Story chasers: using storytelling in the classroom to incentivise collective creativity

Cazadores de Historias: un caso de implementación de storytelling en el aula como herramienta para incentivar la creatividad colectiva

Caçadores de Histórias: um caso de implementação de contação de histórias em sala de aula como uma ferramenta para estimular a criatividade coletiva

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Abstract

In this article, we explore the implementation of storytelling techniques in the classroom and analyze the processes of collaborative story creation. This is done within the framework of educational and innovation research project Story Chasers. Story Chasers was funded by the Barcelona City Council and was developed in two editions (between 2017 and 2019) in primary and secondary schools in Barcelona, as well as in other non-formal educational contexts. Based on a board game created specifically for the project, a series of workshops to experiment with the exchange of narrative worlds between the participants were implemented. The game is the starting point of a co-creation methodology with the aim of fostering the co-construction of fictional stories based on premises that stimulate reflection on challenges such as the climate emergency, the fight against discrimination based on ethnicity, functional diversity or gender. The dynamics of Story Chasers allow for the observation of a series of strategies, in which the students combine the premises with their own personal experiences, their cultural background and their social environment. This way, the generation of empathy and possible responses to challenges posed to the students are fostered. Through this experience, we conclude that storytelling and fiction are a valuable creative methodology and an effective tool to address social challenges in a plural way and to promote collective and collaborative creation processes in the classroom.

Keywords: *Storytelling; Collective Creativity; Interdisciplinarity; Learning; Board games; Fiction*

Resumen

En el presente artículo se exploran las posibilidades del storytelling *como técnica de creatividad en el aula, y se analizan los procesos de creación compartida de historias en el marco del proyecto de investigación e innovación educativa* Cazadores de Historias. *El proyecto ha sido desarrollado durante dos ediciones (2017-2019) en centros de primaria y secundaria de Barcelona, así como en otros contextos educativos no formales.* Cazadores de Historias *se compone de una serie de talleres en los que se experimenta con el intercambio de mundos narrativos entre las personas participantes, a partir de un juego de mesa creado específicamente para el mismo, como punto de inicio de una metodología de co-creación. El juego ha demostrado promover la construcción de histo-*

rias de ficción a partir de premisas que estimulan la reflexión sobre retos tales como la emergencia climática o la lucha contra la discriminación por razones de etnia, diversidad funcional o género. La observación de las dinámicas de Cazadores de Historias *muestra el desarrollo de una serie de estrategias mediante las cuales el estudiantado conjuga las premisas con sus experiencias personales, su bagaje cultural y el contexto social actual, estimulando una posición de empatía desde la que plantear respuestas posibles a los retos planteados. A partir de esta experiencia se concluye que el* storytelling *y la ficción aportan un valor relevante como metodología creativa y como herramienta eficaz para abordar de un modo plural desafíos sociales, así como modo de potenciar procesos de creación colectivos y colaborativos en distintos contextos educativos.*

Palabras clave: *Storytelling; Creatividad Colectiva; Interdisciplinariedad; Aprendizaje; Juegos De Mesa; Ficción*

Resumo

Este artigo explora o storytelling *como uma técnica de criatividade possível de implementar em salas de aula e, analisa os processos de criação coletiva de histórias implementados no projeto de pesquisa de inovação educacional "Caçadores de Histórias". O projeto foi desenvolvido durante dois anos (entre 2017 e 2019) nas escolas primárias e secundárias de Barcelona, assim como em outros contextos não formais. A partir de um jogo de mesa criado especificamente para o projeto, Caçadores de Histórias experimenta com o intercambio e geração de mundos narrativos entre as pessoas participantes através de uma série de workshops. O jogo demonstrou promover a co-construção de histórias de ficção a partir de premissas que estimulam a reflexão sobre desafios como uma emergência climática, a luta contra a discriminação por etnia, diversidade funcional e de gênero. A dinâmica de Caçadores de Histórias permite observar o desenvolvimento de uma série de estratégias por meio das quais o corpo estudantil combina as premissas com suas experiências pessoais, sua bagagem cultural e o contexto social atual. Isso os estimula alcançar uma postura de empatia e a buscar respostas aos possíveis desafios impostos durante o jogo. A partir dessa experiência, conclui-se que a narrativa e a ficção apresentam um grande valor como método criativo e são ferramentas eficazes para enfrentar os desafios sociais de forma plural, bem como potencializar processos de criação coletiva e colaborativa em sala de aula.*

