360-degree immersive journalism: its value, narrative, and future challenges

Periodismo inmersivo con vídeo 360 grados: valor, narrativa y retos de futuro

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Abstract:

Virtual reality and 360-degree video technology were introduced in newsrooms and innovation labs in the mid-2010s, leading to a new way of telling stories. However, 360 video emerged as a more viable alternative to genuine virtual reality, both in terms of investment and production time. The media explored its potential as a form of immersive journalism until its decline from 2018 onward. In addressing the period following the experimental stage, this research analyses the impact of 360-degree video on journalistic production from three perspectives: the value of this format for news stories; the immersive narrative; and the challenges facing its consolidation. To this end, semi-structured and in-depth interviews were conducted with professionals and academic experts in the field (N = 11). The first-person experience was considered a differentiating factor, introducing an experiential dimension to consumption. Moreover, this format requires that the story be told in a different way, which

Resumen:

Las tecnologías de realidad virtual y de vídeo 360 grados se introdujeron en las redacciones y laboratorios de innovación a mediados de la década de 2010 dando paso a una nueva forma de contar historias. Con todo, el vídeo 360 grados se postuló como alternativa más viable frente a la auténtica realidad virtual, tanto por inversión como por tiempos de producción. Los medios exploraron sus posibilidades al abrigo de un periodismo inmersivo hasta su declive a partir de los años 2018 y 2019. Esta investigación analiza, una vez cesada la etapa de experimentación, el impacto que el vídeo 360 grados ha tenido en la producción periodística atendiendo a tres perspectivas: el valor del formato para el relato noticioso, la narrativa inmersiva y los retos que condicionan su consolidación. Para ello, se realizan entrevistas semiestructuradas en profundidad a profesionales y expertos académicos en este ámbito (N = 11). La experiencia en primera persona emerge como factor diferencial, introduciendo una dimensión

involves an adaptation to immersion and spatiality. The future viability of 360 video is uncertain due to its high cost, the absence of a sustainable business model, and the low prevalence of virtual reality headsets.

Keywords:

Immersive journalism; 360-degree video; virtual reality; immersive storytelling; innovation.

vivencial en el consumo. A su vez, el formato exige otra forma de contar el relato, adaptado a la inmersividad y a la espacialidad. Su viabilidad futura resulta incierta por su elevado coste, la ausencia de un modelo de negocio sostenible y la baja penetración de las gafas de realidad virtual.

Palabras clave:

Periodismo inmersivo; vídeo 360 grados; realidad virtual; narrativa inmersiva; innovación.

1. Introduction

After the commercial failure of the virtual reality industry in the 1990s, interest in immersive technology remerged in the media scenario between late 2015 and early 2016 (Doyle et al., 2016), leading to a period of experimentation in newsrooms around the world, including *The New York Times*, *El País*, *Chosun Ilbo*, *Clarín*, *BBC*, *RTVE*, *The Guardian*, *NHK*, and others. This change has arisen as part of an effort to address the business model crisis, as companies try to find sustainable alternatives to traditional revenue streams. The media's drive toward innovation (García-Avilés Carvajal and Arias, 2018) has led to the rapid adoption of high-end technology (Pérez-Seijo and Vicente, 2022), including immersion, in order to differentiate themselves from competitors, which has also led to gradual changes in the audience's news consumption habits.

The emergence within journalism of the so-called "experiential media" (Pavlik, 2019) has helped shift users away from the traditional passivity associated with reading, watching or listening to news items, and places the audience at the centre of the experience. In the case of 360-degree video and virtual reality, users even have "the feeling of being in another place and time, living the lives and stories of other people" (Soler-Adillon and Sora, 2018, p. 56). The aim of these projects is to regain the emotional involvement of audiences in journalistic news and increase engagement (De la Peña et al., 2010; Sánchez Laws, 2020), as well as to "help citizens connect and create bonds with each other, thereby becoming more empathetic toward others" (Soler-Adillón and Sora, 2018, p. 64). This emotional shift, which focuses primarily on audience perception, "not only demand new technological skills, but also challenges the way journalist allow emotions in journalistic productions, and what role they take in relation to the story and the user" (Goutier et al., 2021, p. 1648). Thus, this way of reporting events has been associated with a deeper and more enriching news experience, with authors arguing that immersive journalism might serve two purposes: to awaken interest in distant topics and situations; and to reduce the over-saturation of information available through traditional formats and legacy media (Sánchez Laws, 2019).

