo	3	UMA
Méndiz Noguero, Alfonso	4	UMA	Nieto Tamargo, Alfonso	3	UNAV
Sevillano García, María Luisa	4	UNED	Sanchez Aranda, Jose Javier	3	UNAV

Table 2. Professors who have advised more than two theses written on television theses 1976 and 2007.

3.3. Networks of co-participation in examining committees

Once the main stakeholders are identified, graphs enable us to observe the social structure of co-participation in examining committees. They may represent invisible schools. As a general rule, the total network for 1976-2007 comprises 1,593 participants interrelated by means of 7,505 links. Among them, 7,021 (93.5%) are attached to value 1, which may mean a single coincidence in a committee. The network increasingly incorporates a higher number of nodes, increases in cohesion and density, thus requiring superior measurement units for representation. Figure 2 shows the reduced co-participation network for the period 1978-87 (no data on the members of the committee is available for theses written before 1978) featuring two highly differentiated components. The first component is found on the left-hand side and comprises a united group of researchers who have participated in examining committees of theses advised by Tomas Ferré (Polytechnic University of Valencia). Mattalia Alonso is one of the main committee members included in this group. The second component is of a more heterogeneous nature. Even though most of the researchers included come from the Complutense University of Madrid (Antonio Lara García, J. María Desantes and Pedro J. Pinillos), members from other universities, such as the Autonomous University of Barcelona (Miquel de Moragas) and the University of Navarra (Alfonso Nieto Tamargo and Angel Benito), are also present.

An evolution of the co-participation network is identified in the second period (1988-97). Firstly, a

TRIBUNAL	Filiación	Nº tribunales	Número de participaciones en tribunales según Universidad donde se ha producido la lectura[4]: Universidad propia	Otras Universidades	Universidades diferentes
Prado Picó, Emilio	UAB	24	9	16	7
Fernández del Moral, Alfonso J.	UCM	23	18	5	4
Bustamante Ramírez, Enrique	UCM	22	13	9	7
García García, Francisco	UCM	17	6	11	7
Palacio Arranz, José Manuel	UCM	16	12	4	4
Cebrián Herreros, Mariano	UCM	15	10	5	5
Franquet Calvet, Rosa	UAB	13	6	7	3
Benavides Delgado, Juan	UCM	12	7	5	5
Moragas Spá, Miquel de	UAB	12	10	2	3
García Fernández, Emilio Carlos	UCM	11	10	1	2
Huertas Bailén, Amparo	UAB	11	5	6	4
Lara García, Antonio	UCM	10	7	3	4
Sánchez Tabernero, Alfonso	UNAV	10	8	2	2
Tresserras Gajú, Juan M.	UAB	9	7	2	2
Gómez y Méndez, José Manuel	US	8	1	7	2
Gubern Garriga Nogués, Román	UAB	8	3	5	5
Ledo Andión, Margarita	USC	8	1	7	3
Pablos Coello, José Manuel De	ULL	8	4	4	3
Ricarte Bescós, José María	UAB	8	8	3	4

Table 3. Number and type of participation in committees of theses on television in the period 1997-2007.

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higher number of professors with at least two co-participations is registered. Secondly, sub-groups are more interrelated even though there are still two main components. The mediating task of scholars like Fernández del Moral is clearly visible in the network (figure 3), showing the strong connection between the Complutense University of Madrid and the University of Navarra. Similarly, Bustamante Ramírez has strong links connecting the Complutense University of Madrid, the University of Barcelona and the University of the Basque Country. Exchanges of members of examining committees affect the same teachers. Universities tend to appoint certain members systematically. A striking fact is the isolated nature of the node led by Ventín Pereira of the Complutense University of Madrid, who participates in committees that are not connected to the rest of the network. The cohesion of the network for this period suggests that the studies on television are more mature and consolidated. A shift is registered, with nodes that changed from representing slightly interconnected groups attached to specific universities in the first study period to a network with a higher frequency of exchanges.

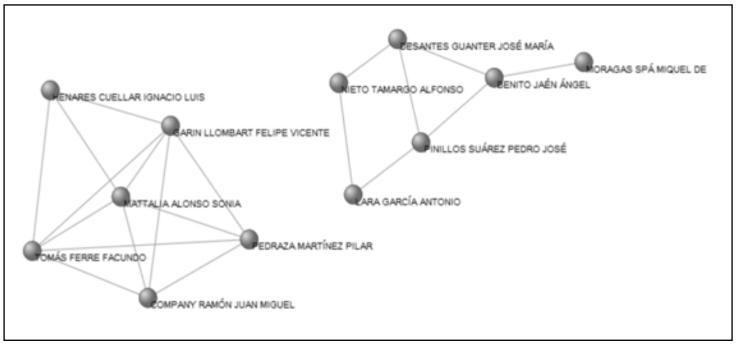

Figure 2. Network of scholars with at least two co-participations in examining committees of theses presented between 1978 and 1987.

Figure 4 shows the network for the period 1998-2007. In this case (due to limited space), the graph is based on three instead of two co-participations. A higher number of stakeholders and interactions is registered. Two components are identified: the one for the Complutense University of Madrid and the one related to the Autonomous University of Barcelona. As shown in Table 1, these components represent leading groups in theses production. One of the characteristics of this period is the incorporation of new, properly-defined sub-groups within universities. Two sub-groups linked by Cebrián Herreros and Pablos Coello, respectively, are found in the node on the right-hand side, which is regarding the Complutense University. The one for the Autonomous University of Barcelona on the left-hand side also includes two groups. One of them is strikingly large and related to Bustamante Ramírez. The second group has strong links with the first one through Bustamante and Palacio Arranz. It is worth mentioning that other universities orbit around the Complutense University or the Autonomous University of Barcelona rather than being tightly grouped. A further group could be considered if the graph were based on two rather than three co-participations. It would be grouped around the University of Navarra and led by Sánchez Tabernero.

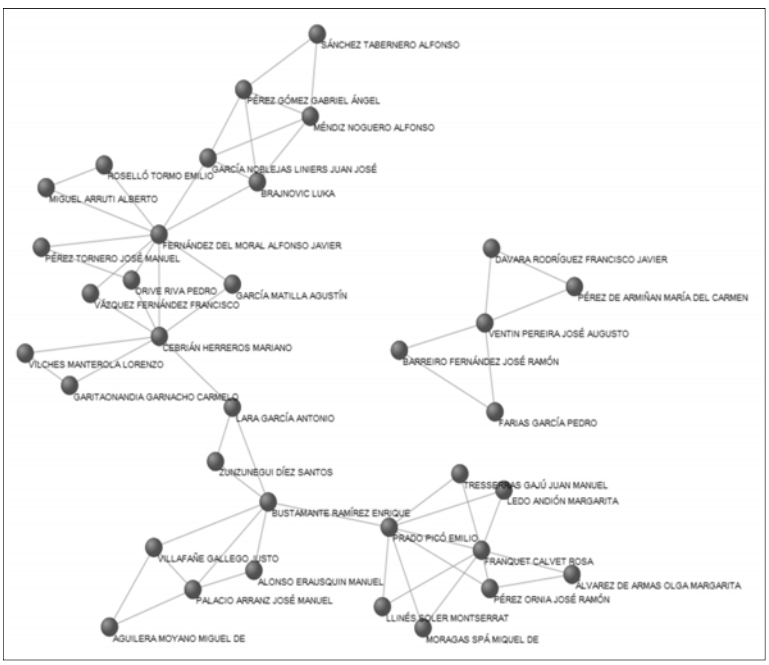

Figure 3. Network of scholars with at least two co-participations in examining committees for theses written between 1988 and 1997.

The same display method was used to create a figure of

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the «Network of scholars with at least 3 co-participations in committees of theses defended between 1976 and 2007» (https://sites.google.com/site/torressalinas/archivos1/Red1978-2007.tif). The total network (1976-2007) comprises 1,593 members of committees related to each other by means of 7,505 links. Once reduced, the network comprises 13 components. Four of them have three nodes each. The main component has 54 scholars, including the main researchers doing television research in Spain collected by means of doctoral theses. The Complutense University of Madrid, the Autonomous University of Barcelona, the University of La Laguna and the University of Navarra are the only ones capable of generating their own research groups in the field of television. Other universities do not have their own groups. Therefore, their scholars depend on the Complutense University of Madrid and to a lesser extent on the Autonomous University of Barcelona to form a group. The thickness of connecting lines represents the level of the relationship between the different stakeholders. As a result, solid connections can be identified, such as the one between Franquet Calvo and Prado Pico or the one between Moragas Spa and Prado Pico.

3.4. Networks of committee selection per advisor and university

The analysis of social networks enables us to identify preferences in member selection. Selection has been analysed at two different levels: first, the professors that are most frequently appointed by a given advisor, resulting in the «Network of preferences in member selection per advisors of theses on television defended in Spain between in 1976-2007» (https://sites.google.com/site/torressalinas/archivos1/redselecciontribunal.jpg), and secondly, professors who are most frequently selected by universities, resulting in the «Network of preferences in member selection per university for theses on television defended in Spain in 1976-2007» (https://sites.google.com/site/torressalinas/archivos1/Redseleccionuniversidades.tif). In the network of selection preferences per advisor, preference given by Cebrián Herreros to Fernández del Moral is worth mentioning (eight times). Likewise, the tendency of Pérez Ornía to appoint García Fernández is salient. One of the most interesting aspects is the triad made up by Bustamante Ramírez, Lara García and Prado Pico, who are consciously rather than randomly selected, as may be the case in co-participations. The Complutense University of Madrid and the Autonomous University of Barcelona are connected and the leading figures identified. In addition, various general phenomena are identified. First of all, the majority of advisors tend to appoint someone from their own university, which is in agreement with the logics of relevant regulations. Secondly, preferences are not reciprocal except between Orive Riva and Fernández del Moral. Finally, very few members of committees are preferred by two advisors, except Bustamante Ramírez.

An increase in the aggregation level and the preferential appointment of certain examiners by universities is obtained in the «Network of preferences in appointment of examiners for theses on television shown by universities in Spain between 1976 and 2007». The reduced network implies that only those relationships with values over three are included. Co-appointment of certain examiners by specific universities indicates that similarities exist between their preferred research topics and scholar exchanges. In this respect, the Complutense University of Madrid and the Autonomous University of Barcelona are the ones with the highest number of common preferences. Five professors participate in committees held at either school (Franquet Calvet, Prado Pico, García García, Bustamante Ramírez and Ledó Andion). Apart from these professors, the following stand out as scholars who are normally selected by two universities: Pablos Coello (Complutense University of Madrid and University of La Laguna), Méndiz Noguero (from the University of

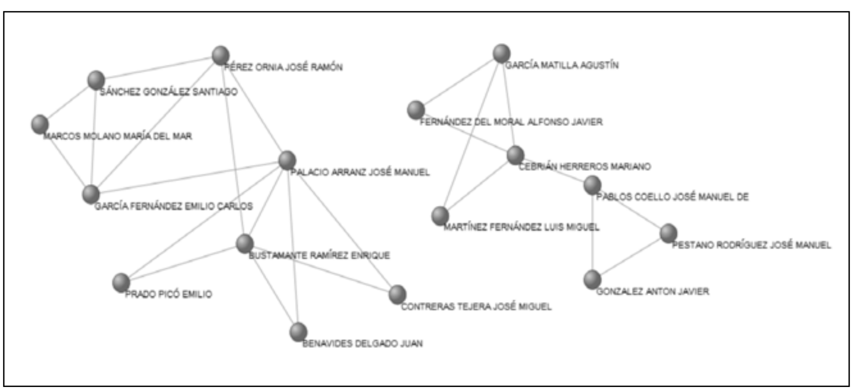

Figure 4. Network of scholars with at least three co-participations in examining committees presented between 1998-2007.

Malaga and is preferably appointed by the University of Madrid and the University of Navarra), and Aguilera Moyano (Complutense University of Madrid and University of Malaga). As a general rule, the rest of the professors are preferably selected by one university. In most cases, those professors who are preferred by several universities are those with a higher national renown.

4. Discussion and conclusions

In this study 404 doctoral theses on television written in Spain between 1976 and 2007 were identified. Most of them (67%) were defended between 1998 and 2007. This is probably due both to the massive increase of the potential of Spanish university for producing research and to the effect of different policies and reforms in the research arena. Likewise, the evolution of the number of theses compared to the total number of theses presented in Spain indicates that research on television has followed the same pattern as in other fields in Spain. With regard to universities, the Complutense University of Madrid leads thesis production (31.7%), followed by the Autonomous University of Barcelona (13.7%) and the University of Navarra (6.65%).

This fact is related to the longer tradition of the leading universities in Communication studies: communication studies were first offered in those three universities in the academic year 1971-72. Nevertheless, history is not the only fact determining thesis production. An interesting fact is that some universities with a shorter research tradition in Communication studies came together in different periods (1998-2002; 2003-07), as was the case of the University of Malaga and the University of Seville. This was due thanks to the incorporation of professors who had studied at other universities.

