Bibliometric profile of *RUSC. Universities and Knowledge Society Journal*

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Abstract

For this study we conducted a bibliometric analysis of *RUSC. Universities and Knowledge Society Journal* in order to determine the characteristics of its scientific content. We analyzed 216 theoretical and empirical articles published in the period 2004–2013, using both qualitative indicators (article type, sample type, subject area of the article, author nationality, language of publication, and university of origin) and quantitative ones (citations per article, citations per article in the three years following publication, authorship index, and recentness index).

The information required to perform the analysis was accessed via the electronic, open access version of the journal (for the analysis of documents) and via the IN-RECS database. The study results enabled us to determine the characteristics of the scientific content of the journal analyzed. We identify strengths that can be built on, areas for improvement, and points that should be taken into account in future studies, with the overall aim of improving the dissemination of the journal.

Keywords

bibliometric profile, *RUSC, Universities and Knowledge Society Journal*, citations, indicators, impact index

Perfil bibliométrico de RUSC. Universities and Knowledge Society Journal

Resumen

El presente estudio realiza un análisis bibliométrico de RUSC. Universities and Knowledge Society Journal. *El objetivo es conocer las características de su producción científica. Para ello, se analizan doscientos dieciséis artículos, teóricos y empíricos, publicados durante el periodo comprendido entre 2004 y 2013, a través de diferentes indicadores, tanto de tipo cualitativo (clase de artículo, tipo de sección, clase de muestra, temática del artículo, nacionalidad de los autores, idioma*

de publicación y universidad de procedencia) como cuantitativo (citas por artículo, citas por artículo en los tres años posteriores a su publicación, índice de autoría e índice de actualización de los artículos).

El acceso a la información se realizó a través de la versión electrónica de acceso abierto de la revista, para el análisis de documentos, y a través de la base de datos IN-RECS. Los resultados obtenidos a través de este estudio determinan las características de la producción científica de la revista analizada. Se establecen los aspectos positivos que deben ser potenciados, las carencias que tienen que mejorarse y aspectos que se han de tener en cuenta en próximos estudios, para conseguir una mayor difusión de la revista.

Palabras clave

perfil bibliométrico, RUSC, Universities and Knowledge Society Journal, *citas, indicadores, índice de impacto*

Introduction

Bibliometrics is concerned with the treatment and study of quantitative data from scientific publications and the consumption of scientific information. In other words, it aims to quantify scientific activity (González & Moya, 1997; López-Piñero, 1972; Spinak, 1996). Assessment of scientific research and bibliometric analysis is now widely recognized as a valid tool for determining the scientific status of institutions, journals, authors, and areas of knowledge. As a result, bibliometric analyses carry a great deal of weight in the scientific community (Ayala-Gascón, Aleixandre-Benavent, & Gandía-Balaguer, 2012; Buela-Casal et al., 2012; Díaz & Buela-Casal, 2010; Maz-Machado et al., 2012; Quevedo-Blasco, Ariza, & Raya, 2012; Quevedo-Blasco, Díaz-Piedra, & Guglielmi, 2010; Zych & Quevedo-Blasco, 2011). Diem and Wolter (2013) found that bibliometric tools have been successfully applied to measure research performance in the education sciences.

Following the establishment of the European Higher Education Area (EHEA) and the European Research Area (ERA), Spanish scientific journals are seeking to become more competitive in the European context (Matesanz, 2010) and improve the quality of the items they publish. Along these lines, Gogolin (2012) described the methodology used within the framework of the European Educational Research Quality Indicators (EERQI) project, which assesses the quality of scientific publications in the social sciences and humanities. As a result of journal managers' growing interest in identifying the positive and negative aspects that affect the impact factor ranking of scientific journals, many bibliometric studies are published each year in journals related to education (Ariza, Granados, Ramiro, & Gómez-García, 2011; Ariza & Quevedo-Blasco, 2013; Gómez-García, Ramiro, Ariza, & Granados, 2012; Granados, Ariza, Gómez-García, & Ramiro, 2011) and other disciplines (Zych & Quevedo-Blasco, 2011).

The impact factor (IF) used by the Web of Science (WoS) and Journal Citation Reports (JCR) is the most internationally known indicator for ranking scientific journals. In Spain the most widely used measure is the impact index determined by the IN-RECS database for Spanish social science journals (Delgado, Ruiz, & Jiménez, 2010). Although both rankings generate a good deal of controversy among researchers, as Buela-Casal and Zych (2012) have shown, the IN-RECS impact index is currently the most significant measure for assessing scientific impact. Achieving a higher ranking is therefore a key goal for scientific journals (Buela-Casal, 2010).

Journals publish research results but can also be the object of research. Bibliometric indicators provide information on the scientific value of a journal and make it possible to identify the most-read articles, authors, and groups. It is also possible to analyze the size, growth, and distribution of scientific documents published in a journal, the structure and dynamics of the groups that produce and consume articles, the information they contain, the type of methodology used, the sample type, impact factor, and half-life of citations, among other details (Ariza et al., 2011; Ariza & Quevedo-Blasco, 2013; Díaz & Buela-Casal, 2010; Gómez-García et al., 2012; Granados et al., 2011; Quevedo-Blasco & López-López, 2010).

The use of bibliometric indicators to assess the content of journals is an objective and verifiable method (Velasco, Eiros, Pinilla, & San Román, 2012). The aim of this article is therefore to conduct a bibliometric analysis in order to determine the evolution of *RUSC. Universities and Knowledge Society Journal* from its establishment in 2004 until 2013. By analyzing the documents published in the journal, we will determine the characteristics of its scientific content in order to establish guiding principles aimed at facilitating its positive evolution

Method

Unit of analysis

In this study we analyzed 216 articles published in *RUSC. Universities and Knowledge Society Journal* between 2004 and 2013.

Materials

RUSC. Universities and Knowledge Society Journal (ISSN: 1698-580-X) is an electronic publication created in 2004 and currently co-published by the Open University of Catalonia (UOC) and its eLearn Center, and the University of New England in Australia and its *dehub*.

Each issue contains between 9 and 16 articles, which are classified in three sections: research articles (open section), a special section, and reviews. Reviews only appear in some issues and have not been included in this study. The journal is published twice a year, in January and July, except in 2004, when only one issue was published. From 2004 to 2013, a total of 19 issues were published.

At present *RUSC's* primary language of publication is English. Although articles may be submitted in Spanish for peer review, if accepted they must then be translated into English and are published in both languages. In the case of articles submitted in English and accepted following peer review, authors may also send a Spanish version so that their submission can be published in both languages. *RUSC* provides immediate, open access to its content in the belief that making research available to the public free of charge encourages the global exchange of knowledge. All articles published in the journal are previously subjected to double-blind review by the members of the Scientific Editorial Board.

RUSC is indexed in the following databases: Scopus, MIAR, IN-RECS, DICE, Carhus Plus, h5-index (Google Scholar), Educational Research Premier™ (EBSCO), Fuente Académica™ (EBSCO), Educational Research Abstracts (ERA), ACER (Australian Council for Educational Research), IRESIE, ISOC (CSIC/CINDOC), Dialnet, DOAJ, Dulcinea, RACO, OAISTER, Scientific Commons, Redalyc, e-Revistas, and SHERPA/RoMEO. It can also be found in numerous catalogues, including REBIUN, CBUC, COPAC, and SUBOC, and in directories such as Ulrich's Periodicals Directory, Intute, and AERA SIG Communication of Research.

IN-RECS, the impact index for Spanish social science journals, is a database that was established in 2004 and is managed by the Science and Scientific Communication Assessment Research Group (EC3) of the University of Granada (UGR). Users can search for information on journals, authors, and institutions in the database, which contains records that go back to 1994. IN-RECS provides the impact index for indexed journals based on the number of citations they receive in selected source journals.

Design and procedure

This is a descriptive study based on analysis of documents and carried out in accordance with the classification proposed by Montero and León (2007). In preparing and writing this article, we followed the guidelines set out by Hartley (2012).