In general terms, immersive journalism can be defined as the production of content in a way that allows the user to experience the news in first-person format (De la Peña et al., 2010). However, there is still no agreement on which technologies are included under this heading: while most proposals, concepts, and definitions focus on 360-degree video and virtual reality (see e.g. Baía and Coelho, 2018; Nielsen and Sheets, 2019; Paíno and Rodríguez, 2019; Sidorenko, Cantero and Herranz, 2017; Sirkkunen and Uskali, 2019; Van Damme et al, 2019), some authors also choose to include augmented reality (Tejedor-Calvo et al., 2020; Aitamurto et al., 2020), or even spatial audio (Vicente and Pérez-Seijo, 2022), under the umbrella term *immersive journalism*.

Although the range of immersive technology available is diverse, the format that the media experimented with the most in the second half of the 2010s was *real-image* 360-degree video (Hardee and McMahan, 2017; Benítez de Gracia, 2019). As opposed to truly interactive virtual reality, which uses completely computer-generated images (Burdea and Coiffet, 2003), the spherical format was introduced in innovation labs and newsrooms as a more viable alternative in terms of both time and money (Barreda-Angeles, 2018; Mabrook and Singer, 2019; Pérez-Seijo and López-García, 2018). In spite of definitions, the media often refer to this type of content as 'virtual reality' (Slater and Sánchez-Vives, 2016; Watson, 2017). The indiscriminate use of this concept has generated various debates in the academic world, but in the professional realm as well, although two main approaches can be identified: those who affirm that 360-degree video can be categorised as a kind of cinematic virtual reality (Frontline and Emblematic, 2018; Pavlik, 2019); and those who separate spherical video from "true virtual reality", thereby maintaining a stricter point of view, justifying their position based on the limited interactivity that the former allows (Dolan and Parets, 2016; Watson, 2017). As a consequence of these debates, some authors have directly advocated differentiating between a form of immersive journalism based on computer-generated content and another based on 360-degree video (Hardee and McMahan, 2017; Sánchez Laws and Utne, 2019). In fact, some studies focus exclusively on immersive journalism with spherical video (see for example Aitamurto, 2019; Benítez and Herrera, 2020; Palmer, 2020; Pérez-Seijo, 2021; Van Damme et al., 2019).

In this paper, immersive journalism with 360-degree video is specifically examined. The existing research dedicated to this category has focused mainly on the analysis of immersive productions in the national and international media ecosystem (e.g. Barreda-Ángeles, 2018; Benítez, 2021; Cantero, Sidorenko and Herranz, 2018; Colussi and Reis, 2020; De Bruin et al., 2020; Paíno-Ambrosio and Rodríguez-Fidalgo, 2019). However, now that the wave of technological-narrative experimentation in the media has passed and interest in this format has declined globally (López, Méndez and Olivares-García, 2022; Rodríguez-Fidalgo and Paíno-Ambrosio, 2020; Pérez-Seijo, 2021; Sidorenko, Herranz and Molina, 2020), it is necessary to review the impact of 360-degree video recording technology in general, and spherical video in particular, on journalistic production. From this main objective, three secondary objectives have been drawn, which focus on the value of this format for news stories, narrative construction, and the challenges facing its consolidation in newsrooms.

2. Applying 360º video to journalistic narratives

Virtual reality and 360-degree video technology were introduced into the journalistic scene in the mid-2010s in order to "competitive edge for media houses competing in the information age" (Nielsen and Sheets, 2019, p. 12), the goal of which was to attract new audiences, such as digital natives, and to reconnect with older audiences, which had become fragmented (Watson, 2017; Soler-Adillón and Sora, 2018; Van Damme et al., 2019). In fact, some research has found that these immersive formats can enhance the sensation of authenticity (Nielsen and Sheets, 2017), especially in relation to emotion (Maschio, 2017), and increase the enjoyment of consuming news (Van Damme et al., 2019; Hendriks Vettehen et al., 2019).

This commitment to immersive journalism confirmed the media's interest in attracting users through more visual, interactive, gamified, and first-person narratives and stories (López-García et al., 2020). In this regard, it is worth noting that Bujic and Hamari (2020) conducted a comparative study between reading an article and experiencing the same report using immersive

360-degree video. The authors found that"users have a higher intention to continue use of similar content the higher the technological immersion" (Bujic and Hamari, 2020, p. 123). However, according to other studies, such as that of Nielsen and Sheets (2019), immersive journalism is not a potential medium for regular news consumption, but rather a complement and added value for specific content.