Palavras chave: *Storytelling; Criatividade Coletiva; Interdisciplinaridade; Aprendendo; Jogos de tabuleiro; Ficção*

Translation by **Linguaserve**

1. Introduction

Stories can be found everywhere, in multiple domains of our everyday lives. The action of telling, sharing, and interacting with stories is connected to oral tradition, and has been revitalised by the narrative practices of social networks, which refer to what Klapproth describes as a way of "sharing worlds" (Klapproth, 2004, p. 127). This vision enables us to understand narrative as both product and process, and to approach it as a methodology which stimulates the creativity of the actors involved, who participate in a specific narrative practices, in this case the co-creation process presented in this article. Through an action research experiment, *Cazadores de Historias* (referred to below as CdH) hopes to contribute to the academic debate on the interrelation between narrative practices, creativity, and innovation in education.

1.1. Research Questions and Goals

The research question at the core of this article is:

What elements make storytelling become a suitable creative strategy for dealing with complex social and environmental subjects in educational settings?

Based on this question, we propose the following concrete goals:

- To observe and list the strategies of the people participating in a co-creation process in an educational setting.
- To understand the role of dynamization and coordination during a collective creation process.

- To analyse the role of different narrative elements which can be used to stimulate the creative development of stories relating to a relevant social issue.

We will do this by referring to the university research project *Cazadores de Historias*, initially funded by Barcelona City Council and continued in the context of the D-STORIES project. CdH is oriented to collective creation of fictional stories based on a board game developed for this specific purpose. The first stage took place over two campaigns, in 2017 - 2019, in four primary and secondary schools in Barcelona, with over 350 participants from five different school years with a diverse socio-demographic profile. The general goals of the project were to experiment with adaptive storytelling strategies (Göbel et al, 2009) via a fictional universe conceptualised in an open way, while also encouraging deeper thought on social issues that were significant to the participants, using different forms of creativity (Roig, Pires de Sa y San Cornelio, 2018).

1.2. Purpose

This article focuses on observation and analysis of the collective creative processes around the generation of stories in the second iteration of the project (2018 and 2019), which revised and improved its methodology and scope, and the game design.

Our starting point was that this type of narrative methodology can encourage debate and the generation, exchange and development of ideas in a creative way, combining them with the expression of personal experiences around social issues close to the participants (Kankainen et al, 2012). In other words, we considered that storytelling can contribute to the use of creativity in formal and informal learning contexts, and we paused to examine its key elements and agents.

1.3. Background

1.3.1. Storytelling, fiction, and creativity

There is a notable conceptual complexity around terms like *stories*, *narrative*, and *storytelling*, depending on the discipline and the analytical tradition. In their approach to what they consider a 'narrative turn' in the social sciences, Moezzi

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et al (2017) distinguish these three terms, which will be very useful to us in the context of this paper. Their proposed notion of *stories* is deliberately very generic: following the tradition of folklore, they consider *stories* as a logical way to explain circumstances, structured with a beginning, a middle and an end, featuring a protagonist (a person, animated creature, object, practice, or idea), and accompanied by a process of transformation or change. The authors understand *narratives* as formal story constructions, which usually appear in set written, visual, aural or audiovisual formats, in contrast with other informal, private, and often ephemeral story constructions. Finally, the notion of *storytelling* is associated with something more concrete: the execution itself, the act of telling a story in its context, in a situated way. Thinking in the *storytelling* vein leads us to wonder what drives the generation of a story at a given moment, why and how it is explained in a particular context, depending on its audience, the chosen time or place, and the goal sought: "[t]he 'same' story may be told quite differently from one instance to another, even by the same teller, challenging the notion of stories as stable data points" (Moezzi et al, 2017, p. 3). As previously suggested by Benjamin (1991), storytelling allows us to recover our focus on the characteristic context and community practices of sharing stories, distorted by the predominance of formal narratives such as novels and films. Thus, we can understand storytelling as a continuing attempt to ask ourselves questions about what we experience in the world and show our efforts to find meaning in it (Pereira and Doecke, 2016).

