Food Stories

Storytelling in Food Science Communication

Best Practices Collection

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Introduction

This handbook is the first output for the 3-year EU-funded ERASMUS+ project, **FOODSTORIES**.

The **”Storytelling in Food Science Communication - Best Practices Collection”** aims to inspire scholars and students to improve their ability to communicate food science through storytelling techniques.

The handbook presents **26 best practice cases** of how storytelling can be used in science communication in a variety of situations and through different channels. Regardless of your level of experience, we hope these examples will inspire you to use storytelling to make your science communication initiatives clearer and more engaging to different types of audiences.

One of the main objectives of FOODSTORIES is to improve the capabilities of professors and universities to develop curricula in science communication. The handbook can be used both as **teaching material** and as a **self-learning** tool for anyone looking for insight and inspiration – either as a whole or as separate cases.

During the next steps of the FOODSTORIES project, we will produce Flashcards, a Toolbox, and Master class webinars that will build teaching material around this handbook to support its use in teaching **context**.

To learn more about the project, visit our website: https://foodstories-project.eu.

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Storytelling

What is a story? We all know it when we see or hear one, yet the term remains ill-defined.

Storytelling can be defined as the **art and practice of transforming information into narratives** which usually link a series of events in time and space thereby establishing a cause-effect relationship among them. As such, some experts would argue that even scientific research papers have basic plot structures, seeing as they usually define a problem and establish causality between certain phenomena.

Storytelling can take countless forms, and is not even necessarily confined to language, with e.g. visual storytelling, music, and other artforms. At its core, storytelling is about **representing or translating ideas** into concrete and engaging experiences, usually as seen through the eyes of character(s), to help audiences understand themselves and the world around them. Depending on your definition, storytelling can therefore range from e.g. simple metaphors that put large numbers into more comprehensible scales to epic sagas that explore our deepest philosophical questions.

While there are many ways to define and approach storytelling, the 26 best practice examples presented in this handbook have been selected because they meet a set of predetermined **Storytelling Quality Criteria**, as well as an additional set of **Science Communication Quality Criteria** (See page 6) to ensure that the examples classify as cases of storytelling in science communication initiatives.

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Why storytelling for science communication?

While some scientists may perceive storytelling as incompatible with rigorous scientific inquiry, it is essential to recognise its potential as a powerful tool for **bridging the gap between complex research and diverse audiences**. Stories can foster understanding, engagement, and inspiration. Furthermore, narratives are associated with **increased comprehension, recall, and reading speed**. In other words, human beings process information better when it is presented in the form of a narrative.

However, utilising storytelling to persuade and engage the general public can sometimes lead to widespread falsehoods if applied without sound knowledge on the issue in question. Storytelling elements are often avoided in scientific research literature for this very reason. The world is therefore increasingly dependent on scientists and experts who have received training in science communication, so that they are able share their valuable knowledge ethically.

Nevertheless, storytelling is not always the appropriate tool for communicating science effectively. After all, stories are anecdotal in nature, and therefore potentially unverifiable, biased, misrepresenting, and/or oversimplifying. The degree to which one might utilise storytelling elements in science communication will therefore depend on the context, including the target audience, the setting, the medium, and the information itself, in terms of e.g. length, data type, and the level complexity.

By embracing storytelling, scientists can **humanise their work, enhance audience engagement and retention, and stimulate curiosity and imagination**.

Read more about other approaches and ethical considerations related to science communication on the REA publication: Towards clearer and more accessible science commuincation": https://rea.ec.europa.eu/news/towards-clearer-and-more-accessible-science-communication-2022-01-12-0_en

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methodology process

criteria identification

best practice collection

technical assessment

partner assessment

first draft discussion

finalization

How were the best cases chosen?

The 26 cases presented in this handbook include examples from European countries (Austria, Belgium, Denmark, Germany, Italy, Portugal, Spain, and the United Kingdom) and the United States. The best practice collection was developed through a **six-step process** to ensure that all best practice cases serve as **high-quality examples of ethical science communication** initiatives that incorporate storytelling elements. The first steps, i.e. the previously mentioned **Quality Criteria**, are described in more detail on the following page.

Quality criteria

STORYTELLING QUALITY CRITERIA

Beginning/Middle/End

The story is structured following the classical Aristotelian tripartition: beginning/middle/end.

Protagonist/Character

The story presents one or more protagonist/character.

Difficulties/Conflict

The protagonist/character is involved in an initial situation and needs to overcome difficulties, emerging barriers or face conflict.

Resolution/Moral

The story shows a final resolution/moral.

SCIENCE COMMUNICATION QUALITY CRITERIA

Source: www.questproject.eu

TRUSTWORTHINESS AND SCIENTIFIC RIGOR

Scientific

Communication is based on reliable, rigorous scientific information and sources. References to scientific sources are added.

Factual

Communication is accurate, objective and fact-checked.

Balanced

Comments by independent experts are provided to key claims. Voices of key stakeholders are represented.

Transparent

Communication provides sufficient information about the scientific process. Communication is honest about the funding and affiliations.

PRESENTATION AND STYLE

Clear

The language is simple and accessible. Communication has a clear focus and outlines key messages.

Coherent and contextual

Communication provides a wider context for topics. Communication is coherent in its structure and style.

Spellbinding

Communication is emotionally engaging and makes full use of the format's capabilities.

Interacting with the audience

Communication involves the audience in a dialogue and treats them respectfully.

CONNECTION WITH SOCIETY

Purposeful and targeted

Communication has a clearly defined objective, is knowledgeable about its audience and is tailored to reach the target groups.

Impactful

Communication generates changes in the society and its individuals.

Relatable

Communication addresses real-life questions and problems and relates scientific results to the everyday lives of people.

Responsible

Communication is socially or politically conscious and follows ethical standards.

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How to navigate the Best Practices

The 26 best practice examples presented in this handbook are categorised into **5 clusters** based on the **Medium**, allowing you to identify those examples that are most relevant to your situation. Furthermore, the cases have also been divided into **Detailed Examples**, providing deeper analysis and illustrating specific techniques in practice, and **General Inspiration**, offering broader ideas and concepts to spark creativity (see icon legend below).

Detailed examples:
Cases that illustrate specific storytelling concepts in practice

General inspiration:
Draw inspiration from creative science communication initiatives

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How to navigate the Best Practices

Detailed examples:
Cases that illustrate specific storytelling concepts in practice

General inspiration:
Draw inspiration from creative science communication initiatives

CLUSTER 3 | MIXED MEDIA

CLUSTER 4 | AUDIO

CLUSTER 5 | LIVE EVENTS

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CLUSTER 1

WRITTEN

BEST PRACTICES COLLECTION

Zetland visits a vertical farm

Science & Fiction

Beta Bugs – A Day in the Life

Futures

Be the Story

Teaching Science Through Stories

Zetland visits a vertical farm

Name of organisation: Zetland
Type of organisation: Journal
Country: Denmark
Website:
www.zetland.dk/historie/sop1m3bB-ae6XddK5-19c83
Author/Responsible:
Thomas Hebsgaard - Zetland journalist, and specialist in climate, energy, and sustainability.
Language: Danish
Link:
www.zetland.dk/historie/sop1m3bB-ae6XddK5-19c83
Additional resources:
- www.zetland.dk
- www.zetland.dk/aboutzetland
- www.zetland.dk
- www.bizcommunity.com/Article/1/15/203160.html
- www.zetland.dk/kultur

"If the climate fight was led by this man, then all people would be living in cities in 50 years. Even our vegetables would grow in high-rise buildings."

Original: Hvis klimakampen blev ført an af denne mand, så ville alle mennesker bo i byer om 50 år. Selv vores grøntsager ville gro i højhuse

Description
This article covers the story of how the main character, Anders Riemann, became the founder of the largest vertical farm in Europe, Nordic Harvest. The article begins with a brief introduction, i.e. the "so what" factor, which summarises Anders' initial idea of building a vertical farm and how it developed into a successful business in the following years.

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After this, the author, Thomas, takes the reader back to the first time he interviewed Anders. Thomas was giving Anders a ride from a train station, so the interview took place in Thomas' car. In a typical Zetland approach, Thomas meticulously describes the character and the set and setting, e.g. how and where Thomas first got in touch with Anders, what Anders was wearing, Thomas' first impressions of Anders, etc. The story is told from Thomas' perspective, as he interviews Anders for the first time in 2019, before Anders had assured the needed funding, and again in 2020, just after the project was finally greenlit. The story itself takes place over several years, from when Anders first had his breakthrough idea on his way home from a late-night dinner party in 2014. The story occasionally stretches even further back in time, with flashbacks to the first time someone used the phrase "vertical farming" in 1915, and to Dr. Dickson Despommier, the originator of the fully functional vertical farming concept.

Thomas applies a rather personal language style and numerous metaphors throughout the article, which might help the audience process the information. As an example, the article's first sentence reads; "The revelation came to him on the subway, somewhere between Kongens Nytorv and Frederiksberg. It was around three in the morning, and Anders Riemann was on his way home from a friend's house after a nice dinner party with beer and red wine."

As the story progresses, Anders accounts for the many challenges he faced along the way, including bureaucracy navigation, financial struggles, and technical viability issues. He also describes the steep learning curve he faced in the beginning and how people, like Dr. Despommier, came to his aid. Elements of science communication are introduced at this point, as Anders accounts for some of the technical aspects of vertical farming, such as; the crop yield per square metre; the unit micromoles, which is used to measure photosynthesis per square metre per second; the water consumption, as compared to traditional farming; the logistical layout of the vertical farm; energy consumption from LED-lights; sustainability initiatives, like roof-mounted solar panels; and the types of crops that are currently lucrative for vertical farming. In this way, readers learn about the pros and cons of vertical farming.

The story concludes six years after that fateful train ride home when Anders had his big idea. In those six years, Anders had received some 20,722 e-mails, attended almost 900 meetings, and gone without a paycheck for four years, but now he had finally reached his funding goal.

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The story does not end here, however, as Anders expounds on the next steps for Nordic Harvest, which includes the planting of giant sequoia trees on Danish fields as part of an extensive Co2 compensation plan.

As illustrated above, the article's narrative follows a chronological series of events, that arguably resembles the structure of the Hero's Journey:

- Anders sets off in a familiar context and receives a "call to adventure", i.e. the revelation he had while taking the subway back in 2014.
- He faces trials and hardships in new contexts, i.e. financial struggles and technical issues.
- Anders gains new perspectives, as he investigates the concept of vertical farming, and learns from Dr. Despommier and other experts. Thomas' first interview with Anders takes place during this period when Anders is still struggling financially.
- When Anders finally secured the funding needed, he returned to the familiar context to begin the construction of the vertical farm. The story goes full circle when Thomas interviews Anders for the second time in the same geographical place where their first interview took place. One could argue that this represents Ander's return to a familiar context.

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Why is this case relevant?

NARRATIVE RELEVANCE

Authenticity
By taking an active role in the story, the author adds to the general authenticity of the article. The inclusion of audio interviews and external sources also adds to the authenticity.

Nonfictional story
The story follows the real-life story of how Anders came to be the founder of Europe's largest vertical farm.

Cultural/anthropological and ethnological approach
The article deals with the Danish food culture and some of the prominent characters at the centre of its development.

Beginning/middle/end structure
The article resembles Campbell's story model, the Hero's Journey, which builds on Aristotle's tripartition.

Protagonist/character presence
Anders is the hero of the story, while the supporting characters include Dr. Despommier and the author himself. The story could arguably have benefited from clearer victim and villain roles.

Personal, emotional and informal tone
The tone is informal, with minimum use of technical jargon. The inclusion of details, metaphors, and idioms adds a personal and emotional layer to the story.

Narrative instead of informative
The story revolves around the challenges faced by the characters, and the chronology, style, and personalisations add to the narrative. The scientific/technical aspects are equally as important to the story.

SCIENTIFIC RELEVANCE
Sources are provided throughout the article, although not to the same extent as a classic scientific paper. The audience is presented with a lot of information about the technicalities behind vertical farming.

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Science & Fiction

Name of organisation: Dr. Helena Hartmann
Type of organisation: Private person
Country: Germany
Website: www.scienceandfiction.net
Author/Responsible: Dr. Helena Hartmann
Language: English
Additional resources:
• **Podcast episode about it:**
https://open.spotify.com/episode/3IWq7imJCzqULN2J5NufsC?si=jGLQjPm5QBCVeFKxEw8rig
• **Example of the story mentioned in the description:**
www.helenahartmann.com/stories/4_drop-race
• **Short story "Emotion to go":**
www.helenahartmann.com/stories/1_emotion-to-go/

Description

Science & Fiction is an online "platform" (inside a personal website) founded by Dr. Helena Hartmann in January 2023. The platform combines accessible scientific findings with fictional narratives through short stories to cater to individuals interested in both scientific knowledge and fiction. Each story is based on a single published academic paper, whose key scientific takeaway is made accessible for a non-expert public by embedding it in a short fictional narrative.

Publications on Science & Fiction follow a monthly release schedule, with new stories published on the 13th of each month. Each publication includes a fictional short story, poem, or literary work alongside thematically related scientific publications, establishing a connection between fiction and real scientific research. The story-paper connection can be through the broad topic ("mental health") or through the results ("sleeping makes you learn better").

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Two submission options are available for aspiring contributors: submitting story ideas or scientific papers for development by Helena Hartmann, or submitting original short stories for publication on the platform. Although most of the published pieces are written by Helena Hartmann, Science & Fiction accepts guest contributions, allowing for a diverse range of voices. Guest authors are acknowledged visually and within the story pages.