In terms of user experience, the spherical format introduced changes not only in the way news is consumed, but also in the role of the audience. The viewing of this type of content, especially with virtual reality glasses, distances the user from traditional consumption, as "news becomes an experience" (Kasem, Van Waes and Wannet, 2015, p. 16), thanks to the possibility of seeing and feeling the events described in the story in the first-person (De la Peña et al., 2010). As the user now becomes "a participant in the virtual story" (Slater and Sánchez-Vives, 2016, p. 33), he or she has control over the point of view in an immersive environment (Domínguez, 2017), as a result of the breakdown of traditional framing (Benítez and Herrera, 2017). For this reason, authors such as De la Peña et al. (2010, p. 299) consider that "immersive journalism does not aim solely to present the facts, but rather the opportunity to experience the facts"".

3. Methodology

This research focuses on the study of immersive journalism involving 360-degree video, which is a way of producing non-fiction content that was introduced in the media in the mid-2010s as an emerging trend. However, once the period of experimentation at the national and international level has ended, it is necessary to review the impact that this trend has had on journalistic production. From this main objective, we have drawn three additional aims that are more specific, which are the following:

1. To analyse the value that 360-degree video offers to the journalistic narrative as opposed to other conventional ways of narrating and reporting events.

2. To explore the unique features of the immersive narrative as applied to journalistic storytelling.

3. To identify the challenges that influence the consolidation of this immersive journalism in the media.

This research has used a qualitative methodological design based on semi-structured, in-depth interviews. This is a technique that makes it possible to "obtain information through conversations with one or more professionals for an analytical research study" (Ruiz Olabuénaga, 2007, p. 165). These professionals usually have expert knowledge in a specific area or topic (Van Audenhove and Donders, 2019). As such, the relevance of the information obtained makes it appropriate to apply this technique to the present study. Not relying on a structured questionnaire offers greater flexibility in conducting interviews (De Miguel, 2005), making it possible to adapt the list of topics and/or questions according to the answers provided by the interviewees (Treadwell, 2019).

In view of the unique aspects of the object of study and the objectives of this research, it was considered necessary to have the perspective and vision of two distinct profiles: on the one hand, professionals from the journalistic and audio-visual field with experience in the production and distribution of non-fiction content in spherical video (producers, journalists, filmmakers, etc.); on the other hand, academic experts who have studied the journalistic approach analysed in depth in the present research.

In order to achieve the objectives, some 20 experts were contacted by e-mail. However, despite the fact that only 11 people accepted the request, this number was enough to reach the saturation point, which is the point where any additional interview or interviews will not yield any further ideas or answers that are different from those given by the previous respondents (Callejo, 1998). The interviews were conducted in two phases: the first took place in July of 2019; the second, which was delayed due to the impact on the university and academia from COVID-19, was carried out between January and February of 2021. A list of the experts interviewed is provided in Table 1.

Table 1. Professionals and scholars interviewed

Alejandro Lendínez	Technical director and operator of immersive video and photography. He has worked in several production companies, including MediaStudio and Visyon, which have collaborated with *RTVE* to produce immersive content.
António Baía Reis	PhD in Digital Media. He is also a researcher specialising in immersive narratives, and an expert in the metaverse.
Daniel dos Santos Catalão	News anchor at Portugal's *Rádio e Televisão*, where he pioneered experimentation with spherical video to produce journalistic content.
Eduardo Acquarone	Former director and producer of 360-degree video content for G1 (*TV Globo*, Brazil).
Esther Pérez-Amat	Editor of RTVE Lab, where she has participated in the production of projects in spherical video format.
Eva Domínguez	Journalist specialising in immersive narratives involving virtual and augmented reality. She is a pioneer in immersive journalism research in Spain, with a thesis entitled, *Periodismo inmersivo: fundamentos para una forma periodística basada en la interfaz y la acción* [Immersive journalism: the essentials of a journalistic format based on interfacing and action] (2013), which was later published as a book.
Fábio Giacomelli	Researcher and journalist focusing on mobile and immersive journalism. He is also a PhD student at the Universidade da Beira Interior (Portugal).
Mª José Benítez de Gracia	PhD in Media Research. Specialist in the study of immersive journalism with 360-degree video. She is also co-author of the book, *Cómo producir reportajes inmersivos con vídeo 360º* [How to produce immersive reports with 360º video] (Benítez and Herrera, 2020).
Marcos Martín Gómez	Interactive Media and Multimedia Producer at RTVE Lab, where he has collaborated in the production of immersive content with 360-degree video.
Pavel Sidorenko	Lecturer at the International University of La Rioja. He has researched and taught courses on immersive virtual reality and 360-degree video. He has also produced spherical video content for *El Diario Conquense*, *El Deporte Conquense*, and *Castilla- La Mancha Media*.
Zillah Watson	Former Director of the BBC VR Hub. Author of the report entitled, *VR for News: The New Reality?* (2017), published by Reuters Institute for the Study of Journalism.

