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The impact of PISA in the Spanish society: the case of written press

El impacto del Informe PISA en la sociedad española: el caso de la prensa escrita

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Abstract

In the last decade, the results of the Program for International Student Assessment (PISA) have raised the debate about the quality of the Spanish education system, influencing public opinion and policy decisions. This study aims to analyze the impact the results PISA have had in Spanish society through the articles that appeared in *El País* (the non-sport newspaper with the biggest circulation in Spain) from 2001 to 2014, attending to the following issues: a) the press subgenres used to talk about PISA and its authorship; b) the evolution of articles from PISA 2001 to PISA 2012; and c) the frequency of use of the skills assessed by PISA as an information point. The results of our study show the great importance of PISA results as indicated by the amount of press coverage, especially since the 2003 edition, which was mostly reflected in descriptive and informative texts. On the other hand, the media's treatment toward the competences in mathematics, science and reading is shown, with greater relevance to the last in recent years. Finally, we conclude that press coverage has been a great contributor when it comes to conveying the results of PISA to the public, despite the inappropriate use that is sometimes made of the data without considering the limitations of the study.

Keywords: Impact, PISA, competences, press, education and media, debate, public opinion, use of data.

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Resumen

En la última década los resultados de los diferentes Informes PISA han avivado el debate sobre la calidad de nuestro sistema educativo, repercutiendo en la opinión pública y en la toma de decisiones en el plano político. En el presente estudio se analiza el impacto que han tenido los resultados de PISA en la sociedad española a través de las noticias publicadas en el periódico «El País» desde el 2001 al 2014, atendiendo a las siguientes cuestiones: a) los subgéneros periodísticos utilizados para hablar de PISA y su autoría; b) la evolución de las noticias desde PISA 2001 hasta PISA 2012; y c) la frecuencia de uso de las competencias evaluadas por PISA como argumento informativo. Los resultados muestran la gran trascendencia de la evaluación PISA en prensa, sobre todo desde la edición del Informe correspondiente al año 2003 y reflejado en su mayoría en artículos de carácter informativo-descriptivo. Por otro lado, se evidencia el tratamiento que hacen los medios de comunicación escrita a las competencias matemática, científica y lectora, dando una mayor relevancia a esta última en los últimos años. Por último, se concluye que la prensa escrita ha sido un gran contribuyente a la hora de trasladar los resultados obtenidos en PISA a la opinión pública, a pesar del uso inadecuado que se hace en ocasiones de los datos sin tener en cuenta las limitaciones del propio estudio.

Palabras clave: Impacto, PISA, competencias, prensa, educación y medios, debate, opinión pública, uso de la información.

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In recent years there has been growing interest in analyzing the quality of different educational systems, judging by the implementation of programs such as Trends in

Mathematics and Science Study (TIMSS), Progress in Reading Literacy Study (PIRLS) or the Program for International Student Assessment (PISA). The characteristics that

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distinguish PISA from other programs are: (a) the guiding focus on decision-making in educational policy; (b) the commitment to regular assessment every three years (TIMSS is four year and PIRLS five year); (c) its participatory and collaborative nature, since some institutions collaborate by providing technical, scientific and pedagogical support; and (d) its wide geographical coverage and methodological rigor (Calero & Choi, 2012; OCDE, 2002).

However, some authors have highlighted some limitations among which can be mentioned: (a) the cross-sectional design of the study, which cannot be used to measure causality; (b) the lack of suitability of the items in the assessment for cross-cultural assessment; (c) the fact that the sample is chosen based on age rather than grade; and (d) the lack of control of variables such as motivation at the time of making an evaluation, or even students who can receive specific training to take the test (Bautier & Rayou, 2007; Pedró, 2012). Others point out the opacity that characterizes this type of assessment, despite the efforts of the developers of PISA in putting at the disposal of the society manuals, handbooks and databases (Domínguez, Vieira & Vidal, 2012; Pérez & Soto, 2011; Rutkowski & Rutkowski, 2010).

The results of PISA have consequences in socio-educational policies. Schleicher (2006, 2016) describes the main objective of PISA as allowing policy-makers to see what factors are associated with educational success, by encouraging them not to establish simple comparisons among the results, but to go farther than that. The results are presented in four major clusters: the quality of the results, equality and equity between outcomes and educational opportunities, the effectiveness and efficiency of educational processes, and the impact of the results on social and economic welfare (Ministerio de Educación y Cultura, 2001; Ministerio de Educación y Ciencia, 2007; Ministerio de Educación, Política Social y Deporte, 2008; Ministerio de

Educación, 2010; Ministerio de Educación, Cultura y Deporte, 2012). In this sense, Calero and Choi (2012) point out that the importance of PISA lies in the purposes for which the assessment has been created, these being: promoting effective choice on the part of families, the accountability of public schools, the provision of internal information for the educational centers, the provision of information to those conducting educational research, and obtaining general information about the functioning of countries' educational systems. Thus, countries such as Germany, Sweden or the United Kingdom are good examples of how governments have used the outcomes to reformulate their policies and implement extensive reforms in their educational systems (Pons, 2012; Robert, 2010; Simola, 2013).