In terms of advising theses on television in Spain, Mariano Cebrian from the Complutense University of Madrid and Emilio Prado Pico from the Autonomous University of Barcelona stand out as the two professors with the highest number of theses advise. Both have taught Audiovisual Communication since the eighties and contributed to the inception and consolidation of research on television. Regarding participation in committees, E. Prado Pico, E. Bustamante and A. J. Fernández del Moral are two notable figures. F. García García and E. Prado are the most renowned in Spanish universities, since they have participated in the highest number of committees in different universities (excluding their university of origin). Period-based SNA shows the way in which the number of scholars in networks increases and becomes more specialized over time. During the first period (1976-87), most professors came from Information Sciences and Arts departments and did not specialise in television, except special cases such as Miquel de Moragas. Over the second period (1987-98), new professors were included in the network. They contributed to the consolidation and quantitative increase of theses written in the departments of Information Sciences to the detriment of other fields. In addition, research groups focusing on television were created.

The leading figures in the last period (1998-2007) are highly specialized professionals who conduct research in the areas mentioned above and also in the field of Audiovisual Communication. This fact portrays the extent of consolidation of the research community. Leading positions may result from their gift to set up relationships or, as some studies suggest, from their multidisciplinary nature within their field (Leydersdorf, 2007a; 2007b).

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In addition, the chronological evolution shows that the Complutense University of Madrid and the Autonomous University of Barcelona are the universities with the highest number of groups. The Complutense

University stands out as the one with the highest number of independent sub-groups (up to four groups have been identified, two in the case of the Autonomous University of Barcelona). Such groups attract professors from different universities without their own groups. Apart from these two universities, the University of Navarra and the University of La Laguna are the only ones capable of generating their own groups. However, the number of members is limited.

Notes

1 An asterisk is used in search engines for truncation of terms in order to retrieve all those terms with the same root.e.g. Televis* returns results including Television (noun), Televisivo (adj.), Televisiva (adj.) and other words with the common root «televis».

2 Professors have coincided in two or more committees.

3 In order to simplify data analysis and representation, only those supervisors who have advised three or more theses are included.

4 This table shows the number of committees the professors have been members of at their university of origin, at other universities and the number of different universities they have participated in.

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The Risk of Emergence of Boomerang Effect in Communication against Violence

Riesgo de aparición del efecto boomerang en las comunicaciones contra la violencia

ABSTRACT

Violent behaviors cause concern among people, policy makers, politicians, educators, social workers, parents associations, etc. From different fields and perspectives, measures are taken to try to solve the problem of violence. Institutional communication campaigns against violence and the publication of news related to violent events are often some of the actions used by policy makers. But some of the literature and data have shown that its effectiveness is not always exactly as expected. And even some anti-violence messages, can have the opposite effect and reinforce the attitudes of those who thought that violence is necessary. The hypothesis is that most people assume with no problem the core message of anti-violence campaigns. But, and this is the key issue and most problematic, individuals who are more likely to be violent (precisely those who should address such communications) could react to anti-violence message in a violent way. There is a tragic paradox: the anti-violence message could increase the predisposition to violent behavior. This would be a case of what some literature called boomerang effect. This article highlights the need for detailed empirical studies on certain effects of media (desensitization, imitation, accessibility and reactance), which could help explain the emergence of the boomerang effect.

RESUMEN

Los comportamientos violentos causan inquietud entre los responsables públicos (políticos, educadores, asistentes sociales, asociaciones de madres y padres, etc.) que, desde diversos ámbitos, toman medidas que tratan de dar solución al problema de la violencia. La difusión de campañas institucionales de comunicación en contra de la violencia y el fomento de la publicación de noticias relacionadas con sucesos violentos suelen ser algunas de las acciones utilizadas. No obstante, parte de los datos y de la literatura disponible han demostrado que su eficacia no siempre es la esperada e, incluso, dichas acciones pueden llegar a tener efectos contrarios al deseado y reforzar las actitudes de los que piensan que la violencia es necesaria. Se sostiene la hipótesis de que la mayoría de la población asumiría como propios los mensajes contrarios a la violencia. Sin embargo –y esto es la cuestión clave y más problemática– son justo aquellos individuos con mayor propensión a la violencia (precisamente aquellos a quienes deberían dirigirse tales comunicaciones) quienes podrían reaccionar ante el mensaje antiviolencia de un modo no deseado. Se da una dramática paradoja: el mensaje antiviolencia podría aumentar la predisposición a desarrollar comportamientos violentos. Estaríamos ante un caso de lo que cierta literatura denomina efecto boomerang. Por último, se señala la necesidad de un estudio detallado sobre determinados efectos de los medios de comunicación (insensibilización, imitación, accesibilidad y reactancia), que podrían ayudar a explicar la aparición de dicho efecto boomerang.

KEYWORDS / PALABRAS CLAVE

Media effects, violence, institutional campaigns, the boomerang effect, desensitization, imitation, accessibility, reactance.
Efectos de los medios, violencia, campañas, efecto boomerang, insensibilización, imitación, accesibilidad, reactancia.

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1. Introduction. Violence as a social problem

Today violent behavior is one of the problems that most concerns society as a whole. Numerous public institutions and diverse social-action organizations (NGOs, Anti-violence associations, etc.) have begun to implement different initiatives to eradicate or at least minimize violent conduct as much as possible.

In this article we concentrate on those initiatives that focus on awareness and sensitization campaigns against violence in order to consider the extent to which these measures are effective and explain why they may be failing. We begin with two proven facts: a) an important communicative effort is being made against violence, but at the same time, b) the data suggest that this effort is not generating the desired results.

The evidence that an important dissemination effort is underway is that the anti-violence awareness campaigns have required a significant economic investment over the last several years. For example, according to the Spanish Ministry of Equality, in 2008 the state-funded campaign against gender violence Ante el maltratador, tolerancia cero cost 4 million euros to fund.

Nevertheless, the desired results have not yet been achieved. Despite the existence of these awareness campaigns, violent behavior has not decreased, with some of the indicators reflecting truly alarming statistics. For example, in the last decade, the total number of violent crimes has experienced a significant increase:

Crimes perpetrated against people's lives, integrity and liberty									
2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
59,737	62,722	69,559	91,070	96,034	98,701	101,437	105,009	104,883	103,647
Number of deaths from gender violence									
2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
50	54	71	72	57	69	71	76	56	73

Sources: Interior Security Studies Cabinet. Ministry of Interior, and Ministry of Health, Social Policy and Equality.

Meanwhile, the statistics of victims of gender violence in Spain during the last decade also show a similar worrying trend despite the fact that now is precisely when more measures are being put into place to eradicate this serious social problem[1].

Therefore, the question that needs asking is: What is going wrong? Although it is evident that social phenomenon can result from diverse causes, one of the possible reasons may be the clearly limited effectiveness of the campaigns designed to sensitize the population against the use of violence. This would explain why the statistics on the occurrence of violence remain unchanged, or do not show a significant decrease.

How can one explain that the number of violent acts increase after awareness campaigns? In this case, we are not only talking about the ineffectiveness of these campaigns, but also of a much more relevant and problematic issue: the possibility that an unforeseen perverse effect is being generated. Our hypothesis is that although the majority of people take on the anti-violence message as their own, there is a reduced number of individuals with a higher propensity towards violence that may react to these messages in a very undesirable way, in that the campaign's message may cause a higher predisposition in them for developing violent behavior; resulting in what some literature calls the boomerang effect.

In this context, critical reflection is needed to determine the social consequences of anti-violence awareness campaigns and identify the causes behind their apparent failure, and at the same time allow us to find the key to developing new campaigns that would be more effective against all types of violence. Several lines of reasoning can aid in explaining the problem. In this article, we will discuss some of them in detail.

2. The root of the problem

When designing an awareness campaign, one of the first steps to follow is to determine to whom the message is directed, who our target audience is. This means that the characteristics of the intended recipient of the campaign may be quite diverse and in the case of sensitization campaigns against violence, it may be especially important to keep in mind that some people are more prone to violent behavior and that their exposure to the campaign could generate different responses in them than those expected.

According to data from a 2008 survey on the use of cellular phones among minors, a sample from the Autonomous Region of Madrid of 1053 minors between 10 and 16 years of age demonstrates that roughly 10% of the child and young adult population are particularly prone to violent behavior (García Galera & al., 2008). The results of this study reveal that these young people confess their desire to record the hooliganism of others, show indifference to or enjoy watching violence posted on the Internet, and even on occasion have used their cellular phones to

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film fights, humiliating or violent acts (for example, pranks played on professors) or have posted these recordings on the Internet (YouTube, MySpace).

This is clearly alarming data, and presents us with a phenomenon that is quantitatively and qualitatively relevant to social coexistence. We are witnessing a scenario in which certain youths demonstrate an elevated degree of insensitivity and tolerance toward certain acts of violence, which they not only enable, but on occasion sometimes participate in. In our opinion, this data should be considered when designing anti-violence campaigns that aim to sensitize this target audience that unquestionably is the intended recipient of the message.

3. The risk of the boomerang effect in awareness campaigns: Empirical evidence

If, as mentioned above, the main institutional strategy used to combat undesired social behavior consists of the dissemination of awareness campaigns aimed at sensitizing the population with respect to different social and public health problems (abuse of alcohol, tobacco or other drugs), it has been demonstrated that in certain circumstances, these campaigns could be generating an effect contrary to the intended one. In fact, it would appear that it may be precisely the very target audience of these campaigns (alcoholics, smokers or drug-addicts) who are more prone to reject or experience the boomerang effect from the institutional message.

In this respect, in a variety of fields where institutional campaigns are used to warn about the risks of developing certain behaviors, an abundance of empirical evidence is being gathered on the boomerang effect. Of special significance are the following: campaigns that stress the risks of smoking (Hyland & Birrell, 1979; Robinson & Killen, 1997; Unger & al., 1999); campaigns against drug use (Feingold & Knapp, 1997); or those that focus on alcohol consumption (Ringold, 2002).

In the field of violence, there is a limited corpus of investigations, although one could cite studies such as the one by Bushman and Stack (1996) in which they reveal how the use of labels that alert about the broadcasting of programs with violent content could increase the audience's interest for viewing the programs. If, as it has been demonstrated, a relationship exists between the exposure to violent content and the subsequent impulses and acts of violence, the problem would be that the use of these labels leads to a higher consumption of measured violence, and as a consequence, a higher level of real violence.

4. The risk of the boomerang effect in anti-violence awareness campaigns

4.1. An explanation based on the proven media effects

There is a long tradition of in depth studies done on media effects[2]. Some of these effects have contrasted empirical evidence, such as the ample consensus in the scientific community on the relationship that exists between the consumption of audiovisual violence and the tendency to develop violent behavior in the child and young adult population[3]. In fact, a number of studies have achieved significant results when correlating the exposure to violent content in the media (mainly on television and in video games) with the generation of violent thoughts, attitudes, and behavior. These effects have been demonstrated for the short, medium and long term. Relevant conclusions have been made for both men and women, and equally significant results have been obtained in a variety of situations studied in different countries. Among others, we can cite the studies by Huesmann and Moise

> The need to consider the effects of desensitization, imitation, accessibility and psychological reactance in the awareness campaigns and information dissemination on violence. In summary, the difficulties of ending violent behavior could be related to the lack of adaptation between the objectives proposed by those responsible for social policy (such as the eradication of all violent conduct) and the communication strategies used (such as the anti-violence awareness and sensitization campaigns in the media).

(1996), Anderson (1997), Anderson and Dill (2000), Anderson and Bushman (2002), Huesmann & al. (2003), Anderson & al. (2003), Gentile & al. (2004), and Huesmann and Taylor (2006).

In order to demonstrate the influence that the consumption of audiovisual violence may have on the generation of violent behavior, different mechanisms are used; among which the desensitization effect and the imitation effect stand out. The former allows us to explain why the anti-violence campaigns are ineffective in reducing the number of violent acts; while the latter could explain not only why the campaigns are not effective, but also why sometimes these campaigns generate an effect contrary to the one desired by increasing the probability that violent acts take place.

4.1.1. Desensitization effect

Although it is true that the exposure to violent content initially produces a rejection response, it is also true that repeated exposure to violence ends up creating a process of decreased response or habituation. When presented with successive violent images, the spectator tends to show progressively smaller psychological and emotional responses. A state of emotional desensitization can be reached in which there are no emotional responses to stimuli that when viewed for the first time caused a strong response. Similarly, a cognitive desensitization is produced when violence is no longer considered as something infrequent or abnormal and begins to be viewed as an inevitable and normal aspect of daily life. Both emotional and cognitive desensitization can influence behavior, resulting in either a decrease in the probability that the desensitized person is critical of violent conduct or an increase in the probability that desensitized people develop aggressive conduct, which in turn may be more intense (Drabman & Thomas, 1974; Drabman & Thomas, 1976; Thomas & al., 1977; Molitor & Hirsch, 1994; Carnagey, Anderson & Bushman, 2006).

The desensitization effect has also been studied in investigations on the effectiveness of warning labels on certain products that may be harmful to a person's health or security. In these studies, the repeated exposure to warning labels of all types (food, road safety, etc.) is found to be a contributing factor when people stop paying attention to them, even leading them to ignore many of them altogether (Twerski & al., 1976). This is especially true in those cases in which the harmful consequences do not immediately arise after engaging in the risky behavior, leading us to what Breznitz (1984) calls false alarms. An example of this would be the messages warning of the risks associated with smoking: while in the opinion of this author it is evident that drinking bleach has an immediate adverse effect, smoking a cigarette does not appear to have any, which makes the warning labels on cigarette packs less effective.