In the first story published, titled "**Emotion to go**", the narrative revolves around a character named Isabella who introduces the protagonist to a red and blue pill (perhaps a call-back to the movie Matrix) called EmGo. Isabella claims that the capsule enhances emotions and allows the user to understand and help others better. Despite initial scepticism, the protagonist decides to take the capsule, and immediately starts perceiving emotions as colourful auras emitted by people. Excited, she becomes a proponent that everyone should experience this heightened emotional awareness, but in a twist, later discovers that the capsule contains no active ingredient and that its effects are solely based on positive expectations.

The story draws a connection to a scientific paper that explores the influence of placebo analgesia on prosocial behaviour, indicating that positive expectations can impact how we perceive and respond to pain. The narrative highlights the complexity of the "placebo effect", and how the power of belief and positive expectations can shape our thoughts, perceptions, and ultimately experiences.

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Why is this case relevant?

NARRATIVE RELEVANCE

Beginning/middle/end structure

Science & Fiction connects fictional short stories with real results from scientific studies using storytelling. In terms of structure, each publication included in the project demonstrates a clear beginning, middle, and end, while the inclusion of factual information from reputable scientific studies ensures the scientific reliability of the content. In the mentioned story “Emotion to go”, for example, the structure is as follows:

- **Beginning:** Isabella introduces the protagonist to the EmGo capsule, describing its ability to enhance emotions and understanding. The protagonist hesitantly takes the capsule, intrigued by its potential.
- **Middle:** As the capsule takes effect, the protagonist perceives emotions as colourful auras emitted by people and feels a heightened sense of connection. She becomes fascinated by this newfound experience and desire to share it with others.
- **End:** In the final twist, the protagonist learns that the capsule contains no active ingredient and its effects are based on positive expectations.

The project maintains a balanced approach by presenting multiple perspectives and considering various aspects of scientific research. Transparency is also prioritised, allowing readers to access the original scientific publications for further exploration and including a section titled “Connection between story and paper” that explores the intersections and explains the science in more detail and with a more classic - informative - approach.

Presentation and style

In terms of presentation and style, and as mentioned in the description, complex and often challenging scientific research is made accessible through the medium of short stories. Stories based on papers with complicated concepts and vocabularies such as “Neural correlates of interpersonal space permeability and flexibility in autism spectrum disorder” start with sentences such as “She looked out of the train window and wished she was outside, even though it was pouring rain and looked freezing.”. By presenting scientific concepts through storytelling and contextualising the scientific concepts within the narratives, the project promotes a deeper

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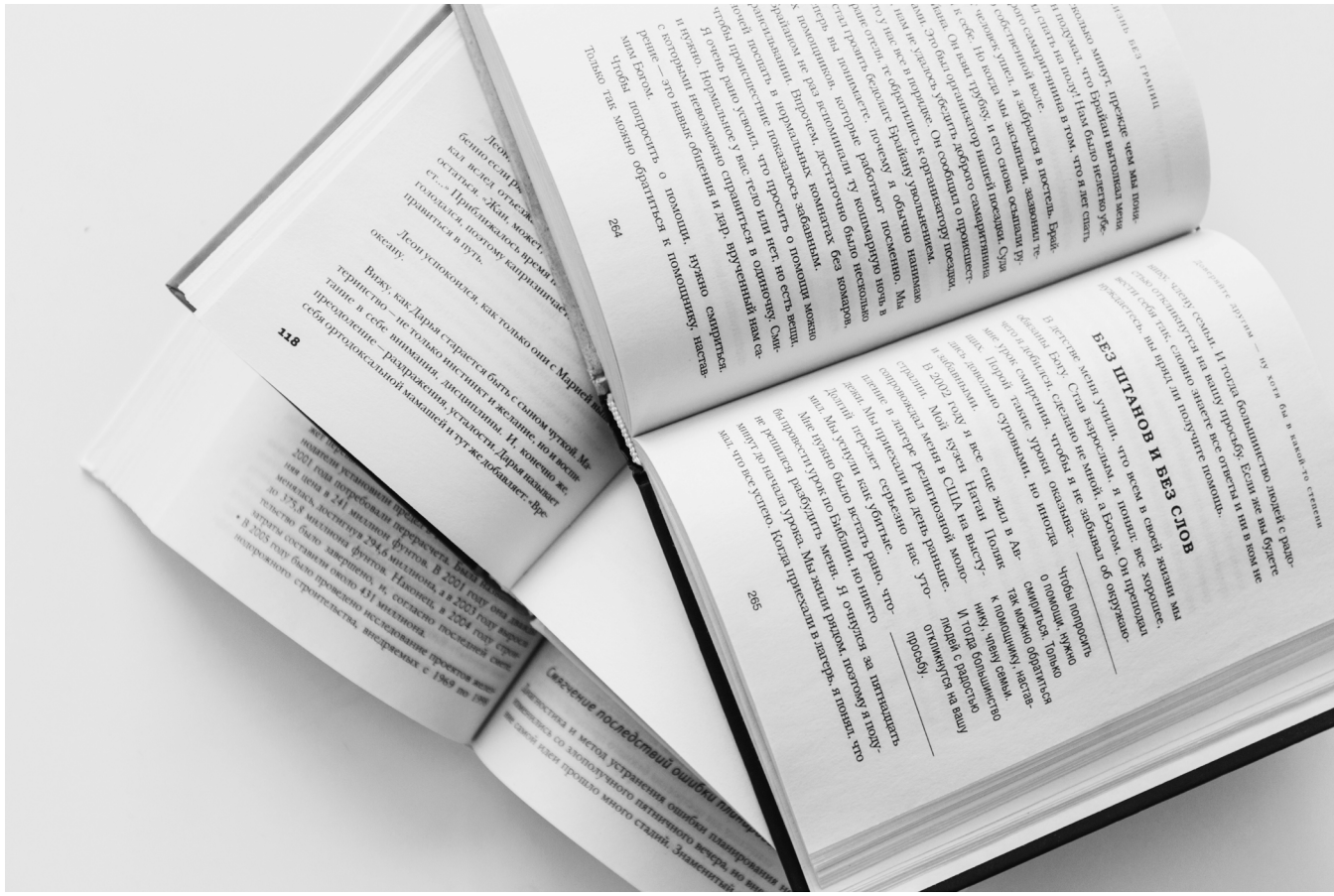
understanding and appreciation of science among a wider audience that might not be willing (or able) to read long-form articles or jargon-heavy sources. This approach facilitates the dissemination of scientific knowledge in a relatable manner.

Being a written online platform with no comment section, there is a limited amount of interaction in the project. However, readers can submit story ideas or scientific papers for development by the author, allowing for some agency in which topics are tackled and potentially bridging the gap between scientific research and the general public. Alternatively, they can also interact with the project or the author through social media channels.

Finally, the range of fictional stories within this project after less than a year showcases how any scientific topic, even lesser-known areas like food science, can find a compelling outlet to engage and communicate with the public, fostering curiosity and understanding through storytelling.



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Beta Bugs
A Day in the Life

Name of organisation: EIT Food & Beta Bugs

Type of organisation: : Innovation Community (EIT Food) & insect genetics company (Beta Bugs)

Country: Belgium & UK

Website: www.eitfood.eu/projects/a-day-in-a-life

Author/Responsible: EIT Food

Language: English

Link: www.eitfood.eu/blog/career-as-a-bug-breeder

Additional resources:

- www.eitfood.eu/
- www.betabugs.uk/
- www.betabugs.uk/russell-finex-a-qa-with-richard-baker/
- www.betabugs.uk/news/
- www.youtube.com/playlist?list=PLp-S_2BT4lePFbAuozLwcIRE15183Vsuj
- www.newscientist.com/article/2300305-what-are-the-obstacles-to-sustainable-eating/
- www.youtube.com/watch?v=H8jD5qii-jg

Description

A **Day in the Life** is a series of articles on EIT Food's website, in which the reader is introduced to various jobs within the food industry. Each article is based on a short interview with a professional, whose job is related to food in one way or another, such as a farmer, a quality control manager, a communication manager, and even a so-called bug breeder. As the name of the series suggests, the articles explore the daily routine of these professionals, focusing primarily on the professional's main responsibilities; the potential career paths towards a similar job; as well as the job's significance in a societal context, i.e., as part of the wider food system. The interviews are accompanied by videos of the interviewee along with location shots from their job site.

This is a description of the article "**Discover a Day in the Life of a Bug Breeder**", consisting of a written article and a video, both of which follow a similar structure.

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The article starts with an introduction to Lindy Stewart, who is an insect producer, a bug breeder, at Beta Bugs. At Beta Bugs, Lindy and the rest of the team use a selective breeding method to breed black soldier flies that are high in protein, fast-growing, and highly durable. Lindy's job is to select the most genetically ideal flies and send them to Beta Bugs' multiplier site. The eggs of ideal flies are then sold to insect farmers, from whom pet food manufacturers subsequently will source their ingredients. Lindy's job also includes taking care of the bugs by "feeding them and treating them as if they were any other pet".

About halfway through the article, the readers are presented with the challenges that Beta Bugs is trying to solve. Soymeal and fishmeal are the two major sources of the protein that are used to feed farm animals all over the world. The problem is that the production of soymeal and fishmeal contributes to deforestation, overfishing, and the loss of biodiversity on a global scale. Bugs, on the other hand, provide more sustainable proteins, as they require less land, water, and food, compared to other sources of protein. While insect protein cannot yet meet the total protein requirements of the agriculture food industry, it is still a more sustainable alternative that might play an important role worldwide. The article then briefly expounds on Beta Bugs' place within the larger value chain, e.g., how Beta Bugs feed their flies with leftover grains from a local brewery, thereby also saving the brewery from the expense of disposing of their spent corn, barley and wheat.

Lindy then talks about the many possible paths towards a career in this relatively new industry and highlights the benefits of getting a biology degree, an entomology degree, or a food science degree.

Lastly, Lindy remarks that the best part of her job is the building of relationships with customers, who might have never previously thought about breeding bugs, as well as the feeling of making a difference for the better in this world. She sums up her job in three words: Exciting, challenging and (extremely) rewarding.

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Why is this case relevant?

NARRATIVE RELEVANCE

Authenticity
Interviews with real experts and professionals, as well as the accompanying illustrative videos, add to the authenticity of the series.

Nonfictional story
The stories featured in the A Day in the Life series are based on interviews with real professionals and experts. This is also the case with Lindy, as she explains her professional responsibilities and personal motivation.

Cultural/anthropological and ethnological approach
As previously mentioned, readers are provided with insight into the daily life of a scientist or expert, as well as their personal motivation and dedication. In this sense, the work culture is addressed. Moreover, the article is arguably concerned with food culture in general, i.e., how farmers and consumers need to adjust to new sources of protein, which could change the way we think about food.

Beginning/middle/end structure
The structure of the article is closely related to news value, as the story focuses on a particular individual within a larger context while exploring the consequences of her actions. Mass media increasingly uses this form of storytelling to keep the audience engaged. As an example, in covering a natural disaster, the news media might focus on a single victim rather than on statistics. On the other hand, logical scientific communication, such as research papers, usually avoids such anecdotes. This present article arguably falls somewhere between these two poles.

The story also loosely follows an Aristotelian tripartition:

- **Beginning (setup):** The article begins with an exposition, as readers learn about Beta Bugs' selective breeding process and Lindy's responsibilities.
- **Middle (confrontation):** Our society is still very much reliant on the more traditional alternatives to bug protein, namely soymeal and fishmeal, which contribute to the loss of biodiversity through deforestation and overfishing. Herein lies the conflict of the story and the character's call to action.
- **End (resolution):** The story has a hopeful and almost happy ending, as Lindy extends her advice on how to pursue a career in insect farming and describes what she loves about her job: "That's really what I think keeps me so happy and excited in this job because no matter how bad of a day you're having, you've made a difference."

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Protagonist/character presence
The hero of the story is the researcher, who is trying to find a solution to the conflict, i.e., unsustainable animal protein feed. However, the story only mentions the conflict in brief, and could arguably have benefited from a more explicit villain (the cause of harm) and potential victims.

Personal, emotional and informal tone
Lindy explains her work in an informal tone by avoiding excessive technical jargon. She also describes her personal and arguably emotional motivation for working for Beta Bugs. The following quote from Lindy is an example of how the "A Day in the Life" articles utilise simple language to explain something complex: "Take a standard fly and make it into a super fly by choosing the best bugs and breeding them together!". Moreover, the reader has the option to watch a children friendly version of the video, which, compared to the regular video, contains even less technical jargon and more illustrative and humorous animations.

Narrative instead of informative
The personification of Lindy's character is the main driver of this story's narrative. In this sense, Lindy's character is used as a specific example to be generalised, whereby she represents another layer of accuracy. This supports the argument that logical scientific communication presents general truths, from which the audience can generalise down to specific cases (deductive reasoning), while narrative communication provides specific cases, from which the audience can generalise up to extrapolate the general truth (inductive reasoning).

SCIENTIFIC RELEVANCE

As has been argued above, the article is more concerned with potential science careers than with science itself. However, the article does inform the audience about Beta Bugs' selective breeding process, i.e., how the flies' protein content, survivability, and growth rate play an important role in selecting the best genes for breeding. Moreover, the article outlines the benefits of insect farming, i.e., reduced water consumption and space requirements, as compared to more traditional productions of pet feed.

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Futures

Name of organisation: Springer Nature
Type of organisation: Academic Publishing Company
Country: Germany-UK
Author/Responsible: Nature
Language: English
Link: www.nature.com/nature/articles?type=futures
Additional resources:
- **Submission guidelines:** www.blogs.nature.com/futureconditional/2015/04/19/how-to-write-for-nature-futures

Description

"Futures" is an award-winning science-fiction section (sometimes referred to as "column" in their website) of the scientific journal Nature. Each Futures piece is an entirely fictional, self-contained story of around 850–950 words. The genre is 'hard' (that is, 'scientific') science fiction rather than outright fantasy, slipstream or horror, but the submission information does claim they are looking for creativity (as their guidelines post suggests) and some of the stories are stronger on the science than others. The stories published cover a diverse range of themes, including space exploration, artificial intelligence, genetic engineering, climate change, and many other topics within the realm of science and technology.

