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Gamification of sports media coverage: an infotainment approach to Olympics and Football World Cups

Abstract

Sports media coverage of mega-events is partly oriented to gamification, the use of game elements and game design techniques in non-gaming contexts. This infotainment approach to events has been developed by media outlets as an original and effective way to capture wider audience attention and to place events in context before a competition starts. This article examines 28 gamified sports pieces developed by media outlets from seven countries during the last two Olympics (2016 Summer Olympics in Rio and 2018 Winter Olympics in Pyeongchang) and Football World Cups (2014 in Brazil and 2018 in Russia). This sample comprises two categories following Ferrer-Conill (2015): "gamified pieces" (game like elements that are part of a bigger interactive feature) and "newsgames" (more sophisticated pieces often included in complex graphics or multimedia content). The results show that, despite its entertaining formula, gamification serves mainly informational purposes and adds value to sports coverage. Especially in the Summer and Winter Olympics, gamified sports pieces tend to be explanatory and data-driven in order to inform the audience about non-mainstream sports.

Keywords
Sports journalism, digital journalism, gamification, newsgames, graphics.

1. Introduction

For decades, sports journalism was underrated in the media world –for example, it used to be called the "toy department" (Rowe, 2007). It was regarded as a form of journalistic practice that lacked the rigor and credibility of other forms of "hard" journalism (Boyle, 2017, p. 493). Such criticisms overlook "the value of this significant subfield in relation to the amount of sports content produced across media, the large numbers of journalists involved in producing the news, and its power in attracting readers and viewers" (English, 2018, p. 1). Sports journalism has experienced continual evolution by showing distinct crafts and setting trends for new ways to tell and present stories to fans.

Since the invention of the world wide web, practices in this field have been constantly changing in response to technological developments. New habits among audiences in accessing the news are increasingly aimed at social media platforms and mobile devices. In this new digital landscape, fans can consume sports as they happen and wherever they are (Andrews, 2014). Sports journalism stands out as a laboratory of ideas (Lambert, 2019) and experiments with new formats, as well as storytelling techniques and disruptive ways of

engaging audiences who are passionate and demand to know more about their sports and their favourite teams across all platforms –and, if possible, in real time.

In a process of technological and cultural convergence, the media produce and disseminate content on different platforms at once. This caters to fragmented and dispersed audiences that are ready to move to any site or device in search of news, and especially entertainment experiences which they look forward to consuming (Jenkins, 2008, p. 14). Sports journalism has thus become a social conversation with fans, based on interactivity, which is key to draw people's attention. To this end, media outlets continue to explore new narrative possibilities. Their aim is to serve better online content every day and even to revamp digital journalistic formats and pieces, such as interactive graphics, immersive journalism or gamified news (Salaverría, 2018, p. 9).

In many ways, sports journalism is currently at the forefront of innovation in journalism. Certain ideas and experiences stemming from sports, especially the coverage of mega-events like Summer and Winter Olympic Games and Football World Cups, have demonstrated such success that they have been emulated by other journalistic fields (Rojas Torrijos, 2018).

Mega-sporting events have become increasingly captivating spectacles (McGillivray, 2014) that produce their own media narratives (Wenner & Billings, 2017). Mega-events became accessible to mass public participation by being covered by the media as a part of contemporary macro-social change (Roche, 2017) and this continues to be the case in a digital era of convergence, fragmentation and a need to capture and maintain audience attention and interest (Webster & Ksiazek, 2012).

In this sense, sports journalism has given birth to web-native news formats such as liveblogging, firstly used by *The Guardian* in 1999 to cover football and cricket matches (Thurman & Walters, 2012), or multimedia longform features (Ramon & Tulloch, 2017) starting from ESPN's 'The Long, Strange Trip of Dock Ellis' story and *The New York Times*' publication of John Branch's 'Snow Fall: The Avalanche at Tunnel Creek,' both in 2012. These features "reinvented the template for digital longform articles designed for the tablet and inspired other media outlets to create similar products" (Dowling & Vogan, 2015, p. 209). Sports journalism has also built new patterns of data-journalism visualisations and predictions (Rojas Torrijos & Rivera, 2016) and has designed new video formats or even native content adapted to each social media platform, and, more recently, mobile devices.