When applying this reasoning to the question of violence, it may be that some especially violent people feel a type of immunity effect regarding their actions, since the immediate consequences for the aggressor of a violent action (for example the prison sentences associated) are seldom discussed. Violent people who consider violence to be a normal part of daily life (cognitive desensitization) may believe (the same as some smokers) that their violent conduct will not result in any negative consequences for them.

Although the desensitization effect may not necessarily be related to the appearance of a boomerang effect, it is important to highlight that the greater the desensitization the person experiences towards violence, the less efficient the anti-violence awareness campaigns will be. Furthermore, if a person's level of desensitization impedes them from reacting to real-life violence it is unlikely that the anti-violence messages (that usually deliberately avoid using damaging images) will have any effect on them.

4.1.2. Imitation effect

A social creature by nature, the human being learns to repeat or imitate behavior that is apparently valid or common by observing the other members of its community. Because of this, one of the most characteristic effects associated with the media is known precisely as the imitation effect. In the context of anti-violence awareness campaigns, this effect is produced solely in the case of messages that contain violence: news stories that contain explicit violence or campaigns that use images with violent content.

This imitation effect can be produced through two different mechanisms, both possibly resulting in an undesirable boomerang effect. They can be observed through increased violent conduct immediately following an awareness campaign or media piece containing violence:

a) Instrumental validity: the spectator imitates the behavior they view because they deduce that it is useful, since the person who has carried out the action has obtained something beneficial by behaving a certain way. In particular, in the context of violence, studies exist that demonstrate how children and adolescents not only tend to imitate the behavior of those people they interact with most frequently (family members, parents, etc.) but also media personalities.

Along these lines, classic studies not only show that children imitate aggressive conduct exhibited by adult role models (Bandura & al., 1961), but that they also imitate the conduct of fictional characters (Bandura & al., 1963a). This is especially true when the imitated action is seen to have a reward (instrumental learning) or when the role model is admired or identified with. Therefore, one can deduce from this that if the awareness campaigns contain violence, they could generate more violence by imitation. Or in other words, it would be preferable that awareness campaigns and news stories on violence avoid displaying violent content in order to avoid the imitation effect.

b) Social validity: the spectator imitates a conduct that they perceive many people to be carrying out, and therefore, they presume that it must be correct behavior. Numerous studies show how people tend to behave the same way other people do since the fact that other people behave a certain way is interpreted as a validating factor about the appropriateness of the behavior (Gould & Shaffer, 1986; Reingen, 1982). This is a factor to consider when designing anti-violence awareness campaigns. Recent studies have shown that when trying to eradicate an undesirable behavior (for example violent behavior) a message that states that unfortunately many people still behave in a certain way may have the exact opposite effect since many of the campaigns focus the public's attention (especially those with higher tendency towards the behaviors in question) more on the prevalence of the action, providing it with more visibility, than the undesirability of the action (Cialdini, 2003; Cialdini & al., 2006; Shulz & al., 2007). Along these lines, recent studies (Vives, Torrubiano and Álvarez, 2009) have brought to light that television news reports on gender violence have a negative influence on the number of deaths attributed to male violence.

4.2. Other mechanisms that could explain the boomerang effect

In addition to the aforementioned documented media effects, we deem appropriate the mention of two mechanisms that could explain the emergence of the boomerang effect after the dissemination of anti-violence awareness and sensitization campaigns: enhanced accessibility and psychological reactance.

4.2.1. Enhanced accessibility

As we have already suggested, the use of images with violent content in anti-violence messages could increase the probability that violent behavior is reproduced in the future. We believe that a new alternative explanation is possible, based on the fact that the exposure to these images could cause these violent behaviors to be more accessible to the recipients' minds. Taking it a step further, accessibility (the ease or speed that a construct or concept comes to mind) could also help to explain the possible perverse effect of anti-violence awareness campaigns even when they do not contain violent content. In line with previous investigations that found that the attempt to eliminate certain thoughts can make them even more accessible (Wegner, 1994), a hypothesis could be made that the mass media's use of messages that refer to violence (even when the ultimate purpose is to criticize it) can have a negative effect by activating and increasing accessibility to violent thoughts and ideas, especially for those individuals already particularly prone to violence.

4.2.2. Psychological reactance

Psychological reactance has been defined as the state of psychological stimulation that arises when our freedom appears to us to be limited or threatened (Brehm and Brehm, 1981). The most direct consequence of this state is a tendency to resist everything that could be considered as a threat to one's personal liberty (Brehm, 1966). Therefore, in the same way that we tend to show reactance when, for example, we are told how to think or we are given orders, we tend to experience reactance when certain behaviors are forbidden (Dillard & Shen, 2005; Miller & al., 2006; Miller & al., 2007). This means that those people who behave in a way that is criticized by the authorities reaffirm their actions as being a defense against a threat to their way of life.

This is also the same motive that leads people to more intensely desire information that has been censored (Worchel & Arnold, 1973). The explanation is found in the need that some people feel to engage in risky or taboo behavior, or to violate societal norms. Stewart and Martin (1994) believe that the warning messages about the risks associated with certain behaviors attract the attention of some people, impelling them to behave in the manner that was trying to be prevented. It is like eating the forbidden fruit (Bushman & Stack, 1996).

As a result, many researchers have identified psychological reactance as one of the main factors for explaining the boomerang effect caused by different media campaigns (Bushman & Stack, 1996; Ringold, 2002; Hornik & al., 2008). From our perspective, this could also apply to the anti-violence campaigns that generate a boomerang effect when individuals who

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are more prone to violence or who routinely use violence in their daily lives come into contact with campaigns that prohibit or criticize violence.

5. Conclusions

The need to consider the effects of desensitization, imitation, accessibility and psychological reactance in the awareness campaigns and information dissemination on violence. In summary, the difficulties of ending violent behavior could be related to the lack of adaptation between the objectives proposed by those responsible for social policy (such as the eradication of all violent conduct) and the communication strategies used (such as the anti-violence awareness and sensitization campaigns in the media).

That in order to avoid generating any negative effects, the different risks shown in the studies on media effects should be taken into account when designing any anti-violence awareness campaigns or portraying violence in the news.

Our aim here is not to assert that the messages about violence in the media or in certain institutional awareness campaigns are the only causes of violence, but rather to point out that not all of the well-meaning institutional campaigns or anti-violence information reach their goal of preventing violence, and that these initiatives could result in harmful effects (the boomerang effect) just as in other areas (for example, the case of drug consumption).

It is our belief, therefore, that in order to avoid generating any negative effects, the different risks shown in the studies on media effects should be taken into account when designing any anti-violence awareness campaigns or portraying violence in the news.

A two-fold proposal for reaching this goal would necessitate on the one hand that the existing studies on desensitization be consulted. Although at first the existence of information and campaigns may have had a positive effect towards the eradication of violence, the reiteration of those messages may have led to the desensitization of the recipients, thus suggesting the possible ineffectiveness of the messages being disseminated. On the second hand, it should be kept in mind that an imitation effect is possibly being generated, which is even more worrying. If this is the case, not only do we have useless campaigns, but also the risk that the messages about violence or those containing violence may actually cause violent behavior. The imitation effect has abundant empirical evidence supporting it, and therefore institutional awareness campaigns generally keep it in mind. The information disseminated through the media presents a bigger problem since it does not always comply with these standards (Vives, Torrubiano & Álvarez, 2009).

Finally, the risk that the messages against violence are not fulfilling their objectives could also be related to two especially relevant psychological effects. On one hand, the research on construct accessibility show that any message about violence, even those whose aim is to combat it, can cause the concept of violence to be more present in people's thoughts. On the other hand, studies on reactance beg us to consider the tendency for certain people to position themselves against any message that may threaten their freedom or self-esteem.

At the same time, it is important to add that in the case of the messages designed to combat violence these effects could intensify in those individuals that are particularly prone to developing violent conduct. This is especially worrying since those who are more prone to developing violent conduct are the target audience for anti-violence messages.

This suggests that inefficient strategies are being implemented, or what is worse, we may be increasing the probability that violent behavior occurs after the dissemination of informative or sensitization messages. As a result, the theoretical reflection and bibliographical review that we have carried out shows the need for a more exhaustive study to be conducted on phenomenon such as desensitization, imitation, enhanced accessibility, and psychological reactance, in order to create a more efficient design for future anti-violence communication campaigns. Specifically, it is particularly necessary that empirical research be developed that would allow for the experimental verification of the hypothesis proposed in this paper.

Notes

1 In 2004 the Ministry of Equality was created (incorporated in October 2010 as Secretary General of the new Ministry of Health, Social Policy and Equality) that has implemented diverse measures

of prevention, sensitization and action such as the Ley Integral contra la Violencia de Género (L.O. 1/2004) (Law on Integral Protection Measures against Gender Violence), awareness campaigns, pedagogical activities, and a personal attention telephone line, etc.

2 Due to the abundance of publications on media effects, several texts have tried to systematize published information of the research on the effects. Among the classics, the work by authors McQuail (1991) or Wolf (1994) stands out. At the same time, a background in the research in Spanish is had by consulting the work by Brändle, Martín Cárdaba, and Ruiz San Roman (2009); Igartua & al. (2001); Fernández Villanueva & al. (2008); Cohen (1998); and Barrios (2005).

3 The recent elaboration of a text presented to the Supreme Court in the United States by the American Psychological Association (APA) and the American Academy of Pediatrics (AAP) that warned of the proven relationship that exists between the use of violent video games and the subsequent aggressive conduct displayed by children and adolescents (see American Academy of Pediatrics, 2009) is evidence of the consensus among the scientific community.

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Classroom 2.0 Experiences and Building on the Use of ICT in Teaching

Aulas 2.0 y uso de las TIC en la práctica docente

ABSTRACT
Recognising the importance of new technology in the classroom, our aim is to promote the integration of information and communication technology (ICT) in teaching practice from a collaborative research in which action research style methods are applied involving 21 primary and secondary schools in Spain. In these research seminars, the participating teachers receive a progressive educational and technological training orientated towards the experiment and reflect on the possibilities of using a computer per student in the classroom and a digital whiteboard or interactive whiteboard (IWB). After the first period of research, we bring to the table significant ideas that have guided the training and put forward findings on the testing of teachers in their classrooms denoted classrooms 2.0 for being equipped with an IWB and computers with Internet access. In specific, from this experiment, we provide relevant results on the intensity of use of IWBs and computers, the usual activities conducted with these technological resources, their advantages and disadvantages found from use and their impact on student learnings. In the conclusions, the results are analysed and assessed, noting possible criteria for taking action in order to move twenty-first century teaching practices forward and promote the inclusion of ICT in classrooms.

RESUMEN
Asumiendo la importancia de las nuevas tecnologías en las aulas, pretendemos impulsar la integración de las tecnologías de la información y de la comunicación (TIC) en la práctica docente desde una investigación colaborativa donde se aplican metodologías cercanas a la investigación-acción y participan 21 centros de educación primaria y secundaria de España. En los seminarios de esta investigación, el profesorado participante recibe progresivamente una formación didáctica y tecnológica orientada hacia la experimentación y la reflexión de las posibilidades de uso de un ordenador por alumno, en el aula, y de la pizarra digital o pizarra digital interactiva (PDI). Después del primer periodo de la investigación, aportamos ideas significativas que han guiado la formación impartida y avanzamos información de la experimentación del profesorado en sus aulas denominadas aulas 2.0 por estar dotadas de una PDI y de ordenadores con acceso a Internet. Concretamente, de esta experimentación, aportamos resultados relevantes sobre la intensidad de uso de la PDI y de los ordenadores, las actividades habituales realizadas con estos recursos tecnológicos, sus ventajas e inconvenientes destacables al utilizarlos y sus incidencias de uso en los aprendizajes de los estudiantes. En las conclusiones, se analizan y se valoran los resultados, apuntando posibles criterios de actuación para ir avanzando en la práctica docente del siglo XXI y en la inclusión de las TIC en las aulas.

KEYWORDS / PALABRAS CLAVE
ICT, education, technology, training, teachers, students, IWB, computers, Interactive whiteboard.
TIC, educación, tecnología, formación, profesorado, alumnado, PDI ordenadores, pizarra digital.

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1. Introduction

Throughout history, new technology has always changed those societies where it has been implemented (Cabero, Lorente & Román, 2007: 1). Information and communication technology (ICT) is now one of the most effective agents of social change due to its impact on society. Faced with the emergence of ICT in our society, it goes without saying that the educational world cannot be immune to these changes.

In the field of education, ICT can provide a teaching and learning environment for both students and teachers. According to Cabero (2006), ICT offers new environments and settings for training with significant features, such as, expanding the range of information, training and tutoring opportunities, eliminating time-space barriers, facilitating collaborative work and self-learning, as well as enhancing interactivity and flexibility in learning. At the same time, Marquès (2008) highlights that ICT adds to the resources we are already using; ICT is a readily available resource for teachers, and, as emphasised by Gairín (2010), ICT facilitates the collective creation of knowledge.

In line with these approaches, our research experiment is designed around the use of a whiteboard or interactive whiteboard (IWB) in the classroom, along with a study of the notion of one computer per student. This research analysed ICT integration at 21 primary and secondary schools in Spain. The teaching staff carried out experiments in their classrooms, which we call Classrooms 2.0 as they are equipped with an IWB and computers with Internet access, with the aim of considering the current demands of 21st century society on schools that use ICT.