An example of a story focused on a food science topic is "Grace and flavour, under pressure", written by M. E. Garber and published on July 13th 2022. The story follows a chemist who is passionate about cooking and dreams of becoming a chef. The richest human in the universe, Gilles-Gerard Daumont, challenges aspiring chefs to recreate his grandmother's favourite meal, but no one has succeeded yet.

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Despite being a cook and not a trained chef, the chemist decides to enter the contest and with meticulous planning and an understanding of the atmospheric conditions on Mars, the chemist prepares the meal, adding a secret ingredient to counteract the flavour-inhibiting atmosphere. When Daumont tastes the dish, he is impressed and offers the chemist an opportunity to become a chef and open a school to train others.

This short story presents a clear hero's journey structure, common in storytelling:

- **Daumont's challenge sets the stage for the story's conflict:** Many skilled chefs have failed to recreate his grandmother's meal, creating a seemingly insurmountable obstacle for the chemist.
- **The chemist, our main character, has a big dream but is an underdog in the competition:** lacking formal culinary training and facing scepticism from Daumont's staff.
- **Resolution:** the chemist's determination and resourcefulness, however, enable him to overcome the challenge and surprise everyone with his innovative, science-based, approach.

By August 2023, two ebooks (e-anthologies with around 100 stories each) and +1000 stories have been published. Some stories (but not all) include a "The story behind the story" section, where authors explain the inspiration for their narratives. Submissions are open to all authors and all topics/fields, including food sciences as long as they contain a science fiction element.

The relevance of this best case is amplified by the vast reach and influence of Nature as a scientific journal. Nature is widely regarded as one of the most prestigious and influential outlets in the scientific community. It has a large readership of researchers, scientists, academics, and science enthusiasts worldwide. By incorporating a science fiction section like "Futures" within Nature, normally associated with a very field-specific scientific language and style, the journal can potentially leverage its extensive platform and reputation to engage a wide audience with thought-provoking and engaging stories that blend scientific rigour with creative storytelling. It may also legitimise the use of storytelling techniques to enable the dissemination of scientific ideas and concepts to a diverse range of readers, extending the impact of science communication and fostering a greater appreciation for the intersection of science and storytelling.

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Why is this case relevant?

NARRATIVE RELEVANCE

The stories in “Futures” typically follow a traditional narrative structure with a clear beginning, middle, and end. They present a story arc that introduces the setting and characters, develops conflicts or difficulties, and resolves them by the end of the story. The stories also often include conflicts or difficulties that the protagonist must face, whether they are scientific, ethical, or personal in nature. Relatable elements (such as human emotions, relationships, and dilemmas) are interwoven in the narrative to allow readers to connect with the characters and themes on a personal level.

“Futures” stories aim to captivate and engage the readers with their imaginative concepts and storytelling techniques. While the length of the stories is limited, they often create a sense of wonder and intrigue as they explore a wide range of scientific concepts and speculative ideas, often drawing inspiration from cutting-edge research and technological advancements. The stories often explore and address social, ethical, and futuristic themes that are relevant to society and are purposefully crafted to provoke thought and reflection on potential future scenarios and their implications.

On the other hand, “Futures” strives to maintain scientific plausibility and often incorporates scientific concepts and ideas into its stories. While the primary focus is on storytelling, the column generally maintains a level of scientific accuracy and credibility. In the short story “Grace and Flavour”, for example, the chemist’s knowledge of chemistry and atmospheric conditions is what sets the main character apart, becoming an intrinsic and logical part of the narrative arc. This is a great example of how (food) science can be embedded in a story, giving it a crucial role in the narrative without falling into didacticism.

That said, it’s important to note that since “Futures” is a work of fiction, it does not aim to present factual information. Instead, the stories generally exhibit a sense of responsibility in terms of addressing ethical and societal implications of scientific advancements and potential future scenarios. They often prompt readers to consider the consequences and responsibilities associated with technological progress and their impact lies in leaving a lasting impression and sparking conversations through the lens of fiction. Nonetheless, “Futures” is transparent in terms of its purpose and the fact that it presents fictional narratives. The readers are aware that they are engaging with speculative stories rather than non-fictional accounts.

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Be the Story

Name of organisation: Jerónimo Martins
Type of organisation: Food Retailer
Country: Portugal
Website: www.jeronimomartins.com/en/
Author/Responsible: Jerónimo Martins
Language: Portuguese and English
Link: www.be-the-story.com/en/

Description:
"Be the Story" is an initiative by Jerónimo Martins, a multinational retail group based in Portugal. It serves as a platform for inspiring stories that look to make a positive impact on the community, through written articles and interviews that are shared via website and social media regarding key topics in food science, sustainability and people who contribute to elevating these topics in society.

The purpose of "Be the Story" is to highlight and celebrate the stories of people who have taken action, overcome challenges, and contributed to positive change. Additionally, articles often revolve around themes such as entrepreneurship, social responsibility, sustainable practices, and community engagement.

The written content is divided into 3 separate categories: "Know the Story", "Change the Story", and "Share the Story". The first category is dedicated to informative pieces that are mainly devoted to topics in nutrition and food science, while "Change the Story"

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pertains to actual practices that people can implement to avoid food waste, save more domestic resources, and sustainable DIY practices and recipes. Lastly, “Share the Story” is all about sharing initiatives, serving as a platform for organisations to share their work and providing real examples of businesses and individuals making a difference regarding sustainability.

The website also provides a platform for people to submit their stories and potentially have them featured on the website, thus amplifying their message and inspiring others.

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Why is this case relevant?

NARRATIVE RELEVANCE

Beginning/middle/end structure
The different "stories" are presented using a classical beginning/middle/end structure that helps the reader connect and engage with the content.

Protagonist/character presence
Organisations and individuals who are featured are truly presented as the protagonists of their own story, with the impact of their accomplishments as the main achievement of their character arc. These accomplishments can range from sustainable business practices to games, sustainable products and other sustainable initiatives.

Difficulties/conflict
The stories often feature a certain difficulty for the protagonists to achieve their final destination, be it a personal or business-related struggle or society's resistance to the acceptance of sustainability and the current use of wasteful and environmentally damaging practices.

Personal, interactive and clear communication
Communication is done with a clear purpose in mind: increasing the knowledge of the reader in matters of sustainable options and products, thus encouraging the adoption of better practices. This is achieved through articles that present each "story" clearly and interactively to the reader. New and specific concepts are also presented throughout the articles to increase the reader's understanding of the subject.

SCIENTIFIC RELEVANCE
The content presented on "Be the Story" is scientifically relevant in the sense that it provides readers with food and nutrition-related scientific knowledge in a friendly, informal tone that allows people to better engage with the information, through a storytelling approach. The addition of resources like recipes and DIY practices to otherwise informative, scientific facts also improves the connection established with the reader and makes the content hold its scientific relevance, while still providing more practical information.

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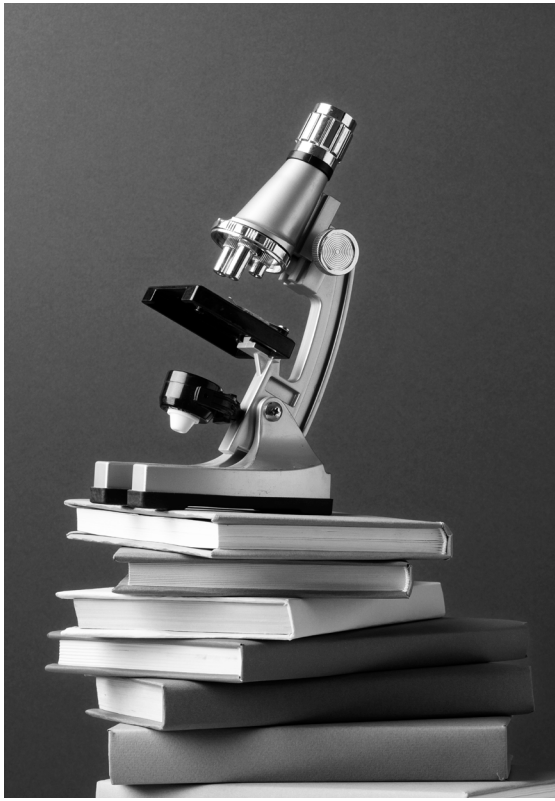
Teaching Science Through Stories

Name of organisation: STEM Learning
Type of organisation: Education Support
Country: UK
Website: www.stem.org.uk
Language: English
Link: www.stem.org.uk/primary/resources/collections/science/science-through-stories

Description:

The Teaching through Stories initiative provides examples, supplementary resources and guidance on how children can be introduced to different STEM themes through popular children's stories. The STEM website gives examples of various stories and then a list of resources that can be used to demonstrate different scientific concepts through the telling of that particular story under various headings including teacher support, activity sheet, and external resources (these vary with each story).

The stories are categorised into age groups: Ages 5-7; Ages 7-9; and Ages 9-11, which coincide with UK primary school age. Each age category gives nine examples of stories that are appropriate for children within those age groups. For example: in the Ages 5-7 category popular fairy stories include "Jack and the Beanstalk" and "Little Red Riding". In the age category 7-9, stories include "Charlie and the Chocolate Factory" and "The Vanishing Rainforest".



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In the oldest age category, 9-11, classic stories such as “Goodnight, Mister Tom” and “Charlotte’s Web” are included. The stories are very briefly summarised on the Teaching through Stories site, the emphasis is on the resources that can be used to elaborate the scientific messages/information that can be demonstrated through the storytelling. In many cases, these stories are common fairy tales which children are familiar with, though a link is provided to purchase/access each story.

Within each of the age categories, the stories are individually linked to a short narrative giving a short description of how they can be the starting point for discussions around a particular STEM theme. For example, it is proposed that the Jack and the Beanstalk story can be used to discuss plants including growing and looking after them with younger children. In the older age category, it is proposed that while reading Charlotte’s Webb, the teacher could use the story to teach children about the lifecycle of animals, and sexual reproduction and discuss death and bereavement.

Information is given under each of the stories to further explore the topic being discussed supported by links to other resources such as teacher guidance notes, activity sheets, videos, and scientific experiments that could be carried out in the classroom.

An example of one of the suggested experiments in the context of discussing Charlie and the Chocolate Factory is the demonstration of how depending on the type of chocolate melting points can have different temperatures and times. The latter information is provided by The Royal Society and features the well-known physicist and UK TV personality Prof Brian Cox.

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Why is this case relevant?

NARRATIVE RELEVANCE

Authenticity
The information under each story is strongly authentic, provided and supported by third parties including the Royal Society, British Science Association, and educational publications amongst others. All the supplementary information provided is designated as “Quality Assured” and is described as having been “reviewed and selected by STEM Learning’s team of education specialists for factual accuracy and relevance to teaching STEM subjects in UK schools”.

Nonfictional story
The story examples provided are all nonfictional, from childhood fairy tales to classic children’s stories in the English language.

Cultural/anthropological and ethnological approach
Each story would have some elements.

Beginning/middle/end structure
All the stories featured follow a classical beginning/middle/end structure.

Protagonist/character presence
Each of the stories involves a protagonist/character

Narrative instead of informative
The stories follow a narrative format rather than informative.

SCIENTIFIC RELEVANCE
Teaching science through storytelling is an effective and engaging approach that can help students grasp complex concepts, develop critical thinking skills, and retain information more effectively. Stories have been used for centuries to convey knowledge, values, and ideas, and they can be a powerful tool in the science classroom as well. This is supported by recent research in the literature that recognises the power of stories in teaching science to primary school-aged children. The programme provides numerous examples of stories that can be used to teach and articulate a large range of scientific concepts that are supported by scientifically robust resources.

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CLUSTER 2

VIDEO

BEST PRACTICES COLLECTION

Close to the Potatoes

Cosmos Possible Worlds

Are GMOs Good or Bad? Genetic Engineering & Our Food

The secrets of your food

PhD Stories

Close to the Potatoes

Name of organisation: Landbrug & Fødevarer
Type of organisation: Competence cluster/trade organisation
Country: Denmark
Website: https://www.youtube.com/watch?v=SStHKHjIKAU
Language: Danish
Additional resources:
www.lf.dk
www.storoehage-kartofler.dk/
www.aabentlandbrug.dk

Description:
The Danish Agriculture and Food Council (henceforth referred to as "LF") is a publicly funded trade organization, whose members collectively represent the entire food value chain, from soil to the dinner table. LF has published several short videos (3-8 minutes), available on their sub-site aabentlandbrug.dk and on their YouTube Channel.

LF's videos cover a few different themes. Some videos are concerned with the cultural history of Danish food, with videos like "the story behind Christmas trees", or "What did Christmas dinner look like in the old days". Others consist of short interviews with local farmers, who are usually involved in some kind of innovative farming technology. The videos are accompanied by music and establishing footage of the farms as well as the farmers' agricultural machinery and equipment. In this way, LF utilises components of visual storytelling, as they are essentially showing (rather than just telling) how farms or production sites are being operated.

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In order to better illustrate the storytelling features of these videos, the remainder of this case study will focus primarily on one exemplary video, namely “Tæt på Kartoflerne” (“Close to the Potatoes” in English). “Close to the Potatoes” is just one video in a series of “Close to...” videos. Other videos in this series include “Close to milk”; “Close to chicken and eggs”; “Close to agricultural machines” and more.
In this 6-minute video, viewers are introduced to Peter Anker who works at Storøhage potato farm. Music is used throughout the video, which adds an emotional element to the story being told.