Source: prepared by the author

In order to systemise the processing and analysis of the interviews, ATLAS.ti software was used. This is a computer programme that allows categories or labels to be assigned to fragments of text in order to later arrange the data obtained according to topics, opinions, or ideas, as well as to subsequently establish connections and discover patterns in the qualitative information (Sabariego-Puig, Vilà-Baños and Sandín-Esteban, 2014).

4. Results[1]

4.1. The journalistic value of 360-degree video

According to the interviewees, spherical video was introduced to the media as an innovation that opened the door to new opportunities for presenting news events and bringing reality closer to the viewer:

> "Immersive journalism [with 360-degree video] is a new technology for telling what we have always told, which is one thing; stories. Nothing is being replaced. It's just a new option that gives us a new way of telling the same stories, because if I had to do a report for traditional television, I wouldn't be able to tell it in the same way as with a 360 degree video" (Daniel Catalão).

According to Pavel Sidorenko, this way of producing journalistic content based on spherical video, which is founded on storytelling, is based on one fundamental idea: placing the user "in the middle of a space, news story, or event" (Esther Pérez-Amat). Consequently, by having a first-person experience and a feeling of being present in the situation being covered, the user can do the following:

Have a better understanding of a certain event,

> "When 'you're there', you're seeing, and you're perceiving. That's the information you're getting. You understand better because you're seeing exactly the way it is, and you have a feeling of being transported (…).You can understand intellectually what a refugee camp is like, but by being there, you might truly assimilate the reality of the situation. You can give a lot of details, but having the feeling of being there makes you better understand what it's really like to be in a refugee camp" (Eva Domínguez).

Obtain a more complete or contextualised picture of what is happening,

> "The 360-degree [video] format offers an extremely valuable recording of demonstrations and momentous social events. Instead of looking at a closed shot, where evidence can be manipulated, a 360º view allows you to see where the police lines are, where the protesters are, and whether they are lying about what happened" (Pavel Sidorenko).

Place oneself in another person's shoes or connect with other people's lives,

> "There were some really good pieces that connected the audience to other people's lives using virtual reality. In fact, there's one from the BBC, which I worked on as the executive producer, called "A Trek to School", which is about two girls who have to make an difficult journey just to go to school in India. And you really connect with those girls" (Zillah Watson).

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1   Some interviewees use the term "virtual reality" to refer to 360-degree video.

"Although this immersive journalism is developed in a technological context, conceptually, and from the point of view of the production of a journalistic narrative, it has a lot in common with journalism that approaches the emotion of a story" (Antonio Baía).

"The thrill of being there gives you an exclusive point of view. As a user, you empathise much more with what you're seeing. If it's a demonstration, or a social problem, it's not the same to see a person giving help to another person in front of you, from a metre away, as it is to see it on TV. The feeling of being more present has a stronger impact when it comes to telling that story. And only virtual reality gives you that" (Esther Pérez-Amat).

Gain access to remote or hard-to-reach places that users would otherwise not know about, or not be able to visit

"Transporting someone virtually to the International Space Station is very different from watching a documentary about the International Space Station, because you can see how cramped those places really are. It is an experience in itself" (Daniel Catalão).

"The part when you're there, when you're floating, and you see outer space, or reach inaccessible places, similar to what National Geographic did with underwater explorations and swimming with sharks, or in Antarctica. That's when you really feel it, because you have the sensation of being there. To me, that's really valuable" (María José Benítez).

Have a better perception of scale and distance in specific places or settings.