An indicator of the impact of evaluations is their presence in the media. Stack (2007) analyzed the coverage by various media of the results of TIMSS and PISA in 1999, 2000 and 2003; others, such as Liegmann & van Ackeren (2012), analyzed the impact of PIRLS2006 results in twelve countries, including its treatment in press. Pons (2012) described how the impact of the PISA results can be used as a weapon of political debate in the media, leaving aside the true relevance to education that an international assessment may have. In Spain we found some studies on the impact of PISA in the press such as Ferrer and Massot (2005) and Massot, Ferrer and Ferrer (2006), who concluded that the press makes an inadequate use, not providing detailed methodological information, which contributes to readers forming a negative image of external evaluations in general, and of PISA in particular.

Therefore, it's unquestionable that press coverage is one of the major influences on public understanding of the results and implications of PISA both at the academic, political and social levels. For this reason, this study is focused on describing and analyzing the impact of the results of PISA on society through press reports. Description and analysis

is divided into sections covering the following issues: a) which were the main journalistic genres in which discussion of PISA took place and who has written these articles; (b) the evolution of the articles; and (c) what competences assessed by PISA have received the most attention in the articles.

Method

Sample

The sample was made up of 778 articles extracted from the digital edition of the newspaper *El País* and corresponding to the interval between 31st December 2001 and 2nd December 2013, inclusive. The choice of *El País* as the unit of analysis is justified by its being the non-sport newspaper with the largest number of daily readers in Spain, according to the General Media Study (Estudio General de Medios, EGM)¹ for the period between April 2000 and March 2014. In addition, this analysis has been performed with a single media outlet in order to focus on the evolution of coverage and eliminate the influence of other variables such as the editorial line or the characteristics of the media.

Data collection

Data was obtained from the digital edition of the newspaper *El País* (<http://goo.gl/V0ljt3>) using the keywords “Informe PISA” and “Informes PISA” (Spanish for “PISA report” and “PISA reports”). In addition, we included other items tagged as “PISA report” by the newspaper itself (<http://goo.gl/YQNgvd>). Those articles published between 31st December 2001 (the date in which the first news regarding PISA was published) and 2nd December 2013 were selected. Data collection was done using the NCapture plug-in for Google Chrome (a tool of the qualitative analysis software NVivo10), whose function is the capturing and digitizing of the articles in PDF format.

¹Index of EGM general summaries (in Spanish). (<http://goo.gl/F5IGVt>).

Data analysis

Once the data was collected, we proceeded to categorize it on NVivo10 in terms of the following variables:

- Date of publication.
- Quarter of the year.
- Year of publication.
- Textual typology.
- Author.
- Author's occupation.
- Interviewee's occupation.
- Cycle of PISA.
- Competence to which the article refers.

To analyze the evolution of the articles, the sample was divided into four cycles, coinciding with the complete cycles of PISA from the day of the publication of each report until the day before the publication of the next one. Thus, the dates are:

- 1st cycle (PISA 2000 – Focused on reading): from 7th December 2001 to 6th December 2004.
- 2nd cycle (PISA 2003 - Maths): from 7th December 2004 to 3rd December 2007.
- 3rd cycle (PISA 2006 - Science): from 4th December 2007 to 6th December 2010.
- 4th cycle (PISA 2009 - Reading): from 7th December 2010 to 2nd December 2013.

Once this categorization was completed, data was transferred to SPSS v21.0 for analysis, using the same variables used in NVivo10.

Results

Journalistic genres and authors

Following Gomis (2008), we differentiate between: informative and descriptive journalism, represented by news, reports and interviews; and interpretative and opinionated journalism, which includes opinionated articles, editorials, columns, letters to the editor and reader's opinions.

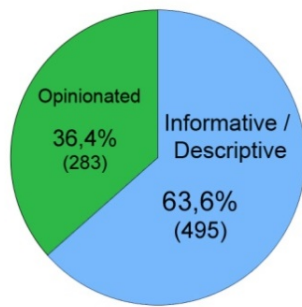


Figure 1. Percentage of articles according to their communicative intent.

As shown in Figure 1, articles of an informative-descriptive nature are more prevalent in the analyzed sample (63.6% of the sample) than interpretative and opinionated articles (36.4%). These data correspond to the more general predominance of informative articles compared to opinionated ones that has been the general trend in worldwide journalism since the Second World War (Fontcuberta, 2011).