At the beginning of the video, Peter provides a quick overview of the farm’s production line, i.e. production sites; the type of potato they grow; the different seasons they adhere to; the machinery involved; etc. Suddenly the video footage ceases, and the screen displays instead a short text in a large font that reads: “Did you know... that potatoes contain almost all types of vitamins, especially vitamin C?”. These short “Did you know...” bits are used sporadically throughout the video, with other quick facts about potatoes, like, “Did you know that boiled potatoes only contain 0.3 g of fat per 100 g?” and “Did you know that the Danish Food Control Agency recommends eating 200-250 g of potatoes 4-5 times a week?”.

Subsequently, Peter tells the story of how he got into potato farming and explains his own background as a greengrocer. After this, the video provides an extended and more technical description of the production site, as Peter e.g. in more detail explains how the potato-harvester and sorting machinery works and how the potatoes are cleaned and organised at different stages with different machinery. These explanations are always provided in a clear, non-technical language style and are always accompanied by illustrative video footage. About halfway through the video, Peter talks about some of the challenges they face. The weather is the main challenge, as it determines yield, taste, sizes, potato blight, etc. The video ends with Peter showing the final product, packed and ready to be shipped.

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Why is this case relevant?

NARRATIVE RELEVANCE

Authenticity

Authenticity is added not least by having real-life farmers on location explain the topic at hand. Having a well-known distributor (LF), also adds to the authenticity.

Nonfictional story

The video provides detailed insight into the different steps of the potato farm's production chain. As an example, viewers learn that the Sherlock optical sorting machine takes 36 pictures per second of every single potato and can organise 20 tonnes of potatoes by size and quality in one hour.

Cultural/anthropological and ethnological approach

"Close to the Potatoes" does have some cultural relevance, as Peter makes reference to Denmark's traditional love of potatoes, although other LF videos, such as "What did Christmas dinner look like in the old days" are even more focused on Danish food culture. This goes to show that food culture is an important issue on LF's agenda.

Beginning/middle/end structure

As is apparent in the description above, "Close to the Potatoes" loosely follows a classic Aristotelian tripartition. The same can be said about most of the videos available on aabentlandbrug.dk.

Protagonist/character presence

Peter Anker is the hero of the story, as he is solving a problem, i.e., feeding people. The audience learns more about this character, as Peter, in his own words, tells about his first job as a greengrocer in a supermarket and how he ended up as a potato farmer: "[...] When I was in my 20s, I had the opportunity to come back home to work, and I thought that since the previous generations had had a go [with potato farming], I would also like to try. [...]"

Personal, emotional and informal tone

Throughout the video, Peter talks in an informal tone and avoids the use of too much technical jargon. A personal and emotional element is also added, as Peter talks about his personal career and makes a few jokes throughout the video.

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Narrative instead of informative

The video is rather informative but is balanced out by the integration of the character, Peter, and his personal narrative style. Moreover, the music and visual storytelling as described above also adds to the narrative.

SCIENTIFIC RELEVANCE

LF's videos, as well as the additional articles and statistics available on their website, are all forms of science communication. In the case of "Close to the Potatoes", the audience does not only gain some basic insights into the phytology of potatoes, but also into some of the more technical aspects that go into a potato farm's production chain. Therefore, while the science is rather elementary and presented in a relatively informal style, the information presented does have scientific relevance.

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Cosmos
Possible Worlds

Name of organisation: Cosmos
Type of organisation: Documentary series
Country: USA
Website: www.fyc.nationalgeographic.com/cosmos
Author/Responsible: Hosted by Neil deGrasse Tyson
Creator, Executive Producer, Writer and Director: Ann Druyan
Executive Producer: Seth MacFarlane, Jason Clark, & Kevin Tao Mohs
Executive Producer, Writer and Director: Brannon Braga
Co-Executive Producer: Kara Vallow
Produced by Joseph Micucci
Language: English
Link: www.imdb.com/title/tt9206758/?ref_=ttep_ep4

Description

Cosmos: Possible Worlds is a science documentary series hosted by Neil deGrasse Tyson and serves as the second season of Cosmos: A Spacetime Odyssey (2014). The series is based on the groundbreaking PBS documentary series, Cosmos: A Personal Voyage, which was hosted by Carl Sagan, who used storytelling to explain scientific concepts to the viewers, e.g. the famous Flatland thought experiment.

Cosmos: Possible Worlds (2022) reuses many of the same drivers of storytelling that were deployed regularly in the prequel, Cosmos: A Spacetime Odyssey (2014), most notably:

1. The Ship of Imagination

Tyson has a fictional spaceship, called the Ship of Imagination, which can go anywhere in the universe, even past the event horizon of a black hole or inside the nucleus of a single atom, without any repercussions. The ship can thus change size, go at any speed, and can travel back and forth in time. This CGI-created spaceship provides context, scale, and

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visual storytelling, as it, for instance, allows Tyson to hover right next to a supernova while he describes the phenomena to the audience.

2. Animated short-stories

Throughout the series, the picture will sometimes switch from live-action footage to sequences of drawn or stop motion animations in order to tell stories about various people, such as Albert Einstein, Nikolai Vavilov, Henrietta Swan Leavitt, etc., who have made important contributions to their fields of science. These segments usually incorporate all the major storytelling elements, notably character personalization, context, and setting. This is a way for the writers to explain complex scientific concepts from a narrative perspective.

3. The Cosmic Calendar

Sagan and Tyson will often refer to the imaginary Cosmic Calendar, which comprises the 13.8 billion years since the Big Bang into a single calendar year. Thus, Big Bang took place within the first second of January 1st, and Homo sapiens appeared at around 23:48 on December 31st. Every day on the calendar represents nearly 40 million years. The calendar is visualised as a large flat surface on which Tyson can stroll around to highlight specific moments in history. This is one way of perceptually extrapolating something of great magnitude or volume into human scale, thus improving the accuracy of non-experts' conceptions of the age of the universe. In contrast to many scientists, who typically have had extensive training in dealing with large numbers and huge time scales, such concepts can be difficult to grasp for non-scientists, but the Cosmic Calendar makes it easier for non-scientists to visualise these cosmic time scales.

The remainder of this template will cover Cosmos: Possible Worlds, episode 4, "Vavilov", which tells the true story of Russian agronomist, botanist, and geneticist, Nikolai Vavilov, and his dream of ending world hunger through science.

The episode, like most other Cosmos episodes, begins with some exposition from Tyson: "For the first couple of hundred thousand years that we were human, we were wanderers, living beneath the stars. We gathered plant life and hunted animals. Until about 12,000 years ago, when our ancestors invented a new way to live. Think of those geniuses who were the first to realise that inside the plants they foraged, was a means to make another plant. A seed. [...]". The quote illustrates Tyson's storytelling cadence and climactic phasing. He continues, standing on the Cosmic Calendar, and claims that humans invented agriculture less than half a minute before midnight on December 31st. Tyson then provides an overview of the history of agriculture and of the many famines that have raged regularly throughout the world.

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Viewers are then introduced to Charles Darwin and Gregor Mendel, as the picture switches from live-action footage to 2D animation. Tyson explains their work in broad strokes, but also accounts for their character traits, stating for example that Darwin was "a tender, loving father [...]." Mendel would later be known to many as the father of genetics. Decades later, his work was resurrected by the British zoologist, William Bateson, who named the field of genetics. At this point, the picture switches to stop-motion clay animation, while Tyson continues to narrate. Bateson in turn inspired the Russian botanist, Nikolai Vavilov. Note how the documentary describes the cause-and-effect relationships between phenomena that take place over a specific time period, and that impact certain characters.

Shortly after, Tyson describes the terrible famine that hit Russia in 1891: "Half a million Russians perished, while the aristocracy and the wealthy feasted on fresh strawberries from the south of France and clotted cream from England. The Russian Revolution would not explode for another 30 years, but many historians believe that this famine was the spark that ignited the long fuse. It was to make a lasting impression on the hero of our story, Nikolai Vavilov." This quote provides context and establishes Vavilov as the hero of the story, but it also introduces a villain, i.e., the aristocracy, and the victims, i.e., starving Russian peasants. The detailed and figurative style, i.e. metaphors, emphasises certain features of paired concepts which enable the audience to interpret reality in a novel way.

The picture then switches back to stop-motion clay animation, as Tyson provides a rather detailed description of Vavilov's childhood and early career. Later, Vavilov begins the formulation of his law of homologous series in variation and embarks on a long journey to collect seeds from across the globe for the first world seed bank in history. Shortly after, Tyson introduces the main antagonist, Trofim Lysenko, who gradually convinces Joseph Stalin, another villain, that Darwin, Mendel, and Vavilov are all liars. Lysenko favoured a process called vernalization, which, inspired by Jean-Baptiste Lamarck's ideas of inheritance of acquired characteristics, involved soaking seeds in ice-water to make crops that were more resistant to harsh winters.

The following quote illustrates Tyson's use of tonality and style when explaining scientific concepts: "Lysenko was peddling the long-discredited theory of an early 19th century naturalist named Jean-Baptiste Lamarck. He believed that acquired characteristics, let's say the length of a giraffe's neck from staining to get at those leaves up high, could be inherited by the next generation. He failed to grasp that it took millions of years of evolution and higher survival rates among the

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generations of giraffes with even slightly longer necks to result in a tall modern giraffe. This increasingly long neck of the giraffe was due to random mutations in the genes that happened to lead to a more successful giraffe. Not their neck stretching exertions."
When World War II broke out, famine continued to rage in the Soviet Union. Vavilov was eventually arrested, tortured, and sentenced to death. Meanwhile, in Leningrad, Vavilov's dedicated coworkers were guarding the precious seed bank with their lives, but there was another problem: "Hitler, unlike Stalin, knew that it [the seed bank] was priceless. [...]. On Christmas Day alone in 1941, 4000 people starved to death in Leningrad." [...] But Vavilov was still alive. Barely. [...] The State had decided not to shoot him. They had a crueller fate in mind for the man who did more than any other to eliminate famine and hunger. He would be deliberately and slowly starved to death. [...] the protectors of Vavilov's treasure began to succumb to hunger amidst the plenty their sacred honour prevented them from consuming. [...]. The botanists perished from hunger, and yet not a grain of rice in the collection was unaccounted for. [...] And what of Vavilov's nemesis, Trofim Lysenko? [...] After Stalin's death and the recognition of the damage he and Lysenko had done to the Soviet Union, Nikolai Vavilov could once again be talked about in public. The Institute of Plant Industry was renamed after him, and it still thrives. And this [Tyson points to the Svalbard Global Seed Vault] is here because of his life and work. [...] So why didn't the botanists at the institute eat a single grain of rice? Why didn't they distribute the seeds and nuts and potatoes to the people of Leningrad who were dying of starvation every day for more than two years? Did you [the audience] eat today? If the answer is yes, then you probably ate something that descended from the seeds that the botanists died to protect. They gave their life for us. If only our future was as real and precious to us as it was to them [the camera points to a block of melting ice on Svalbard]."

The quote demonstrates once again that Vavilov and his colleagues are the heroes of the story, while Hitler, Stalin, and Lysenko are the villains. The threat of famine and the villains constitute the heroes' call to action, and after many hardships, the heroes are vindicated in the end.

The episode thus ends with a resolution and moral considerations. It could be argued that this episode is a cautionary tale about the potentially dire consequences of political mismanagements, especially when science itself comes under attack from political forces. On a deeper level, the episode also addresses some of the opportunities and threats from the sometimes overwhelming cosmic forces that human beings must face, such as volcanic eruptions, droughts, and global warming.

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Why is this case relevant?

NARRATIVE RELEVANCE
Authenticity

The level of authenticity is arguably high, not least because of:

- High levels of production (music, cinematography, CGI, etc.)
- Hosted by Neil deGrasse Tyson, a respected and famous scientist in his own right.
- The channel, National Geographics, is well respected.
- Celebrity branding, like guest appearances by Viggo Mortensen.
- Content is based on real science and real people.

Nonfictional story

The show is built around references to actual scientific research and real-life scientists. Note in the following quote how Tyson explains something scientifically complex in simple storytelling language:

"Vavilov wanted to preserve every phrase of life's ancient scripture, to ensure its safe passage to the future. [...]. Vavilov came up with an entirely new concept. A world seed bank that he hoped would be impervious to war and natural catastrophe. And there was a scientific underpinning to this humanitarian goal. If you could find the earliest living specimens of the plants we eat, you could parse its sentences and decipher life's language. You could know how it changed over time. This decryption would make it possible to write new messages. To grow food immune to disease, fungus, and insects and resistant to drought."

Cultural/anthropological and ethnological approach

The story not only concerns science or characters but also history. Events like the Huaynaputina eruption, famines, wars, and political upheavals have created many social disruptions across the globe, which inevitably prompted new identity myths and cultural revolutions.

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Beginning/middle/end structure

Similar to most Cosmos episodes, this episode loosely follows a classic Aristotelian trepidation, i.e., exposition, conflicts, and climax/resolution. Like many classic tales, the overarching narrative of the episode concerns humans' battle to overcome the natural elements (famines, droughts, global warming, etc.). The episode is also about the philosophical role of human beings in the cosmos, i.e., the "evidence for oneness," as Tyson formulates it; **"we were actually relatives to the other beasts and vegetables, as much a part of the natural world as any other living thing."** These stories are largely presented in embedded narratives within the episode, such as the story of Darwin. The main storyline of the episode, which also could be viewed as an embedded narrative, concerns Nikolai Vavilov's life and work:

- Beginning
  - Childhood innocence
  - Inspired by Mendel and Darwin to pursue science
  - Famine and social inequalities prompted a call to action
- Middle
  - Pursuit of knowledge
  - Travelled the globe to collect seeds in order to end famine
  - Faced villains (Lysenko, Stalin, and Hitler
  - Sacrificed himself
- End
  - Reputation redeemed
  - Ethical considerations for future generations

Vavilov's arc, as summarised above, also exhibits elements of Campbell's notion of the hero's journey. There are also elements of biographical structures and of classic epics, as the episode comprises events that took place over several generations. The chronology of events is non-linear, with several flashbacks and prolepses, which could be confusing to some audiences, however, events are usually presented in a sequence that is optimal for comprehensibility, as deemed by the creators.