The document analysis was conducted by two researchers working independently in order to ensure the reliability of results. After pooling the data, a third researcher repeated the analysis for points of disagreement. The documents included in the study, published between 2004 and 2013, were accessed via the website for the journal, and the search period for the analysis was from 9 to 22 December 2013.

The data on *RUSC* that can be extracted from the IN-RECS database were also analyzed. The study was carried out at the end of 2013. The analysis of citations did not take into account articles published between 2010 and 2013, because IN-RECS data on citation of papers published in these years was not up-to-date when the analysis was conducted. The analysis was performed in IN-RECS. Data from Scopus were not considered, because *RUSC* had only recently been added to the database and consequently the required data was not available.

In the study we considered both papers included in the section for research articles (open section) and those published in the special section. Different types of articles were included in each case (Fernández-Ríos & Buela-Casal, 2009; Sánchez-Meca, 2010): both empirical (Chiecher & Donolo, 2013; Tempelaar et al., 2012) and theoretical (Casas & Stojanovic, 2013; Coughlan & Perryman, 2013). We analyzed all of the articles independently, taking into account both qualitative indicators (article type, sample type, subject area of the article, author nationality, language of publication, and university of origin) and quantitative ones (citations per article, citations per article in the three years following publication, authorship index, and recentness index).

The number of citations received by each article was determined by consulting the IN-RECS database and adding up the citations indicated in the list of most-cited articles. For citations per article in the three years following publication, we took into account those recorded in the indicator "citations received", counting only the citations that occurred in the three-year period of interest.

Article type, sample type, and research design type were determined by reading the abstracts of the articles. When the information required for these indicators was not indicated in the abstract, we read the method section to obtain the necessary details.

We identified the subject area of each article based on how it was classified by the journal, which publishes papers in the following subject areas: a) university models in the knowledge society, b) educational models and technology use in higher education, c) open access systems for use of learning materials; systems for development and use of open educational resources, d) technological and pedagogical models and innovations, e) transformations in higher education learning or administrative processes resulting from ICT use, f) organizational and administrative perspectives on ICT use in higher education institutions, g) university governance and leadership in the knowledge society, and h) models of university presence and service using the Internet.

To determine the authorship index, we recorded the number of authors for each article. We also noted the nationality of all named authors and collected data for the indicator "university of origin". When an article was published by authors from a single university, that university was taken as the university of origin. In the case of articles published by authors from more than one university, the university of the first author was identified as the university of origin. In the case of articles written by authors affiliated with other institutions, we used the category "other institutions".

The recentness index was determined by counting the bibliographical references that appeared in the papers and grouping them according to the year in which the cited item was published. This index was determined only for articles published in 2012 and 2013. We also took into account the language in which each item was published (Spanish, English, Spanish and English, or Portuguese).

Data for all these indicators was collected in a single SPSS 15.0 database for Windows to facilitate the detection of significant relationships between different indicators when performing analyses.

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Results

Between 2004 and 2013 (both years inclusive), the *Universities and Knowledge Society Journal* published a total of 216 articles. Figure 1 shows the number of articles published for each year in the study period.

Figure 1. Number of articles published in the *Universities and Knowledge Society Journal* by year of publication, 2004–2013.
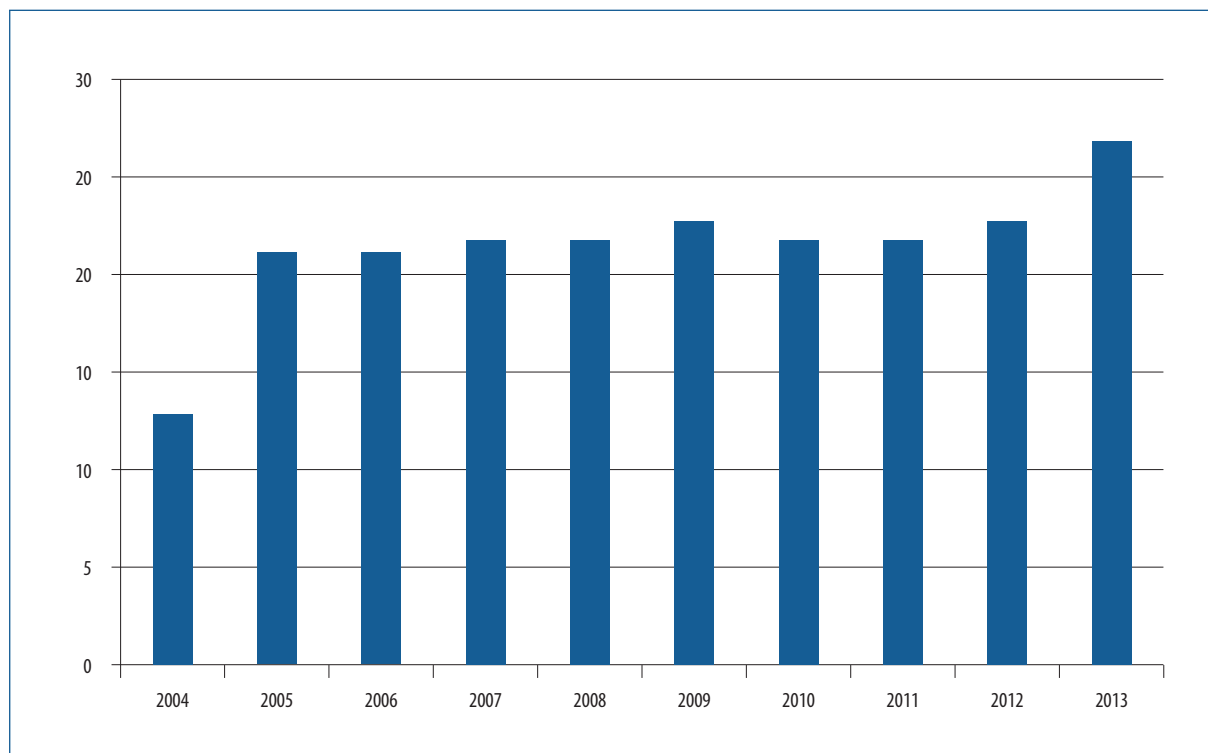
The articles reviewed were from the section for research articles (open section) (44.4%) and the special section (55.6%). Out of a total of 216 articles reviewed, 121 (56%) were theoretical articles and 95 (44%) were empirical articles. Figure 2 shows the number of empirical and theoretical articles by section of publication.

Chi-square test results showed that there are differences in the distribution of the two types of articles (empirical and theoretical) by section of publication ($\chi^2_{(1)}$ = 11.472; p = 0.001). In the special section, the percentage of theoretical articles published was higher than that of empirical articles (66.7% versus 33.3%), whereas in the open section, the percentage of empirical articles was higher than that of theoretical articles (57.3% versus 42.7%).

Figure 3 shows the number of articles published by article type (theoretical or empirical) and year of publication. The results indicate that more theoretical than empirical articles were published in all of the years in the study period, except 2011, 2012, and 2013, when the number of empirical articles exceeded the number of theoretical articles. We also looked at the number of articles published by year of publication and section type (open or special). The results, presented in Figure 4, show that more articles were published in the special section than in the open section in every year except 2013.