"These are stories where the feeling of being there allows you to see things that you wouldn't otherwise see, and to really take in some of the feelings of being there. And to see what you would see if you were actually there. For example, you can have a better understanding of the distances between different objects, or the scale of things, and it can be useful. In the story called "Damming the Nile", one of the things we thought was really going to work was seeing the dam, and seeing how big it was. So this technology is really good for understanding scale. It allows you to 'be there' and see different things in relation to each other" (Zillah Watson).

Experts agree that while the story is the main part of immersive 360º video journalism, not all stories make sense when they are told in this format:

"The first thing to analyse is whether the story is really worth recording in 360-degree format (...) and then you have to think about how to make the most of it. Because one of the problems is using 360 just to draw attention, as if to say 'Look! I'm going to put a camera here and you can turn and see everything'. But you have to find a story that really makes good use of this new narrative" (Marcos Martín).

Regarding the value of the format, there is consensus that the potential of this method for journalistic storytelling lies precisely in its ability to bring a certain reality closer to users, and to give them the feeling of having been transported to the place depicted, or in other words, to have the illusion of really being there. Antonio Baía notes that having access to the reality of a news story from a first-person perspective is the differentiating feature of immersive journalism with 360-degree video. Furthermore, the disappearance of the rectangular frame and the fading away of the fourth wall when using virtual reality glasses allows the user to control the point of view in the immersive scene and to be the one "who frames it with his or her gaze" (Alejandro Lendínez).

As the journalist now loses his or her traditional control over the story, they must understand that the way of telling stories with spherical video cannot be equated with the rules and rationale of other formats, as Daniel Catalão points out. Once again, the main reason for this is the fundamental objective of immersive journalism: to generate a perceptual illusion of non-mediation. This is why Alejandro Lendínez points out that what differentiates it from other forms of portraying reality is this eagerness to give the impression of "being in the story, rather than seeing the story". In fact, there is consensus when it comes to seeing this immersive journalism in terms of live experiences.

The interviewees believe it is precisely the first-person perspective, together with the feeling of being present in the place where events occur, that makes it possible "to get closer to the real situations and have a greater understanding of what you're seeing, because you're basing it on a personal experience that you are living through" (María José Benítez). According to Zillah Watson, this makes the audience more deeply involved in the story: "What it gives you is a sense of understanding those spaces, and it might even transport your intellect and your mind there in a much more emotional way".

4.2. A spatial narrative

In terms of storytelling, 360-degree video introduces profound changes in the way narratives are conceived, designed, planned, and ultimately constructed. Some interviewees point out that the absence of a defined visual grammar and the process of rectifying previous practices (Fábio Giacomelli), in which this format is still enmeshed, pose serious challenges in the production of content. In spite of this, a language of its own is gradually being defined, which is adapted to the unique features of the immersive experience and the spatiality that spherical video narration demands (Antonio Baía), because "you need to understand the place to understand what is happening" (Zillah Watson):

> "This is an audio-visual language that's different from film, video or photography. It takes some elements from those, but also from stage languages such as theatre, or other more interactive activities such as videogames or escape rooms" (Alejandro Lendínez).

As such, the experts agree that compared to the conventional format, the specific aspects of recording with 360-degree cameras in general, and of the spherical video format in particular, "have changed the rules of everything related to the traditional audio-visual narrative as we know it" (María José Benítez). "The frame, or shot, as the minimum unit of narrative" (Alejandro Lendínez) disappears, as it is now the user who chooses the point of view in the scene at all times, which inevitably requires "another way of telling" (Marcos Martín) the story.

In this regard, the professionals agree that for a story to make sense in a 360º video format, it is essential to develop it with the user at the centre of the scene at all times:

> "The user must be the protagonist. For this to happen, the camera needs to be in the middle [of the scene], one metre away from the face [of the people appearing or intervening], or from the main action (...). Then, those rings of information around the user's eyes have to be attended, because from two metres away everything is blurred, and you nearly can't see, although the place doesn't always make it easy" (Esther Pérez-Amat).

Likewise, the point of view that the user is intended to have in the story also influences and impacts the way the scene is presented at the narrative level. For this reason, the experts emphasize that both the height and position of the camera, and its

movements during filming, must be justified in terms of the perspective that the viewer is to be offered in a particular scene, and in the story in general:

> "The fact that the user is in the scene, or to put it another way, is living rather than watching the scene, makes us wonder what role they play in the scene. Is the user just another character in the story, with whom the others interact? And does the user have a first-person experience of the story? Do they take on the role of one of the main characters, or are they an omniscient being who sees everything from the third-person perspective? All of these options have to be considered when it comes to setting out and writing the story" (Alejandro Lendínez).