Among other trends, sports media coverage of mega-events has become more visual, infographic, data-driven and customised through interactive pieces. These pieces add value to previews, analyses, reports and features. The coverage is also oriented to gamification of news (Ferrer-Conill & Karlsson, 2016), an infotainment approach to events as developed by media outlets. Here the term "infotainment" refers to a hybrid formula between information and entertainment that has been increasingly adopted by news organisations (Thussu, 2007). In this regard, gamification becomes an original and effective way to capture more audience's attention and put them into context before sports competition starts.

1.1. *Defining gamification in journalism practice*

Before examining which elements and narratives of games are used in sports journalism practice, in this section we first clarify what gamification means. The meanings we present here follow the definitions given by various authors. An early study on this topic defined gamification as "the use of game design elements in non-gaming contexts" (Deterding *et al.*, 2011, p. 9). However, this proposal appears to be insufficient because it overlooks typologies and goals of the gamifying works and experiences.

Kapp (2013, p. 570) asserted that gamification consists of "using game-based mechanics, aesthetics, and game thinking to engage people, motivate action, promote learning and solve problems." Kapp also distinguished between "structural gamification" (p. 577) and "content gamification" (p. 567). In structural gamification, only the structure around the content is

gamified, whereas content gamification entails "the application of game elements and game thinking to alter content to make it more game-like." Moreover, he referred to "serious game" (p. 576), a game designed for purposes other than pure entertainment, as those games often used by media outlets in their coverage. These are known as "newsgames."

In this regard, Ferrer-Conill (2015) explained that the introduction of digital technologies has derived into two formats in journalism practice: "newsgames" and "gamified news." According to Conill, newsgames are used with the intention of explaining or commenting on current news, whereas gamification attempts simply to "apply game elements to digital interfaces that endeavor to merge both news and games in new storytelling formats using game mechanics as a defining feature."

A key element of discussion concerns clarifying the blurred boundaries between a gamified narrative and a game with an informative purpose. In this regard, newsgames are an interactive format, which draws its narratives from both video games and journalism to deliver news in a playful, immersive and participatory way (García-Ortega & García-Avilés, 2018). Thus, media outlets produce newsgames as an interactive extent of stories to provide meaningful and relevant firsthand experiences to users. Hence, beyond their entertainment value, newsgames propose new "narrative experiences" to individuals, who are able to participate in the construction and outcome of their own stories (Ruiz Collantes, 2012, p. 19).

This immersive style of presenting stories –like a game– increases user engagement. Crucially, it enables a better understanding of the news by drawing the audience's attention to what is in front of their own eyes (Flores-Vivar, 2017, p. 134). Therefore, gamification offers users the chance to explore, experiment and learn through the news.

Despite their potential to generate user experiences, gamification also raises questions about the limits of when and how it can be used. Foxman (2015) stated that "certain types of content may not be best represented in game formats." Other authors, such as García-Ortega and García-Avilés (2018), doubt whether game-like designs and playful dynamics can prevail, because such designs may trivialise or distort stories that are distributed to audiences.

Torres-Toukoumidis and Romero stated that newsgames are "transmedia and immersive narratives" that mainly offer a new approach to the informational aim of reaching young audiences, who look for experiences by interacting with the content on digital media (2018, p. 12). Gamification thus provides possibilities for news organisations to have more impact among youngsters who are reluctant to consume journalism in a traditional way, or who react against information overload on social media platforms (Mañas, 2018, p. 21).

Nonetheless, narratives and elements in emerging technologies that derive from video games are brought into journalism to explain facts because they are linked to current news. In this regard, informative purposes prevail over playful aspects. Newsgames and gamified news are a result of this intersection (Gómez & Navarro, 2013). Even so, "games are never meant to be the sole vehicle for relaying a story or comprehending the news" (Foxman, 2015, p. 11), but should rather supplement that coverage.

What seems clear is that gamification is being developed by media outlets as a viable method of journalism, rather than a mere attempt to entertain and engage online readers (Bogost, Ferrari & Schweizer, 2010). Bogost *et al.* identified several typologies of newsgames according to their structure and purpose. However, they presented a mixture of concepts, which becomes confusing, from current event games to interactive infographics or documentary games, and even puzzles.

In this regard, it is to be noted that gamified pieces and newsgames are in part a natural consequence of the evolution of digital infographics, that become more dynamic and interactive. This, in fact, has led to different levels of gamification within infographics and interactives, visual journalistic works that usually include and combine layers of gameplay with data representations and summaries of information. Hence, gamified pieces could be categorised according to the explanatory nature of the graphic in which they are located.