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Figure 2. Number of theoretical and empirical articles published in the *Universities and Knowledge Society Journal* by section of publication (special or open), 2004–2013.
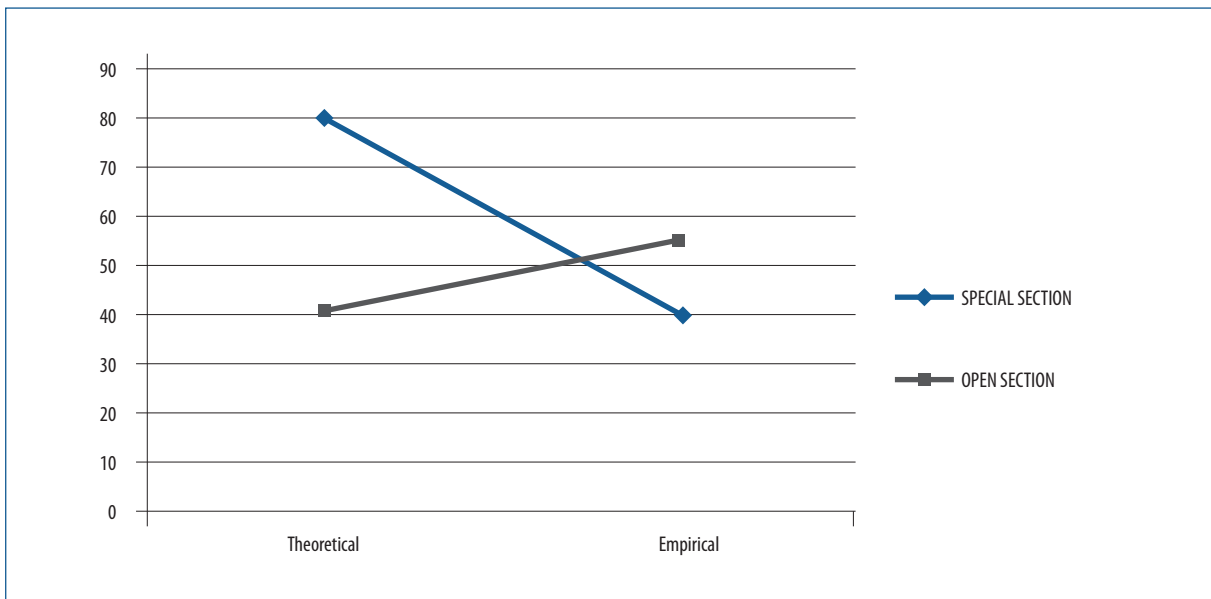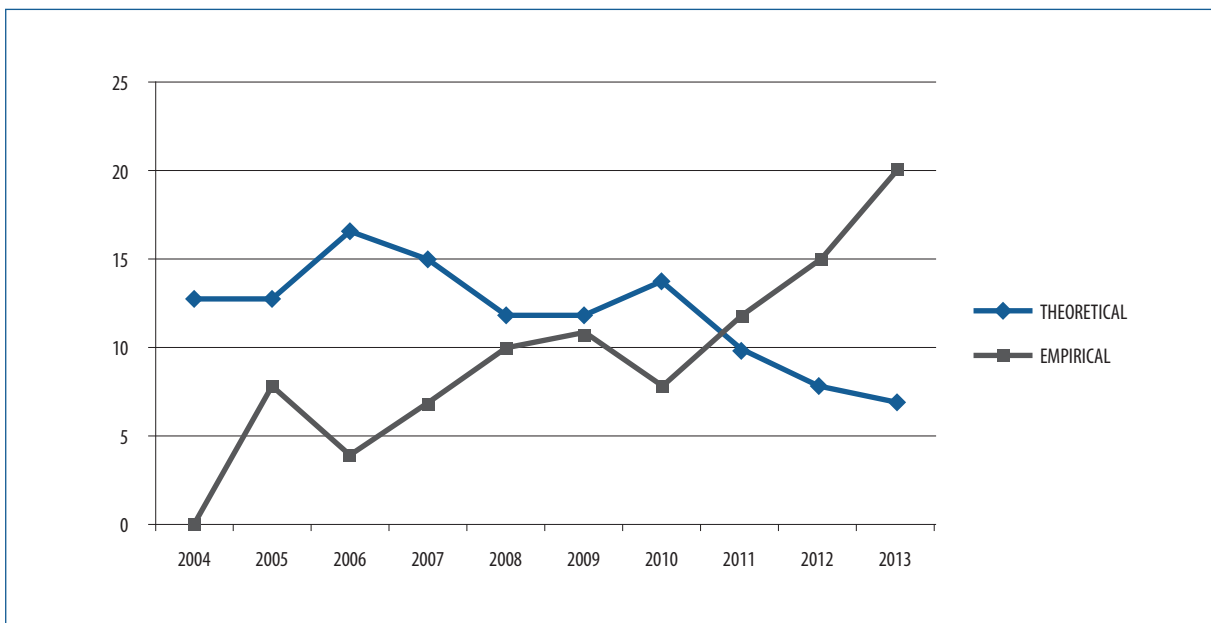

Figure 3. Number of articles published in the *Universities and Knowledge Society Journal* by article type, 2004–2013.

For the analysis of citations, we did not include articles published between 2010 and 2013, because the IN-RECS database did not contain up-to-date data on citations of papers published in these years. As a result, the data presented below are for articles published between 2004 and 2009. During this period, the journal received a total of 34 citations: 15 in national journals and 19 in international ones. Significant differences were found in the number of citations by article type (t = 1.661; p = 0.002). The theoretical articles (M = 0.35; DT = 0.83) received more citations than the empirical articles (M = 0.13; DT = 0.33).

Figure 4. Number of articles published in the *Universities and Knowledge Society Journal* by section type, 2004–2013.
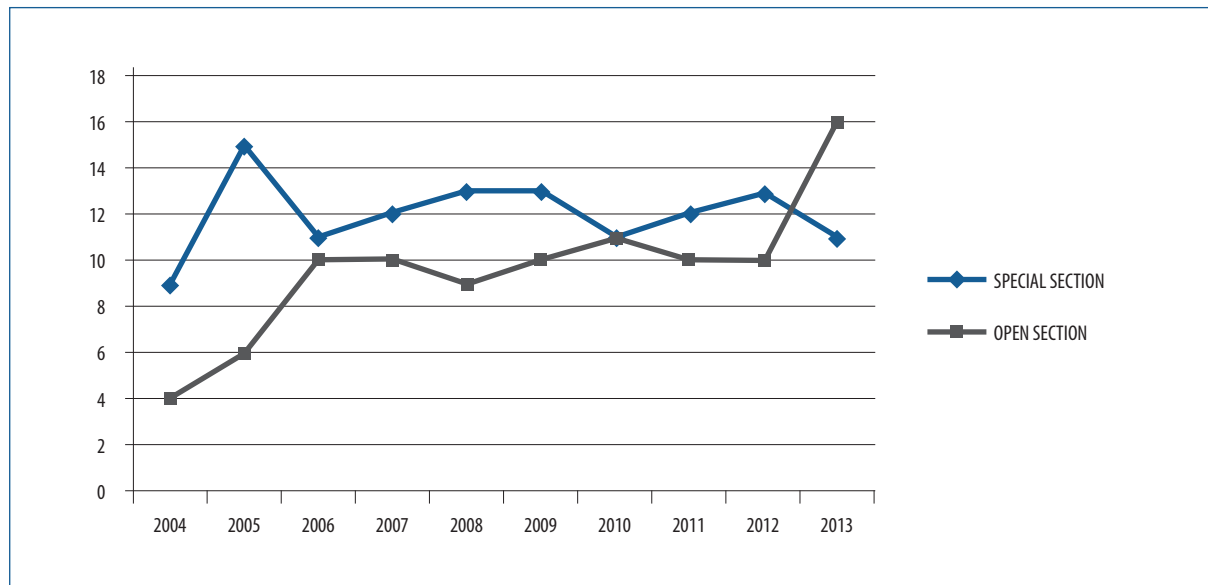
With respect to citations by section type, that is, special section ($M = 0.29$; $DT = 0.69$) or open section ($M = 0.27$; $DT = 0.75$), no significant differences were found (t = 0.168; $p = 0.89$).

Another point to consider was the number of citations per article in the three years following publication. Articles published in *RUSC* received a total of 29 citations in the three years following their publication. Of the articles that received citations in the three years following their publication, 16 received one citation, one received two, another received three, and two received four citations each.