Teachers and/or managers of these participating institutions have a positive stance towards intervention in research and/or the use of ICT in the classroom. Therefore, the results and conclusions of this research are somewhat limited because they are interpreted within a positively biased teacher and/or management context.

Evidently, what the teacher thinks about the educational potential of ICT conditions its use in teaching practice (Tejedor, García-Valcárcel & Prada, 2009: 117). Our research also examines the stumbling blocks that hamper teachers' use of technology, such as those highlighted by Calderón and Piñeiro (2007), resistance to change, lack of technical training, the effect on self-esteem and the frustration felt by teachers.

Then, we present a brief bibliographic review of the technological resources under study in our research (IWB and computers):

- Plenty of research into IWBs confirms that they are a good resource for use in teaching. The research generally highlights the advantages of IWB use for teachers and students. In Anglo-Saxon countries, there are significant research contributions on IWBs from Bell (2002), Glover and Miller (2001), Levy (2002) and Walker (2003), and we can also mention three IWB research centres: the UK government agency BECTA, the US government agency NCEF and the Canadian company SMART. In Spain, there have been several investigations with promising results that point to the benefits of this resource, notably the Iberian Research Project (Gallego & Dulac, 2005) and investigations by the research group DIM (Marquès & Domingo, 2010; 2011).
- There is also considerable research into the use of computers in the classroom, but the findings on the contribution of computer use in the classroom and improving student performance are contradictory. Despite these discrepancies, the computer makes for an effective tool at school, a valuable information resource and an interesting teaching support (Tondeur, Van Braak & Valcke, 2007).
- Research into the benefits of using the computer at home and improving academic performance is on the increase. Hence, the household computer and Internet access not only contribute to the acquisition of digital skills which prove useful when using this medium at school, but also favour the development of valuable cognitive strategies for school performance (Kuhlemeier & Henkel, 2007).
- We highlight a recent comparison on computer usage and performance (at home or in the classroom): The frequency of computer use at home generates greater performance in the PISA test than the frequency of computer use in the classroom (OECD, 2010).

2. Materials and methods

We present a collaborative research in which procedures are applied to action research to investigate teaching practice following classroom training, reflection and experimentation on the educational applications of IWBs and students' computer use. The research is conducted in two periods: from December 2009 to July 2010 (first period) and September 2010 to July 2011 (second period).

This research involves 120 teachers from 21 Spanish public and private schools at all levels of primary and secondary education with a total of approximately 3,000 students. The 21 participating schools are from different parts of Spain. Each area has a local research moderator who organises 5 seminars at the centres.

In each of these seminars, the moderator acts as a supervisor of the action research process while giving basic technical training on the use of IWBs and computers in the classroom and progressive didactical training on teaching and learning activities. Some significant ideas that guide the training are:

• The teacher loses his monopoly regarding the transmission of information in the face of a new form of student and society. Their work aims to make students find their own cognitive and relational belongings in the pluralistic world that we live in (Tello & Aguaded, 2009: 45).

• Today's media and entertainment (Internet, television and other standard screens) affect children more directly and universally than traditional media (Camps, 2009: 140).

• The introduction of social software extends the capabilities of communication, interaction and information exchange among participants. It also facilitates collaborative work generated within a virtual space (Del Moral & Villalustre, 2008: 74).

• It is fundamental to train people to be up-to-date with both existing and emerging technology… appropriately using the technology at each instance (Sancho, 2009a). It is fundamental to reflect on where these actions may lead, look at what is left to do and foresee what might be achieved (Sancho, 2009b: 30).

In these seminars, teachers comment on the activities, highlighting strengths and weaknesses and bringing up questions or problems. Also, we discuss recommendations and guidelines on the actions and use of technology in classroom practices (Area, 2007: 5). Finally, after each workshop, teachers will experiment with the activities that seem most appropriate and they also have access to online information in the research portal (DIM UAB, 2010).

The assessment questionnaire is the data collection tool that complements the minutes of each seminar. There will be 130 completed assessment questionnaires by the end of the first period of the investigation. The format of the questionnaire has already been used in other DIM research.

In summary, during the first period, the most significant activities of the investigative work plan were:

Prominent dates	Activity	Description
December 2009	START OF INVESTIGATION	Preparatory actions: selection of moderators, centres and technological resources to use in the coordinating centres.
January 2010	SEMINAR 1_1 (First period: Seminar_1)	The moderators present the research and provide initial training. Activities to be carried out are planned. We give out the initial questionnaire to be returned completed in June.
February / April 2010	EXPERIMENTATION	The teacher experiments in the classroom, following the planning laid out in seminar1_1 and the training received.
May 2010	SEMINAR 1_2 (First period: Seminar_2	The teacher explains what was done with the IWB and computers. Reflecting on teaching practice and further training (with emphasis on the educational use of the IWB and computers). Lastly, the course of action is laid out.
May / June 2010	EXPERIMENTATION	The teacher experiments in the classroom, following the planning laid out in seminar1_2 and the training received.
July 2010	REPORT_1 (End of first period)	The report of the first period of research is elaborated mainly from the completed questionnaires.

During the second period, the most significant activities of the investigative work plan will be:

Prominent dates	Activity	Description
September 2010	SEMINAR 2_1 (Second period: Seminar_1)	Upgrading the technical and educational training. Performance review and planning of activities to be carried out. The questionnaire to be given back completed in May is handed out.
October / January 2011	EXPERIMENTATION	The teacher experiments in the classroom, following the planning laid out in seminar 2_1 and the training received.
February 2011	SEMINAR 2_2 (Second period: Seminar_2)	The teacher explains what was done with the IWB and computers. The moderator imparts further training and the activities to be carried out are planned.
February / May 2011	EXPERIMENTATION	The teacher experiments in the classroom, following the planning laid out in seminar 2_2 and the training received.
May 2011	SEMINAR 2_3 (Second period: Seminar_3)	The teacher explains what was done with the IWB and computers and puts forward the end assessments from the final questionnaire.
June and July 2011	FINAL REPORT (Final investigation)	Final report of the investigation obtained from the experiments carried out.

3. Results

This section presents the results from the first period of investigation (December 2009 to July 2010).

3.1. Depth of IWB and computer use in classrooms

During this first period of research, many of the teachers and students carried out a fairly intensive use of the IWB and computers, although somewhat less in the latter case. We emphasize that 50% of teachers use the IWB in almost 50% of their teaching and instead only use computers in about 25% of their teaching.

These results are partly logical because of the short experimental period and the fact that teachers only attended 2 seminars. In addition, most teachers had little experience in the use of IWBs and very little in the integration of computers into classroom activities. Probably in the second period of research, with the completion of the 3 remaining seminars, the usage rates of these technological resources would increase in teaching and learning processes.

3.2. Types of activities most used in classrooms 2.0

During this first period of research, we gather in the more frequent uses of IWBs and computers along with their ratings. Initially, the most common types of activities are those that are focused on the teacher's activity and those that are developed with the IWB:

- Keynote addresses (95%).
- The carrying-out of group exercises (82%).
- Collective comments on information from the Internet, mainly videos or newspapers (80%).
- Class correction of exercises (68%).

Later, and progressively to a lesser extent, other types of activities are also carried out by students with the IWB:

- Presentation of papers and materials used in the work (68%).
- Presentation of information from Internet (62%).
- Explanation of items to classmates on the role of the teacher (62%).

In some cases, students have also previously used computers for work or for looking for resources, the most frequent activities requiring a more active student role being:

- Doing self-correcting exercises and exercises for further correction (52%).
- Development projects (41%).

Less common actions and with lower assessments are for the use of simulators and learning platforms (Moodle or similar), creating blogs and wikis, the use of WebQuests and videoconferencing.

3.3. Advantages of classrooms 2.0

During this first period of research, the teaching staff appreciates many advantages in using technological resources in teaching. The most important advantages that affect teaching and learning processes are:

- Increased attention and motivation (100%).
- Facilitating understanding (98%).
- Increased access to resources for debate and sharing among students and/or teachers (92%).
- Facilitating the teaching, learning and achievement of objectives (90%).
- Increased student participation and involvement (88%).
- Facilitating the contextualisation of activities and diversity management (82%).

Also, positive feedback is collected on activities carried out with a more active student role. The most important activities are:

- Research (93%).
- Developing creativity (86%).
- Making group corrections (85%).
- Conducting collaborative activities (82%).

Additionally, the teaching staff values certain benefits that directly affect the teachers:

- Enables a refreshing of methodology (88%).
- Increasing satisfaction, motivation and self-esteem (87%).

To a lesser extent and with lower assessment rates, the teaching staff mentioned that continuous assessment and presentations are facilitated. In contrast, there is a neutral stance on whether time is better used in class or as to whether reflection and reasoning are nurtured.

3.4. Notable classroom 2.0 disadvantages

During this first period of the investigation, the routine use of technological resources (in teaching and learning processes) also has drawbacks for teachers, few but significant. The outstanding issues are:

- Needing more time to prepare their teaching (75%).
- Internet connection problems (65%).
- Software failures and problems with students' computers (37%).

3.5. Impact of classrooms 2.0 on student learning

During this first period of research, virtually all teachers (91%) and a majority of students (75%) believe learning is better with new ICT activities and they like to perform them. The majority of teachers insist that this represents a significant increase in work, but it is worth it for the learning improvements gained. However, students do not always improve their academic qualifications, as emphasized by almost half of teachers (46%).

The impact on learning improvement from ICT activities is analysed in various student profiles. In this case, it is stated that the greatest impact in improvement (84%) is seen in the students who progress normally, well or very well during the process of teaching and learning. In contrast, the impact is lower (68%) on students who cannot keep up or who are not motivated.

Additionally, teachers notice an improvement in the acquisition of competence in processing information, digital competence and competence in learning to learn. To a lesser extent, they also identify improvements in linguistic communication skills, autonomy and personal initiative. Throughout the second period of research, how performing certain activities with ICT can make way for skills development was studied in depth.

4. Conclusions and discussion

At the end of the experiment, the use of IWBs in teaching was greater than that of computers, almost double. The most frequent and highly-rated activities were those made with the IWB and those that focused on the work of teaching (keynote addresses, carrying-out of exercises, conceptualisation of Internet information and corrections). Next, also with good results, came other activities in which students make extensive use of the IWB (project presentations, explanations...). The fact that teachers start out using the IWB for teacher-centred activities and that they are initially the most common activities is considered in other research on IWBs (Marquès & Domingo, 2010; 2011).

At the end of the first period of research, there are several types of activities that students performed with computers, but to a lesser extent. The most common were self corrective exercises and exercises to correct, project development, consultations and works.

The classroom use of other resources of great educational potential such as simulators, educational platforms, blogs, wikis, WebQuests and videoconferencing was low. Probably, they will be used more and with better results as the skills and abilities of teachers increase in the teaching and technical use of these resources.

Obviously, the use of ICT in teaching still has significant drawbacks (devoting more time to prepare teaching and problems with Internet connection and computers), but there are significant advantages that teachers expressed almost unanimously. The most significant advantages being:

- Increased attention, motivation and student participation.
- Facilitating the understanding of issues, teaching, learning and the achievement of objectives.
- A refreshing of methodology.
- Increases in teacher satisfaction, motivation and self-esteem.

In addition, teaching staff appreciate that they now have more resources to use and share in class, more contextualized activities, can better manage diversity and provide more opportunities for research, collaborative efforts and corrections. They also underline the impact on the acquisition of certain skills such as digital literacy, processing information and learning to learn. Together with these advantages, we note that the use of IWBs and / or computers (in teaching and learning) is a wise choice for use in today's classrooms. We further assert that perhaps these resources could be helpful in contributing to reducing academic failure.

In addition, teaching staff appreciate that they now have more resources to use and share in class, more contextualized activities, can better manage diversity and provide more opportunities for research, collaborative efforts and corrections. They also underline the impact on the acquisition of certain skills such as digital literacy, processing information and learning to learn.

Virtually all teachers and a majority of students believe that learning improved with the use of IWBs and / or computers in teaching and learning processes. However, students do not always improve their academic qualifications, as emphasized by almost half of teachers. Therefore, there is an inconsistency because the improvement in student learning is not reflected in their final assessment. Perhaps, the cause of this contradiction resides in that memorising still prevails in the assessment. In fact, the activities supported by IWBs and / or computers only benefit memorising contents long-term when specific programs are used for this purpose. Probably, if the assessment provided more learning competence, student grades would also be higher. Therefore, a significant challenge lies ahead to design reliable strategies for identifying and validating learning outcomes in the assessment.

We found that the use or incorporation of ICT in the classroom can provide a good opportunity to raise necessary issues about teaching and learning in 21st century schools (Adell, 2010a, 2010b; Domingo & Fuentes, 2010). In this investigation, the progressive considerations and experimentation have been complemented by an increase in new realities such as learning through teaching practice and active ICT experimentation.

We round up by underlining significant activities carried out since the seminars, which have eased the incorporation of ICT in the classroom:

• Contextualising teacher training that attends to their practical needs.

• Teachers exchanging experiences and sound practices.

• Providing opportunities for teachers to work together and with experts.

• Supporting and encouraging the testing of new strategies and skills.