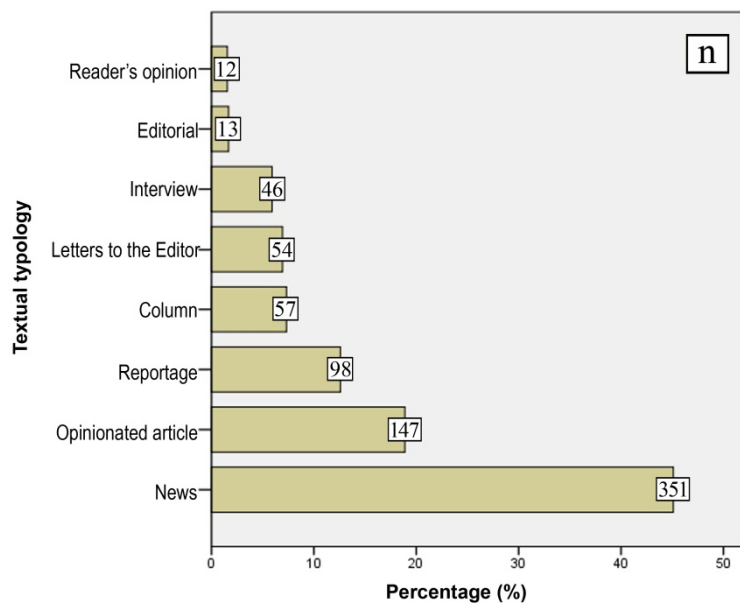


Figure 2. Journalistic subgenres used to refer to PISA

Among the journalistic subgenres, as shown in Figure 2, the most numerous articles are news articles, representing 45.1% (351) of the total of articles, while opinion articles and reports represent 18.9% (147) and 12.6% (98) respectively, columns represent 7.3% of the articles with 57 items, followed by letters to the editor (54) and interviews (46). Editorials and reader's opinions represent the least frequent journalistic subgenres to discuss PISA, with 13 and 12 items, respectively.

This data shows how the news represents a large part of the articles that refer to PISA; which is not surprising given that it is the journalistic genre most used to expose aspects related to evaluation from a descriptive point of view. It is notable that there is a low incidence of reader's opinion articles, which

may be due to a lack of interest on the part of the readers for the issues related to PISA or, on the contrary, that media are not interested in showing the opinion of the citizens.

With regard to the authors' occupation, 71% (551) of the articles were written by journalists, with journalists who were not specialized in education accounting for 58.1% (452) of the articles; those written by journalists who specialized in education accounted for 12.7% (99) of the articles, and were all written by the same author (J. A. Aunión). On the other hand, 9.8% (76) of the articles were written by professors, while 7.6% (59) were written by authors in various professional fields such as: writers (39), sociologists (5), political scientists (3), librarians (3), lawyers (2), linguists (2),

historians (2), researchers (1), economists (1) and entrepreneurs (1).

All of the articles in the informative category were written by journalists, with most of the opinionated articles being written by authors from other fields, as listed above. Nonetheless, journalists wrote 19.8% (56) of the total number of opinion articles, accounting for 7.2% of the total number of the articles. On the other hand, only 3.9% of the articles were written by primary and secondary teachers, even though they are by far the ones with the most contact with the PISA participants in an academic setting.

Interestingly, it can be observed that when the newspaper interviews external sources regarding the PISA, it mainly resorts to political personalities. Thus, as can be seen in

Figure 3, 39.1% (18) of the interviews were conducted with policymakers, while interviews with OECD members or other entities occupy the second and third place, with a 19.6% (9) and a 15.2% (7) respectively. On the other hand, it can be observed that the percentage of interviewees belonging to the collective of secondary school teachers (10.9%, 5 of the interviews) is higher than that of other groups such as university teachers (8.7%). Although secondary school teachers write fewer opinion pieces (26 items, 8.9% of the total) than university professors (76 items, 25.9% of the total), more secondary school teachers are interviewed. This could be explained by the primary role of secondary school teachers in instructing students in the subjects assessed by the PISA.