It is important to take into account other theories which make the notion of narrative more flexible than the formalisation of stories. For Veland et al (2018), narrative can be understood both as a cognitive structure that enables us to make sense of our experiences, and as a specific praxis, a communication technique which uses a set of widely recognisable elements, such as heroes, villains, conflicts, or a sense of closure. The tension between both approaches, according to the authors, is what gives narrative its capacity to foster conversation about complex subjects where we need to understand and juxtapose different experiences, in a process of co-creation of meaning. As part of our consideration of this dialectical dimension of narrative, in this paper we talk about storytelling in order to highlight the set of situated, realised, contextualised manifestations of the act of telling stories.

1.3.2. Storytelling as a co-creative process in the classroom

In CdH we work with storytelling as a playful framework for the co-creation of fictional stories in the classroom. According to Walsh (2007), fictionality enables us to establish a concrete communicative framework, characterised by the use of a set of distinctive and recognisable rhetorical elements. Thus, fictionality defines a clear call to the participants, and lets us direct our interpretative attention towards what is considered particularly important within a given narrative, or around its construction.

As Alkaaf (2017) remarks, from an early age children acquire a sense of what is a story, and quickly internalise an understanding of the internal structure of a fictional story and its connections to the personal and social imaginary.

Different authors agree on underlining the educational value of fiction for raising awareness of social problems, as it provides an emotional framework and gives a moral dimension to a given subject, making it relevant to the here and now (Bilandzic and Sukalla, 2019). Similarly, Otto's (2012) analysis of the relationship between fiction and education in ecological skills, considers fiction to be an "educational machinery", enabling participants to compare the everyday and the fictional worlds and better perceive the inadequacies of current worldviews and practices, in a process he calls "cognitive estrangement" (Otto, 2012, p. 49), opening up possibilities of a critical discussion of social norms and the role individuals play in the system. Thus, fiction should be understood not as an escape from reality, but as an escape *to* reality, and therefore encourages us to understand the role it may play in the creation of true empathy, not directed solely towards those we feel close to (Bal et al, 2021). Meanwhile, Pak (2015) highlights the high educational potential of science fiction for prompting interdisciplinary reflection, as it considers the role of both experts and non-experts, people and their environments. As well as its political role, fiction contributes to creativity when tackling certain types of complex problem, enabling us to do so indirectly and at more of a distance, through analogy and speculation (Dunne and Raby, 2013). At the same time, it facilitates co-creative work, as it lets us frame group strategies in a shared framework, thanks to elements which emerge from the media and popular culture during the experience, which constitute a shared cultural baggage (Roig, Pires de Sa y San Cornelio, 2018).

All of these considerations reinforce the role of fictionality as a viable approach to discussing social subjects, especially those that look to the future, at any educational level - which is our hypothesis and the starting point of our research. Fictionality establishes a privileged space for imagination and the meaningful projection of possibilities and alternative futures, which Cuzzocrea and Mandich (2016) call navigational capability; a way of opening a space to the future, defining a broader margin of possibilities for action. Similarly, Sools (2020) affirms that imagining possible and preferable futures can guide and motivate action. And here the imaginative function of narrative is a key tool for giving meaning to lived experience. Consequently, this imaginative function of narrative, apart from speculation, opens a path towards social action, given that its focus is on the meaning of events, in contrast to a mere description of demonstrable events and their development: "imagining futures is a political act that configures present actions, behaviours and decision-making" (Yusoff and Gabrys, 2011, p. 519).

We consider that this approach to storytelling, as both a tool and a creative result around a process of collective construction of stories in an educational context, contributes not only to experimentation with new creative ways to deal with curricular aspects in learning processes, but also to tackling complex and immediate social issues in which we want to involve the students as citizens.

2. Design, Methods, and Materials

In this article, we examine the story generation process during the second iteration of the *Cazadores de Historias* (CdH) research project. The initial goal of CdH was to study creativity through collective creation processes in educational environments, with the intention of tackling socio-environmental issues in the classroom. The study was conducted among older primary school and first- and second-year secondary school students. Transferring the methodology to other educational environments is currently being considered. This is a type of research based on intervention in the field, starting with a proposal for co-design with the schools involved and co-creation with the people taking part, from which we have extracted qualitative data for analysis, based on ethnographic methods.