Bogost *et al.* proposed three patterns of use for infographics. The first is those that depict only specific data for simultaneous consumption; the second is those that allow users to draw a variety of conclusions by exploring and manipulating data; and the third is directed infographics, which guide readers through data in a specific way (2010, p. 42). Indeed, infographics have become more "game-like" in their structure and display of elements. In contrast, newsgames and other gamified journalistic pieces are more data-driven and explanatory, or simply enhance news coverage through interaction. Digital journalism in any form interacts with users in some way, and gaming is a powerful storytelling tool.

Among other areas, sports journalism is a field in which infographics and data visualisation are being developed strongly (Horky & Pelka, 2017), as are interactive newsgames and gamified pieces. This confluence of visual narratives in an ongoing process of creativity plays a key role in sports outlets' digital strategies to reach fans across different platforms.

Journalists, graphics editors and game designers are increasingly working together to build interactive and playful stories in certain digital newsrooms where a gaming culture is more cultivated (Mello-Klein, 2017). Since the rise of the digital newsgames in the mid-2000s (Foxman, 2015, p. 9), large media outlets like *The Guardian, BBC, Financial Times*, *The Washington Post* and *The New York Times* have been creating multidisciplinary teams of professionals in their Graphics and Data departments (Errea, 2017) in which they produce all kinds of interactives, and also gamified pieces.

These departments normally work in long-term planned projects for special coverages that may take months to be developed (Rojas-Torrijos, 2014, p. 125), and produce interactive visual journalism that often "involves bringing professionals from statistical, information design, and computing backgrounds into the newsroom" (Murray, 2014, p. 491). These teams are usually made up of people with different professional profiles, such as graphics editors, visual journalists, graphics programmers or developers, video editors, data journalists, web designers or producers.

For all that, it is interesting to analyse specific intersections between games and sports journalism practices in the current online news landscape. The goal is to explain what game formats are being integrated in sports coverages to inform and entertain users, and how this is being done.

2. Gamification in sports mega-events coverages

Despite the increasing prevalence of the format, the production and the use of gamification in sports media coverage, this topic has been under-researched. In order to trace its expansion across the journalism landscape, this is the first descriptive study on how sports media outlets are employing gamification. Consequently, this article outlines a framework for mapping and interpreting this new emerging trend in sports media production and offers a basis for further research on this topic.

Furthermore, the methodological framing is focused on sporting mega-events. So, this article examines newsgames and gamified sports pieces that were developed by international media outlets during the last two Olympic Games (2016 Summer Olympics in Rio and 2018 Winter Olympics in Pyeongchang) and Football World Cups (2014 in Brazil and 2018 in Russia).

3. Hypotheses

The starting hypotheses of this study are:

(1) Sports media outlets and sports desks are introducing more gamification into their mega-event coverage as an enjoyable way to attract audiences to news. Gamification also draws people into sports competitions by using news storytelling and offering experiences. Despite their entertaining formula, these pieces serve a mainly informational purpose and so they all add value to sports coverage.

(2) Gamified sports pieces often function as a part of a bigger graphic that includes interactive elements, rather than appearing as standalone newsgames. Thus, gamification usually needs to be understood within the context of the coverage developed by each outlet.

(3) A large proportion of gamified content is data-driven, based on visual displays of elements. Sometimes, especially in Olympics coverage, they tend to be more explanatory to let people know about sports and disciplines which are poorly reported about every four years by media.

4. Objectives

The main objectives of this research were as follows:

(1) To analyse gamification in sports mega-event coverage developed by media outlets, as an original and effective way to capture wider audience attention.

(2) To identify and categorise gamified sports pieces according to the way they add value to previews, analyses, reports and features in mega-events coverage.

(3) To outline a framework for mapping and interpreting gamification as an emerging trend in sports media production and offer a basis for further research on this topic.

(4) To gain insight into how sports journalism is exploring new storytelling models to transform traditional coverage into a more absorbing, social and fun activity for fans.