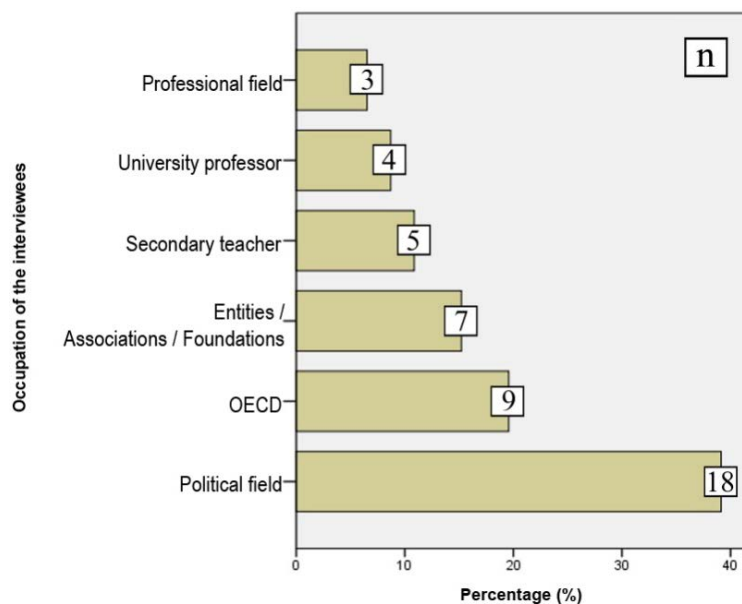


Figure 3. Activity sector of the interviewees

Evolution of the articles

Figure 4 shows the evolution of the number of publications between 2001 and 2013 (until the 2nd of December). On the one hand, it may be observed that the years in which the most articles are published are the years after the publication of the OECD report (2002, 2005, 2008, 2011). It should be noted that these

reports are published in December. On the other hand, the number of publications around PISA has increased progressively from 2001 to 2008, from 1 to 122 publications. Finally, it can be seen that the number of articles has decreased between 2009 and 2013, reaching a peak during this period in 2011 with 90 articles, 32 less than 2008.

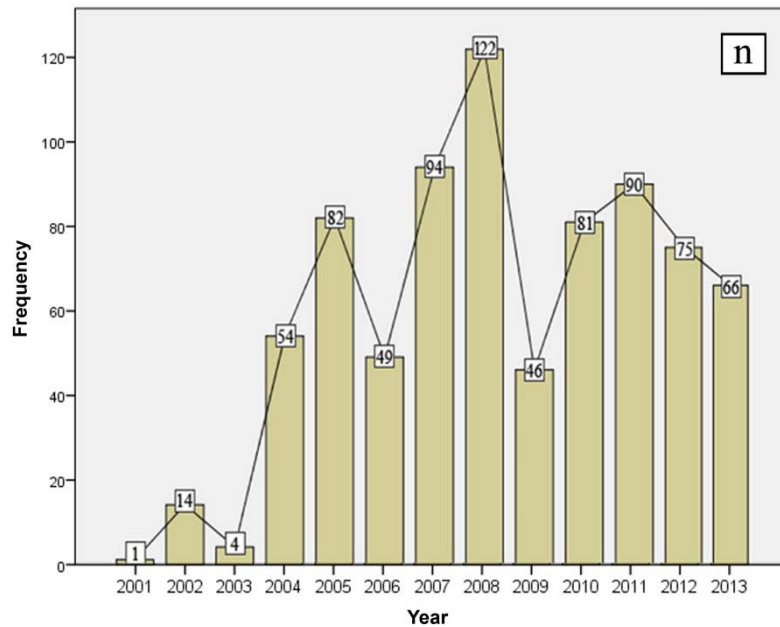


Figure 4. Evolution of the number of publications by year

To describe the informational trend by PISA cycles, the frequency of publications was analyzed according to twelve-month periods, within each of the three-year cycles between the publication of the PISA reports. We measured each three year period starting from the exact date of publication (for example: for the PISA 2003 report we consider as the first year of the cycle from 7th

December 2004 to 6th December 2005, as the second year from 7th December 2005 to 6th December 2006, and as the third year from 7th December 2006 to 3rd December 2007, since the results of PISA 2003 report were published the next day). The frequency of articles according to the PISA cycle can be seen in Figure 5.

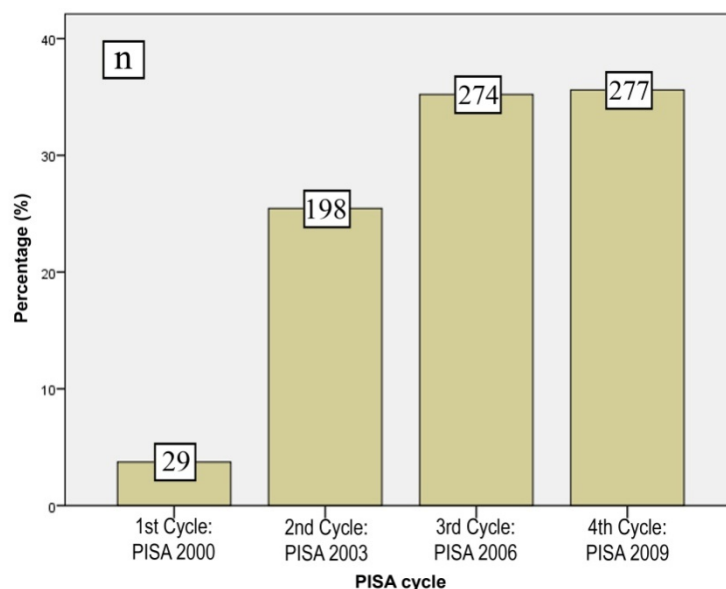


Figure 5. Evolution of the publications according to the PISA cycle.