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The Musical Offers of Children's Programming on «Televisión Española» as its Hearing Universe

La oferta musical de la programación infantil de «TVE» como universo audible

ABSTRACT

The music that children are exposed to in their everyday lives plays an important role in shaping the way they interpret the world around them, and television soundtracks are, together with their direct experience of reality, one of the most significant sources of such input. This work is part of a broader research project that looks at what kind of music children listen to in a sample of Latin American and Spanish TV programmes. More specifically, this study focuses on children's programmes in Spain, and was addressed using a semiotic theoretical framework with a quantitative and musical approach. The programme «Los Lunnis» was chosen as the subject of a preliminary study, which consisted in applying 90 templates and then analysing them in terms of the musical content. The results show that the programme uses music both as the leading figure and as a background element. The most common texture is the accompanied monody and the use of voice, and there is a predominance of electronic instrumental sounds, binary stress and major modes with modulations. Musical pieces are sometimes truncated and rhythmically the music is quite poor; the style used is predominantly that of foreign popular music, with a few allusions to the classical style and to incidental music. The data reveal the presence of music in cultural and patrimonial aspects, as well as in cognitive construction, which were not taken into account in studies on the influence of TV in Spain. Such aspects do emerge, however, when they are reviewed from the perspective of semiotics, musical representation, formal analysis and restructuring theories.

RESUMEN

La música de la vida cotidiana del niño tiene uno de sus referentes, junto a su experiencia real, en la banda sonora de la televisión, configurando una parte de su interpretación de la realidad. Este trabajo forma parte de una investigación más amplia sobre la escucha televisiva infantil en una muestra iberoamericana. El objetivo, conocer qué escuchan los niños en la programación infantil de «Televisión Española», ha sido estudiado desde un marco teórico semiótico con un enfoque cuantitativo y musical. El artículo presenta un resumen de los resultados obtenidos en un primer análisis del programa «Los Lunnis» mediante la aplicación de noventa plantillas y sus análisis musicales correspondientes. Estos resultados indican que el programa utiliza la música como fondo y figura, textura de monodía acompañada y utilización de la voz, predominio del sonido electrónico instrumental, acento binario y modo mayor con modulaciones. Aparecen piezas musicales cortadas y cierta pobreza rítmica, su opción estilística es la música popular no propia, con algunos guiños al estilo clásico y a la música incidental. Los datos muestran la presencia de la música en aspectos culturales, patrimoniales y de construcción cognitiva no considerados en los estudios sobre la influencia de la TV en Spain, pero que emergen cuando son revisados desde la semiótica, la representación musical, el análisis formal y las teorías de la reestructuración.

KEYWORDS / PALABRAS CLAVE

Soundtrack, observation, analysis, television, children, listening, music, audience.
Banda sonora, observación, análisis, televisión, infantil, escucha, música, audiencia.

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1. Introduction

In the twentieth century, music emerged as a powerful new force that was to reshape the borders of a number of areas including aesthetics, expression and communication. This redefinition of course also had significant effects on the field of education. Additionally, this new sonic space, widely used by the avant-garde artistic movements of the twentieth century, has been a key element for the mass media such as the radio, cinema and, more especially the one dealt with here, namely television. Yet, despite its importance and repercussions, it has received very little attention from education as a discipline. Some of the most important works found in a review of the Spanish literature on children's television include those by Vallejo-Nágera (1987), De Moragas (1991), Ferrés (1994), Orozco (1996), Pablo de Río (1997), Aguaded (2005), Pintado (2005) and Reig (2005). Of the studies that were consulted, the «White Book: education in the audiovisual setting» (CAC, 2003) and «The Pigmalión Report» (Del Río, Álvarez & Del Río, 2004) contain a great deal of information about Spain, as well as some proposals for action.

The first of these two works studies the context of the mass media, together with their industry, contents, consumption and relation with education. In its conclusions, the Pigmalión Report recommends using global views that allow cultural proposals and the needs of childhood development to be integrated. To achieve this, researchers are asked to describe, explain and propose reliable alternatives involving new designs based on the evaluation of TV programmes (Del Río, Álvarez and Del Río, 2004). In the international domain, Cohen (2005) recommended a method for gaining a better understanding of the overall content of television and its local diffusion. This proposal consisted in examining three variables: 1) who selects the contents and for whom; 2) the proportion of local material to be included within the foreign content; and 3) how the latter is adapted to local viewing (Cohen, 2005). All the reports speak of an excessive exposure to television and poorly defined criteria for selecting and processing its contents.

The object of our study is the music that appears in the «television diet», which is affected by the issues outlined above and requires specific forms of analysis to be able to study it because music speaks using its own particular language (Porta, 2005: 285). A soundtrack consists of music, sound and noises, with which it produces effects on the audible thoughts and on the characteristics of listening (Schaeffer, 1966; Schafer, 1977; Delalande, 2004; Sloboda, 2005). One of the elements to be taken into account from the perspective of education is sound. This element of expression, which became liberated in the twentieth century, as shown by the Theory of Art (Cage, 1961; Hauser, 1963), is crucial in the production of TV programmes. The second element to be borne in mind owing to its presence and repercussions in everyday life is how sound is recorded and published on a material support (Delalande, 2004: 19). The third element is the nature of the actual medium, in our case, television. With regard to the generation of paradigms, Stiegler (1989: 235) spoke about the effect produced by «memory technologies», such as television, because they construct the coherence of their discourse from a combination of techniques, social practices and sound shapes.

When we speak of children's sonic environment, a review of the international literature shows that most of the studies are conducted as laboratory experiments that cover artificial realities in groups determined by their learning characteristics or the fact that they are a risk population in schools (Ward-Steinman, 2006; Burnard, 2008) or by their eating habits and health (Ostbyeit, 1993). Music has also been linked to reading skills (Register, 2004) or violence (Peterson, 2000), among other things. Some of the most important works on television music include those by Beckers (1993) in Germany, Bixler (2000) in England or Magdanz (2001) in Canada. Others include those carried out on the programme «Sesame Street», and more especially the study entitled «Musical Analysis of Sesame Street» conducted by McGuire (2001). With respect to the influence of the soundtrack as music from the everyday environment and its relationships with identity, Brown (2008) reviewed the need to integrate fields of research taking into account the production of consumption, the production of culture and the cultures resulting from this process of hybridisation.

The same author also underlined the need to integrate this designer popular music within research. Finally, one important contribution on the subject of the globalisation of music that should be highlighted is the work by Aguilar (2001), which deals with preserving cultural products in changes and migrations that, according to the author, offer challenges for musicians and educators alike. She sees the effects of the media production on cultural phenomena as being selective, incomplete and inaccurate, and recommends the use of music that presents a valid image of itself. Likewise, she also urges musical and educational communities to offer a representation of musical culture that includes its roots and transformations. In Spain, although there are very few lines of research in this direction, some of

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them are followed by our research group, such as the work by Ocaña and Reyes (2010) on the programmes shown on Canal Sur. Nevertheless, music on television is more commonly reviewed as an educational tool to help learning (Eufonia 12, 1998; Comunicar 23, 2004).

From the psychological approaches, some of the most significant contributions have been those made by Cognitive Psychology concerning information processing and the Restructuring Theories, both of which are clearly based on «anti-associationist» concepts defended by authors like Piaget, Vygotsky or the Gestalt School. The key difference between the two lies in the unit of analysis that they use: while the first is elementarist, the cognitive approach is based on molar units (Pozo, 1989: 166). One important point to be highlighted in this second approach is Vygotsky's sociohistoric theory, which has been reinterpreted and adapted so that it can be applied to audiovisual comprehension (Korac, 1988). In his works on the use of television in education, De Pablos (1986) studied the Russian author and underlined some relevant elements of his work: 1) Mental processes can be explained by the instruments and signs that act as mediators; he therefore defends the study of the communicative nature of signs as holders of meaning. 2) From a semiotic point of view, internalisation is a process of gaining command over the different forms of external signs (codes). 3) Today, the semiotic offer has expanded to an unbelievable extent, so that, in addition to speech, it has also become important to be able to use other codes. Children perceive the world through the senses, speech and other codes in a process that goes from social speech (the mother tongue) to inner speech by way of egocentric speech. Hence, it could be said that television music follows this same trajectory and forms a semiotic instrument that the subject incorporates within his or her repertoire of inner dialogue for interpreting reality.

Finally, and to end this brief review of music and television, it should be noted that there are no empirical indicators that ensure a good knowledge of the field of study.

1.1. Presentation of the problem

The music used every day on television provides children with cognitive, social, emotional and patrimonial elements. It is therefore important for both academics and researchers to understand it so as to be able to:

1) Match curricula to these modes, media and musical contents.

2) Take on the educational commitment to be familiar with the music offered on television.

3) Lay down guidelines that allow high-quality television programmes to be produced.

4) Offer alternatives in both the educational domain and in terms of musical and audiovisual production.

In the twentieth century, music emerged as a powerful new force that was to reshape the borders of a number of areas including aesthetics, expression and communication. This redefinition of course also had significant effects on the field of education. Additionally, this new sonic space, widely used by the avant-garde artistic movements of the twentieth century, has been a key element for the mass media such as the radio, cinema and, more especially the one dealt with here, namely television.

1.2. Purpose and aims of the study

This work studies the soundtrack of the children's television programme with the largest audience in Spain, i.e. «Los Lunnis», which is produced by Televisión Española (TVE) and is broadcast every day from 7:30 to 9:30 am, the episodes from each week being shown again on Saturday mornings. Our intention is to find out what music is used on the most important public free-to-air television channel in Spain. «Los Lunnis» is the only children's programme offered by TVE and it is broadcast on its second channel and is financed by public funding. In order to analyse it we developed a system for coding and categorising musical material and the findings were to be used in a later (still to be initiated) phase involving the search for alternatives. In our study, the aim is to determine what music the viewers of TVE listen to and what it is like.

1.2.1. What is listened to?

This first approach will provide us with the traits that allow the soundtrack to be classified according to an objective pattern of measurement. Our questions are: What musical sounds are used and what types and families do they belong to? What tempo and metre are used? How do the pieces of music begin? What pace and intensity do they have? What genres and styles do they display? What keys are most frequently used? How do the pieces of music end? How prominent is the soundtrack in the programme?

Children perceive the world through the senses, speech and other codes in a process that goes from social speech (the mother tongue) to inner speech by way of egocentric speech. Hence, it could be said that television music follows this same trajectory and forms a semiotic instrument that the subject incorporates within his or her repertoire of inner dialogue for interpreting reality.

1.2.2. What is the music like?

The second approach has to do with the internal elements of the music in the television landscape (Atienza, 2008). In order to understand their musical and discursive meaning, we divided the programme into three sections, namely in-house (locally produced) material, advertising and cartoons. Our research questions were: How is the soundtrack constructed in the three sections? What are its musical characteristics? What are the songs about? How is the music related with the dramatic action, the scenes and the synchrony between them?

2. Material and methods

This work is part of a broader research project aimed at determining what children listen to in a sample of Hispanic TV programmes. Umberto Eco's (1978) model was used as the semiotic framework of reference. Gómez-Ariza's (2000) model was specifically utilised in the construction of the listening template and, lastly, Zamacois' (1968) analysis of Musical Form was also employed.

2.1. Sample

The programming block that was selected, «Los Lunnis», consists of three sections with different proportions: 25% in-house programme material, 63% cartoons and 12% advertising. The sample is made up of the ten hours of the programme that were broadcast during one week (18 to 22 February 2008) in which no special events took place. The potential range of viewers' ages was relatively wide. The sample comprised Spanish and US cartoons, advertising (commercials advertising food/sweets and toys) and lastly the in-house programmes, which included the opening and closing sequences, bumpers, dramatisations, reports, songs, news and interviews.

2.2. Design, instruments and data collection

To conduct this research a listening analysis tool was developed ad hoc and validated before applying it in the study (Porta & Ferrández, 2009). Sampling was performed by means of the expert choice procedure to ensure that musical elements from all three sections of the programme that were relevant to the first analysis were all included. Furthermore, the sample was complemented with 10 excerpts in order to establish the target musical material used in the programme. Three different instruments were used in the research, the first two being included within the same template. These were: 1) Data from the sample; 2) Musical categories; and 3) The musical analysis itself.

The first instrument gathered data about the rater, data record, country, programme, section, date, duration and the musical elements of the programme (opening sequence, signature tune, closing sequence, bumpers, songs, dramatisations, scenes, reports and excerpts). The second instrument consisted of 14 categories divided into 59 codes, which had «yes/no» or «undetermined» (ND) as possible answers. This tool divided the variables into different categories that could be measured in a dichotomous way, depending on whether they appeared in the selected unit or not (Porta & Ferrández, 2009).

In the Latin American study that this work is part of, a joint validation session was held so that programmes, countries and contents that were common to the whole research study could be reviewed by a panel of experts. A double interrater validation was also carried out, the results showing a mean percentage of agreement above 80%, which was considered to indicate a very high level of reliability of the instrument in general.

• Approach 1. What do they listen to? The template was applied to the programme «Los Lunnis» by means of 90 units of analysis and a full examination of the form of 23 pieces of music.

• Approach 2. What is the music like? Since not everything can be answered dichotomously, a new approach was developed to search for the molar elements (Pozo, 1989: 166-167) and their meaning, that is to say, the characteristics of the music, in: 1) The in-house programmes: study of the opening theme music, closing themes, bumpers and songs; 2) Cartoons: the series «Berni», «Clifort» and «Pocoyó»; and 3) Advertising: commercials for toys and food/sweets. Finally, in order to study the intentional musical options from the programme, five diegetic songs were selected (that is, songs performed by the leading characters in the programme).