The 360º video format also compels us to redefine the role of the journalist, who now loses control over the story and leaves it in the hands of the user, and usually disappears from the scene so that their presence does not show any sign of mediation (María José Benítez). In this way, the professional is removed "from the visual equation" (Daniel Catalão), in order to give the viewer the freedom to explore the scene for themselves and, through a first-person perspective, the opportunity to observe the action or space as if they were actually present:

> "In a way, the reporter takes a step back, and unlike a normal TV broadcast where they tell you exactly what's happening and what you're seeing, in virtual reality the user doesn't need so much information, because the journalist hands over some of that to the viewers so they can see for themselves what's happening and understand it in a different way" (Zillah Watson).

4.3. The decline of this format for journalistic production

Now that the surge of journalistic experimentation with 360º video in newsrooms has passed, which most experts place between 2015 and 2017, the media have gradually been "abandoning the format" (María José Benítez). Despite the possibilities that spherical video offers in approaching and portraying reality, as well as the value it brings to journalistic storytelling in terms of user involvement, or the experiential aspect, as well as the news experience, all the interviewees agreed that the future viability of immersive journalism with 360-degree video faces a number of challenges.

Specifically, three main challenges have been highlighted as hindering its consolidation as a "developed journalistic practice" (Antonio Baía). Firstly, an audience must be established. Eva Domínguez points out that there has been "an enormous amount of production, but not so much consumption", which is partly due to the low number of virtual reality glasses in households, despite the eagerness of the technological industry to popularise their use and democratise both access to them and the consumption of immersive experiences. "So until something changes, and more people start buying [virtual reality] headsets, it's going to be difficult", says Zillah Watson.

Although the user has alternatives available for consumption, such as mobile viewing or access from desktop devices, some of the interviewees believe that these options limit the potential of spherical storytelling, which provides the sensation of actually being present in the situation depicted:

> "It's only effective when you watch it [360-degree video] with glasses. Only with glasses can you really enjoy the content because you're in the story. With a mobile phone or a computer, you're outside the story because you have an interface in front of you. With the glasses, you don't seen the interface, because you're inside the story" (Daniel Catalão).

"The best way to enjoy an immersive 360º video or virtual reality is with total immersion by the user, or in other words, with virtual reality glasses, headphones with 360º sound, and completely isolated". This way, you can participate with more sensory input and interactivity. That's the real potential of virtual reality and 360 [video]. Seeing it on a social network, mobile, tablet or computer screen takes away a lot of the features and limits the potential. At the present time, this is good because it makes it easier to reach more people, but I think in the future this way of viewing it will diminish and be used only for promotional purposes" (Alejandro Lendínez).

The second challenge hindering the consolidation of immersive journalism with spherical video in newsrooms is the return on investment. Some of those surveyed emphasised the need to find a sustainable business model to monetise this type of content, because the uncertainty surrounding the profitability of immersive production is holding back media investment in this type of journalistic product:

"First, you have to acquire the material, or the equipment. Then you need to have people who specialise in this area. You have to produce. And this type of content takes a long time to make. So I think the cost-benefit might not be immediate, or what I mean is, we might invest a lot of money in a project, but what we get in return from the users is still very low compared to everything else. I think there could be a financial point of view preventing stronger investment in this area" (Daniel Catalão).

"Because this method is still experimental, there's not much talk about the business side, or obtaining value from the product. But it's important to know that like all other formats that require a return on investment, it's a challenge to monetise them [360-degree video productions]" (Antonio Baía).

The third challenge highlighted by the experts is related to the language and narrative required to produce 360º video content. In this regard, when the media entered the experimental stage with the spherical format in the mid-2010s, they were largely driven by hype from the technology industry, in addition to an eagerness to innovate and differentiate themselves from competitors. However, they generally started producing 360º news videos without considering the need to train their journalists and provide them with the skills needed to adapt the story to the unique aspects of immersive storytelling. The result, according to Eduardo Acquarone, was a situation of news professionals being faced with producing immersive content "with more questions than answers":

"They did the process backward. They jumped on board and signed an agreement with Samsung. How many cameras do you want? 40? Take forty, one for each journalist. And then they had to create a specific department or office afterward. Everything was done backward. They should have trained the journalists first, and then sent them out to work with this format" (Pavel Sidorenko).