In the first cycle, corresponding to PISA 2000, it should be noted that only 29 articles were published (3.7% of the total), increasing

progressively in the PISA 2003 cycle (198 items, 25.4%) and in PISA 2006 (274 articles, 35.2%), and maintaining that percentage in

PISA 2009 (277 articles, 35.6%). This shows that, judging by the frequency figures, the interest of journalists in the PISA results has progressively increased between the cycles of PISA 2000 and PISA 2006, and was maintained at a similar level in PISA 2009.

With regard to the distribution for years within a cycle, Figure 6 shows that the first

year after the publication of the results is when the most publications can be found, with 60% (467) of the total number of articles, while in the two following years the percentage falls, with 22.5% (175) and 17.5% (136) respectively.

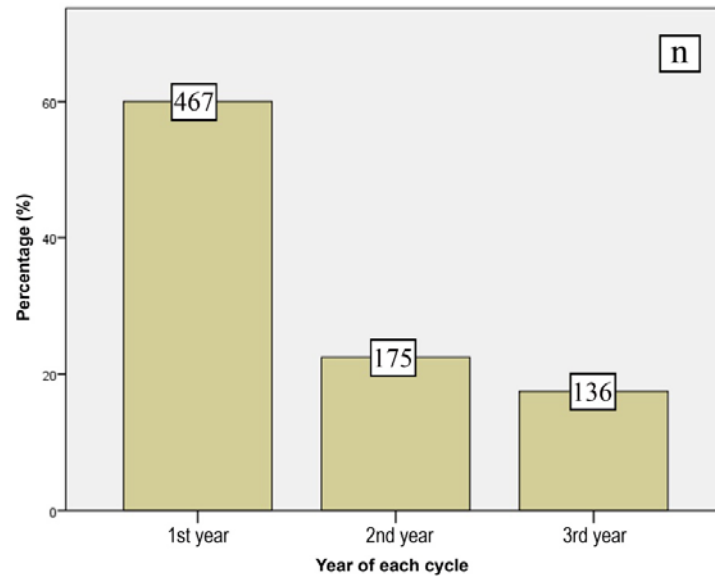


Figure 6. Number of articles published in each year of the cycle

Analyzing the journalistic subgenre for years within the cycle, Table 1 shows that in the first year a total of 285 informative-descriptive articles were written (61% of the total of the first year), increasing that percentage progressively in the second and

third year (with 66.3% and 69.1% respectively). This means that the number of opinionated articles in the first year is larger than in the second and third years, with 182 entries in the first year, 59 in the second, and 42 in the third.

Table 1. The relationship between the journalistic subgenre and the year of the cycle

	1st year		2nd year		3rd year	
	n	%	n	%	n	%
Informative / Descriptive	285	61,0	116	66,3	94	69,1
Opinionated	182	39,0	59	33,7	42	30,9
Total	467	100	175	100	136	100

To illustrate the annual evolution of the publications on PISA we have carried out an analysis of the percentage by quarters, also taking into account the first quarter of 2014. As we can see in Figure 7, the largest number of articles was published in the fourth quarter

with 326 items (43.7%), followed by the first quarter with 194 articles (25.4%), while the second and third quarters account for 18.6% and 12.2%, respectively. Presumably that is because the results of PISA are published early in the month of December.

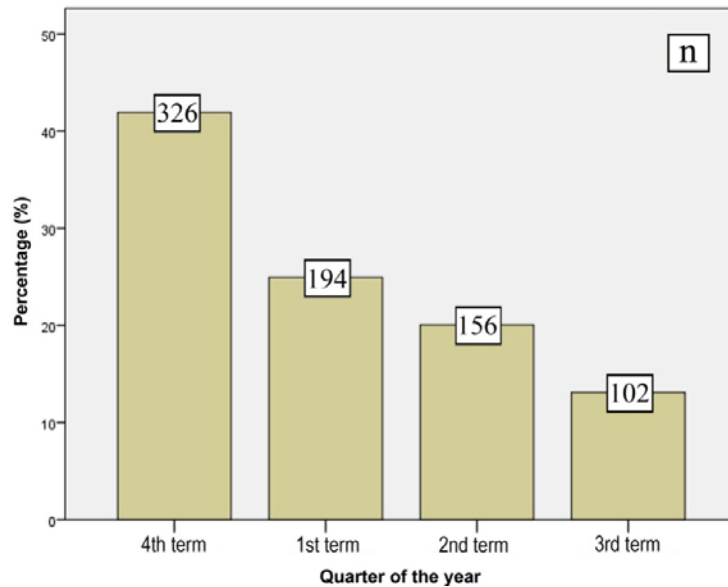


Figure 7. Number of articles published in each quarter of the year

One fact that should be pointed out in the present study was the occurrence just prior to the publication of the PISA 2006 results, scheduled for 4th December 2007, an incident that resulted in a sanction of Spain by the OECD. As reflected in a statement issued by the Ministry of Education and Science, a leak of PISA 2006 took place in a specialized education newspaper on 28th November 2007, breaking Spain's commitment to confidentiality signed with the OECD². Therefore, a count of the articles published between 28th November of each year of publication of PISA results and the day before the exact date of publication was carried out in order to determine if this topic was circulated to the public opinion.