The basic approach of CdH is to generate discussion about social issues in a creative way, beginning with a board game which encourages the collective generation of fictional stories through play. The stories are to be developed through distributed authorship, collaboratively and multimodally, and generated during a series of workshops adaptable to different environments, with a time limit.

We integrated different approaches to the co-design of creative experiments based on games and narrative co-creation (Sanders and Stappers, 2008; Kankainen et al, 2012; Frossard et al, 2012; Cruickshank et al, 2016). The teaching and management staff at the schools were involved in the design process in order to help identify subjects of interest, understand the needs and social environment of the people taking part, and speed up the process of obtaining informed consent. At the same time, this enabled us to run tests with students and teachers, improving the experiment and its implementation. As part of this recursive process, the teachers were provided with learning resources which they could transform and apply according to their own criteria and needs.

So far there have been two iterations of CdH (2017-2018 and 2018-2019) in state schools and semi-private schools in different Barcelona districts. The selection criteria, already defined to some extent by the project's funding, were based on comparison (age groups) and diversity (different city districts and school types). Table 1 shows the distribution of participants in both iterations.

	1st iteration (2017-2018)	2nd iteration (2018-2019)
Escola La Salle Gràcia (semi-private school)	(5th and 6th year of primary school) 46 participants distributed in 8 groups	(5th and 6th year of primary school) 50 participants distributed in 8 groups
	(1st year of secondary school) 45 participants distributed in 8 groups	(1st year of secondary school) 60 participants distributed in 8 groups
Instituto Juan Manuel Zafra (pública)	(3rd year of secondary school) 30 participants distributed in 5 groups	(2nd year of secondary school) 28 participants distributed in 5 groups

	1st iteration (2017-2018)	2nd iteration (2018-2019)
Escola La Farigola del Clot (pública)	-	(6th year of primary school) 52 participants distributed in 10 groups
Escola Ramon Llull (pública)	(5th year of primary school) 48 participants distributed in 10 groups	-

Table 1: *Distribution of participants in the two iterations of* Cazadores de Historias.

As can be seen in Table 1, the experience design took into account the diverse profile of the participants, facilitating its adaptation to other geographical and socio-demographic contexts. The workshops represented an occasional break from the usual flow of school activity, creating a playful atmosphere which enabled a discussion of a range of subjects which ideally were already being worked on, or which formed part of the expectations for partnering with each school.

The workshops consisted of 3 differentiated phases: 1) the game, 2) writing fictional stories, 3) materialising them in different formats. The third phase was run as an independent session to establish a period between the conception and the materialisation of the creative project.

The experience also included a presentation session and a later meeting to share the results, which concluded it and provided feedback for the research group. This later meeting is vitally important for CdH, as the workshops focus both on the possibility of constructing collective stories and on fostering the group's ability to share and comment on them.

2.1. Experience design

A board game was designed to meet the goals of the project, consisting of a board for generating stories, plus a pack of cards divided into 6 suits, each of which corresponded to basic narrative elements, according to Greimas and Courtés (1990): character, skills, goal/obstacle, helper, action, and place. It also included a premises card and a non-numerical dice.

2.1.1. First phase of the experiment: the board game

The goal of the game is for each group to obtain the basic narrative elements which will be key to the second phase of the workshop: writing the story. The class is divided into sub-groups of 6-8 students, each of which is organised around a game board (see Figure 1).

The game starts when each group is given a card which is placed at the centre of the board: the premise. Formulated as a question, the premise contextualises and personalises the underlying subject each group will be working on. The premise submerges the participants in a world which is fictional but also recognisable and relatable, and is an initial stimulus.

Once the premise is in place, the game effectively begins. Each participant receives 7 cards, and the rest of the pack is placed on a specific space on the board. Gameplay consists of laying down a card from any suit, as each player chooses, and then rolling the dice. The faces of the dice have instructions such as "Vote", "Play another card", "Draw from the pack", etc., and modify the status of the card played, adding the variable of chance or group agreement as a constituent element of creative practices. At the end of this turn, the next player takes a turn. The next player may opt to play a card from another suit on the corresponding area of the game board, or to lay a card from the same suit over a card another player laid down.

The game ends when nobody has any cards left. The result will be a board with only 6 cards visible and face up, one from each suit. These will be the elements the group must use along with the premise in the second part of the workshop, the collective creation of a story.