Figure 5. Average number of citations received by articles published in the *Universities and Knowledge Society Journal* by year of publication, 2004–2009.
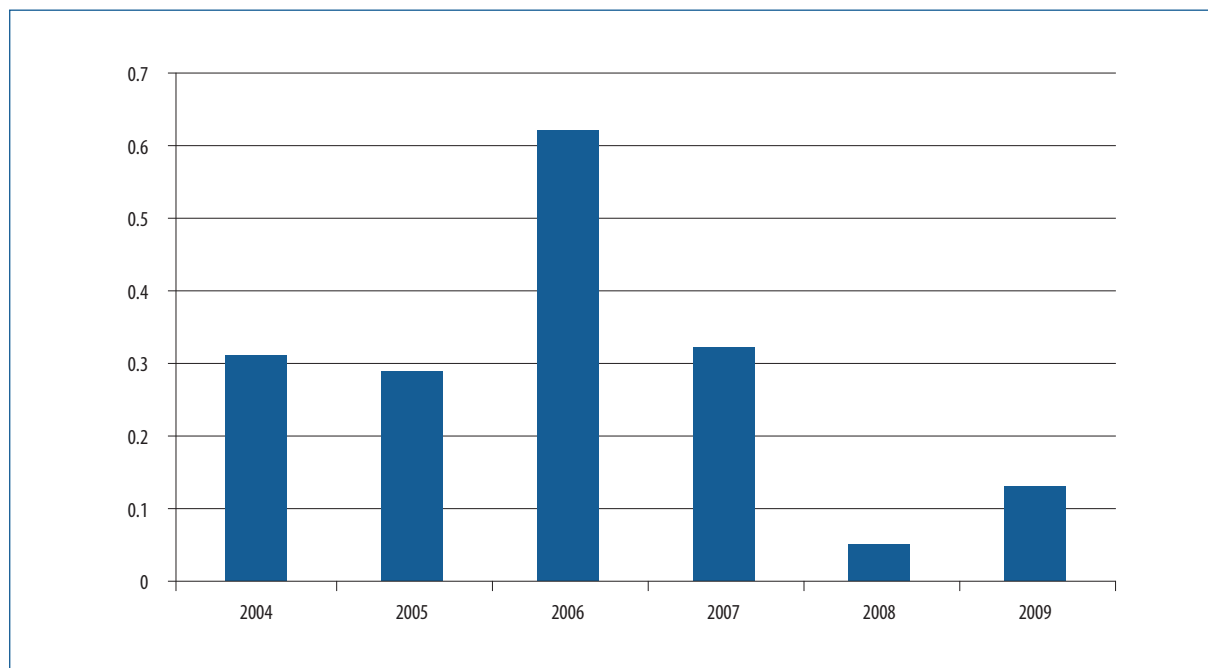
When we looked at the number of citations in the three years following publication by article type, we found significant differences (t = 1.599; *p* = 0.002). The theoretical articles (*M* = 0.30; *DT* = 0.78) received more citations than the empirical articles (*M* = 0.10; *DT* = 0.30). No significant differences (t = 0.226; *p* = 0.730) were found between the number of citations received by articles published in the special section (*M* = 0.27; *DT* = 0.69) and those published in the open section (*M* = 0.18; *DT* = 0.63).

Figure 5 shows the average number of citations received by articles according to the year in which they were published. Articles published in 2006 were the most cited, with an average of 0.62 citations, and those published in 2008 generated the fewest citations, with an average of 0.05..

We also calculated the average number of citations received in the three years following publication for each year of publication from 2004 to 2009. The articles published in 2004, which provided the journal with an average of 0.32 citations per article, did not receive any citations in the three years following their publication. In contrast, the articles published in 2006 and 2007, which generated the highest average number of citations in the period 2004–2009, also received the most citations in the three years following their publication (see Figure 6).

Figure 6. Average number of citations in the three years following publication by year of publication for articles published in the *Universities and Knowledge Society Journal*, 2004–2009.
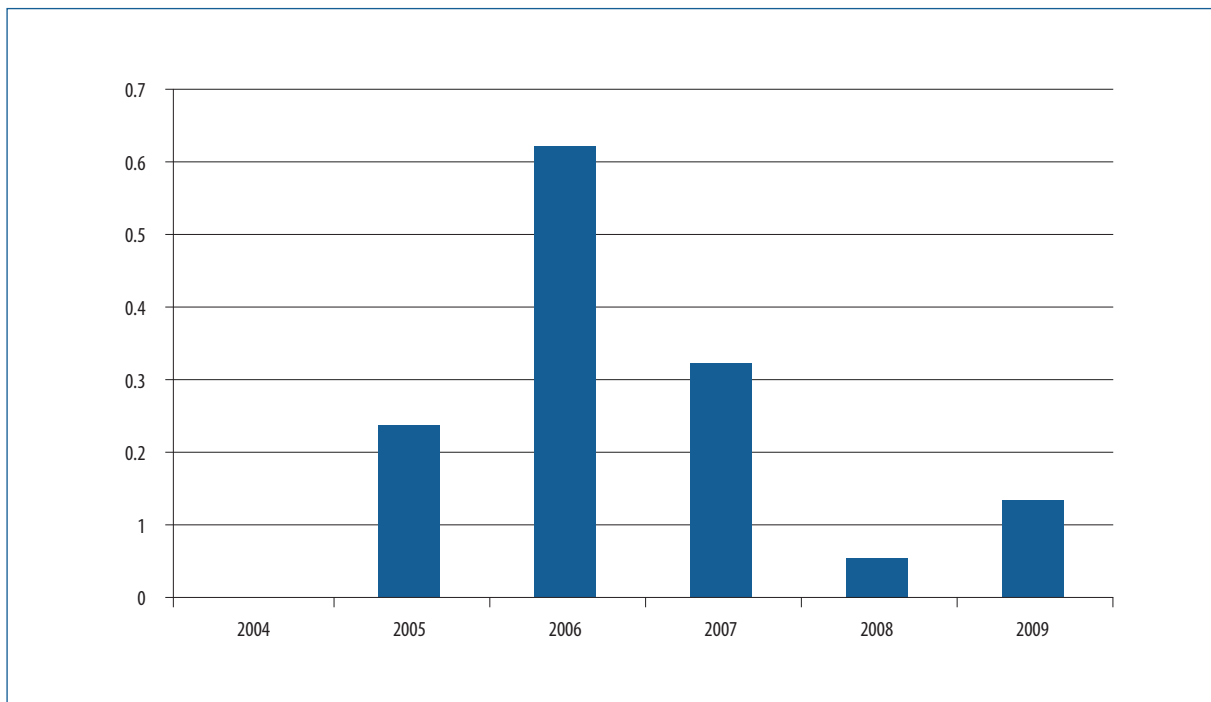
Figure 7 shows data on the evolution of the journal in terms of its impact index according to the IN-RECS database. The journal reached its highest impact index in 2009, with a score of 0.256, which earned it a position in the first quartile. In 2004 and 2005, the impact index was 0 and the journal ranked in the fourth quartile of IN-RECS. In 2006, however, the journal ranked in the second quartile, holding position 19 out of a total of 70 journals. In 2007, it remained in the second quartile but fell to position 32 out of 86 journals.