5. Method

A substantial and representative sample of newsgames and other gamified pieces during the last Olympic and World Cup events was needed. Therefore, this research followed a methodology that comprised two stages. First, the sample included the most relevant examples underlined and analysed on the Observatory of New Trends in Sports Journalism, from the blog *Periodismo Deportivo de Calidad*[1]. This scholar site is the only Spanish-language blog devoted to sports media analysis from the academic field and it has been highlighted as one of the most outstanding new media accountability systems in the Spanish online environment (Mauri-Ríos & Ramon, 2015). A report on new trends in this journalistic field has been published every six months since June 2016, the eve of the UEFA European Championship and Rio Olympics. The Observatory is called "Radar de nuevas tendencias en la información deportiva digital" ("Radar of New Trends in Digital Sports Journalism") and the report consists of a content curation of the most innovative storytelling items produced by media outlets worldwide. This also includes an identification and explanation of the new trends in sports journalism and mega-event coverage.

To locate relevant articles and pieces for these reports on new trends in digital sports journalism, the content has been curated on Twitter through different source lists in order to better follow the main sports media outlets and desks' accounts, and to monitor and keep up with their publications. For this specific study on gamification in sports coverage, relevant content was also curated through a Twitter list that comprises more than forty Graphic and Interactive News departments' accounts[2] created by international media outlets. From this curation, done on a daily basis since the launching of the abovementioned blog in 2010, all gamified pieces and newsgames produced to cover sporting mega-events were identified and included in the first research sample.

Second, results from this Observatory were confirmed by a panel of experts to validate and refine the sample from a broader perspective and with more objectivity. A panel-of-expert method is similar to a focus group and is commonly used in qualitative research for the social sciences (Gideon, 2012). The panel typically consists of a few participants who provide insights and deeper understanding of the topic being studied. The panel of experts is

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[1] https://periodismodeportivodecalidad.blogspot.com/search/label/radar.
[2] https://twitter.com/rojastorrijos/lists/gráficos-e-interactivos.

characterized by homogeneity, but with enough variation among participants to allow for contrasting opinions.

In contrast to focus groups, that may better described as "group interview" because data are generated by interaction between group participants (Finch & Lewis, 2003, p. 171), the panel-of-expert method is a collection of individual interviews and comments directed solely through the researcher. So here the role of the researcher is not moderating a live group who meet physically or online and discuss about a topic but conducting and collecting a battery of questions and distill the anonymous judgments of the participants. This technique can be regarded as a variation of the classical Delphi method (Linstone & Turoff, 2002), which is suited as a research instrument when there is incomplete knowledge about a problem or phenomenon.

Here the participants were experts in graphics and interactives in journalism. They were drawn both from the academy and professional field, among four countries: United States (US), Spain, Brazil and Argentina. They were all asked to choose five gamified sports pieces during Football World Cups and Olympics that they considered to be in some way innovative or outstanding. They were also asked to explain their choices.

Eleven experts were selected for the panel, as follows: Chiqui Esteban, graphics director of *The Washington Post* (US); Alessandro Alvim, executive editor of the Visual Department at *O Globo* (Brazil); Nacho Labarga, editor of *Marca PLUS*, a tablet and mobile magazine produced by the daily sports newspaper *Marca* (Spain); Miriam Hernanz, director of the Lab of Innovation at *RTVE.es* (Spain); Dario Gallo, editor at *Infobae* and former editor in chief at *Clarín* (Argentina); Ismael Nafría, journalist (former digital editor at *La Vanguardia*) and media analyst (Spain); Miquel Pellicer, journalist and media analyst (Spain); Alejandro Rost, lecturer in digital journalism at Universidad Nacional del Comahue (Argentina); Félix Arias, deputy director of master degree in innovation journalism at Universidad Miguel Hernández de Elche (Spain); Rafael Aguilera, journalist and media analyst (Spain); and Álvaro Liuzzi, lecturer in digital journalism at Universidad Nacional de La Plata (Argentina).

The first stage of this research was to obtain a meaningful sample of journalistic pieces in the Olympics and FIFA World Cup coverage for the experts to study. This sample comprises only two formats in sports journalism practice, following the categories suggested by Ferrer Conill (2015), namely "gamified pieces" and "newsgames." Gamified pieces are game-like elements that are part of a bigger interactive designed not only to inform but also to entertain and offer experiences to users. Newsgames are more sophisticated pieces, which are included in complex graphics and sometimes videos or other multimedia content. The latter are built mainly for information purposes and invite users to explore the content in more depth than other gamified pieces.