From these two approaches we sought to determine the options and musical elements used in children's television programmes, that is, the place that music speaks from (Porta, 2007: 22). This will be the first step towards discovering the unexplored educational space of music and its communicative presence as a discourse that conveys meaning (Talens, 1994).

3. Results

3.1. What is listened to? The musical categories

The 14 indicators were applied to the five programmes broadcast during the week by means of 90 templates. The percentages indicate the measure of the dichotomous feature «yes/no» and «undetermined» that reflected factors involving mainly brevity and inaudibility. The most notable results were:

Musical sound/non-musical sound. The programme often uses musical sound as well as a high percentage of non-musical sound consisting of noises and sound effects.

Type of sound. The music studied is 70% electronic, 15.5% acoustic and 10,5% combinations. Groups of instruments from all the families can be heard, although there is a predominance of stringed instruments and electronic imitative sound.

Voice and instruments. It was observed that 42% of the music was instrumental and the rest was vocal, mainly in groups (38.9%) with a prevalence of male voices (10%) over female voices (2.2%).

Metre and rhythm. With regard to the type of stress, the results were binary in 88% of cases versus 1.4% of ternary, with occasional cases of blends.

Type of beginning. The pieces of music had anacrusic beginnings in 57% of cases versus 37.8% thetic beginnings and very few cases of acephalous beginnings.

Dynamics. The use of intensity was mostly flat (81%), with variations in 18.9% of the melodies that were listened to.

Agogic. As far as variations in pace are concerned, the music in this programme was again seen to opt for no variations in tempo in 88.9% of cases versus 3.3% of cases in which it speeds up and a slightly higher percentage that uses ritardando.

Genre and style. Of all the different genres and styles that were listened to, the most common was popular music (77.8%), which included pop, rock and blues, together with other popular subgenres and styles from the twentieth century. Within traditional music, 13.3% comes from other cultures while only 1.1% is from the local one.

Sound organisation. In the sample, the major key predominated over the minor key (88.9% vs. 6.7%, respectively).

Cadences. Resolutions, regardless of the section of the programme in which they appear, were mostly conclusive (56.7%), while 25.6% were suspensive and 10% truncated melodies. This last type occurred in segments from advertising or in adjustments made to the continuity of the programme that cuts its melodies short in order to move on to the next programme.

Sound texture. The texture in the sample was the accompanied monody (64.4%), in contrast to singing voices, which can be either homophonic (4.4%) or polyphonic (12.9%).

Sound plane. The music often played a leading role in the programme, only appearing as the background to scenes and dramatisations in just 25.6% of the cases in the sample.

3.2. What is the music like? The musical contents

In order to study what the music in the programmes is like, the template was applied to 23 pieces of music from the three sections, bearing in mind the length of the work and its musical form. Thus, in the long pieces of music, the first and last phrases, two intermediate excerpts and an assessment of the whole piece were studied for the five days of the week.

3.2.1. In-house programmes

The results of the analysis of the in-house material (opening themes, closing music, bumpers and songs), cartoons and advertising were as follows: the opening theme music of the programme, which was repeated on each of the five days of the week, was studied using 15 templates, three for each day. It is a short tune lasting 34", with an anacrusic beginning, in G Major, and a tempo of 144 beats per minute. It is sung by an adult soloist and groups of vocalists accompanied by instruments (Figure 1). This tune is heard in links, the presentation of dramatisations, subsections, bumpers and closing themes, and in each case different versions are used (instrumental, vocal, semi-spoken) and could be complete, fractioned or played as a repeating loop.

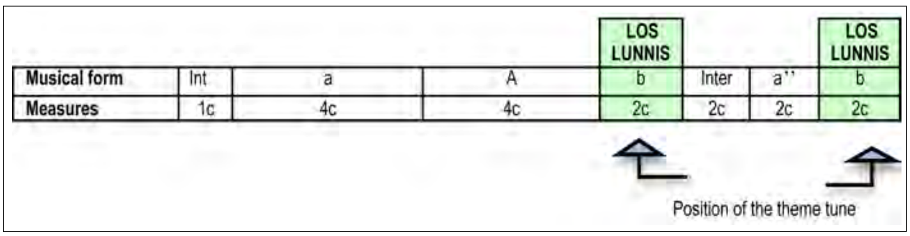

Figure 1. Musical structure of the opening theme

In the closing themes, the programme uses different parts of the tune from the opening theme, while maintaining the motif from the signature tune, and they vary in length: 4", 36" and 1'33". This last closing theme, for example, is repeated in a loop while the last dramatic action in the programme is finishing, and ends with the signature tune shifting from the background to the foreground. On two of the five days, it was truncated and replaced by the next programme, which was already being announced, or by the «unrelenting commercials» (González Requena, 1988). Eight of the bumpers lasted 7" and, again, took up the identifying elements of the opening theme tune and modified them with different arrangements and effects. There were many different songs and melodies in the programme. In this section we have selected the leading songs performed by the characters in different settings such as little theatres, pubs, television studios or virtual sets. These songs represent the different options that exist in television as regards form, genre and style, as well as their connection with the scene, the choice of subject matters and the synchrony between text and images. The five diegetic songs from the week (Table 1) were studied using 25 templates – five for each song: one for the first and last musical phrases, two intermediate excerpts and one assessment of the whole piece.

3.2.2. Advertising

Advertising was studied using a single template for each commercial or two when there was a notable change in the music. The common features were: average length 20"; tempo of about 123 beats per minute; instrumental, electronic imitative sound; binary; no variation in the dynamics or in the rhythm; pop and film genre; in a major key; and the music was background music that sometimes became the leading, foreground figure. In the case of «I'm pocket» two templates were applied due to the significant change that takes place between Excerpt 1 (from 1" to 18") and Excerpt 2 (from 18" to 20"), where there is a change in the music to highlight the theme tune.

3.2.3. Cartoons

Lastly, the cartoons were studied by taking an excerpt every 45" until the whole episode was covered. The following is a summary of «Berni» and «Pocoyó»:

• «Berni» is a cartoon series from 2006 without dialogues, produced by BRB Internacional S.A., which is about sports and features «Berni», a polar bear. It is made up of 3' episodes that are strung together to fill the whole broadcast. The study was conducted by means of six templates. The episode included both everyday noises and sounds and electronic imitative sound. The music was a combination of short sequences in the Classical style with others more closely related to the incidental music used in films. It was written in a major key and was instrumental, with no variation in the rhythm or in the dynamics, and both conclusive and suspensive cadences were employed. There were some modulations to other tones, the sound texture was the accompanied monody and the music appeared as background music, except for just one occasion on which it progressed from the background to the leading figure.

• «Pocoyo». This is a Spanish cartoon series from 2005 produced by Zinkia Entertainment which features Pocoyo, a little boy whose adventures involve discovering and interacting with the world around him. Each episode lasts 6'45" and the narrative action in this episode was about discovering one's own fingerprints and those of others. The episode made use of both non-musical and musical sound from the pop environment with traces of incidental music from

Song 1. «Un mundo major»	Topic	Peace
	Summary	Strophic pop song in G Major at 168 beats per minute, sung with a child's and a man's voices, accompanied by electronic imitative sound.
Song 2. «Oh Lulú»	Topic	The legend of the hero
	Summary	Country song with alternating verses and a chorus that is repeated at the end. It is in C Major at 114 beats per minute. It is sung by a man's voice, accompanied by an acoustic banjo, percussion and polyphonic children's choir.
Song 3. «Estoy como un queso»	Topic	Self-image and self-esteem.
	Summary	Blues song at 136 beats per minute. Alternating verses and chorus. Sung with voice, piano, drums and male choir that echoes in the chorus.
Song 4. «Soy rancherito»	Topic	Popular song.
	Summary	Mexican style song in C Major at 144 beats per minute, accompanied by mariachis, and sung by a male soloist.
Song 5. «Que me fallen las palabras»	Topic	Words
	Summary	Blues song in D Minor at 78 beats per minute. Recreation of a blues recital: singer, electric guitar, drums and projection screens.

Table 1. The diegetic songs from the week

the film world. The music was electronic, instrumental, binary and thetic, with variations in the dynamics and the rhythm. The tempo was linked with the characters as they appeared in the scenes: «Pocoyo» at 156 beats per minute, «Elly» (the elephant) at 90 and «Pato» at 114. Major and minor keys were both used, with different cadences and modulations. The sound texture was the accompanied monody, and there were also rhythmic ostinatos and sound effects. The music was present in the background and also as the leading figure, and the musical motifs were the leitmotif of the characters.

4. Discussion

In answer to the aims and research questions of this study, we can say that: What is listened to? The programme «Los Lunnis» has a soundtrack that utilises musical sound (preferably electronic) that is divided into fairly equal proportions of instrumental and vocal music sung by groups of voices. Its music is binary, popular, anacrusic, with flat dynamics, no variations in the pace and the texture is the accompanied monody. It uses the major key with modulations to other keys, it resolves by means of conclusive cadences, and the music is predominantly the leading figure. There is a high percentage of non-musical sound consisting of noises and sound effects.

What is the music like? A preliminary evaluation of the musical analysis reveals that the diegetic music of the in-house material (25% of the programme) is made up of strophic songs with phrases eight bars long. They are listened to as whole pieces and resolve in a highly conclusive manner with all the closing elements available, sometimes using both polyphonic and homophonic polyphony. There is a certain lack of rhythmic richness, with a strong presence of binary stress. The intensity has no nuances and is controlled using a mixing desk, with shifts from the background towards the leading figure usually carried out by means of non-musical narrative strategies. The synchrony between the music and images in the programme is good and the instruments and sound objects are coherent with its soundtrack and stage spaces. Its tempos range from 78 to 168 beats per minute, with no variations in the rhythm and it uses the keys of CMaj, GMaj, DMaj and Dminor, which sometimes modulate to other keys. With regard to style and how it is linked with identity, the programme opts for foreign popular music. Its timbral composition is predominantly electronic with some acoustic elements of the popular music in question. This is also reflected in its harmonic and melodic structures, which are often accompanied by choreographic arrangements and an appropriate wardrobe and set design. Advertising, which takes up 12% of the total time, has a soundtrack with an average pace of 123 beats per minute. It is predominantly instrumental, with electronic imitative sounds, and is binary and thetic with no variations in the dynamics or in the rhythm. It has no defined style, sometimes using the film genre and non-musical noises and sounds, and appears in the major key in the form of background music. Cartoons, which account for 63% of the programme, use both music and non-musical sounds and noises to reinforce the dramatic action with the aid of changes in key and tempo, as well as the use of suspensive effects and small leitmotifs to define characters. A study of the melodies used in the programme shows that the most common one is that of the actual signature tune, which appears as the introduction and at the end of each section, dramatisation and episode. Truncated pieces of music are also heard, especially in commercials and at the end of episodes. Another point to be highlighted, due to its specific weight in cartoons, is the preponderance of non-diegetic music and a wide variety of both musical and non-musical sounds.

Selection of genres and styles. Music from before the twentieth century is scarce, with a few exceptions in cartoons and parodies of the programme itself, in which there are some allusions to the classical style. Instead, the style chosen for the programme is popular music, the leading songs of the week being a ranchera, a country song, two blues and a pop song. In the sample that was studied, the music is always someone else's and never one's own work. Children's television programmes require proximity contents (De Moragas, 1991), yet what is offered is a multicultural space that has been filled with exotic material and no longer contains any local elements. From an educational point of view, this option questions identity because music speaks about oneself, about others and to others (Porta, 2004: 112). Valuing diversity means recognising what is one's own at an early age, because this egocentric speech (Vygotsky, 1981: 162) will eventually give rise to inner speech, and music is part of the cognitive construction.

Incidental music. Music is linked to the action in all the different sections of the programme in the form of tiny fragments of music that remind the child of the world of films. This is the case of the parody of «Lunicienta» or that of «Psycho», or the repeated references to one of the last American heroes: «Indiana Jones». In «Pocoyo» there are leitmotivs associated to its characters, tonal and non-tonal music, modulations, variations in the dynamics and rhythm, as well as shifts from leading figure to background, and vice versa. And all this takes place within an expressive and aesthetic dialogue in space and time that has in mind a small, intelligent child who interacts with the television media through music.

Soundtracks of films and television programmes have an influence in education and also a social responsibility as part of the construction of children's consciousness because they make an important contribution to the development of their cognitive, social, expressive, aesthetic and, later, critical capabilities. This article outlines some of the aspects that have received little attention from researchers in studies on the music used on television and its influence in childhood, but which become more apparent when they are studied from the perspective of semiotics, musical representation, formal analysis and restructuring theories. The conclusions point to the following as lines of action that should be followed: value must be given to the social, cultural and patrimonial functions of music on television because music speaks about others and to others. And it does so by means of representation: i.e. what is listened to; by means of edition: i.e. how the continuity of what is seen and heard is produced, articulated and created; and also from the position of the speaker: i.e. the television production, its meaning and influence. Television as a medium can favour the reconstruction of musical contents and their understanding, as well as the development of taste and the enhancement of the immaterial heritage. Thus, in future studies broader units of analysis will have to be defined, as proposed by cognitive psychology and the musical tendencies of the twentieth century. This study has responded to some of them, which refer to cultural heritage, identity and otherness, that is, interpretations of diversity and relationships with the environment in which music is far more than just an audiovisual medium – it is a vehicle, a means and a content of expression, representation and dialogue with the world.