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Figure 7. Evolution of the *Universities and Knowledge Society Journal* in terms of its IN-RECS impact index, 2004–2009.
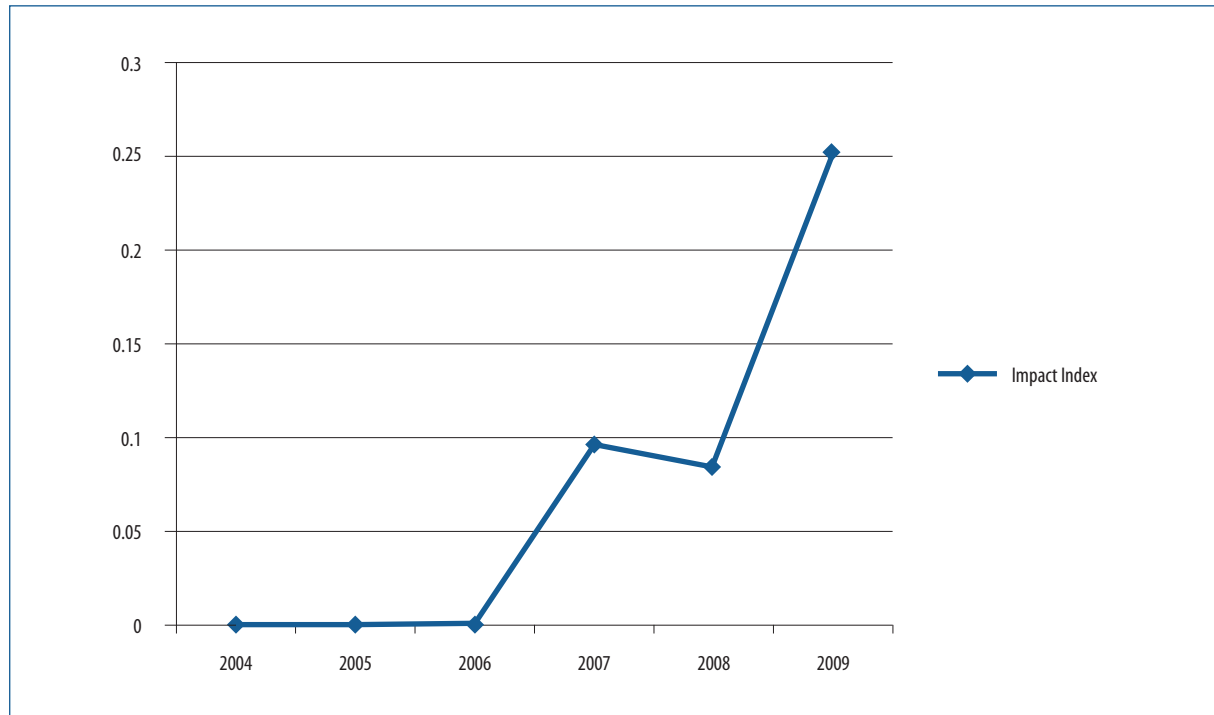
We also looked at the type of sample used in each article by article type. The results of this analysis are shown in Table 1. Fifty-six per cent of the articles published in the period 2004–2013 indicated that no sample of any kind had been used. This percentage corresponds to the total number of theoretical articles. Of the articles published, 16.2% deal with studies that used university students as participants, and in 10.2% the participants were university faculty.

Table 1. Distribution of articles published in the *Universities and Knowledge Society Journal* by article type and sample type used, 2004–2013.

Sample type	Theoretical article		Empirical article		Total	
	n	*%*	*n*	*%*	*N*	*%*
No sample	121	100	0	0	121	56
University faculty	0	0	22	23.1	22	10.2
University students	0	0	35	36.9	35	16.2
University faculty and students	0	0	19	20	19	8.8
Other	0	0	19	20	19	8.8
Total	121	100	95	100	216	100

When we classified the articles by subject area, as shown in Table 2, it was clear that the highest proportion of articles published dealt with "educational models and technology use in higher education", which accounted for 26.4% of all articles, followed by "technological and pedagogical models and innovations" (18.1%). In contrast, the subject area in which the fewest articles were published was "models of university presence and service using the Internet".

Table 2 also shows the distribution of articles by subject area and article type. In the case of both theoretical and empirical articles, "educational models and technology use in higher education" is the area that accounts for the highest percentage of papers (23.1% and 30.5% respectively). However, for empirical articles, the subject area with the second-most articles was "technological and pedagogical models and innovations" (28.4%), whereas for theoretical articles it was "organizational and administrative perspectives on ICT use in higher education institutions" (16.5%).

Table 2. Distribution of articles published in the *Universities and Knowledge Society Journal* by subject area and article type (empirical or theoretical), 2004–2013.

Subject area	Empirical article		Theoretical article		Total	
	n	%	n	%	N	%
University models in the knowledge society	11	11.6	12	9.9	23	10.6
Educational models and technology use in higher education	29	30.5	28	23.1	57	26.4
Open access systems for use of learning materials; systems for development and use of open educational resources	3	3.2	15	12.4	18	8.3
Technological and pedagogical models and innovations	27	28.4	12	9.9	39	18.1
Transformations in higher education learning or administrative processes resulting from ICT use	11	11.6	15	12.4	26	12
Organizational and administrative perspectives on ICT use in higher education institutions	5	5.3	20	16.5	25	11.6
University governance and leadership in the knowledge society	8	8.4	9	7.4	17	7.9
Models of university presence and service using the Internet	1	1.1	10	8.3	11	5.1
Total	95	100	121	100	216	100

As for the distribution of articles by subject area and section type (open or special), the results show that for both sections the subject area in which the most articles were published was "educational models and technology use in higher education" (see Table 3). However, the second most frequent subject area covered by articles published in the special section was "university governance and leadership in the knowledge society", whereas in the open section this position was held by "technological and pedagogical models and innovations".

Our analysis shows that the articles published in the period 2004–2009 which received the most citations were those that dealt with the subject area "open access systems for use of learning materials; systems for development and use of open educational resources" (see Table 4). This was the subject area in which the second fewest articles were published during this period, accounting for a total of eight articles. Although the subject area "educational models and technology use in higher education" accounted for the highest number of articles published in the period 2004–2009 (31 in total), it was the area that generated the third fewest citations (an average of 0.16).

Table 3. Distribution of articles published in the *Universities and Knowledge Society Journal* by subject area and section type (special or open), 2004–2013.

Subject area	Special section		Open section		Total	
	n	*%*	*n*	*%*	*N*	*%*
University models in the knowledge society	7	5.8	16	16.7	23	10.6
Educational models and technology use in higher education	30	25	27	28.1	57	26.4
Open access systems for use of learning materials; systems for development and use of open educational resources	12	10	6	6.3	18	8.3
Technological and pedagogical models and innovations	16	13.3	23	24	39	18.1
Transformations in higher education learning or administrative processes resulting from ICT use	15	12.5	11	11.5	26	12
Organizational and administrative perspectives on ICT use in higher education institutions	16	13.3	9	9.4	25	11.6
University governance and leadership in the knowledge society	17	14.2	0	0	17	7.9
Models of university presence and service using the Internet	7	5.8	4	4.2	11	5.1
Total	120	100	96	100	216	100

Table 4. Average number of citations received by articles published in the *Universities and Knowledge Society Journal* by subject area, 2004–2009.

Subject area	Articles	Citations	
	n	*M*	*DT*
University models in the knowledge society	6	0	0
Educational models and technology use in higher education	31	0.16	0.37
Open access systems for use of learning materials; systems for development and use of open educational resources	8	1.13	0.83
Technological and pedagogical models and innovations	19	0.26	0.93
Transformations in higher education learning or administrative processes resulting from ICT use	14	0.29	0.82
Organizational and administrative perspectives on ICT use in higher education institutions	22	0.09	0.29
University governance and leadership in the knowledge society	12	0.25	0.45
Models of university presence and service using the Internet	10	0.60	1.35

In order to examine the contribution to the journal by country (i.e. author nationality), we made a count of the nationality of each contributing author. The results show that 64.3% of contributing authors were of Spanish nationality. The next most frequent nationalities among contributing authors were Argentinean (4.8%), Mexican (4.8%), and Colombian (4.8%). Table 5 shows the percentages for the rest of the contributing countries.

Table 5. Percentage contribution in the *Universities and Knowledge Society Journal* by country, 2004–2013.

Country	No. of authors	%*
Spain	254	64.3
Argentina	19	4.8
Mexico	19	4.8
Colombia	18	4.7
USA	11	2.8
France	11	2.8
Netherlands	11	2.8
Venezuela	11	2.8
Brazil	7	1.7
United Kingdom	7	1.7
Finland	5	1.3
Chile	4	1
Cuba	4	1
Sweden	4	1
Australia	2	0.5
Ecuador	2	0.5
Other	6	1.5
Total	395	

* To obtain the percentage contribution for each country, we took into account the nationalities of all named authors. The "other" section includes countries that only appeared as the nationality of the author of one document.

To examine the contribution of different universities to the journal, we made a count of the university of origin of each article (i.e. the university of the first author). The results, presented in Table 6, show that the highest percentage of articles were written by authors from the Open University of Catalonia (UOC) (20.4%), followed by the University of Barcelona (UB) and the University of Granada (UGR), each of which accounted for 3.2% of the articles published. The results show that the lead authors were from a wide variety of universities, not all of which are identified in Table 6. Seventy-one articles were classified under the heading "Other universities". This count includes all of the articles in which the lead author's university was the university of origin for just a single article. Overall, we found that the articles published were written by authors from 93 different universities. We also found that 16.7% of the articles had a lead author associated with a non-university institution.