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Protagonist/character presence

There are numerous characters present in the episode; the heroes Vavilov, Mendel, and Darwin, and the villains, Lysenko, Stalin, and Hitler, as well as several other supporting characters, like Vavilov's brother and father. The dramaturgy and the personification of characters become apparent in the following quote: "As Joseph Stalin was having all his political rivals systematically murdered, he began to slash away at the structure of Russian agriculture. [...]. Between five and ten million people perished in famine. But to Trofim Lysenko this massive tragedy was an opportunity. Lysenko hated Vavilov for his knowledge and fame, and like the snake that he was, he knew exactly when to strike. And ultimately, his venom would be fatal. [...]"

Personal, emotional, and informal tone

Tyson narrates in a slow and enthusiastic tone, which sometimes is referred to as storytelling cadence. This involves a deliberate pattern of detailed descriptions, pauses, and "punchlines", which gives the narration a well-flowing, almost poetic quality, reminiscent of how one would read a fairy tale to a child. In this way, Tyson seeks to balance seriousness, drama, humour, and scientific information without losing the attention of the audience.

Narrative instead of informative

The plot and the characters (usually scientists) become vehicles for explaining the science. On top of this, Cosmos also utilises visual storytelling, music, humour, metaphors, tonality, and dramaturgy to provide context and scale, which collectively makes the information more comprehensible to non-scientists.

SCIENTIFIC RELEVANCE

The case is scientifically relevant, not only because it is presented by a scientist or because it tells the backstories of how certain scientists came to play important roles in history, but also because these elements serve as drivers for explaining complex scientific concepts, in this case, genetics, to a particular audience.

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Are GMOs Good or Bad? Genetic Engineering & Our Food

Name of organisation: Kurzgesagt – In a Nutshell
Type of organisation: YouTube Channel & animation studio
Country: Germany
Website: www.youtube.com/watch?v=7TmcXYp8xu4
Author/Responsible: Kurzgesagt team
Language: English
Link: www.youtube.com/watch?v=7TmcXYp8xu4
Additional resources:
www.kurzgesagt.org/
www.kurzgesagt.org/about/
www.youtube.com/@kurzgesagt
www.reddit.com/r/kurzgesagt/

Description:
Kurzgesagt (German for “in short” or “in a nutshell”) is German based animation and design studio. Although their videos are short, usually around 5-15 minutes, they cover a wide range of educational topics, including physics, technology, biology, history, politics, psychology, and philosophy.

This template describes the **Kurzgesagt YouTube video, “Are GMOs Good or Bad?** Genetic Engineering & Our Food”, from 2017. The video is 9:02 minutes long and has more than twelve million views.

The episode follows a structure that is typical for Kurzgesagt. It starts with a question: **“GMOs are one of the most controversial areas of science. Genetic engineering is used in many fields, but even though medical applications like GM insulin are widely accepted, the debate heats up when it comes to food and agriculture. Why is that?”.** After this, viewers are taken thousands of years back in time to when

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humans first started breeding animals and plants with beneficial traits. After this, the video goes on to explain some of the main differences to selective breeding and genetic engineering. Subsequently, the narrative moves on to the conflict of the story, namely to explain some of the most common objections to GMOs, including terminator seeds, unintentional spreading of engineered DNA, and questions about the general healthiness of genetically engineered food. At this point, Kurzgesagt claims that eating GMO plants is no more risky than their non-GMO equivalent, adding **"But don't just take our word for it, the sources for this and other claims are in the video description".** The video continues to go deeper into the challenges associated with GMOs, especially BT proteins, herbicide resistance, and the problematic issue of how the pesticide industry can take advantage of GMOs increasing popularity. Viewers are subsequently presented with examples of how GMOs have improved eggplant farming in Bangladesh and papaya harvesting in Hawaii. Towards the end of the video, the focus turns towards the future research and application of GMOs, and Kurzgesagt seems to remain positive, e.g., pointing out that GMO crops require less land mass; plants could be engineered to be more resistant to erratic weather caused by climate change; as well as make developed countries less dependent on fertilisers. Lastly, the video ends with a brief summary.

Illustrative animations, as well as music, are used throughout the video, to make the content more tangible and emotionally engaging.
In typical Kurzgesagt style, the illustrative animations depict the aforementioned birds, and other anthropological characters, like fruits and vegetables with smiling faces, as well as a few human scientists working in laboratories. While these characters are not described verbally, they add an emotional and relatable component to the visual storytelling. In this way, most of the science communication is presented verbally by the narrator, while the storytelling is mostly visual.

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Why is this case relevant?

NARRATIVE RELEVANCE

Authenticity

The team of researchers and fact-checkers adds to the general trustworthiness of Kurzgesagt, while the high production level and the stylistic consistency of the videos add to the authenticity. Moreover, statements like “But don’t just take our word for it, the sources for this and other claims are in the video description” and the extensive reference list also adds to both authenticity and trustworthiness. Kurzgesagt has also published a video, which explains how they generally seek to uphold their own scientific integrity when creating new content.

Nonfictional story

Most of the science communication is presented verbally by the narrator and is grounded in scientific research, which is referenced in the video description. While the animations mostly serve the visual storytelling, they occasionally incorporate more logical-scientific communication, like numbers and graphs.

Cultural/anthropological and ethnological approach

The episode, like most Kurzgesagt videos, has many cultural references, like how humans have engineered food for centuries. This not only helps establish the context but also adds an emotional component to the story.

Beginning/middle/end structure

While the plot structure is not linear, the video establishes causality (in this sense, almost all science has a plot) and it follows a classic Aristotelian tripartition , i.e. exposition - conflict – resolution (see description above).

Protagonist/character presence

Although the characters are non-verbal and nameless, they play an important role in the video. As can be seen in the image above, GMO food is initially portrayed as a villain-type character while natural food is portrayed as the hero. However, as the story moves along, the audience realises that it might not be that simple. This arguably resembles Aristotle’s “reversal” (a change of direction in the course of events) and/or “discovery” (a change from ignorance to knowledge). Moreover, the birds and scientists are also simple characters that are nonetheless difficult to define.

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Personal, emotional and informal tone
The music and animations deploy a humorous and at times dramatic and scary tone, while the narrator generally has a more educative and content-oriented approach and uses a rather informative or "serious" tone. The narrator does however use humour and an informal tone at times, and he generally avoids heavy use of technical jargon. He also uses metaphors and other means of comparisons, which adds to the personal, emotional and informal tone.

Narrative instead of informative
The non-fictional elements are most prominent in visual components, i.e. the visual storytelling described above. However, while the narrator is the main source of science communication, he utilises storytelling elements, such as metaphors and other comparisons, i.e. linking the phenomena to something relatable within the human scale. As an example, the narrator claims that the poison in BT crops is harmless to humans but deadly to insects, which, he admits, sounds alarming, wherefore he subsequently compares the phenomena to how chocolate is harmless to humans, while it can be dangerous to dogs – a fact that many non-experts know.

SCIENTIFIC RELEVANCE

The video is scientifically relevant, as it discusses the pros and cons of genetically modified foods from a scientific perspective. The information presented is generally factual, clear, and purposeful. Furthermore, the inclusion of references in the video description adds to the overall transparency and responsibility of the video.

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The secrets of your food

Name of organisation: BBC
Type of organisation: Public Broadcasting
Country: United Kingdom
Website: www.bbc.com/
Author/Responsible
Presenters: Dr Michael Mosely and James Wong
Language: English
Link: www.bbc.co.uk/programmes/b08gj4rq
Additional resources:
www. youtu.be/23EMDIvtnEE
www.youtube.com/watch?v=evhYRamBrSY

Description:

"The Secrets of Your Food" is a three-part documentary series produced by the BBC that explores the science and history behind the food we eat. The show delves into the various processes and transformations that occur from farm to table, revealing the hidden elements and surprising facts about common foods.

The series aims to educate viewers about the journey of food, from its origins in agriculture and farming to the processing and preparation before reaching our plates. It also investigates the nutritional aspects of different foods and how they affect our bodies.

The show is hosted by medical doctor and presenter Michael Mosley, who is known for his engaging and informative approach to science and health-related topics. He has focused on making science and medical topics accessible to the public and is known for his engaging and informative approach to complex subjects. Mosely is joined by James Wong, a botanist,

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science writer, and broadcaster. Wong is well known for his efforts to make plant science and gardening accessible to a wider audience through his books, television shows, and public appearances.

The series was created in conjunction with the Open University in the UK, which provided the scientific support for the series and around which some teaching modules were developed.

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Why is this case relevant?

NARRATIVE RELEVANCE

Authenticity

The show demonstrates activities taking place in appropriate settings given the context of each topic, e.g., clearly demonstrating the scientific analyses in laboratories by scientists; visiting paddy fields in Banaue in the Philippines to discuss the role of rice in the diet and interacting with local farmers. In episode 2, the presenters meet a family in Huelva in Spain who produce their Iberico ham. There is interaction with the farmers and the cultural and economic significance of the ham to the family and region. The use of visual images such as the molecular structures of macro and micromolecules underpins the scientific authenticity of the programme, whilst the presenters themselves, as well-known and respected scientists and communicators, add gravitas to the series.

Nonfictional story

The series follows a completely nonfictional story approach. With scientifically trained professionals and robust scientific techniques, the stories unfold using real life examples across many countries and cultures to describe how food is produced and how we respond to food and metabolise it.

Cultural/anthropological and ethnological approach

The series provides an excellent example of using a cultural/anthropological and ethnological approach to storytelling.

A very good example is found in episode 2 whilst discussing how our taste receptors have developed to identify and avoid certain foods due to potential poisoning, through the bitterness receptors on our tongue. In this episode, Wong visits an indigenous community in the Andes in Peru to follow how cultures have developed their agricultural and food practices to ensure food security. The diet in this region is almost solely dependent on the potato, which can contain very high levels of the toxic compound solanine. The programme describes how the Andean people have developed agricultural practices over the centuries to minimise the risk of solanine in their crops and to ensure the safe consumption of potatoes. This includes growing potatoes on terraces, as found in old Incan villages, ensuring that the crop is not exposed to sunlight and thus avoiding sprouting. Wong accompanies a traditional Andean community as they bring their crop to the upper ranges of the mountains to allow the crop to freeze, breaking down the structure of

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the potato to release the solanine after which the crop is safe to eat.

Beginning/middle/end structure

Of the two episodes available to watch online, the first episode is focused on the topic of "We are What We Eat", while the second one is entitled "A Matter of Taste". Within each episode there are a series of short mini-stories or vignettes under each topic with a beginning/middle/end which describes how foods are grown/prepared, the scientific phenomenon involved (e.g., fermentation in bread making), to the ultimate final product and how we determine biologically the taste, smell and enjoyment of food.

The beginning/middle/end structure can be demonstrated within some of the substories of each episode. A good example in episode 2 is demonstrated in discussing the role of smell and taste in our enjoyment of food, through the story of the making of the cheese, **Epoisses de Bourgogne**.

Wong introduces the story with a background on how the cheese has a reputation of being one of the world's most infamously worst smelling and that it was a favourite of Napoleon. It has also been allegedly banned on public transport in France, setting an interesting context and preparing the audience for what is to come – for the worst we imagine! He moves to the fromagerie where we see the cheese being made, the role of bacteria in the maturation process, and how the use of the brandy water waste helps to colonise specific bacteria on the rind. Descriptions of the bacteria and the compounds that are produced because of their breakdown of the proteins and fat in the cheese are discussed. We learn that it is these compounds that impart the unique colour of the rind and smell of the cheese. Molecular structures of the breakdown compounds are used as floating images across the screen, which add authenticity of the story. In the final segment, Wong is seated eating the cheese in an idyllic French setting.

Firstly, describing the smell as "old rugby socks", he brings the audience into the story and helps them to imagine the awful smell that he is experiencing. He goes on to taste the cheese and to his surprise finds it very appealing, explaining how due to "backward smelling", the combination of taste and smell as we eat can change the overall experience of food. He is seen now thoroughly enjoying the cheese, and the audience who initially begin the story, perhaps, with some trepidation, now also wish that they could be there tasting and enjoying the experience and the cheese.

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Protagonist/character presence
Michael Mosley is the main presenter in the series. He is an affable, knowledgeable protagonist that brings the viewer along with him on the journey of how foods are produced, and the science behind some of the processes. Likewise, James Wong is an engaging, warm, character with whom the viewer can relate and trust as a storyteller.

In the substories, we meet many other characters such as the Andean Community in Peru in discussing bitterness in episode 2; the Lucha Libre wrestler and the role of eggs as a good protein source in episode 1; and the Bulgarian family in the discussion of traditional yoghurt making in episode 1. The use of these characters adds weight and authenticity to the stories that are being told, although their presence in each episode is short, being able to relate to the story through them is important to the overall narrative.

Narrative instead of informative
The series is both informative and narrative. E.g., in episode 2 how Iberico ham is produced is presented in a visual story, from the pig grazing on acorns in the Huelva region of Spain, through slaughter, and maturation, to tasting and how the umami taste of the ham is detected by the taste buds

SCIENTIFIC RELEVANCE
The series was developed in collaboration with the Open University who provided some of the evidence-based knowledge and the scientific support via their laboratories throughout the three episodes. Each episode is populated with visuals linking the story telling the actual science processes taking place. It has strong scientific relevance to those who have no understanding or have not previously considered how food and science are strongly correlated.