Notes

1 The indicators, definitions and review of the results were discussed and agreed on at the II Encuentro investigador sobre la banda sonora de la television infantil y juvenil en el ámbito latinoamericano. Variables, impacto e influencia en el patrimonio sonoro» held at the University of LANUS, Buenos Aires from 14th to 18th May 2008. The conference was attended by representatives from three Spanish (UV, UG and UJI) and five Latin American universities (U LANUS, UT, UNIRIO, US, UNE).

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Structures and Archetypal Content in Advertising Communication

Estructuras y contenidos arquetípicos en la comunicación publicitaria

ABSTRACT
The aim of this investigation is the study of publicity from the point of view of the archetypes, following a hermeneutic model of analysis of the content; through this we have studied the presence of the Greek mythological figures in comparison with the characters that appear in the advertising messages of perfumes, which at first allows us to observe the analogy of the gods of the old Greek Mythology with real human archetypes; secondly, it allows us to dig deeper into these advertising contents to know if these stories are purely commercial or if they could be interpreted with other meanings. The results of this analysis show a high participation of the female archetype of the woman as a wife, related to the goddess Hera, and followed by the archetype of the sensuality represented by the Aphrodite goddess and that of the goddess Artemisia or goddess of liberty; in perfume commercials aimed at men, the biggest frequency in the myth of Zeus and of Narcissus is emphasized, as archetypes of power and success, continued by the presence of the myth of Odysseus, the hero's archetype, known as a model of strategist and intelligence; in commercials aimed at both sexes the myth of Dionysus as archetype of the party and transformation is the most relevant, followed by the myth of the brothers Hera-Zeus that become husbands and fathers of the Greek Panteon of Mithological Gods.

RESUMEN
Esta investigación tiene como objeto el estudio de la publicidad desde la óptica de los arquetipos, siguiendo un modelo hermenéutico de análisis del contenido; a través de él hemos estudiado la presencia de las figuras mitológicas griegas más conocidas en comparación con los personajes que aparecen en los mensajes publicitarios de perfumes, lo que nos permite observar en primer lugar la analogía de los dioses de la Antigua Mitología Griega con arquetipos humanos reales; en segundo lugar, nos permite profundizar en estos contenidos publicitarios para saber si estos relatos son puramente comerciales o admiten otras interpretaciones. Los resultados de este trabajo revelan la mayor presencia del arquetipo femenino de la mujer como pareja, relacionado con la diosa Hera, modelo de esposa, seguido en frecuencia por el arquetipo de la sensualidad representado por la diosa Afrodita y en tercer lugar el de la diosa Artemisa o la libertad; en los anuncios de perfumes dirigidos al sector masculino destaca la mayor frecuencia del mito de Zeus y de Narciso, como arquetipos del poder y el éxito, seguido del mito de Odiseo, arquetipo del héroe, reconocido como modelo del estratega y la inteligencia; en los anuncios dirigidos a ambos sexos el mito de Dionisos como arquetipo de la fiesta y la transformación es el más relevante, seguido del mito de los hermanos Hera-Zeus que evolucionaron a esposos y padres del Panteón griego.

KEYWORDS / PALABRAS CLAVE
Advert, advertising, hermeneutical, interpretation, mythology, persuasion, speech, symbolism.
Anuncios, discurso, hermenéutica, interpretación, mitos, persuasión, publicidad, simbolismo.

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1. Introduction

The creation of advertising messages for perfumes, a process that is integrated in the so-called social sciences, incorporates in its eminently visual language cultural contributions of all the orders of our environment which, through the perspective of this investigation, has led us to study the references contained in modern commercials that come from the classical mythological culture. The reinterpretation of stories and symbols corresponding to gods and Greek and Roman myths that are in turn nourished by the Mesopotamian and Egyptian mythologies is widespread in advertising (León, 2001) and this investigation concentrates on the specific segment of the advertising of perfumes of the last decades. These messages stand out in the current advertising panorama because of their greater expressive richness through persuasive stories in which we can find multiple rhetorical and symbolic contributions at the service of a product whose essence, the aroma, cannot reach the consumer through conventional communication media.

Myth, from the Greek word Mizos, means etymologically: word, saying or story (Pabón, 1975). Herodotus (Elíade, 2001), in the 4th century B.C. describes it as fiction and even falsehood, in comparison to logos, the word of truth. The myth comes to us anonymously while the word can come from God, as understood by this classical historian. Art and literature have recreated popular myths due to the unavoidable attraction that those stories exert on individuals when containing a non-scientific interpretation, and due to the restlessness that surrounds human life. That continuous focus on the classical myths has also had its corresponding influence on other fields like analytical psychology, in which C.G. Jung, the outstanding pupil of S. Freud, elaborated a theory around the archetypes (Jung,1982) as unconscious elements of the human being that underlie all cultures in terms of basic outlines that operate in our way of explaining reality, appearing in the core of all the stories that the human being builds, be they of a literary, didactic or religious nature.

The archetype works as an innate structure of the individual, and taking that substratum, different societies build their cosmogonies which are accepted, with slight local variations, by other cultures and transformed with the passing of time, but which still maintains its original essence.

Archetypes are not inherited individually but collectively, so we can speak of the collective unconsciousness as the virtual space in which certain archetypes have settled, all of them constituting what could be taken to be the structured nature in which man lives so that the human being can understand his life via similar images that are repeated throughout time. The recognition of an archetype is not conscious, but contact with them produces a reaction in the individual that doesn't allow him to remain indifferent; this reaction can take the form of a sudden shiver, fascination, self-absorption, fear…because according to Jung (1982) we are standing before an authentic symbol that he liked to define by using the expression coined by Rudolf Otto (Jung, 1982) referring to the archetypal images as numinous. Those images materialize in what we call myths.

Advertising, in its constant generation of messages for human groups of different social classes and cultures, acts as catalyst and updater of those units of archaic knowledge that are myths. The goal of this investigation is not to know if creative activity is conscious or to analyze the transmission of those archetypes, but to verify their presence in perfume commercials. Through a hermeneutical methodology and the analysis of the advertising messages for perfumes from the end of the 20th century and beginnings of the 21st for women and men, we can interpret the content of the commercials we have selected.

2. Material and methods

The general hypothesis that has inspired this investigation is the following: TV commercials of modern perfumes reproduce mythical stories and contain references to specific cultural archetypes. The objective of this investigation is to check the basic preexistence of the classical myths in publicity for perfumes through the advertising story. We must keep in mind that the means through which the attributes of the products or brands are transmitted are not always linguistic, but symbolic, iconographic and evocative; but, whatever the means are, they would not be effective if the recipients did not recognize them or interpret them appropriately. Herein lies the point of this investigation: to check that the messages contain references to classical myths and the recipients can decode them with the same meaning as the originators intended, because both share the same cultural references. Persuasion is elaborated to produce a response from the recipient by the «vis rhetórica» of the speech, as García Jiménez (Moreno, 2003) calls it when interpreting Aristotle´s theory of persuasion. This forces the recipient to complete the meaning of the message on a triple demand level: the plausible level, the level of the logic of the actions and the level of symbolic dimension.

A widespread and extended tendency exists to consider the advertising language from a linguistic approach characteristic of normal languages, when the reality tells us that the verbal component of this language is used less and less. Studies have been developed focused in semiotics, linguistics and the meaning and structure of advertising communications that lead us to understand the consumer's reaction to the messages that he/she receives. We know that the images and texts that are included in the messages have an empathic relationship with the social environment of the communities in which they are broadcast, being constantly updated by the inspiration of film, literary and artistic novelties in general produced by society, but that doesn't explain everything. The audiovisual narrative is nurtured by recreated situations or fiction, of real scenarios, daily and spontaneous conversations, but also of cultural symbols, sometimes intentionally chosen and on other occasions without keeping its meaning in mind. From this we can distinguish two significance levels: the intentional and the materialized.

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In the recent perfume advertising it has been observed that the stories have become richer in symbolism and suggestions that capture the attention; however, the interpretations coming from the consumers are usually of a literal meaning, like a simplified translation meant to bring the contents closer to the real world known by the audiences. In the first place, the deep meaning in a conscious way is not noticed but it should be sensed and because of this, more attention is given to these stories than expected. The irrepresentability of the scent of the perfume (Canovas, 2005) has motivated a more rhetorical and more emotional elaboration of perfume commercials.

2.1. Material

The samples chosen for this investigation consist of 150 commercials of the main international perfume brands for mature consumers broadcast on television between January 1990 and July 2009, and which have been kept alive on the YouTube channel, demonstrating interest in these advertising messages of users who can continue to enjoy them and express their opinion. This presence implies a degree of acceptance, regardless of whether they have been situated in the portal of the users of the brands or in that of the perfume companies; the fact that they are still being watched on Internet indicates that they have connected with the recipients because of their aesthetic and/or thematic qualities. The 150 commercials found on YouTube contain a story or narration. Of these 150 messages analyzed, the number of commercials aimed at women is greater than the ones at men, in short two thirds of the sample.

The advertising gathered in this investigation is relevant because of the message and its meaning in an individual way and as part of a group. The results obtained will tell us about the meaning for the consumer, as much as at the literal as the conscious level, and at the symbolic or unconscious levels, and the method applied is that of the literal and allegorical interpretation of the images. Analogy, as a hermeneutic principle, transmits to us the power of the subjective, giving a visible symbolism to an invisible sense and a singular phenomenon that it is deified. Analogy will be the key factor in the analysis of these advertising commercials.

2.2. Analysis model

The analysis model uses association and confrontation as a methodological axis characteristic of the hermeneutical application. According to the German philosopher and student of the Greek Classics, Hans-Georg Gadamer (León, 2001), the key is in comparing what the text says and its interpretation, trying to maintain a neutral position, even knowing that pure neutrality doesn't exist. The person must be aware that he/she is limited, unable to give a complete interpretation of a story, and to accept that their interpretations should be contrasted and supplemented with other interpretations. However, the hermeneutical formula of analysis can be considered subjective on the part of

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MYTH – ARCHETYPE	WOMAN		MAN		UNISEX		ALL
	Partial	Total	Partial	Total	Partial	Total	Total
Hera: Couple/Wife	26%	17,3%	-	-	-	-	17,3%
Aphrodite: Sensuality	18%	12%	-	-	-	-	12%
Artemisia: Freedom	15%	10%	-	-	-	-	10%
Divine Elixir: Feelings	13%	8,7%	2,8%	0,7%	26,7%	2,6%	11,9%
Metamorphosis: Change	11%	7,3%	11,4%	2,7%	13,4%	1,3%	11,3%
Persephone: Youth	9%	6%	-	-	-	-	6%
Athena / Nike: Success	6%	4%	-	-	-	-	4%
Zeus / Narcissus: Success	-	-	40,1%	9,4%	6,6%	0,6%	10,1%
Odiseo: Hero	-	-	25,8%	6,1%	-	-	6,1%
Poseidon: Unconscious	-	-	14,3%	3,4%	-	-	3,4%
Dionysus: Transgression	2%	1,3%	2,8%	0,7%	26,7%	2,6%	4,6%
Zeus + Hera: Spouses	-	-	2,8%	0,7%	26,7%	2,6%	3,3%
All	100%	66,7%	100%	23,6%	100%	9,8%	100%

Chart 1. Frequency of myths and archetypes.

the person who uses it; yet artistic creation is also subjective and this is decisive in the elaboration of the advertising commercials to channel sales potential to the consumer in a suggestive and interesting way. In the artistic scenario, where advertising comes closer in its effort to seduce the consumer, the German thinker E. Panofsky (1970) elaborated a method for the realization of iconographic-iconological analysis that entails an interpretation at the different layers of meaning of an artistic work that he called factual and expressive analysis, where he verified the presence of symbolic elements and analyzed their meaning. This method is currently still being applied. Perfume commercials have been chosen because as a group they are quite homogeneous from simple observation, and are open to in-depth analysis; this characteristic of the investigation can be used as a critical argument, however, in practice the recipient does not consume all products motivated by the same interests but rather establishes differences among purely practical products, of mass consumption; in those he does not deposit more interest than is necessary, as opposed to those products that he wants for their benefits or for the emotions that they arouse; some receive great attention for the potentiality that they contain and mainly for the aspirational content channeled towards the consumer, and this is generally the case of perfumer.

To reach the objective pointed out in the previous paragraph, the investigation has been designed with 3 differentiated work phases.

— First phase: Hermeneutics; the hermeneutic or interpretation model is applied from José Luis León (2001) to analyze advertising messages. We distinguish the following stages:

• 1st stage: the immediate literal sense, in two steps:

a) The literal sense of the narration: the story narrated in the text.

b) The literal-strategic sense: the inherent sales strategy of the announcement, the benefit offered to the consumer, the promise, the positioning of the product based on tangible and intangible attributes.

• 2nd stage: The allegorical sense: the elements of the commercial are considered in a symbolic way: the individuals are valued as representatives of social or human groups, the products become main characters of actions and become symbols.