Table 6. Percentage contribution to the *Universities and Knowledge Society Journal* by university, 2004–2013.

University	No. of articles	%*
Open University of Catalonia (UOC)	44	20.4
University of Barcelona (UB)	7	3.2
University of Granada (UGR)	7	3.2
University of Seville (US)	6	2.8
Autonomous University of Barcelona (UAB)	4	1.9
Carlos III University of Madrid (UC3M)	4	1.9
Pontifical University of Salamanca (UPSA)	4	1.9
Complutense University of Madrid (UCM)	3	1.4
Cooperative University of Colombia (UCC)	3	1.4
University of La Laguna (ULL)	3	1.4
National Distance Education University (UNED)	2	0.9
University of Buenos Aires (UBA)	2	0.9
University of Huelva (UHU)	2	0.9
University of the Andes (ULA) – Venezuela	2	0.9
University of Murcia (UM)	2	0.9
University of Oviedo (UniOvi)	2	0.9
University of Salamanca (USAL)	2	0.9
University of Santiago de Compostela (USC)	2	0.9
University of the Basque Country (UPV/EHU)	2	0.9
International University of Catalonia (UIC)	2	0.9
Polytechnic University of Catalonia (UPC)	2	0.9
Rey Juan Carlos University (URJC)	2	0.9
Other universities	71	32.9
Other institutions	36	16.7
Total	216	100

* We obtained the percentage contribution of each university by reference to the first author's university of origin.

Another point we analyzed was the language of publication: 52.8% of the articles were published in Spanish, and 38.9% in both Spanish and English (see Table 7).

To analyze citations by language of publication, we reviewed the citations for the 120 articles published between 2004 and 2009, 108 of which were published in Spanish and 12 in English. The average number of citations for articles published in Spanish was 0.14 ($DT = 0.44$), and the articles published in English received an average of 0 citations ($DT = 0.00$). However, the articles published in Spanish received an average of 0.16 ($DT = 0.45$) international citations, fewer than the average for articles published in English, which received an average of 0.17 ($DT = 0.38$) citations of this type, though the difference was not significant.

Table 7. Distribution of articles published in the *Universities and Knowledge Society Journal* by language of publication, 2004–2013.

Language	No. of articles	%
Spanish	114	52.8
English	17	7.9
Spanish and English	84	38.9
Portuguese	1	0.5
Total	216	100

As for the authorship index, our results show that 49.1% of the articles had a single author, and that the number of articles was inversely related to the number of authors (see Table 8). It should also be noted that there is a relationship between the number of authors and the article type. Theoretical articles were produced by fewer authors ($M = 1.53$; $DT = 0.79$) than empirical articles ($M = 2.21$; $DT = 0.21$), and statistically significant differences were found (t = -4.950; $p = 0$).

Table 8. Distribution of articles published in the *Universities and Knowledge Society Journal* by number of named authors, 2004–2013.

Number of authors	No. of articles	%
1	106	49.1
2	66	30.6
3	26	12
4	14	6.5
5	2	0.9
6	1	0.5
7	1	0.5
Total	216	100

Finally, we analyzed the documents cited in articles published in 2012 and 2013 to determine the recentness index. In the case of articles published in 2012 (see Figure 8), we found that 41.37% of the cited documents had been published before 2005, and 44.39% between 2008 and 2012.

In the case of articles published in 2013, 35.79% of the cited documents had been published before 2005, and 41.44% in the previous five years, that is, between 2009 and 2013 (see Figure 9).

Figure 8. Number of documents cited by year of publication, for articles published in the *Universities and Knowledge Society Journal* in 2012.
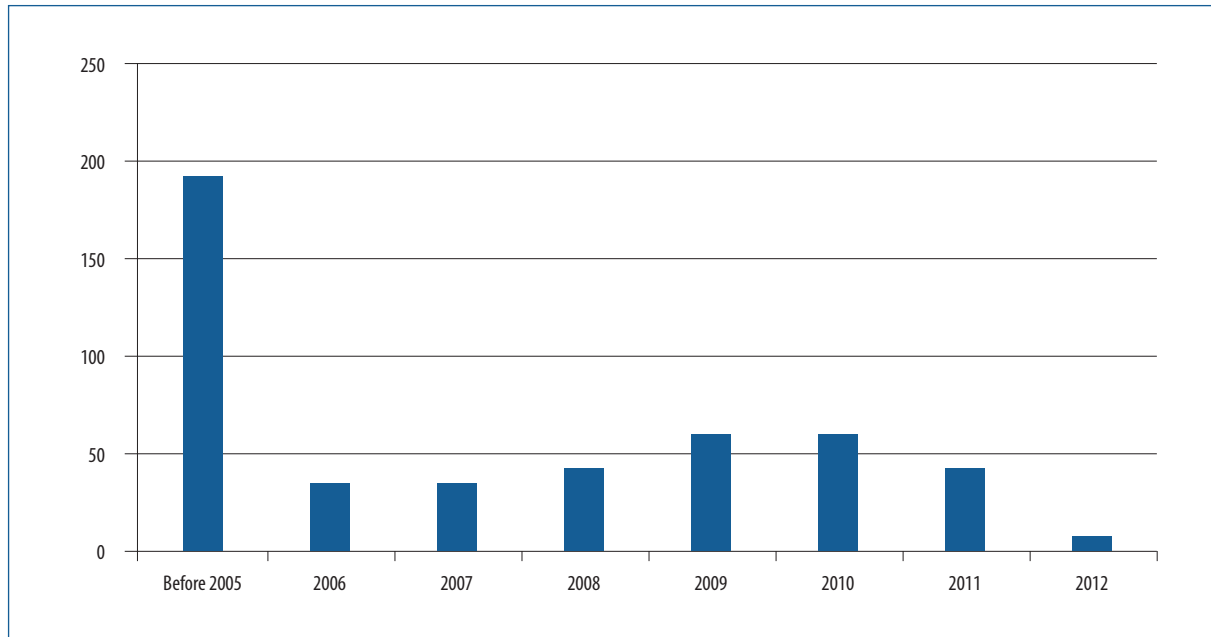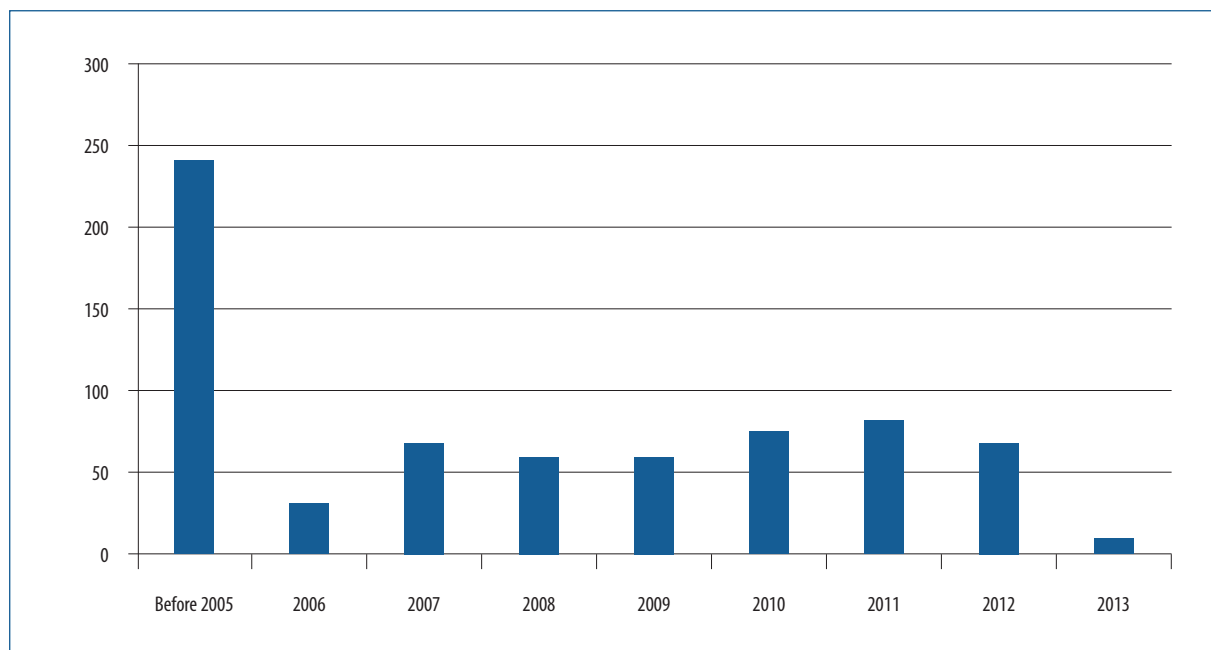

Figure 9. Number of documents cited by year of publication, for articles published in the *Universities and Knowledge Society Journal* in 2013.