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PhD Stories

Name of organisation: Politecnico di Milano
Type of organisation: Public University
Country: Italy
Website: www.polimi.it
Author/Responsible: Politecnico di Milano
Language: English
Link: www.youtube.com/watch?v=rUl6xXDzj90&list=PL_06oobzMEutTKR7qmdqvoL0q-c5dOEER

Description:

The **"PhD Stories"** series by Politecnico Milano offers bite-sized, two-minute interviews with PhD candidates, providing a unique perspective on their academic journeys and personal lives. These candid conversations go beyond research topics, giving viewers a well-rounded understanding of the individuals behind the degrees.

Exploring Diverse Research and Personal Narratives:
In each episode, PhD candidates from various fields open up about their studies, showcasing the diverse range of research taking place at Politecnico Milano. However, these interviews go a step further by delving into the personal lives of the candidates. They share their hobbies, interests, and what they enjoy about living in Milan, offering viewers a glimpse into the cultural and social aspects of their experiences.

Why Politecnico Milano Matters:
One common thread throughout the series is the candidates' genuine enthusiasm for Politecnico Milano. They articulate why they chose this institution for their PhD studies and what sets it apart.

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Whether it's the university's academic excellence, its vibrant and welcoming community, or the unique opportunities it offers in Milan, these interviews highlight the reasons why Politecnico Milano is a top choice for aspiring researchers.

Short and Informative
With each video clocking in at just two minutes, "PhD Stories" from Politecnico Milano offers concise yet informative insights. These quick interviews are perfect for those seeking a quick dose of inspiration or a brief glimpse into the world of PhD studies and academic life.

Community Building and Inspiration
The series not only informs but also fosters a sense of community among viewers. It allows aspiring PhD candidates to connect with those who have already embarked on the journey, offering valuable insights and inspiration for future researchers. It also showcases the rich tapestry of experiences and perspectives that make Politecnico Milano a thriving academic institution.

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Why is this case relevant?

NARRATIVE RELEVANCE

The narrative relevance of **PhD Stories** consists of structuring the video messages from the PhD candidates using the classical elements of a story: Beginning/Middle/End; Difficulties/Conflict; and Resolution/Moral in which the Protagonist/ Character are the PhD candidates. The story is not impersonal but personal and, instead of focusing only on scientific research, incorporates also the personal and human experience of the PhD candidate, having a higher level of engagement toward the non-expert audience.

Nonfictional story

In the realm of PhD Stories, the narratives remain firmly rooted in reality, echoing the non-fictional essence. The PhD candidates step into the role of protagonists, offering a firsthand account of their academic journey. These stories are biographical, delving into the genuine experiences and challenges encountered during their pursuit of knowledge.

Protagonist/character presence

The heart of PhD Stories lies in its protagonist—the PhD candidates. By placing them at the forefront, the initiative humanises the often complex and abstract world of academic research. These individuals become relatable characters, offering a personal lens through which the audience can connect with the scientific journey.

Personal and Informal Tone

Much like the informal tone prevalent in cultural festivals in Italy, PhD Stories adopts a personal and relaxed narrative style. Distinct from the formalities of traditional academic communication, the videos aim to be approachable, resonating with a diverse audience. This informal tone serves the purpose of expanding the reach of scientific narratives beyond conventional settings.

SCIENTIFIC RELEVANCE

The PhD stories are scientifically relevant because the video allows PhD candidates to share their research and personal experiences about it concisely and informally. Nevertheless, the message is factual, scientific, clear and impactful because it is synthesised in a short video message.

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CLUSTER 3

MIXED MEDIA

BEST PRACTICES COLLECTION

The Magical Orb

I’m a Scientist, Get me out of here!

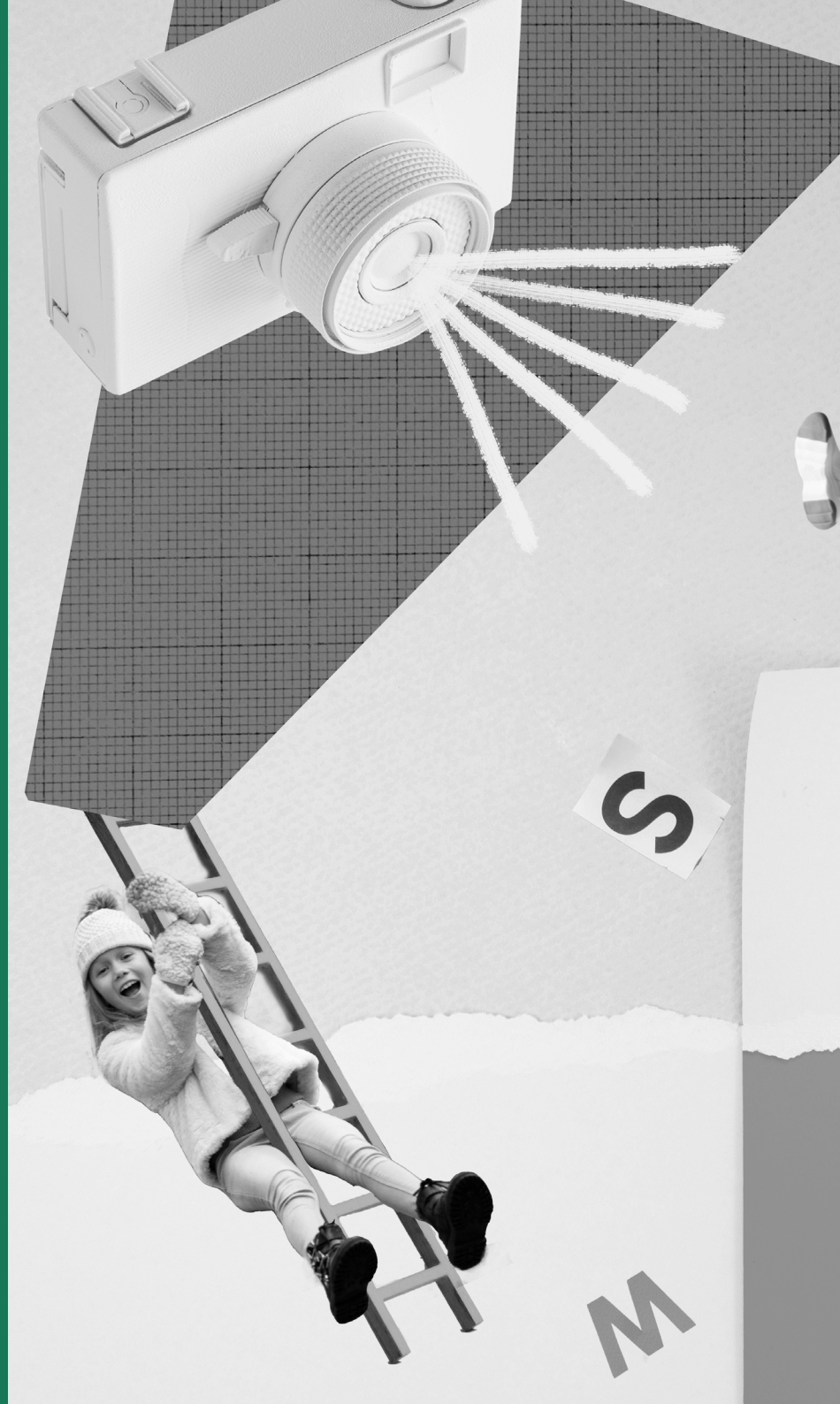
Virtual “One Health” Exhibition

CSI - The science behind the show

PiCS - Picturing the Communication of Science

What is your Kitchen Crime?

“Ciência Viva”



The Magical Orb

Name of organisation: The Magical Orb (Den Magiske Kugle)
Type of organisation: Theatre Production
Country: Denmark
Website:
www.gymnasieforskning.dk/fortaellinger-naturvidenskaben/
Author/Responsible:
Bent Nørgaard, Ole G. Mouritsen, SDU – Aarhus University
Language: Danish
Link: www.portal.findresearcher.sdu.dk/en/publications/den-magiske-kugle-videnskabsteater

Description:
The Magical Orb, "Den Magiske Kugle" in Danish, was a science theater production in 2007. The play was written by a small group of scientists, many of whom would later perform as actors in the play, and was centred around the physics, chemistry, and the biology behind a new form of cancer treatment.

The following quotation from the play's introduction captures the essence of the storyline fairly well, and at the same time illustrates how storytelling elements are incorporated from the very beginning: "This performance is based on the true story of how researchers, since the beginning of the 20th century, have dreamed of creating magical orbs that are able to smuggle medicine into diseased cells, so that it only works there, without harming the body's healthy cells. Any connection to reality is intentional, and the actors are affiliated with the University of Southern Denmark." The same language style and tonality is used throughout the rest of the performance, deploying as little technical jargon as possible, thereby making the content more digestible for non-scientist, even though the subject matter in reality is very complex.

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The story takes place over a period of over a hundred years, starting with the German scientist, Paul Erlich, who was trying to find a cure for syphilis. He was searching for a chemical compound, which he dubbed “magical orbs”. As the story continues, we meet other scientists at different time periods, like Alex Bangham, who explains his work on membranes and phospholipids to the audience. Meanwhile, a TV-screen is supporting his accounts by showing animated cell membranes. As the story progresses, the characters (scientists playing scientists) run into seemingly unsolvable challenges, some of which can be life threatening to patients. As an example, a challenge arises when the scientists realise that the magical orbs are leaking the harmful medicine onto healthy cells instead of the cancerous cells, which has dire consequences for the patients. During the ending of the story, the audience is presented with the newest research by SDU and LiPlasome Pharma, and are then told that the magical orbs will be available for patients by 2010, if everything goes as planned. The plot thus revolves around the research processes through the years while emphasising the importance of interdisciplinary collaboration.

With multiple, interconnected storylines set in different time periods, The Magical Orb belongs to a genre that resembles a classic epic, or perhaps a chronicle play or family saga. As such, it can be difficult to identify a clear beginning, middle, and end, as each character has their own individual arc. On the same note, there is no main protagonist in the conventional sense. Instead, the research field itself becomes the main focal point of the story, as the field undergoes developments and faces challenges, as seen through the perspective of narrators and different supporting characters. Three of the involved scientists serve the function of narrators at different times during the play. They will come to the stage at key moments to explain the science in more detail to the audience. Herein lies one of the most difficult challenges: the scientists are still trying to avoid using technical jargon as much as possible. The following quote from the play illustrates how the scientists will deploy less scientific language and more metaphors to explain something complex: “Ever since Bangham saw these tiny sacks under his microscope, we call them liposomes, ever since then it has been a dream to use them to carry medicine.

They seem to have all the characteristics we could wish for; They are robust; they are soft; they are made from nature’s own fat; they are, you could say, nature’s own kind of nano technology. They can be made very tiny, and they can be sent through the arteries and circulate the body until they reach the sick tissue,

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where they will wait until a key comes around to open them." (Hørup Hansen, 2008: ll. 175-180). Furthermore, the Magical Orb utilised scenography props, metaphors, and even music and songs to make the content more entertaining as well as comprehensible to the audience. For example, the stage had floating spherical chairs that represented liposomes; walking bridges that symbolised cell membranes; and red painted tree branches that looked like fractal blood veins. The magical orbs are sent through the blood veins, which is where most conflicts will occur.

While this case is not specifically related to food science or technology, it is a great illustration of how science communication can be intertwined with storytelling, and it shows how one can "think outside the box" to create something educational as well as entertaining for a large audience.

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Why is this case relevant?

NARRATIVE RELEVANCE

Authenticity

The fact that the actors are volunteering scientists adds to the overall authenticity of the play, and so too do the three narrators, who provide exposition between the scenes. The non-fictional elements of the story (see below) also add greatly to the overall authenticity.

Nonfictional story

While the play is obviously a staged and dramatised piece, it is based in real science and history, which means the characters, their work, and the challenges they face, are grounded in real life, albeit other aspects, such as the dialogue or visual components, are less authentic and more symbolic. In this way, the overall plot, i.e., the characters' positioning relative to each other as well as their setting in time and space, is non-fictional.

Cultural/anthropological and ethnological approach

There is a cultural component to the time frame of the play, in that the play shows how far society and science has come and how much we have learned. At the same time, the play also pays reverence to the researchers from different time periods, who could accomplish so much in spite of the absence of modern technology.

Beginning/middle/end structure

As the story takes place over centuries and does not follow a single main character, it is harder to recognize a clear beginning, middle, and end, since characters will run into conflicts at different times. Yet the play does follow a classical Aristotelian tripartition:

- **Beginning (exposition):** introduction to the research field and the characters' motivation.
- **Middle (conflicts):** Years of hard work and the challenges that arise along the way,
- **End (resolution):** The rather happy note, that the magical orbs will finally be available for patients in a few years.

Protagonist/character presence

The chronology of the story does not follow one main character per se, but instead follows the progression of a research field from the perspective of different characters who are involved in the field at different time periods. This type of narrative is sometimes referred to as a historical narrative or historical epic. There are several clear hero-type characters present in the play, but no clear antagonists.

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Personal, emotional and informal tone
There is a mix of tonalities, ranging from pedagogical or educational to humorous and informal. The dramaturgy and the personalization of the characters adds a personal and emotional tone to the play.

Narrative instead of informative
The dialogue and the use of song and music adds to the narrative without being informative. There are also non-informative fairytale elements, especially when it comes to the scenography and the choice of words, e.g. “magical”.

SCIENTIFIC RELEVANCE

The play was rendered as the main subject for a Ph.D. dissertation by Stinne Hørup Hansen (2007), which examined the play’s influence on high school students. The study found that the play was effective at increasing young people’s interest in natural sciences and that narrative has the potential to be a focal point in interdisciplinary school projects, as it enabled students to make meaningful connections between school subjects.

Scientific communication and dissemination
The play was shown 11 times in Theaterhuset, Odense, and was presented in several news reports. The project was supported by the Danish Research Council for Nature and the Universe and by the Department of Biochemistry and Molecular Biology, SDU.

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I'm a Scientist, Get me out of here!