2.1.2. Second phase of the experiment: brainstorming and the story

This second phase of the workshop is subdivided into two stages, first an individual stage and then a stage of group sharing and working in consensus. Each participant has a set of sticky notes on which they start imagining possible sto-

ries, or parts of stories, based on the cards face up at the end of the game, and how they connect to the premise. They are asked to write down these ideas and place them on the spaces on the board assigned to story creation, and more specifically in the beginning, middle or end areas, as appropriate, as shown in Figure 1. In the second iteration of CdH a neutral area was added, called the "ideas bank", to hold any ideas which did not yet have a clear position in the story timeline, opening up the possibility of other, possibly non-linear structures.

Figure 1: Photo of a CdH game board showing the result of the game and brainstorming.

In this stage of the workshop, each student has time to individually set up and break down parts of a narrative and add elements linked to their own interests and knowledge. In the second stage, they share their individual contributions and start writing the "final story" as a group.

2.1.3. *Third phase of the experiment: materialisation of the story*

Once the story is defined, the participants focus on producing it in a specific format. In the first iteration there were various materialisation techniques, from putting on a play to creating stories on Instagram, comics, or storyboards. How-

ever, after evaluating the results, in the second iteration we chose to use a single materialisation format, the audiovisual technique of stop-motion animation, which apart from enabling us to gain a better overall picture of the experiment, was highly attractive for the students and required technical skills which could be acquired quickly, while fostering digital competencies.

The stop-motion technique consists of animating inert objects by filming them frame-by-frame and moving them slightly between each take, which when projected gives the illusion of movement (O'Byrne et al, 2018). Here we used a wide range of "animatable" materials, and in all cases gave the groups stop-motion cameras connected to computers equipped with Hue Animation Studio software.

3. Results and Analysis

Our analysis was based on the data obtained through documenting the project, including the design, implementation, and final recap phases. In this article we have mainly referred to the field notes taken by the research team, the audiovisual records of the workshops and closing sessions, and the organisation and classification of all the material generated by the people taking part in the different phases of the process.

Our research proposal is centred mainly on the collective process of creating stories, rather than on the narrative objects themselves: the participants, through play and teamwork, applied different creative strategies to give shape to stories which led them to ask themselves questions about certain social issues. The design and implementation of the CdH experiment was intended to play with various types of balance. First, the balance between creative freedom and the focus on a given subject. For this, we decided to add the idea of the premise, worded to act as a frame of reference for the story, without constraining its development or conclusion. Second, we introduced alternating individual and group phases, and worked to generate a judgement-free context (similarly to the Sherlock Holmes and The Internet of Things project in which one of the researchers had participated - see Weiler, 2015). This counterbalanced possible dysfunctions in the process caused by personal leadership or situations of exclusion. Finally, we looked for a balance between play, reflection, and orientation towards tangible results. None of this

would have been possible without the involvement of and attentive monitoring by the facilitators and teachers before, during and after the experience.

For this reason, the analysis is structured based on three core areas:

- the role of the teachers' support and monitoring, in parallel with the work of the facilitators (research team members) during the process;

- the role of the narrative premise as an open definition of a starting point;

- the generation of a creative space between the individual and the collective.

3.1. Modulators of creativity: the role of teachers and facilitators

Teachers and other school staff are central to CdH. However, they are not given any specific tasks, leaving their role open during the workshop practice. We observed different attitudes, according to the school and the student year, from some who left the management of the workshops and students entirely in the hands of the CdH facilitators, to the other extreme, where staff enforced orthodox school standards which were sometimes a determining factor in the creative process. Thus, the field notes of one researcher read: "A very methodical teacher. He did not let the children draw before finishing the story"; another note by another researcher in the same workshop comments: "The teacher takes the role of controlling and normalising the group. He says how to do things, what to write, and even what not to do."

In the case of the facilitators, one researcher was assigned to each group of 6-8 students as a participant observer. The facilitation functions were mainly to accompany the students, modulate working times, answer questions, identify and resolve possible conflicts in order to maintain an atmosphere of collaboration and respect, provide technical/material support (see Figure 2), act as points of reference for the experiment's goals, and when necessary, suggest the allocation of tasks (for example, in the production of stop-motion stories, not specifically analysed in this article).