"Many videos are produced just to try out the new technology; to see how it works; to experiment with new formats. That's where you see a mix of everything: the camera appears on a shelf, on the floor, and then on a table. That's where you see the lack of knowledge, and the experimentation, and you see that there's no coherence in producing a certain narrative" (María José Benítez)."

5. Conclusions

This qualitative study has attempted to address the impact and potential of 360-degree video in its application to journalistic storytelling, as well as to delve into the unique features of immersive narratives and the challenges facing the consolidation of this way of producing content as a standard practice, despite the upsurge experienced in the second half of the 2010s.

Immersive journalism with 360-degree video was introduced into newsrooms as a new way of telling stories and transporting the user to the location where events take place. Unlike other ways of portraying reality, with this content the user is placed at the centre of the scene and has the ability to control the viewpoint at all times, due to the elimination of the traditional rectangular frame.

The first-person point of view, which is a fundamental objective of immersive journalism (De la Peña et al., 2010), stands out as a differentiating factor. As the perceptual illusion is unmediated, enabled by the use of virtual reality glasses during consumption, the fourth wall is blurred and allows the user to observe and explore the scene from its very centre, as if they were actually present. Thus, a live experience has been added to the story, which separates the viewer from the traditional passivity associated with news consumption, such as reading, listening, or watching the news, and turns the user into a direct witness or observer of the events. This unique aspect encourages the shift from traditional storytelling to a kind of *storyliving* (Maschio, 2017).

Even though the story continues to be the main component in this type of immersive journalism, the format does not offer a large amount of information. Instead, its value lies in taking advantage of the options provided by the immersive scene and spatial narrative so that the user has the sensation of being present in the situation depicted, and is able to comprehend a certain context or event to a greater extent, understand complex realities, obtain a more complete picture of what is happening, access distant or otherwise inaccessible places, and even put themselves in other people's shoes. The potential of 360 video storytelling lies in its ability to bring distant realities closer to the user, and offer the illusion of being present where the events are taking place. This is why spherical video has often been used as a method that offers much more depth.

In narrative terms, the unique features of this format imply a new way of reporting and portraying the news. Immersive journalism transcends previous practices, which is why it requires its own grammar and audio-visual language adapted to its unique features, as other authors have previously pointed out (Dooley, 2017). Unlike conventional video production, the story is developed by adhering to criteria of immersion and spatiality. Therefore, the setting becomes more relevant (Kukkakorpi and Pantti, 2020), which also entails careful planning of the scenes so that the main action and background activity both make sense, and are justified from a narrative point of view.

Moreover, the journalist hands over control of the story to the user, who now has the freedom to explore the scene and choose the point of view at all times. The absence of the reporter, aimed at reinforcing the illusion of non-mediation, also poses serious challenges regarding the risk of obtaining only a partial view of what is happening, or missing important information that is necessary to really understand the events being covered. In fact, the ethical issues of such practices have been questioned by some scholars, with debates focusing primarily on objectivity, accuracy, and the degree of user agency (Aitamurto, 2019; Mabrook, 2021).

In the short to medium term, the viability and continued use of immersive journalism with 360-degree video is uncertain, as the challenges that have emerged alongside this media format in the second half of the 2010s remain unresolved (Doyle, Gelman and Gill, 2016; Marconi and Nakagawa, 2017). Thus, the high cost of production, the low number of virtual reality glasses in homes, the absence of a sustainable business model that would allow the content to be monetised, and the low

audience figures are hindering the commitment to spherical video in newsrooms. Some authors had predicted a worldwide decline from 2018 to 2019 (Rodríguez-Fidalgo and Paíno-Ambrosio, 2020; Pérez-Seijo, 2021).

Despite 360-degree video being abandoned as a journalistic format for reporting and covering events, augmented reality remains a method with greater potential for ubiquity, portability, and mobility. At the same time, development of the metaverse might offer new opportunities for immersive storytelling backed by mixed-reality technology. Immersion and interactivity have been identified as the main features to explore for the creation of journalistic content in these virtual worlds, although their future sustainability might be impacted by factors such as audience literacy, journalist training, and monetisation, which was the case with immersive virtual reality and 360-degree video journalism. Thus, the opportunities in terms of narratives and user experiences offered by mixed realities and the metaverse call for new lines of research focused on their implications for the journalistic profession.

6. Acknowledgements

7. Bibliographic references

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