In addition to the gamified pieces in this research, two main typologies were considered, according to the categorisation proposed by Foxman (2015, p. 16-19). The first is quizzes and question-based formats, usually graphics that give users a personal stake in the results. These have a simple, playful design and may contribute to disseminating content or contextualising stories. In contrast are situation-specific designs and packages, which present data in playful modes to consumers so that they can interact with the content.

So, the first research sample comprised 18 newsgames and gamified pieces from the abovementioned blog *Periodismo Deportivo de Calidad*. This sample included examples from 13 media outlets in six countries, as follows: *The Washington Post* (3 pieces), *The New York Times* (2), *The Wall Street Journal* (1), *The Boston Globe* (1), *Five Thirty Eight* (1) (US); *BBC Sport* (1), *The Guardian* (1), *The Telegraph* (1), *The Financial Times* (1) (United Kingdom); *RTVE.es* (3) (Spain); *La Nación* (1) (Argentina); *O Globo* (1) (Brazil); and *L'Équipe* (1) (France).

All these newsgames and gamified pieces were selected and validated by the panel of experts as well. These participants had been asked to choose five pieces each, but most of their replies were consistent and pointed towards the same newsgames and gamified pieces.

Apart from the ones in the first sample, experts also chose other 10 pieces coming from seven media outlets in six countries, as follows: *The New York Times* (3) (US); *The Guardian* (2) (United Kingdom); *Marca* (1), *El País* (1) (Spain); *O Globo* (1) (Brazil); *La Nación* (1) (Argentina); and *The Irish Times* (1) (Ireland).

After adding the experts' selections to the examples drawn from the blog, the final sample consisted of 28 newsgames and other gamified pieces. They were all produced by media outlets during two last Football World Cups (Brazil 2014 and Russia 2018) and Olympics (Summer Games in Rio 2016 and Winter Games in PyeongChang 2018). More gamification pertained to coverage of the Olympics than the World Cup, especially the Summer Games in Rio in 2016, for which gamified coverage represented half of all pieces examined in this study.

6. Results

Examination of the most relevant examples underlined and analysed in the *Observatory of New Trends in Sports Journalism*, and of the answers and explanations given by the experts consulted, revealed that gamification is increasingly common. This can be regarded as a new trend in mega–event coverages developed by media outlets during recent Olympics and FIFA World Cups.

Table 1: Research sample.

Media outlet	Country	Newsgame/gamified piece
The New York Times	US	5
The Washington Post	US	3
The Guardian	UK	3
RTVE.es	Spain	3
O Globo	Brazil	2
La Nación	Argentina	2
The Wall Street Journal	US	1
The Boston Globe	US	1
Five Thirty Eight	US	1
Financial Times	UK	1
The Telegraph	UK	1
BBC Sport	UK	1
Marca	Spain	1
El País	Spain	1
L'Équipe	France	1
The Irish Times	Ireland	1

Source: Own elaboration.

Gamification use cases significantly increased between Brazil 2014 and Russia 2018. Half of them were produced for the Summer Olympics in Rio in 2016. The breakdown of the sample was as follows:

Table 2: Mega-events coverage.

Mega-event	Gamified pieces	%
2014 Brazil FIFA World Cup	2	7.14
2016 Rio Summer Olympics	14	50
2018 Russia FIFA World Cup	10	35.71
2018 PyeongChang Winter Olympics	2	7.14

Source: Own elaboration.

In both Olympics and FIFA World Cup coverage, gamified news and newsgames were mostly published before the competition started, in most cases. The preview was planned in advance by several months and provided the opportunity for media outlets to draw the audience's attention to the content and stories in their coverage.

According to the main gamification formats and narratives used by media outlets to cover sporting mega-events, newsgames and gamified pieces could be classified into six different categories: charts and interactives to predict results, virtual contests, quizzes, photo-based games, explanatory playful pieces and audio-based games. These typologies will be explained below with examples taken from both FIFA World Cup and Olympics coverage.

Table 3: Categories.

Format and main narrative	FIFA World Cups	Olympics
Charts and interactives to predict results	5	1
Virtual contests	1	5
Quizzes	1	1
Photo-based games	4	2
Audio-based games	1	5
Explanatory playful pieces	0	2

Source: Own elaboration.