Discussion

The quality of scientific publications is difficult to clearly define, but there are quantitative indicators that can be used to assess their relative impact in the scientific community. These indicators are important for teaching and research staff in accreditation and assessment processes (Buela-Casal & Sierra, 2007). The *Universities and Knowledge*

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Society Journal therefore needs to strengthen its position in relation to these indicators. Journals with better rankings attract authors of higher quality. This in turn leads to further improvement in rankings, given that the content of articles published by such authors is of greater scientific significance, and their papers therefore receive more citations, thus increasing the impact index of the journals in which they are published (Buela-Casal & Zych, 2010).

The results of our study show that *RSUC* improved its ranking in the IN-RECS database from the year it was established until 2009. The number of articles published remained stable up until 2013 and then increased in that year. Ariza & Quevedo (2013) have shown that when a journal publishes more than the usual number of articles in a single issue, or several consecutive issues, this has a negative effect on its impact index. It will therefore be necessary to look at what effect the publication of a greater number of articles in *RUSC* in 2013 may have.

In terms of the type of articles published, we found that the journal has published more theoretical than empirical articles. Furthermore, in line with the findings of other studies (Ariza et al., 2011; Ariza & Quevedo-Blasco, 2013; Buela-Casal et al., 2009; Gómez-García et al., 2012; Granados et al., 2011), we found that theoretical articles generated more citations for the journal than empirical ones, with respect to both the total number of citations received and those received in the three years following publication. However, although more theoretical than empirical articles were published each year up until 2010, the balance began to shift in 2011, and the journal continued to publish more empirical articles in 2012 and 2013.

We did not find any relationship between the number of citations and the type of section (special or open) in which articles were published. We did find, however, that more theoretical than empirical articles are published in the special section, but there is no guarantee that theoretical articles published in the special section will generate more citations than articles of the same type published in the open section.

In relation to article type, we found that theoretical articles are more likely to be published by a single author. This finding has also been reported by other researchers (Ariza et al., 2011; Ariza & Quevedo-Blasco, 2013; Buela-Casal et al., 2009; Gómez-García et al., 2012; Granados et al., 2011).

The journal has a set of clearly defined subject areas for the articles it publishes. However, our study has shown that the subject areas covered by the articles that generate the most citations for the journal are not the areas in which it publishes the most papers. The journal's editorial team would therefore be well advised to reconsider its priorities in this respect and focus on publishing articles on the subjects that generate most interest within the scientific community.

As for the contribution by country, despite the fact that over 50% of the authors are of Spanish nationality, there are also many authors from other countries, both within Europe and elsewhere in the world. Likewise, although authors from the Open University of Catalonia (UOC) account for the highest percentage of papers published, others Spanish universities are also well represented, and there are also numerous contributions from foreign universities and other types of institutions. These are positive factors for the evolution of the journal, as they give it a distinct international character. Recognition as an international journal depends on much more than being foreign or indexed in the Web of Science (Navarrete-Cortes, Quevedo-Blasco, Chaichio-Moreno, Ríos, & Buela-Casal, 2009; Zych & Buela-Casal, 2007; Zych & Buela-Casal, 2009; Zych & Buela-Casal, 2010). Scientific output has no boundaries and research results can be of great significance to the scientific community throughout the world, not just in the countries where studies are carried out. Being indexed in the Web of Science is a key condition for inclusion in the most select group of publications, which meet a very high standard, but fulfilling this requirement does not in itself guarantee the international character of a journal (Zych & Buela-Casal, 2010). It is therefore important that the journal continue to focus on its international dimension in order to ensure that it keeps evolving in a positive direction.

As for the language of publication, since 2010 the official language of the journal has been English, and most papers are published in both English and Spanish. This is a positive feature of the journal, because, as this study has shown, articles published in English are more likely to generate international citations. A study conducted by Zych & Buela-Casal (2009) also showed that one of the common features of journals with a higher internationality index is that they publish in more languages. In short, it is important that items published are not only in Spanish: Spanish-only articles reach fewer researchers, which affects the number of citations they receive. However, research papers in Spanish remain important, because they generate international recognition in Ibero-American countries.

Inclusion in prestigious databases is another way in which a journal's importance to the international community is recognized. *RUSC* has been indexed in Scopus, one of the most highly-regarded databases, since 2010. Scopus provides a comprehensive overview of the world's research output in various scientific fields, including the social sciences. The fact that *RUSC* is indexed in this database is important, because it provides greater visibility to the scientific work published in the journal. Authors want their research papers to be visible to the scientific community and are therefore more motivated to publish in journals indexed in Scopus.

As for the recentness of citations in the articles published, our study has shown that although the articles published in 2012 and 2013 have an acceptable percentage of citations to items published in the previous five years, they also have a relatively high percentage of citations to items published eight or more years earlier. Other studies have shown that the citation of recent works has a positive effect on the number of citations a journal receives (Cañedo, Nordase, Guerrero, & Ramos, 2005), as well as ensuring that the most relevant recent scientific research is considered in published items. This is therefore an important aspect to focus on.

We believe this study is an important one for *RUSC*. Although our results show that the journal is evolving in a positive way, we have identified strengths that can be built on and some areas for improvement. It is particularly important that the editorial team monitor the effects of two changes in the journal: an increase in number of items published in each issue, and a shift towards publishing more empirical than theoretical articles.

One of the main limitations of our study is the analysis of citations. We have not been able to analyze the articles published in the period 2010–2013, because the IN-RECS database did not contain up-to-date data on citation of papers published in these years. We therefore recommend that another study be conducted using citation data from Scopus when the database contains sufficient data to allow this.

References

Ariza, T., & Quevedo-Blasco, R. (2013). Análisis bibliométrico de la *Revista de Investigación Educativa* (2000–2012). *Revista de Investigación Educativa, 31*(1), 31–52. doi http://dx.doi.org/10.6018/rie.31.1.160321

Ariza, T., Granados, M. R., Ramiro, M. T., & Gómez-García, A. (2011). Una década de la *Revista Española de Educación y Psicopedagogía*: un análisis bibliométrico de su evolución. *Revista Española de Educación y psicopedagogía*, *22*(1), 38–57.

Ayala-Gascón, M., Aleixandre-Benavent, R., & Gandía-Balaguer, A. (2012). Indicadores de actividad científica en investigadores singulares: perfil bibliométrico de Eduardo Primo Yúfera, expresidente del CSIC. *Revista Española de Documentación Científica, 35*(2), 209–237. doi http://dx.doi.org/10.3989/redc.2012.2.887

Buela-Casal, G. (2010). Índices de impacto de las revistas científicas e indicadores para medir el rendimiento de los investigadores. *Revista de Psicodidáctica, 15*(1), 3–19.

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Buela-Casal, G., & Sierra, J. C. (2007). Criterios, indicadores y estándares para la acreditación de profesores titulares y catedráticos de Universidad. *Psicothema 19*(4), 537–551.