As can be seen in Table 2, news of the leaks of the PISA 2006 results was highly publicized, as 11 articles were found (1.4% of the total of the sample) between 28th November and 3rd December 2007, while in the same period in 2004 and 2010 the percentages were of 0.2% and 0.9% respectively. Therefore, it can be affirmed that the leaks were made known to the public, and resulted in the Spanish Government

immediately issuing a public statement on the matter, as mentioned previously.

Table 2. Number of items from 28th November to 3rd December the years of presentation of the results

	n	% of total
From 28 th November to 3 rd December 2004	2	0.2
From 28 th November to 3 rd December 2007	11	1.4
From 28 th November to 3 rd December 2010	7	0.9
Total	20	2.6

Competences assessed

With regard to the competences assessed by PISA, Figure 8 shows that 59.3% (461) of the articles analyzed do not mention any of them, while in the remaining 40.7% (317) there is a reference to some of these competences. This reflects that the scores obtained in a specific competence are not the main discourse at the time of discussions about the PISA results, but the articles are often presented in a decontextualized and simple form, offering a global view of the results without substantiating opinions with empirical and concrete data. These results support those obtained in previous studies carried out by Vélaz de Medrano (2006), Peter (2012) and Domínguez (2015).

² A statement issued by the Ministry of Education and Science on the filtration results in the OECD's PISA report. (<http://goo.gl/UGNYc5>).

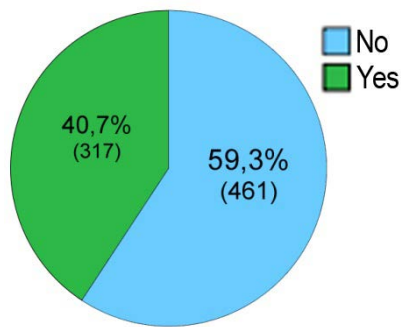


Figure 8. Percentage of articles according to whether they refer to some of the competences

As can be seen in Table 3, 317 of the articles mention some of the competences assessed by PISA, and 44.5% (141) of these cite the three competences (reading literacy, mathematical competence and scientific competence), offering to the readers a comprehensive vision of what PISA represents in the matter of competences. Reading literacy

is the competence that has been most discussed in the press, with a total of 67 articles (21.1%), followed by group reading and mathematics with 45 articles (14.2%) and mathematics as an individual competence with 33 articles (10.4%). The mathematics and science group is found in 14 articles (4.4%), drawing attention to the fact that science appears more linked to mathematics than to an individual competence, since only 9 articles (2.8%) made reference to science in an exclusive way. Finally, the reading and science group is the least referenced with 8 items (2.5%).

Thanks to this data we can establish an order of priorities shown by the press to society as to the relevance and importance of different competences, giving a greater emphasis to reading literacy than to mathematics or science.

Table 3. Number of articles depending on the competence they refer

	n	%
The three competences	141	44,5
Reading	67	21,1
Reading and mathematics	45	14,2
Mathematics	33	10,4
Mathematics and science	14	4,4
Science	9	2,8
Reading and science	8	2,5
Total	317	100

To focus on the previous data in a more concrete way, Table 4 shows the number of articles, independently of the groups of competences that have been discussed in the articles.

Table 4. Number of articles addressing competences (double counting)

	n
Reading	261
Mathematics	233
Science	172

As illustrated in Figure 9, articles dealing with the analysis of competences give a more informative treatment of the competence referred to primarily in each PISA cycle with respect to the others at the time of publication of results. Thus, in 2004 (year of publication of the PISA 2003 report), mathematics is the most cited competence (32), although there is a slight decrease in articles in 2005 (28), with an increase in reading that remains equal in 2004 and 2005 (30).