6.1. *2014 and 2018 FIFA World Cups*

First, it is noteworthy that some outstanding and innovative gamified pieces or newsgames have been copied or adapted by other media outlets. For example, the gamified piece '*Spot the Ball,*' which is a situation-specific design of match pictures produced between 2010 and 2011 by *The Guardian*, was appropriated by *The New York Times* for the 2014 FIFA World Cup. This game shows ho w capturing a newsworthy moment just a few minutes after the end of the football game, and in an accessible way for fans, can help media outlets to reach more playful audiences. The piece was successful and was reused not only by the same newspaper four years later but was also emulated by *The Irish Times* for its 2018 World Cup coverage. This is also the case of the simulator to plan knock-out stages developed by *The Guardian* during the 2014 World Cup, that would inspire similar interactives produced by *La Nación, El País* and *The Telegraph*'s predictor all in 2018.

Gamified pieces that seek to engage users through a contest, where they give forecasts and compete against each other while vying for the highest score, are widely used in FIFA World Cup coverage. This playful structure gives users a personal stake in the results and so involves them in the football matches while they receive news about the tournament.

Sometimes these gamifying formats aimed at predictions are question-based and data-driven. These features allow users to demonstrate their knowledge about football and have fun at the same time. *Five Thirty Eight* designed an interactive quiz called '*Which World Cup Team Should You Root For?*'. In the quiz, fans answered a few questions to determine their choice. These quizzes let fans play an important role in making decisions about the content – for instance, acting as a national team manager who selects the players to represent a country in the World Cup, as *L'Équipe* did. *The Guardian* similarly designed an interactive in which users not only create their all-time best national team in World Cup history but also compare their choice with famous former footballer selections.

Despite their informational purpose, some gamified pieces are creative proposals that offer unique experiences to users through a playful design and sense of humour. *O Globo* did this in its infographic '*Copa Cabelo & Bigode*' ('*Cup, Hair and Moustache*'), a smart infographic in which readers play to identify a football player by their haircut, beard or moustache as displayed in any World Cup edition.

In the preview of sports mega-events, some gamified pieces are included in special sites along with other interactives, graphics and multimedia content. In this regard, the importance of audio content in playful and immersive modes is growing. As part of its online coverage during the Russia World Cup, the Spanish sports daily newspaper *Marca* included an interactive machine to let fans know how to pronounce each player's name.

6.2. *2016 and 2018 Olympic Games*

The FIFA World Cup is about the most popular sport event in the world. By contrast, Olympics include a wide variety of sports and events, many of which are unknown among the general public. This scenario usually requires sports media outlets to explain the facts, rules and history of the less widely known disciplines and athletes, to give readers the context to understand what the mega-event is about. This need to add data and explanatory value to Olympic coverage may be the reason why newsgames are more commonly used for this event than Football World Cups.

Thus, the gamification of coverage can be useful because it combines two purposes. The first is presenting a considerable amount of interesting data about sportspeople who participate in the Olympics, to be explored by users. The second is customising the content and inviting users to take part as if they were Olympians and so to compete against their own sports heroes.

Some of the most disruptive newsgames produced for the 2016 Rio Olympics emerged from the graphics department of *The New York Times*. The first was called '*Olympic Bodies: Can You Guess their Sport?*' This was a photo-based interactive project where users were required to guess what sport certain athletes practiced, according their physical appearance. In a creative way, this newsgame brought the Olympic Games closer to the general public.

To have the chance of playing and winning a virtual race against a renowned sprinter is appealing for most users. *The New York Times* produced '*Can You Beat Usain Bolt Out of the Blocks?*'. This simulation enabled readers to see whether their reaction time from the starting block was better than Usain Bolt's. This newsgame is an example of how user engagement may easily be increased while the audience receives tips to understand the event being reported, in this case the preview of the 100-metre final.

Also featuring Usain Bolt was the newsgame '*Río 2016: corré la carrera de 200m y enfrentá a Bolt desde el teclado de tu computadora*' ('*Río 2016: Run 200m Race Against Bolt From Your Computer Keyboard*') created by *La Nación*. The game asked users to participate in an imaginary race against the golden medallist in a 200-metre final simply by striking their computer keyboard as fast as possible.

The Financial Times created '*On Your Marks*' to invite users to test their own reaction times at the start of three events: track and field, swimming, and indoor cycling. Their score was ranked among other participants'. This newsgame underscores the importance of concentrating just before the starting signal at the highest level of sporting competitions, where medals may be decided by milliseconds.