Buela-Casal, G., & Zych, I. (2012). What do the scientists think about the impact factor? *Scientometrics*, *92*(2), 281–292. doi http://dx.doi.org/10.1007/s11192-012-0676-y

Buela-Casal, G., Bermúdez, M. P., Sierra, J. C., Quevedo-Blasco, R., Castro, A., & Guillén-Riquelme, A. (2012). Ranking de 2011 en producción y productividad en investigación de las universidades públicas españolas. *Psicothema, 24*(4), 505–515.

Buela-Casal, G., Zych, I., Medina, A., Viedma del Jesús, M. I., Lozano, S., & Torres, G. (2009). Analysis of the influence of the two types of the journal articles; theoretical and empirical on the impact factor of a journal. *Scientometrics, 80*(1), 265–282. doi http://dx.doi.org/10.1007/s11192-008-1715-6

Buela-Casal, G., & Zych, I. (2010). Analysis of the relationship between the number of citations and the quality evaluated by experts in psychology journals. *Psicothema, 22*, 270–276.

Cañedo, R., Nodarse, M., Guerrero, J. C., & Ramos, R. E. (2005). Algunas precisiones necesarias en torno al uso del factor de impacto como herramienta de evaluación científica. *ACIMED, 13*(5). Recuperado de http://bvs.sld.cu/revistas/aci/vol13_5_05/aci01505.htm

Casas, M., & Stojanovic, L. (2013). Innovación en la universidad iberoamericana [electronic version]. *RUSC. Universities and Knowledge Society Journal, 10*(1), 61–74. doi http://dx.doi.org/10.7238/rusc.v10i1.1345

Chiecher, C., & Donolo D.S. (2013). De diálogos e intercambios virtuales. La dimensión social y cognitiva de las interacciones entre alumnos [electronic version]. *RUSC. Universities and Knowledge Society Journal*, *10*(2), 37–53. doi:10.7238/rusc.v10i2.1534

Coughlan, T., & Perryman, L. A. (2013). Más allá de la torre de marfil: un modelo para potenciar las comunidades de aprendizaje informal y desarrollo mediante prácticas educativas abiertas [electronic version]. *RUSC. Universities and Knowledge Society Journal, 10*(1), 135–150. doi http://dx.doi.org/10.7238/rusc.v10i1.1586

Delgado, E., Ruiz, R., & Jiménez, E. (2010). Qué es y cómo utilizar el índice de impacto de revistas españolas de ciencias jurídicas. *Aula Abierta*, *38*(2), 3–16.

Díaz, L., & Buela-Casal, G. (2010). Estudio comparativo de las publicaciones realizadas sobre psicosis en las revistas de psicología y psiquiatría españolas. *Actas Españolas de Psiquiatría, 38*(3), 147–162.

Diem, A., & Wolter, S.C. (2013). The Use of Bibliometrics to Measure Research Performance in Education Sciences. *Research in higher education, 54*(1), 86–114. doi http://dx.doi.org/10.1007/s11162-012-9264-5

Fernández-Ríos, L., & Buela-Casal, G. (2009). Standards for the preparation and writing of Psychology review articles. *International Journal of Clinical and Health Psychology, 9*(2), 329–344.

Gogolin, I. (2012). Identificación de la calidad en las publicaciones de investigación educativa: Proyecto Europeo sobre los Indicadores de Calidad en la Investigación Educativa (EERQI). *Revista de Investigación Educativa, 30*(1), 13-27. doi http://dx.doi.org/10.6018/rie.30.1.140812

Gómez-García, A., Ramiro, M. T., Ariza, T., & Granados, R. (2012). Estudio bibliométrico de educación XX1. *Educación XX1, 15*(1), 17–41. doi http://dx.doi.org/10.5944/educxx1.15.1.148

González, J. & Moya, M. (1997). Indicadores bibliométricos: características y limitaciones en el análisis de la actividad científica. *Anales Españoles de Pediatría, 47*(3), 235–244.

Granados, M. R., Ariza, T., Gómez-García, A., & Ramiro, M. T. (2011). Estudio bibliométrico de Aula Abierta. *Aula Abierta, 39*(3), 97–110.

Hartley, J. (2012). New ways of making academic articles easier to read. *International Journal of Clinical and Health Psychology*, *12*(1), 143–160.

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López-Piñero, J. M. (1972). *El análisis estadístico y sociométrico de la literatura científica*. Valencia: University Press.

Matesanz, M. (2010). Los retos de las publicaciones científicas españolas en el desarrollo de la Europa del conocimiento. *@tic. Revista d´Innovació Educativa, 5*, 20–29.

Maz-Machado, A, Jiménez-Fanjul, N., Gutiérrez-Arenas, M. P., Adrián, C., Vallejo, M., & Adamuz-Povedano, N. (2012). Estudio bibliométrico de la investigación educativa en las universidades de Andalucía en el SSCI (2002–2010). *Revista Iberoamericana de Psicología y Salud, 3*(2), 125–136.

Montero, I., & León, O. G. (2007). A guide for naming research studies in Psychology. *International Journal of Clinical and Health Psychology, 7*(3), 847–862.

Navarrete-Cortes, J., Quevedo-Blasco, R., Chaichio-Moreno, J. A., Ríos, C., & Buela-Casal, G. (2009). Análisis cuantitativo por países de la productividad en Psicología de las revistas en la Web of Science. *Revista Mexicana de Psicología, 26*(2), 131–143.

Quevedo-Blasco, R., & López-López, W. (2010). Análisis bibliométrico de las revistas multidisciplinares de psicología recientemente incorporadas en la Web of Science (2008–2009). *Psicologia: Reflexão e Crítica, 23*(2), 384–408. doi http://dx.doi.org/10.1590/S0102-79722010000200021

Quevedo-Blasco, R., Ariza, T., & Raya, L. (2012). Análisis de la producción de la psicología jurídica en España (1989–2010). *Aula Abierta, 40*(2), 117–128.

Quevedo-Blasco, R., Díaz-Piedra, C., & Guglielmi, O. (2010). Análisis comparativo de las publicaciones sobre drogodependencias en las revistas de Psicología clínica y psiquiatría iberoamericanas indexadas en el Journal Citation Reports. *Salud Mental, 33*(2), 133–143.

Sánchez-Meca, J. (2010). Cómo realizar una revisión sistemática y un metaanálisis. *Aula Abierta, 38*(2), 53–64.

Spinak, E. (1996). *Diccionario enciclopédico de Bibliometría, Cienciometría e Infometría*. Caracas: UNESCO.

Tempelaar, D. T., Kuperus, B., Cuypers, H., van der Kooij, H., van de Vrie, E., & Heck, A. (2012). The Role of Digital, Formative Testing in e-Learning for Mathematics: A Case Study in the Netherlands [electronic version]. *RUSC. Universities and Knowledge Society Journal, 9*(1), 92–114. doi http://dx.doi.org/10.7238/rusc.v9i1.1272

Velasco, B., Eiros, J. M., Pinilla, J. M., & San Román, J. A. (2012). La utilización de indicadores bibliométricos para evaluar la actividad investigadora. *Aula Abierta, 40*(2), 75–84.

Zych, I., & Buela-Casal, G. (2007). Índice de internacionalidad de las revistas iberoamericanas de psicología incluidas en la Web of Science. *Revista Mexicana de Psicología*, *24*(1), 15–22. Recuperado de http://www.redalyc.org/articulo.oa?id=243020635003

Zych, I., & Buela-Casal, G. (2009). The Internationality Index: Application to Revista Latinoamericana de Psicología. *Revista Latinoamericana de Psicología, 41*(3), 401–412. doi http://dx.doi.org/10.14349/rlp.v41i3.428

Zych, I., & Buela-Casal, G. (2010). Internacionalidad de las revistas de psicología multidisciplinar editadas en Iberoamérica e incluidas en la Web of Science. *Universitas Psychologica, 9*(1), 27–34. Recuperado de http://redalyc.uaemex.mx/src/inicio/ArtPdfRed.jsp?iCve=64712156003

Zych, I., & Quevedo-Blasco, R. (2011). A decade of the International Journal of Clinical and Health Psychology (2001–2010). *International Journal of Clinical and Health Psychology, 11*(3), 549–561.

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