Figure 2: *Production of stop-motion audiovisual.*

During brainstorming there was a constant insistence on not judging other people's ideas, in order to let creativity flow. Even so, this explicit commitment did not prevent moments of individual self-censorship from happening; in fact, we saw that students found it difficult to let themselves go. In general, the groups tended to do things "as is expected of them", or as they thought would be expected of them in an educational setting. The field notes of a researcher read: "They are used to cooperative role play and to voting. Not so much to being creatively free." Probably the fact that the activity took place in the classroom influenced the implementation of the CdH workshops and the students' practices, as this is a space that the participants associated with the restrictions of formal education.

3.2. The premise as a creative framework

As we mention above, the first phase of CdH centred on a board game with very simple rules, which seeks to facilitate a collective creation process based on a reaction to chance as a stimulus to creativity and group decision-making. Of all the game elements, the explicit introduction of a premise (McKee and Lockhart, 2012) was fundamental to redesigning the game's second iteration. The premise is a space of possibilities, but at the same time, of constrictions; it is an element which opens up worlds, but also sets boundaries. In this research, the premise

was found to be a key element for anchoring fiction to a debate on the social and environmental subjects we wanted to bring into the classroom.

While there was a single premise in the first iteration, based on a science fiction scenario set in the future, the diversification of the premises in the second iteration enabled us to place potential stories in a socially recognisable context, closer to the present, although in many cases speculative, and this established a closer link with the educational work being done in each school. Not only were there multiple premises in the second implementation of CdH, they now became questions, invitations (according to the 'What if…?' model shown by McKee and Lockhart) to propose creative answers, which would finally be materialised as a story and an audiovisual production.

3.2.1. Example case

With the premise *'What would happen if the Internet suddenly disappeared?'* a group of students in year 1 of secondary school (ESO) at the Instituto Juan Manuel Zafra developed the story "The dawn of the Internet". During the game, multiple hypotheses emerged based on the premise; however, the cards and especially the dice did not help put these stories forward. During the feedback session after the experiment, the students stressed that they had wanted "a thing to come up, and it didn't". The final character card (Figure 3) described the character as "Woman, film director, maker of historical documentaries".
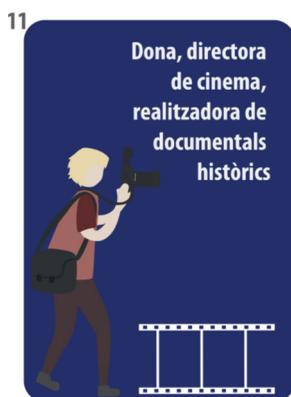
Figure 3: Character card appeared in the round which led to the story "The Dawn of the Internet".

Although all the character cards in the second iteration of CdH were in the same format, balancing giving the right information to start creating stories without restricting them too much, the members of the group found it more promising to work with the character "Woman, archaeologist, travels the world in search of the remains of ancient civilisations. Collects rare stones" shown in Figure 4.

Figure 4: *Character card used in the story "The Dawn of the Internet".*

So the participants arrived at a consensus that the filmmaker would eventually die (although the final video shows the two women working together to tackle the challenge of the switch-off). As we have seen again and again in this and other groups, if the premise does not fit with the game, creative strategies and tactics emerge, and even narrative "cheats". In this way, different formal and informal strategies are generated to get closer to having the elements to create a story which represents them. The students updated the story and its protagonists according to their preferences and the worlds which seemed closest to them, and we considered it important as facilitators to encourage this type of transformation.

3.3. Brainstorming, the generation of a creative space between the individual and the group

As we indicate above, an important element in the design of CdH as a participatory narrative experiment is brainstorming, where the story begins to take a

tangible form. This phase of the workshop was subdivided into a first individual stage and a second collective stage; this dual dynamic aligns with other collaborative experiments which, according to Weiler (2015), provide different types of agency. In the first stage, each member of the group generates as many ideas as they can think of, writing them on sticky notes, and places them on one of the areas of the game board, according to the place they might occupy in the story (beginning, middle, or end) or in the large 'ideas bank'. Some groups went as far as proposing new organisation methods, such as adding ideas to the cards and giving them new attributes. After the individual production time, each member presents their proposals to the group.