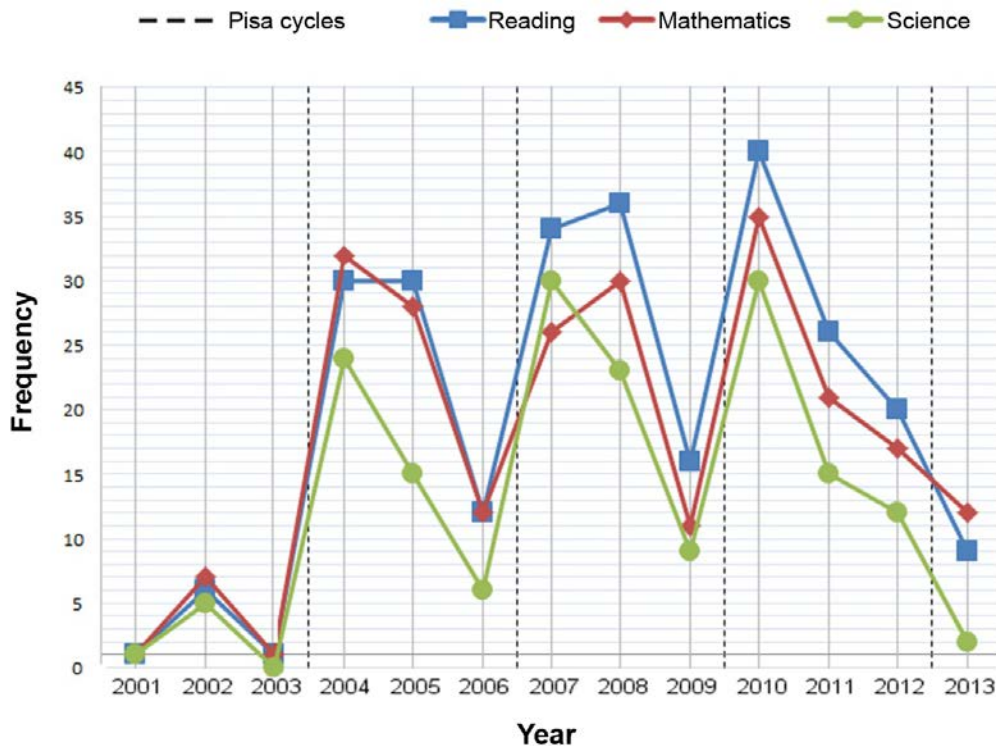


Figure 9. Distribution of the competences cited by the articles according to the year

However, it has been found that reading occupied the most in the articles corresponding to the 2006 cycle, despite the fact that the competence assessed as the main focus was science. It should be noted that in 2007, there were 34 articles related to reading, while the mathematical and scientific skills had 26 and 30 articles devoted to them, respectively. In 2008 the number of articles focused on reading increased to 36, as well as those related to mathematical competence (30), while those dedicated to science decreased to 23 items, being the core competence of PISA 2006. This trend is repeated in 2009, although with many fewer items (16 in reading, 11 in mathematics and 9 in science). However, this phenomenon

of the importance given to reading would require a specific analysis.

Figure 10 shows the evolution of Spanish results compared to the average of OECD countries from 2000 to 2012 in reading (Ministerio de Education, Cultural y Deporte, 2013). In the intermediate years, it can be observed that this evolution has been different from the other countries. First, from 2003 to 2006 the Spanish average fell 20 points (from 481 to 461), while the OECD average fell only 2 points in the same period (from 494 to 492). However, these 20 points were recovered from 2006 to 2009, and even increased by 7 points from 2009 to 2012, going from 481 to 488.

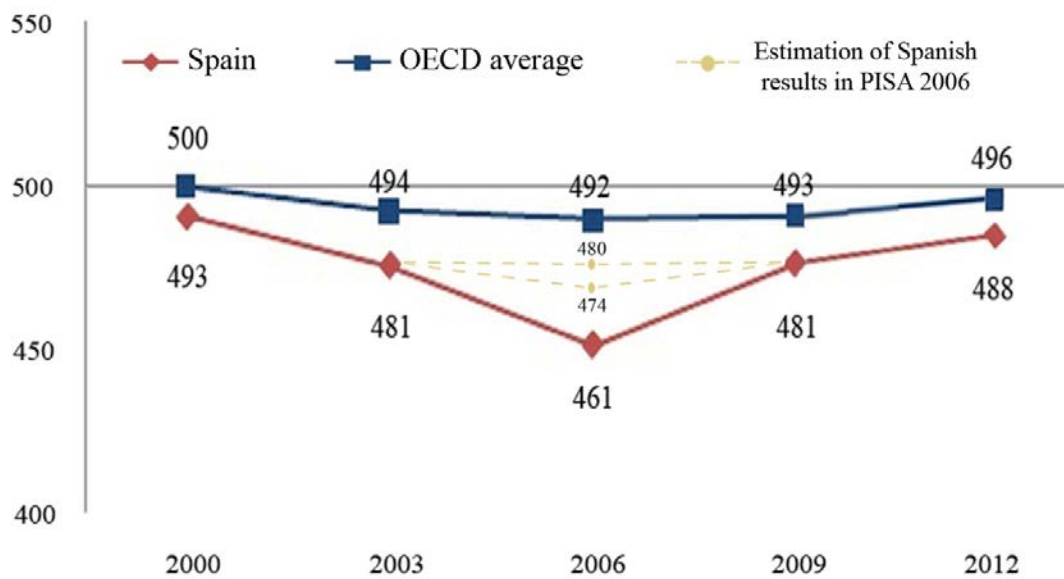


Figure 10. Evolution of the Spanish results (published and estimated) and the OECD average in reading.