The Wall Street Journal took a similar approach in '*Armchair Olympian.*' This was a set of five minigames that let users play and check their abilities in areas where Olympians are masters, as well as learning about the mechanics of sport. The core skills tested were reaction time in sprinting, timing and rhythm in rowing, anticipation in long jump, precision and accuracy in archery, and muscle memory in synchronized swimming.

As mentioned earlier, some newsgames and gamified pieces in Olympic coverage appeal directly to audiences through customized content, invitations to participate, and comparisons of the user to real Olympians. Gamification thus enables users to *walk in athletes' shoes* and brings the atmosphere of competition closer to them. This is what *BBC Sport* suggested in '*Who is Your Olympic Body Match?*'. In this interactive, users are asked to enter their personal details, such as height, weight, date of birth and sex. They can then find a body match from a

database of more than 10,000 athletes taking part in the Games. Similarly, *The Washington Post* produced '*What Olympic Sports Fit Your Body?*' This seven-question quiz about the user's physical characteristics provides them with an answer about which sport is the best suited to their build.

In creating new user experiences, some playful content becomes immersive and may even approach virtual reality. In this context, audio may serve both purposes. This was evidenced by *The Guardian*'s '*RioRun,*' an interactive podcast that took users on a virtual audio tour of Rio, following the route of the 2016 Olympic marathon. This mobile-only experience did not require downloading any app but merely visiting the site *riorun.theguardian.com*. The user could then start playing and competing against other *Guardian* readers from around the world.

Another example of audio-based newsgames in Rio Olympics was *The Boston Globe*'s '*Do You Know what the Olympics Really Sound Like?*'. This gamified feature presented the sounds of the Games, with the newspaper capturing sound clips from various events during the Olympics and presenting them in a "name that sport" format. Users had to play each clip and see if they were able to guess which sport it represented, before moving a slider to reveal the photo and reading a description of the audio track. *RTVE.es* used a similar idea in its quiz titled '*Juega a identificar los sonidos olímpicos de Río*' ('*Play to Identify Rio Olympic Sounds*'), in which users tried to identify the sounds of different sports at the Olympics. In such examples, gamification not only calls upon the spectator's senses but also tests the audience's knowledge about sports.

Audio newsgames and gamified pieces have precedent in the interactive '*Sounds of Exertion*', published by *The New York Times* on the eve of the 2013 US Open Tennis Championships. This innovative work was adapted by others, such as *Le Monde* in '*Roland Garros: saurez-vous reconnaître ces joueurs de tennis à leur cri?*' in its coverage of the tennis Grand Slam in 2016.

RTVE.es designed mobile-friendly interactive quizzes, such as '*Qué sabes de*' ('*What Do you Know About…*') which presented the life stories and statistics of certain Olympian stars. Another piece was '*Match Game,*' where users had to link accessories and equipment used by athletes with the respective sport. Both gamified pieces enhanced users' engagement by presenting facts, history and profiles about sportspeople in an entertaining way.

Another knowledge test about sports culture was *O Globo*'s '*Você consegue escalar um time melhor que o Dream Team*' ('*You Can Create a Stronger Side Than The Dream Team*'). This was a data-driven newsgame that enabled fans to choose any five basketball players, position by position and according to game statistics, and discover if those players could beat the US national team led by Michael Jordan in the 1992 Olympic Games.

Gamification may contribute to promoting a sports culture among citizens. In this regard, the Winter Olympics –despite being a smaller mega-event than the Summer Olympics regarding the number of sports, athletes and events[3]– offers the opportunity to explain curiosities and facts about non-mainstream sports. For this purpose, *The Washington Post* produced '*The Speediest Winter Olympic Sports*'. This question-based interactive requires users to view an animated image before answering questions about speeds in the Games. Similarly, *The Post* designed '*Do You Know How to Judge Figure Skating?,*' an explanatory newsgame about the technical and aesthetic components of figure-skating routines. Here users act as the expert judge and take a quiz to see how well they can evaluate five basic figure-skating skills.

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[3] According to International Olympic Committee site (www.olympic.org), 2016 Summer Olympics received 11,238 athletes from 207 National Olympic Committees who participated in 306 events in 28 sports (41 disciplines). Meanwhile, 2018 Winter Olympics welcomed 2,922 athletes from 92 National Olympic Committees who took part in 102 events in 7 sports (15 disciplines).