At this moment, the CdH team give them the following instructions: don't make value judgements; dare to suggest "crazy" ideas; don't limit yourself in terms of quantity; build new ideas based on other people's initiatives; allow yourself to ask questions; and talk about ideas that seem to provoke conversation. From all of these instructions, "no judgements" became the most important, and at the same time the one we considered most difficult to follow. However, based on the field notes of the research team, we saw that in general this principle was adhered to more than we had expected. One explanation is that the students tend to internalise cooperation and voting processes. Some even organised themselves into roles such as secretary, manager, or coordinator, reflecting dynamics and competencies previously worked on in the classroom. We also found that they were restrained when generating and sharing ideas. Terms such as balance, moderation, and respect for fellow players recur throughout the field notes.

They sometimes used the sticky notes to change or refine elements of the cards and to note ideas which had previously arisen during the game, but they also tried to create new relationships or introduce outside elements which had nothing to do with the original cards. Thus, in the brainstorming sessions, there were multiple references to the immediate context (the game) and the players' mental and social encyclopaedia (Eco, 1979); in other words, the importance of the wide variety of cultural knowledge stored in our minds, which helps us interpret different types of text and social contexts.

3.3.1. Example case

During brainstorming, the team that developed the story "The Dawn of the Internet" thought about the premise and the cards that appeared during the game. They asked "What happens in the world without the Internet?" and quickly concluded that "at the beginning people would complain, they would be desperate...". This is when the archaeologist comes into the story, recalling having read about a similar event in a book, and based on this decides to find the solution to the problem: "she knew what she had to do was solve an enigma and she went to the library." During feedback, the group explained how the characters in their narrative had got the Internet back, and how they based what they did on the book and films they had seen before: "[The characters] ended up getting the Internet back on the beach because there was an enigma in that book, which is in a prehistoric film (...) And, well, it's called *Dawn*". The primitive film in their narrative appeared in relation to the stones the archaeologist collected and the enigma generated in the past as the key to resolving the problems of the present.

In the written story (Figure 5) we see that "the archaeologist found a stone which interfered with the Internet"; an arrow, added later, pointed to its name: "Aragonite". In the stop-motion animation, Aragonite took the form of a stone which fell from the sky to Earth, like a meteorite, destroying, in the words of the students during the *feedback*, "the Internet centre of the whole world".
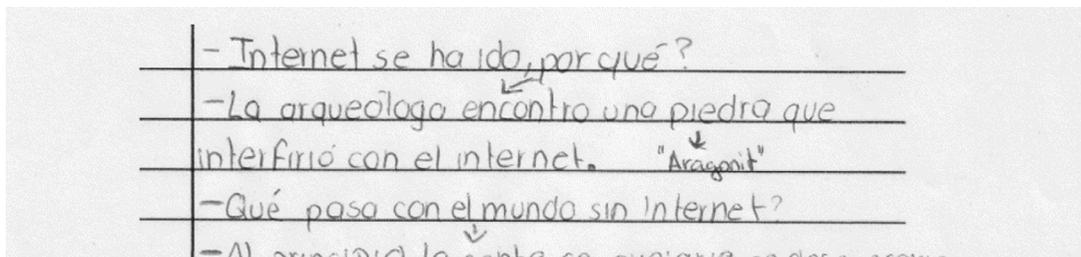
Figure 5: *Fragment of the narration "The Dawn of the Internet", second phase or plot writing workshop.*

At this point it is interesting to see how the imaginary Internet is constructed in a centralised, tangible space, more like the educational/ cultural/ government institutions that adolescents are familiar with, as seen in Figure 6, than with the notion of the "cloud" that is the usual symbolic form of the Internet in the adult world.
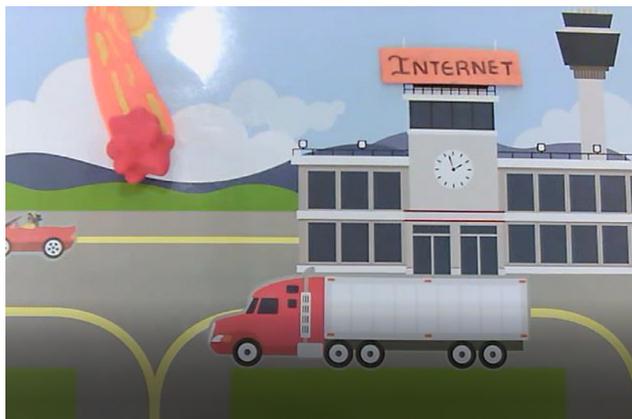
Figure 6: Image from the stop-motion animation of the story "The Dawn of the Internet", showing the moment when "Aragonite" falls to Earth and the Internet stops working.