As can be seen in Table 5, the high difference between the OECD average score and the Spanish score in reading (-31) is not present in any other competence, neither in the 2006 report nor in the previous and subsequent reports, in which the minimum difference is -12 and the maximum is -18. There is no hypothesis to explain neither that a country's results decline and increase in so few years nor why there is so wide a difference between these two scores. The only reasonable hypothesis is methodological: a reliability

problem in the measuring instrument or its application, as noted in the Spanish Report of PISA 2009. It explains that the low score in reading in PISA 2006 could be due to the variation between the number of items used in PISA 2003 and PISA 2006 (28 items) with respect to the 2000 and 2009 editions (41 items), since the lower the number of items the greater the risk of making errors in the measure (Ministerio de Educación, 2010, p. 138).

Table 5. Spanish and OECD average in reading, mathematics and science, and score difference between them

	PISA 2003	PISA 2006	PISA 2009
OECD average in reading	494	492	493
OECD average in mathematics	500	498	496
OECD average in science	500	500	501
Spanish score in reading	481	461	481
Spanish score in mathematics	485	480	483
Spanish score in science	487	488	488
Score difference between Spain and OECD - Reading	-13	-31	-12
Score difference between Spain and OECD - Mathematics	-15	-18	-13
Score difference between Spain and OECD - Science	-13	-12	-13

On the other hand, it should be mentioned that in the PISA 2012 Spanish report the data of PISA 2003 and PISA 2006 were eliminated in the section corresponding to the evolution

of results, which seems to indicate that they are not reliable enough (Ministerio de Educación, Cultura y Deporte, 2013, p. 191).

Finally, an estimation of the Spanish result in reading was carried out, taking into account the maximum and minimum of the differences in the three competences assessed in PISA 2006, PISA 2003 and PISA 2009, and the OECD average in reading in PISA 2006. Thus, the reading score should have been between 474 and 480 points (Figure 10).

As a result, on the one hand, it should be observed that the high number of articles on reading was a reaction to the poor results in PISA 2006 and, on the other hand, the results that caused this reaction do not correspond to the reality of the level in reading literacy of the Spanish students.

Discussion

The impact of PISA reports in the press has been significant and growing since its first edition. Most of the articles that refer to PISA are informative news articles that describe the results of the study, while only a third of the total are opinion pieces. Opinion articles are written by people from different fields, such as journalists, academics or professionals. However, few people from other sectors, such as elementary and secondary teachers, are among the authors of these articles. Nevertheless, secondary school teachers are among the people interviewed, and are considered as one of the responsible and involved parties in the results of PISA results. With regard to the low participation of anonymous readers, one might ask if this trend follows the natural line described by Navarro (2001) that almost no print media achieves an interaction between the transmitter and the receiver or, on the contrary, these issues do not interest the bulk of citizens.

Regarding the evolution of the articles, we can affirm that the treatment of PISA in the press and the exposure of this issue in society has increased considerably since its inception, and especially since the PISA 2003 results were released. It has been observed that following PISA 2006 a greater number of articles were published, coinciding with low scores in reading literacy, while in the

following years, this pattern of publications has stabilized. In terms of number of articles throughout the year, there is a stable trend, since most reports are published in the same quarter that PISA results are presented, reducing progressively throughout the calendar year. In addition, there has been a similar proportional distribution of informative and opinionated articles in each stage of the cycle, without finding a greater incidence of opinionated articles with respect to informative ones at any time.

With regard to the analysis of the three main competences assessed, it has been found that a high percentage of the references to PISA make use of their results, without an argument or specific mention concerning each competence. This type of articles offers too general information to society, something that is far from the intentions of PISA developers and the aim of these kinds of assessments. Regarding the articles that refer to the competences, it has been found that reading literacy is the one that causes greater concern, compared to mathematical and scientific competence, even in the cycles in which the main focus of PISA is on these other competences.

In this sense, it must be analyzed in detail what happened in this regard with the PISA 2006 report, when the negative results in reading literacy provoked a great debate. However, we have serious doubts about the reliability of the instrument and the validity of the results obtained in reading in PISA 2006, based on the data provided by the Spanish report of PISA 2009 with respect to the methodological limitations of the evaluation. Poor results led to a wide debate on reading level, with understandable pressure on the education authorities to take immediate measures for its improvement. However, it has been shown that the data that triggered the debate (and the corrective measures) did not correspond to the real level. These limitations should reflect, in addition to the actual scores that should have been obtained, the need to use different sources of information for the

analysis and the decision making for such complex phenomena as education.

As a final reflection, we can conclude that PISA reports have clearly fueled the debate about the quality of the education system in Spain, giving the press a leading role at the time of presenting the results to society. However, it has been shown that even a study with the relevance and significance of PISA may present methodological limitations, so it is necessary that the discussions are fed from a variety of sources of information and, in any case, are undertaken with a more prudent use of the methodological limitations.

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