This playful mode of placing users into the role of sportspeople to explain the complexities and technical aspects of top-level sports competitions was used by *The Wall Street Journal* in '*Are You Good Enough to be a Tennis Line Judge?*'. This newsgame was produced in two versions, according to characteristics of playing surfaces. The first appeared in the preview of the 2015 US Open played on hard courts, and the second in the days before the 2016 Roland Garros on clay.

7. Discussion

All cases examined in this study indicate that gamified pieces and newsgames may fulfil useful and necessary information purposes. However, most of these formats supplement the sports mega-event coverage; very rarely does the full comprehension of stories and news rely on gamification alone.

On the other hand, findings in this study indicate that only a few real newsgames exist in sports. Probable reasons are that these games are expensive and require time and production processes to create, including planning and a dedicated multidisciplinary team of professionals. Aspects of creation include reporting, graphic design, and coding.

So, the making of gamified stories is thus largely, to a considerable extent, a matter of infrastructure. It seems that most of these kinds of pieces are being made in large newsrooms where there are specific departments devoted to creating interactive graphics and visual journalism.

Most of these graphics and interactives departments have evolved more significantly in legacy media, such as the ones developed by *The New York Times, The Washington Post* and *The Wall Street Journal* in the US, *The Guardian* and *The Financial Times* in the UK, *O Globo* in Brazil, *Le Monde* in France, *La Nación* in Argentina or *El País* in Spain.

Despite being a part of a multi-platform structural newsroom where working procedures are mainly cross-sectional, graphics departments at large newsrooms tend to develop interactive pieces and explore new storytelling formats in order to enhance sports coverages. Among those formats, media outlets are introducing more gamified pieces into their mega-event coverages as an enjoyable way to attract audiences to news.

On the other hand, gamification narratives and formats may also contribute effectively to a better common understanding about the sports world. It may be argued that newsgames and other gamified pieces produced by media outlets to enhance their coverage and reach wider audiences have also a great potential to diversify the news agenda in sports journalism and even to broaden audiences' sports culture. As a matter of fact, gamification does not only mean offering a playful approach to sports news but also providing context for them by explaining technical aspects of disciplines, their protagonists and their history.

The findings of this study, however, have limitations. These are associated with the sampling area and methodology to study gamification in sports in more depth. Although Olympic Games and FIFA are the most popular and global mega-events, it remains to be seen whether gamification is also applied by sports journalism to report about other tournaments or even in day-to-day coverage. Moreover, direct monitoring and panel of experts elicit knowledge and gather relevant information, but both methods may carry out limited-scope evaluations.

Future research must continue monitoring the coverage of sports mega-events beyond Olympics and FIFA World Cups in order to examine other gamified features, storytelling formats, approaches and techniques developed by news organisations. So, conducting further interviews to sports reporters and graphic editors at these large newsrooms will be necessary in order to observe new practices in sports journalism. All this will allow researchers know more about how gamification is being used as a part of a strategy strongly connected to innovative ways of engaging sports fans in the new digital landscape.

8. Conclusions

These results confirmed the working hypotheses in this research. That is, there are different levels of gamification within sports journalism and most gamified pieces in this field are included in complex graphics or interactive features during mega-event coverages. Here newsgames rarely appear as standalone features.

Newsgames are commonly used in the weeks or months before a competition starts, and usually require the context of the full coverage developed up to that moment by the media outlet if they are to be completely understood. Indeed, full comprehension of stories and news do not rely just on gamified pieces, which are rather a supplement of the normal coverage.

Regarding the sample in this research, most of the gamified pieces used in sports mega-event coverage are content designed to serve mainly informational purposes. They tended to be data-driven and explained statistics and the history of disciplines, teams or athletes. These features were especially evident regarding the Olympic Games.

In the preview of mega-events, mostly in FIFA World Cup coverage, some gamified pieces consist of an interactive graphic that invites users to participate and predict the results of events or matches. Users might even be invited to predict the winner of a tournament. Other pieces are audio-based formats and immersive and offer an experience to users; they allow the user to feel like an athlete, and the game simulates the atmosphere of competition as if the user was participating in it. Sometimes this playful content may be even close to virtual reality.

Certain outstanding and innovative gamified pieces or newsgames have been copied or adapted by other media outlets. Overall, the findings suggest that regardless of typology, interactive newsgames and gamified pieces are becoming an emerging trend in sports journalism that media outlets are adopting. They all add value to mega-event coverage. In short, gamification is a key element for sports outlets as part of a digital strategy to increase user engagement through carefully designed infotainment content.

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Appendix

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