That being said, the imaginary of the adolescent and pre-adolescent participants (video games; animation; TV series; Internet celebrities such as YouTubers, Instagrammers and TikTokkers; family members; and institutions) was shown to be a substantial inspiration for the idea-generation process, as it allows for the reinterpretation of discourses, stories, and aesthetics for the production of these narratives (Masanet et al, 2020).

It should be remarked that some narrative elements are lost when the story shifts to the audiovisual form in stop-motion animation, although others arise due to their familiarity with the audiovisual language. Most of the groups mentioned the lack of time during the production phase of the workshop; however, later they said they felt the step of shifting the story from paper to audiovisual animation had been an "easy" transition, thanks to the different materials they were offered "and to our imagination", which of course is a key element in this storytelling practice.

4. Discussion and Conclusions

The methodology presented in this article shows the dual role of storytelling in educational environments as a tool for stimulating creativity, and as a creative result in itself, facilitating the emergence of a space of empathy and consensus. This impulse takes place at the individual and collective levels, while also generating synergy and collaboration among different actors: the research team, the schools, and the students taking part in the workshops. The experience shows the utility of using playful, interdisciplinary and co-creative methods to tackle complex subjects.

The fact of having focused the first phase of research in a single urban setting, the city of Barcelona, enabled us to gain a better understanding of the phenomenon in a more controlled context, as this is qualitative research from an ethnographic perspective, in which an in-depth observation of the phenomenon is more important than a statistically representative sample. Despite this limitation, the results obtained give us a future opportunity to continue this experience outside the educational context of primary and secondary schools and the local setting: here, we are working on adapting the   methodology to formal and informal university environments in the framework of the D-STORIES project, which will continue along the lines set out by CdH.

For future implementations of the project in formal education environments, we believe that the role of teaching staff in CdH should be more clearly specified and agreed on in advance, as we have seen that individual teachers may mould or limit students' creativity when creating their narratives, as an extension of curriculum-based work in the classroom.

While we planned the storytelling workshops in three differentiated phases (game, brainstorming, and materialisation of the stories), we have seen that in practice, creativity is activated from the start: brainstorming and beginning to work out possible stories takes place as soon as the game begins, when the first cards are laid down.

In the same way, when converting the story into an audiovisual product such as stop-motion animation, the narration goes through another creative phase, based on its adaptation to the audiovisual medium. It also becomes a fundamental practice for fostering the ability to tell and transform stories collectively, around subjects of shared interest and social relevance.

Our research shows that there is a "sharing of worlds" among the participants, enabling collective stories to be generated. It also fosters situated reflection on the mechanisms of creation and the personal and cultural points of reference which come into play. Thus, the final artistic product (in this case, stop-motion animation) functions as an incentive for the students, helping them maintain their attention and commitment during the workshops. The CdH project has observed that storytelling as a product can only be achieved via storytelling as a process. In other words, it is only achieved when the participating students have an active and reflective role in relation to the narratives, media, and cultural products they consume. This active role of storytelling we are working on in the CdH project lets them take a position on topical issues that affect them directly or indirectly, and enables them to express that position through playful creative techniques, especially in the use of fictional elements. For future iterations we believe it will be fundamental to insist on a necessary minimum time for each phase. Time becomes a scarce resource in tightly-scheduled formal environments. Room to manoeuvre appears to be necessary for defining the written story, and for its materialisation. Materialisation is a phase in which the story continues to change as it is adapted, and where the participants need support as they venture out of their comfort zone (oral, graphic or written individual or group work) to work in other creative competencies such as audiovisuals. It is also essential to save enough time after the workshops to present and discuss the experience and the subjects which have arisen around the stories. This enables us to connect the initial premise with the creative process and stimulates work on key issues in the classroom.

Finally, this experience the concrete application of storytelling as a methodology opens doors to replicating the workshops in different educational contexts. The materials used by the CdH team are available online, and can be edited and adapted, very much in line with the spirit of collaboration and co-creation which

we have sought to develop with each school, and even in informal education environments and social and cultural spaces.

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