• 3rd stage: reconstruction of the tropological sense: unify different commercials that pursue the same goal, or which are related by common service to the same value, far beyond the immediate sales purpose. This is the deepest plan that goes beyond the author's strategic intention to deliver to the audience messages that are internalized. The aim is to put commercial categories at the service of specific values with an end result of these interpretations being a complete vision of man and the current world as a great story.

— Second phase: Descriptive statistical treatment of the data obtained in the first phase from which we can find quantitative and qualitative results that allow us to group the 150 commercials in homogeneous archetypes or mythical groups.

— Third phase: In-depth analysis of the content of a specific commercial, selected from each resulting group in the previous phases. The selected commercial in each group has as main characteristic a great wealth of stylistic, iconographic and iconological resources that assumes greater elaboration, at least formal. This third and last phase follows the hermeneutic pattern adapted to the one used by Francisco García García (2006) for content analysis; it studies the narrative structure distinguishing enunciated, enunciation, forms like the characters, space, time and actions, and the different expressions of these elements. In this phase, special attention is prioritized towards the significant aspects of the message and not to the technical aspects or set-up, unless they contribute or reinforce the persuasive story.

3. Results

The application of the hermeneutic and statistical analysis to the total of the sample has allowed us to classify successfully each of the commercials with its corresponding archetype and myth. The quantitative and qualitative conclusions of the analysis (Chart 1) indicate that commercials dedicated to women number around two thirds of the total, in which 26% have women in the role of partner or wife; if we add the archetypes represented in the stories that appear with less frequency but which are, nevertheless relevant, we come up with the role of feminine sensuality, like that of the goddess Aphrodite as the second most widely used persuasive argument (18%), followed by the appeal to individual freedom as a natural value that connects woman to Nature, after the image of the goddess Artemis (15%). Perfume is also presented as a special, valuable or divine element equivalent to the old idea of possessing a magic elixir (13%) with which to achieve love, a perfect accessory to physical appearance or to seduce the man of her desires. This idea complements another reiterative argument in the group, as it is also explained in relation to men, which consists of assigning to the perfume the capacity to operate non-imagined but desired changes by the one who uses it (11%), causing sensations and experiences that remind one of the processes of metamorphosis of the Greek gods who changed their aspect, shape or identity at will to achieve their goals, generally of seduction.

Younger women who are just leaving adolescence behind and entering maturity receive messages specific to this collective, describing the main characters of the commercials through the evocation of the myth of Persephone, the Koré in the Greek mythology, in which the young woman discovers her sexuality after accepting a pomegranate from her captor, Hades, the god of the underworld, arousing passions and deep sensations which are translated into commercials by young women taking in their hands a bottle of perfume in the shape of an apple, a magic object or a star from the sky, metaphor of a promise of love. However, commercials aimed at females which use motivation to reach social or professional success are few, an attribute traditionally assigned to the goddess Athena in her vision of a victorious Nike. Less used is the plot involving fun or partying to accompany perfume use, in fact the opposite is true: perfumes are presented as a product for personal and private use on a deep level.

The group of commercials dedicated aimed at men, which is far smaller than those aimed at women, less than one third of the total, has a clear tendency towards stories of social success as an outstanding persuasive value. Man is seen as the god that leads the Greek pantheon, Zeus (40%), leader in heaven and on Earth, god of all that is seen and where Earthly life is developed. Within this role of control, a characteristic aspect of this mythical character is inserted, narcissism, as a consequence of success, which leads man to see himself as complete, autonomous and superior to the rest, destined to reign in any social environment. The man as a part of a couple or husband (2.85%), barely appears, as opposed to the predominant role he holds in plots in female perfume commercials, in which man is seen as an object of seduction and a necessary complement for the woman's happiness; there is no reciprocity in this aspect, and Zeus as a husband, a decisive role in the development of the mythology, is not an outstanding value. Besides supreme god, the role mainly portrayed in these commercials for men, although to a lesser extent, is that of a hard-working hero (25.7%), determined and necessary, a superior being to man but inferior to the gods, and as a result he can achieve greater empathy with male consumers; this coincides with the Odysseus argument, the hero of Greek mythology, Ulysses in Roman mythology, who is the prototype of all the most socially and culturally valued qualities, possessing intelligence, loyalty, generosity and beauty. Lastly, the argument that man has feelings, corresponding to what you cannot see, where Zeus does not reign but his brother Poseidon does (14.32%), appears in third place, perhaps as a complementary characteristic to the arrogant man described earlier, to show his interiority, allowing his unconscious and sensibility to be expressed. Finally we see that, as in the commercials for female perfumes, the discreet presence of the Metamorphosis concept of change in the male perfume commercials adds to the possibility that men who are not so sure about resembling Zeus or Ulysses can imagine that the perfume boosts their social projection, endowing them with a powerful dimension with regards to their possibilities of being and/or seeming.

Unisex perfumery represents a very scarce and not very relevant percentage in the universe analyzed but this does not prevent us from proving that the most important message is concentrated in three fundamental concepts that correspond to the three main characters of Greek mythology and their corresponding modern archetypes. Man and woman as a couple (26.6%), partners or husbands, Zeus and Hera-style, frequently related to fun, leisure, partying and happiness that Dionysus represents (26.6%), and united by the desire for transformation of themselves and of the group (26.6%), by using perfume as elixir identified with the values of sharing and enjoying the existence with others.

The in-depth content analysis of a relevant commercial from each group has enabled us to make a detailed check of the iconographic and iconological presence of each myth seen in the commercials, with a fairly high analogy level, as is the case of the «J' Adore» commercial by Dior in which a woman takes off her clothes and complements herself with the perfume in a tranquil, elegant environment as if she were the goddess Aphrodite, naked and beautiful, with no interaction with a man taking place, emulating the goddess that is born mature. The commercial for Chanel nº 5 for young women that recalls the process of Persephone entering adult life, dressed in the commercial like the character of the story that relates the same myth – Little Red Riding Hood, who this time is accompanied by wolves that do not threaten her but rather obey her when she picks up her perfume and takes a step toward a new world, that of adult life; the goddess Artemis was also accompanied by wolves that protected and obeyed her; we see in this commercial a combination of myths and archetypes that is very appropriate for the modern woman, the young and daring woman. Artemis is played by the actress Keyra Knightly in a commercial for «Coco Mademoiselle» from Chanel, in which she dares to flirt with men who she leaves behind to feel free in Paris. We also find Persephone in Nina Ricci´s commercial for the «Nina» perfume, this time symbolizing the end of adolescence with the act of catching the symbol of carnality, a red apple that is also the bottle of perfume. The phenomenon of the metamorphosis, typical of the mythological gods is seen in the commercial for «Madame» by J.P. Gaultier, in which the transformation has to do with the aesthetics promoted by the designer. The success and intelligence attributed to the goddess Athena hardly appears in any commercials although an outstanding example is that of actress Nicole Kidman for Chanel Nº 5. Power as a masculine attribute began to be seen at the end of the 20th century in a memorable commercial for Chanel's «Egoiste», in which a man fights with his shadow in a clear narcissistic combat for power. Man as the hero of modernity is compared to Odysseus, the hero of the Iliad and the Odyssey, in a purely Mediterranean environment where manliness and serenity stand out in the main character of the commercial for Light Blue by «Dolce&Gabbana». The commercial of another Italian brand, Giorgio Armani, for «Acqua di Gio», shows the most profound and sensual man in Greek mythology, Poseidon, playing sexual ambiguity that includes homosexuality as a suggested proposal through the movements of a man who has a relationship with the ocean, similar to that of two male lovers, where the deep water is a symbol of the unconscious and the model who plays this role is of a classical beauty.

The analogy is also clear in «Escape» from Calvin Klein, a unisex commercial that represents the myth of the Minotaur and Ariadne with the man's expressions true to character as the bull-man seducing Ariadne in the labyrinth. Finally, we must mention the mark of the god Dionysus in the commercial for Hugo Boss brand XY that transforms the atmosphere where he appears partying and in debauchery.

This brief summary of the deep analysis of 12 commercials and the precedent phases of the analysis allows us to verify that the hypothesis posed at the beginning of the investigation has been confirmed in each of the phases of the analysis of the sample, resulting in some general conclusions which we now present.

The advertising of the perfumery sector that prevails in the audiovisual media is primarily focused on the mature woman who is identified mainly by the character of the goddess Hera, wife or partner of a man that she feels proud of. At the same time she is sure of her sensuality and uses it as a gift from nature, just like the goddess Aphrodite, which provokes greater attention to the body and arouse the desire of those who admire it. Young women are persuaded to enter the world of high perfumery with stories that hint at a discovery that will change their lives, which leads them out of the infantile world of imagination. All of this brings us closer to the idea of the perfume as elixir, able to make the most diverse fantasies reality and also to the promise that perfume can transform women and men to help them fulfill personal wishes or dreams.

Men have a much smaller presence in this category of commercials, but these concentrate a lot on the idea of man as holder of power, control over himself and others, like Zeus, proud of himself and his possibilities and able to become a hero in his approach to mortals, as a superman or a semi-god. This also connects with the idea that an elixir or a metamorphosis is possible by using a certain perfume; however, the perfume does not appear as a creator of relationships among couples or with a wife, except in isolated cases.

Perfume commercials whose target is a mixed man-woman public are very scarce and are based on the argument of the group as a formula for Dionysian amusement, partying, the transformative possibilities by means of participation in the group and the formula of the perfume as elixir that offers the happiness and enjoyment of feeling and being with other people.

The targets in the group of perfume commercials, even if they seem to differ for each sex, coincide in the use of empathy to get the different consumer groups to indentify with the different archetypes shown. These are for both male and female and summarized in a single sentence: woman is a sensual and free wife that transforms and reinvents herself; man experiences success, is daring, brave and with feelings; men and women who enjoy life together.

In the period analyzed, almost two decades, the evolution in perfume commercials is observed with regards to the archetypes represented, with those mentioned in the previous paragraphs remaining constant. The most recent archetypes to be incorporated for women, men and mixed group/unisex are archetypes of female success, Athena-Niké, and independence, Artemis; in men, the hero's archetype represented by the figure of Odysseus, a more intelligent and conscientious man than the one represented by Zeus, and lastly, the archetype of transgression and the breaking of conventional rules, summed up in the myth of Dionysus, introduced through unisex commercials or focused towards an ambiguous public that cannot follow the conventional patterns of the female and/or male sex.

The peculiarities of publicity of the high perfumery sector are so many that without exaggeration we could open a new category of commercials that we could name, in light of the results of this investigation, archetypical advertising.

In short, this investigation shows the viability of the hermeneutic model in the analysis of current publicity and the use of archetypes as an instrument for content analysis, offering us a new focus for knowledge of advertising messages which in the case of perfume advertising, are rich in analogies from the classical mythologies and human prototypes, protagonists of persuasive speeches that act as references in our society. A greater proportion of advertising targets women, this is confirmed; the predominant role is that of the goddess Hera, wife and partner; the role of success and power is most frequently used to target men, both of which reinforce or maintain the role that both sexes have played out in society for centuries. The sentimental man or the autonomous woman are infrequent archetypes.

4. Discussion

The stage that advertising messages currently occupies has been called emotional advertising and its peculiarities continue to be studied; among the characteristics of these messages is the description of characters through highly accentuated physical and emotional features that coincide with the dominant features exhibited by certain social groups in society, those that the recipient identifies with and this investigation identifies as human archetypes. The integration formula of the archetypal content in the advertising characters is not perceived in a direct way but rather functions through familiarity; they obtain the corresponding automatic recognition in the mind of the recipient who adopts them as models to follow; this explains and reinforces the idea that modern advertising messages are channeled indirectly and that the consumer is being constantly trained by publicity to decode message beyond a first reading or impression (López and Farrán, 2010), and aside from this investigation we can understand how and why this emotional and archetypal publicity works.

The relationship between publicity and mythology has hardly been explored; when this encounter has taken place it has been to consider that publicity creates modern myths, but this investigation has gone in the opposite direction, considering it implicit in the starting hypothesis that publicity is inspired as much by classical ideas as modern ones, and that their stories are renewed and activated, and are massively diffuse concepts or knowledge that have accompanied man throughout history, as happens with the archetypes. To sum up, it is about an innate substratum in the individual, and due to this it should be valued in tackling persuasive communication both for content and for an effectiveness factor.

The most recent tendencies in persuasive communication have led publicity to show an individual that looks more and more like himself/herself, which could lead us to consider that the commercials analyzed respond to a fashion, but the advertising of structure and archetypal content is no mere temporary accident but a natural resource and, therefore, of constant use as much in publicity as in any communication environment; as it is, publicity consolidates the dominant archetypes in each period because its objective is always to maximize the diffusion of a content to obtain quantifiable results; the most original contribution in this investigation indicates that that general objective of publicity is achieved, in the case of perfume advertising, through the use of archetypes in narrations, and this adds to our understanding of the success of some advertising messages and consolidates the idea that publicity, true to its expansive role, makes the majority the minority, as Martinez-Rodrigo comments (2006) with regards to this topic. Our focus can be of great interest to further investigations centered on other products or content, and could be a useful guide for institutional campaigns that work on eliminating behavior such as domestic violence (Berlanga, 2009) since the decision can be made on the diffusion of a certain female archetype that strengthens a new woman model that doesn't have as a main vital objective the achievement of becoming part of a couple and complementarily, a male archetype that far from looking for power, develops complementary archetypal qualities such as those of Odysseus.

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