Name of organisation: Gallomor Communications
Type of organisation: Communications Agency
Country: United Kingdom
Website: www.gallomanor.com
Author/Responsible: Gallomanor Communications and Fundación Española para la Ciencia y la Tecnología
Language: Officially English, Spanish in this version
Link: https://somoscientificos.es
Additional resources:
1. Press release by Wellcome about the activity:
www.wellcome.org/press-release/im-scientist-get-me-out-here
2. UK webpage for the activity:
www.imascientist.org.uk
3. A researcher's experience of the UK activity:
www.emmayhnell.com/2021/05/23/scientists-are-people-too/

Description:
"Somos Científicos e Científicas" (the Spanish version of "I'm a Scientist, get me out of here!") is an engaging and interactive science communication contest that connects students aged 14 to 18 with scientists through an online platform. Students take on the role of judges, challenging scientists through live text chats, asking questions, and casting votes for their favourite scientist to win a €500 prize for science outreach. A significant part of the activity is student-led (they can ask whatever questions they want), so students of different ages and skill levels benefit from participating.

Participating in "Somos Científicos y Científicas" offers several benefits to students. Firstly, it demystifies the role of scientists, allowing students to realise that scientists are approachable and open to their questions. Secondly, it broadens career perspectives by exposing students to a variety of science-related careers beyond their usual biology, physics, and

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chemistry classes. Furthermore, the online format ensures equal participation, providing an opportunity for all students to ask questions regardless of their personality or level of curiosity. The activity promotes student-directed learning as students take the lead by asking questions and voting for their preferred scientist. Lastly, the engagement and excitement surrounding “Somos Científicos y Científicas” make it a highlight topic in the classroom, fostering a vibrant atmosphere throughout the duration of the activity.

On the other hand, the benefits for researchers participating are especially interesting from the point of view of science communication. The activity challenges scientists to communicate effectively with a diverse audience, simplify complex concepts, receive feedback, understand audience perspectives, connect science to real-world impact, and inspire future scientists. These experiences contribute to their storytelling skills, enabling scientists to communicate their research more effectively to a broader audience. Furthermore, the voting process, where students choose their favourite scientist to win a €500 prize for further science outreach, not only provides recognition but also supports scientists in expanding their outreach efforts.

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Why is this case relevant?

NARRATIVE RELEVANCE

"Somos Científicos y Científicas" is an activity that exemplifies science communication beyond the traditional deficit model and the mere dissemination of information. Instead, it creates an immersive communication experience that emphasises interaction and two-way feedback, as it invites the scientists themselves to directly answer the questions posed by students.

Furthermore, the activity demonstrates purposeful and targeted communication. It specifically targets students aged 14 to 18, aiming to bridge the gap between scientists and younger generations. By creating a communication experience that is relatable and relevant to the students' lives, the activity seeks to inspire and motivate them to pursue scientific fields and contribute to society.

In addition to these principles, presentation and style play a crucial role in the activity. The best communicator is rewarded with a monetary prize to be reinvested in outreach activities, which underscores the importance of effective presentation and storytelling approaches. Scientists are encouraged to convey their knowledge and research in a clear and engaging manner, tailoring their communication to suit the diverse audience of students. Furthermore, in order to participate, the scientists need to submit a short introduction text, and it will be the students and teachers who decide who they want to "see" in their classroom. This not only empowers a normally passive audience but also puts the communication skills of researchers up to the test from the start.

Storytelling structure

While a storytelling structure can certainly be used by individual researchers, it might be worth noting that the lifecycle of the activity for researchers follows a hero's journey narrative structure from the point of view of the students. The researchers are the main characters who apply and strive to be accepted, overcome challenges, and ultimately compete for the prize. This hero's journey narrative structure adds excitement and personal growth to the activity. It enhances the emotional connection between researchers and students as they witness the researcher's progression and become active participants in the story and their "success".

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SCIENTIFIC RELEVANCE

The activity embraces key principles of trustworthiness and scientific rigour by drawing on the expertise of the participating scientists. Students have the freedom to ask questions on a wide range of topics, and scientists are encouraged to open and foster a fact-based dialogue to dispel misconceptions and promote a deeper understanding of scientific concepts. Researchers may also present different perspectives when appropriate, encouraging critical thinking and a well-rounded understanding of scientific issues.

Transparency is another key feature of the activity. By allowing students to directly interact with scientists through live text chats, “Somos Científicos y Científicas” fosters open and transparent discussions. This direct communication enables students to gain insights into the scientists’ work and research processes, fostering a greater understanding of the scientific enterprise.

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Virtual "One Health" Exhibition

Name of organisation: Center for International Health CIHLMU
Type of organisation: International network
Country: Germany
Website: www.cih.lmu.de/contact
Author/Responsible::
CIHLMU and **EUGLOH** (The **E**uropean **U**niversity **A**lliance for **Glo**bal **H**ealth)
Language: English
Link: www.cih.lmu.de/one-health-target/one-health-virtual-exhibition
Additional resources:
Social Robots and their Role in Healthcare" story
www.eugloh-network.pageflow.io/eduardo-vila-cha#346078
"One Health" story
www.eugloh-network.pageflow.io/one-health

Description:
The Virtual One Health Exhibition is an online platform that highlights the research projects conducted by researchers from CIHLMU and EUGLOH. This virtual exhibition showcases digital stories that delve into various complex global health issues related to the concept of One Health, shedding light on the research findings and their implications. The stories mainly include short, character-driven texts with visuals and videos as support.

The exhibition showcases different examples of research projects related to One Health being conducted at the partner universities of the EUGLOH alliance. These examples demonstrate the practical application of the One Health approach in tackling a wide range of health issues that transcend traditional disciplinary boundaries. By presenting these examples, the exhibition highlights the relevance and

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effectiveness of the One Health approach in addressing complex health challenges that impact humans, wildlife, and ecosystems.

The One Health approach recognizes the interconnectedness of human health, animal health, and the health of ecosystems. It acknowledges that the well-being of humans, animals, and the environment are interdependent and that addressing global health challenges requires a holistic and interdisciplinary perspective. Through the exhibition's storytelling format, visitors can explore and understand the One Health approach in greater detail and from different points of view.

The first story presented in the exhibition, for example, provides an in-depth exploration of the concept, offering insights into its principles, methodologies, and significance in addressing complex global health issues. Before introducing the more informative parts of the concept, however, the story starts like this: "Lisa is sitting at home. She is preparing a presentation for her biology class, but is taking a break to spend some time with her grandma."

Subsequently, the story includes videos showing the interactions between three characters as they discover how topics they thought unrelated are actually interconnected through the concept and science of One Health, intertwined in the narrative.

A different approach is taken, for example, by the story "Social robots and their role in Healthcare". In this case, the first section presents the scientific problem, challenge, and solution. After the informative part, an "illustrative story" is introduced: "[...] the story between Maria, an elderly lady, and Caro, a health care specialised robot". The story mainly relies on simple dialogues between the characters: Maria, who has recently undergone surgery, her son, Joseph, a doctor, and Caro, a social robot. While basic in style, this story uses characters and a narrative arc to answer what could potentially be common reactions, doubts, and questions raised by an elderly person being offered robot care.

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Why is this case relevant?

NARRATIVE RELEVANCE

Overall, the Virtual One Health Exhibition showcases the use of storytelling for science communication by utilizing digital storytelling techniques to engage visitors in a narrative-driven exploration of research projects.

Most of the stories in the exhibition follow a structured three-part narrative format using personal accounts and both research-based and citizen-based characters. The stories usually include a narrative section, either at the start (e.g. “One Health”) or at the end (e.g. in the story “Social Robots and their Role in Healthcare”), followed or preceded by more classic information sections that include explanations of the science and related challenges.

The stories seem to strive to make the content relatable by creating an emotional connection with the audience through the characters to make the information more memorable and impactful, and employing clear and accessible language to make scientific concepts and information understandable to a broad audience. However, it’s important to note that not only do the issues tackled offer a wide array of perspectives, but the quality (both regarding visuals and story-wise) and tone of the stories are also very diverse, probably due to the platform being multi-authored.

SCIENTIFIC RELEVANCE

On the other hand, the exhibition is grounded in scientific, factual, research conducted by reputable institutions and researchers, ensuring a scientific foundation for the stories and information presented. It aims to accurately represent the findings and knowledge generated through these projects while also presenting a diverse range of research projects related to One Health, covering various topics and perspectives within the field. It demonstrates how research projects conducted by CIHLMU and EUGLOH researchers are contributing to the advancement of knowledge and the development of practical solutions that consider the interconnectedness of human health, animal health, and ecosystems.

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CSI - The science behind the show

Name of organisation: EUSEA – European Science Engagement Association
Type of organisation: Association
Country: Austria
Website: www.eusea.info/activity/csi/
Author/Responsible:: EUSEA – European Science Engagement Association
Language: English
Additional resources:
Forensic River activity
www.mediasanctuary.org/project/week-3-forensic-river-art-science-workshop/"

Description:

CSI - The Science Behind the Show is an educational activity designed to teach participants about the principles and techniques used in real-life crime scene investigations and forensic science. The activity is similar to an escape room or murder mystery game, but with a strong science component.

The activity allows participants to learn about a wide diversity of fields (including biology, physics, and chemistry) in a hands-on way, by conducting experiments to try and solve the mystery of who the "criminal" that has committed a murder (usually represented by a dummy body on the ground) is. Each experiment is set up in a different "station" to allow participants to move around in small groups, and each station is covered by one volunteer/expert that explains the science and guides participants to conduct the experiments and draw conclusions based on them. The experiments included are generally: DNA extraction, chromatography, fingerprint matching, blood spatter analysis, and paint and fibre matching.

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Although originally focused on forensic science, the activity could be adapted to focus on food science variations, such as investigating food poisoning outbreaks or food fraud cases. This gamified approach immerses participants in the world of food science, fostering a tangible understanding of complex concepts, showcasing the diverse career pathways in the food industry, and allowing participants to develop an understanding of the importance of food science in ensuring a safe and sustainable food supply for all.

For example, following the same template, but with a different “case”, Forensic River focuses on river pollution to promote citizen science (The victims? Macroinvertebrates that function as a natural indicator of the river’s health!). The workshop combines scientific analysis, artistic expression, and storytelling to shed light on the environmental issues surrounding the Hudson River. By engaging participants in hands-on activities and providing them with a deeper understanding of the river’s condition, the workshop aims to generate awareness and encourage action.

The hands-on nature of the activity also promotes active learning and helps to make science more accessible and engaging for a wide range of audiences. EUSEA has organised the activity for adult citizens, children aged 7 to 12, teenagers, and professionals from different fields like public engagement or the cultural and creative sector. The activity can be facilitated by well-trained volunteers, but it is recommended to have a researcher/expert on hand that is well-versed in forensic science to give more in-depth explanations and provide real-world context.

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Why is this case relevant?

NARRATIVE RELEVANCE

CSI - The Science Behind the Show stands out as a case of science communication utilising storytelling techniques. The activity follows a well-defined structure, encompassing a beginning, middle, and end, to lead the participants throughout the experience. They are introduced to a crime scene and presented with a mystery that demands their attention and analytical skills. As the main characters and detectives in the narrative, participants embark on a journey to gather evidence, analyse it, and ultimately solve the crime.

By the recreation of a crime scene and the use of science and detective skills to solve the mystery, participants can learn about the scientific process and gain a better understanding of how science is used to solve real-world problems.

One of the notable strengths of this activity is its ability to create a personal and immersive experience. Incorporating tangible details and hands-on techniques allows participants to engage with physical evidence and interactive elements, making complex scientific concepts more accessible and easier to understand. This hands-on approach fosters a deeper connection with the scientific information presented, enhancing the overall impact of the activity. Additionally, by incorporating some TV drama and real-world context, the activity can help to spark interest and curiosity in science, which can lead to long-term engagement and even inspire future careers in science-related fields.

SCIENTIFIC RELEVANCE

In terms of science communication quality, CSI - The Science Behind the Show demonstrates trustworthiness and scientific rigour. It provides factual information about science and crime investigations, promoting scientific literacy and knowledge among participants. The activity maintains a balanced approach, highlighting the fun and exciting aspects of solving a crime while also emphasising the scientific principles and techniques employed. Thus, it is crucial that the activity employs clear and coherent communication strategies, ensuring that participants can easily follow and understand the content.

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PiCS - Picturing the Communication of Science

Name of organisation: Frame - Divagazioni scientifiche
Type of organisation: Science organisation
Country: Italy
Website: www.weareframe.it
Author/Responsible: Frame - Divagazioni scientifiche with support of the Fondazione Compagnia di San Paolo
Language: Italian
Link: Frame - Divagazioni scientifiche with support of the Fondazione Compagnia di San Paolo
Additional resources:
1. "Science, communication and the caring relationship" publication: www.wearepics.it/wp-content/uploads/2022/12/PiCS3_Impaginato_digital.pdf
2. "Stand up for comedy" Stand up Comedy: www.wearepics.it/covid-eo/
3. Frame divagazioni scientifiche Youtube Channel: www.youtube.com/channel/UCuRxr2LkjuHd5Tvl34WVdFw

Description:

PiCS, which stands for "Picturing the Communication of Science," is a dynamic and innovative initiative based in Italy that brings together a diverse group of professionals with a shared passion for science communication. This interdisciplinary collective includes experts from a wide range of fields, including philosophy, sociology of science, scientific research, artistic exploration, audience engagement, and museology. Their collaborative efforts are aimed at redefining and enriching the ways in which science is communicated to the public.

At its core, PiCS seeks to bridge the gap between the scientific community and the broader public, recognizing that effective science communication is essential for fostering understanding, engagement, and appreciation of scientific knowledge. By combining their unique skill sets and perspectives, the members of PiCS strive to create innovative and engaging approaches to

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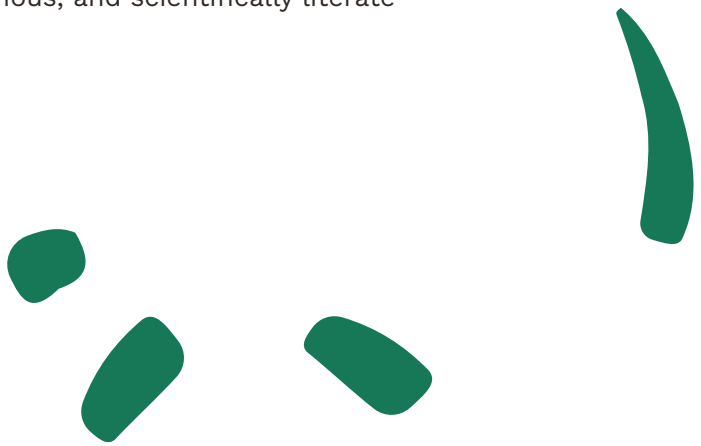
convey complex scientific concepts in accessible and captivating ways.

One of PiCS' key goals is to explore the intersection of science and art, recognizing the power of visual and creative mediums in communicating scientific ideas. Through this exploration, they aim to develop new ways of "picturing" science, not only through traditional forms of communication but also through artistic expressions that can resonate with diverse audiences.

Their work is not limited to theoretical discussions; PiCS actively engages in practical projects and initiatives. This includes collaborations with museums, science centres, and cultural institutions to curate exhibitions that blend art and science. They also develop interactive educational programmes and experiences designed to foster curiosity and critical thinking among learners of all ages.
Furthermore, PiCS is committed to advancing the discourse on science communication, both within Italy and on a global scale. They contribute to the academic and professional conversations surrounding science communication methodologies, ethics, and best practices. Through publications, workshops, and public events, they share their insights and knowledge with the wider community of science communicators.

PiCS serves as a testament to the power of interdisciplinary collaboration in addressing the challenges and opportunities of science communication. Their work not only enriches public engagement with science but also stimulates creativity, innovation, and dialogue among professionals from diverse backgrounds. As they continue to "picture" science in new and exciting ways, PiCS is contributing to a more informed, curious, and scientifically literate society.



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Why is this case relevant?

NARRATIVE RELEVANCE
The narrative relevance of PiCS (Picturing Communication of Science) is the link between science communication and visual arts like illustrations and graphic novels that are close to the words of fictional stories. Through PiCS, science is narrated with the aim of making it more attractive and engaging for non-expert audiences. The stories produced present the classical essential elements of a story (Beginning/Middle/End; Protagonist/Character; Difficulties/Conflict; Resolution/Moral) with the difference that the characters in this case are scientists and the content of the stories is always scientifically related.

Beginning/middle/end structure
The narrative of PiCS unfolds with a clear structure, introducing the initiative's inception (beginning), delving into its diverse projects and explorations (middle), and culminating in a vision that underscores the societal impact and innovative contributions (end).

Interacting with the audience
PiCS actively engages with the audience, making the narrative relevant to diverse viewers. Interactive educational programs and experiences exemplify the narrative's impact on fostering curiosity and critical thinking among learners.

SCIENTIFIC RELEVANCE
The stories produced by PiCS (Picturing Communication of Science) are scientifically relevant because they were developed to make science communication simpler and more engaging. More specifically, the content is factual, scientific, impactful, clear, and developed with the support of scientists and experts in science communication.

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What is your Kitchen Crime?

Name of organisation: Food Standards Agency
Type of organisation: Public Organisation
Country: United Kingdom
Website: www.foodstandards.gov.scot/
Author/Responsible: Food Standards Agency
Language: English
Link: www.foodstandards.gov.scot/consumers/food-safety/at-home/kitchen-crimes
Additional resources:
www.foodstandards.gov.scot/consumers/food-safety/at-home
www.foodstandards.gov.scot/consumers/food-safety/buying-food-eating-out

Description:
One of the main functions of **Food Standards Scotland** is to educate the general public about food safety practices and nutritional information. This public health campaign is designed to provide a fun, novel way to encourage good food safety practices in the home and raise awareness of how changes to our preparation and cooking behaviour can reduce the likelihood of getting food poisoning.
The campaign highlights 20 common “kitchen crimes” which could potentially lead to food poisoning. The campaign features “mug shots” of people who have “committed” these crimes, including the“Ham Sniffer” (someone who sniffs the food to see if it smells “off”); the “Dodgy Chiller” (someone who doesn’t check the temperature of their fridge on a regular basis); the “Chicken Washer” (someone who washes raw chicken potentially spreading bacteria) among others.
Participants are invited to complete a quiz to see if their food safety habits can be attributed to one of

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the 20 “crimes”. Each crime is presented to which the participant must answer guilty or not guilty. At the end of the questionnaire the participant, depending on how many crimes they are guilty/not guilty of can be branded a “disgraceful devourer”, a “not bothered nibbler” or a “squeaky clean keen bean” among others.

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Why is this case relevant?

NARRATIVE RELEVANCE

Authenticity

There is authenticity in the programme as supported by robust scientific evidence to back up the "case studies" that are being presented as "crimes". The "crimes" are identified as common practices that are known to happen in the home from which potential food poisoning can arise. The causes of the food poisoning are well documented in the literature. However, none of the characters carry any air of authenticity.

Nonfictional story

The whole premise of the campaign is to create a nonfictional story albeit around actual food poisoning events that might take place in the home due to twenty food handling malpractices.

Beginning/middle/end structure

The campaign does not follow a normal narrative structure. The engagement is a quiz regarding 20 scenarios ("crimes") in the home involving food handling. The participant is invited to take the quiz and to determine if they are "guilty" of committing these "crimes". The beginning could be identified as the commencement of the quiz, while the result of the questionnaire is the end outcome or conclusion to the engagement. The participant is given a "Criminal Record Sheet" which can identify them from "Not Bothered Nibbler" or a "Grubby Guzzler" in the worst-case scenarios, to a "Minty Fresh Muncher" or a "Squeaky Clean Keen Bean" in the best cases. There is little evidence of what might be described as a middle segment.

Protagonist/character presence

There is a strong protagonist/character presence in the quiz. There are 20 "mug shots" of individuals who have committed "crimes" in the kitchen. "Dodgy Chiller" does not check the temperature of the refrigerator; "Raw Griller" does not check that his food is cooked throughout etc.

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Personal, emotional and informal tone

The tone of the campaign is light but noting that the overall message it wishes to deliver is a serious one pointing to the fact that food poisoning can have serious repercussions for an individual's health or that of their family. Interspersed with the "mug shots" of each of the food criminals, is text described as "facts", which emphasise the seriousness of food poisoning framed in an otherwise light and jovial tone. These include messages such as:

> ***"There's an estimated 43,000 cases of foodborne illness in Scotland every year. That's 5,800 visits to the GP and around 500 people needing hospital treatment."***

> ***"Research suggests that over half (56%) of people in Scotland aren't concerned about food hygiene in their home."***

SCIENTIFIC RELEVANCE

The campaign has a high degree of scientific relevance, highlighting the importance of food safety in the home and the consequences of not carrying out small but not inconsequential habits with respect to the handling of foods.

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“Ciência Viva”

Name of organisation: Ciência Viva
Type of organisation: National Agency
Country: Portugal
Website: www.cienciaviva.pt/en/
Author/Responsible: Ciência Viva
Language: Portuguese, English and Spanish
Link: https://www.cienciaviva.pt/en/

Description:
“Ciência Viva” (which translates to “living science”) in Portugal is considered a noteworthy example of science communication and public engagement in science. It has received recognition for its efforts in promoting science and technology among the general public, particularly among children and young people. The programme has successfully engaged people in various educational and cultural activities related to science and has been lauded for its impact, the variety of activities it offers, and its commitment to fostering a deeper understanding of science and technology in society. It serves as a model for how to effectively communicate scientific concepts and inspire interest in STEM (Science, Technology, Engineering, and Mathematics) fields.

“Ciência Viva” is a Portuguese government initiative aimed at promoting scientific and technological culture and knowledge among the general public, particularly young people.

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The “Ciência Viva” programme includes a wide range of activities and initiatives, such as science centres and museums, science education programmes for schools, science festivals and events, scientific communication and outreach activities, research and development projects, and international collaborations.

The organisation’s mission is to enhance the scientific literacy of the Portuguese population, promote the development of scientific and technological skills and knowledge, and contribute to the creation of a culture of innovation and entrepreneurship in Portugal. “Ciência Viva” initiatives are designed to make science and technology more accessible, understandable, and engaging for everyone, regardless of their background or level of education. By fostering scientific curiosity, critical thinking, and creativity, “Ciência Viva” aims to empower individuals and communities to actively participate in the development of a knowledge-based society.

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Why is this case relevant?

NARRATIVE RELEVANCE

The motivation behind “Ciência Viva” is to promote scientific and technological culture and knowledge among the Portuguese population, with a particular focus on young people. The initiative was launched in the early 1990s, at a time when Portugal was undergoing significant economic and social changes, with the country’s transition to a knowledge-based economy.

“Ciência Viva” was created with the aim of fostering a greater appreciation for science and technology, and to promote scientific literacy and critical thinking among the population. The initiative also seeks to inspire young people to pursue careers in science and technology, and to encourage the development of a culture of innovation and entrepreneurship in Portugal.

“Ciência Viva” u uses storytelling as a powerful tool for science communication in several ways as it often creates interactive exhibitions and displays that use storytelling to present scientific concepts in a compelling and relatable manner. By weaving narratives into these displays, visitors can connect with the information on a personal level. For example, they may use stories about famous scientists or historical events to illustrate key scientific principles.

“Ciencia Viva” also conducts workshops and demonstrations, where educators and presenters frequently incorporate storytelling techniques. Alongside this, it organises programmes and events that include storytelling as a central element. These programmes often feature scientists and experts who share their experiences and stories related to their work, making science more accessible and inspiring to the public.

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The organisation also organises competitions or events where individuals or groups can present their scientific research or projects through storytelling. These competitions encourage participants to convey their scientific work in a compelling and accessible way.

SCIENTIFIC RELEVANCE

In addition to promoting scientific knowledge and skills, “Ciência Viva” also aims to increase public awareness of the importance of science and technology in addressing societal challenges, such as climate change, health, and energy. By engaging with the public and promoting dialogue between scientists, policymakers, and citizens, “Ciência Viva” aims to contribute to the development of evidence-based policies and decision-making processes that are grounded in scientific knowledge and understanding. Incorporating storytelling into their science communication efforts helps “Ciência Viva” engage and educate the public in a more engaging and accessible manner

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CLUSTER 4

AUDIO

BEST PRACTICES COLLECTION

Potato Blight The Greatest Inca Treasure

Reflections on science - Podcast series

Potato Blight The Greatest Inca Treasure

Name of organisation: SEGES Innovation P/S
Type of organisation: Research and development
Country: Denmark
Website: www.dca.au.dk/aktuelt/nyheder/vis/artikel/plante-podcast-den-stoerste-inkaskat
Author/Responsible: Martin Stoltenberg Hansen, Camilla Brodam Galacho
Language: Danish
Additional resources:
www.seges.dk
www.landbrugsinfo.dk

Description:
SEGES Innovation has created a podcast called SEGES Podcast, which covers a wide range of topics related to farming and agriculture. The podcast targets a broad audience, i.e. farmers, scientists, policy makers, and consumers alike. In SEGES Innovation's own words;

> ***"With the SEGES Podcast, you can get smarter while driving the tractor, walking around in the barn, or sitting in the office."***

Hence, the content is generally presented in a rather informal manner, so as not to alienate non-researchers. The podcast is divided into four subcategories, namely:

- **Plante-podcast** (Plant podcast)
- **SEGES Gris** (SEGES Pig)
- **SEGES Kvæg** (SEGES Cattle)
- **SEGES Økonomi og virksomhedsledelse** (SEGES Economics and Business Management)

This template covers a podcast miniseries called "The Largest Inca Treasure", which can be found under

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SEGES Plant podcast. The Largest Inca Treasure deals with the history of potato blight, and is hosted by SEGES Innovation's senior communication consultant, Martin Stoltenberg Hansen. The miniseries consists of two episodes with a total runtime of 43 minutes, and features interviews with the two potato experts, Jens Grønbech Hansen, Senior Advisor at Aarhus University's Department of Agroecology, Climate, and Water, and Lars Bødger, national consultant in crops and production, specialising in potatoes. Here follows a brief summary of both episodes, with emphasis on any present elements of storytelling and science communication.

Episode 1: The Journey to Europe
The first episode starts off to the sound of thunder, crashing waves, and seagulls, until Martin begins to narrate:

"You are standing on the deck of a large wooden ship, and you have difficulty standing because the wind and the merciless North Atlantic waves pull and beat our vessel. We write in the year 1537, and the ship we are imagining we are standing on, has a dramatic past, because it comes straight from a raid of the Inca Empire in South America, where a small Spanish army led by General Francisco Pizarro, has taken the Inca Empire and raided their gold. But there is something else in the cargo hold: a small, humble-looking lump. But it will turn out that this small lump has a far greater influence on Europe's progress and prosperity than all the gold lying next to it".

Already we see several elements of storytelling, including a temporal, spatial, and cultural setting (context); an inner tension from stylistic devices (style); a distinct tone (tonality); and an immersive form of presentation (modality). Soon thereafter listeners are introduced to Lars, who provides insight into the many advantages gained from bringing the potato back to

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Europe, including the potato's high amount of minerals, fibres, and vitamins, especially vitamin C at a time when scurvy was raging the seas. He then continues to explain the increasingly important role of the potato in Europe during the next 300 years, until the 1840s, when a ship containing potatoes with potato blight (type A1) arrived, which caused the Irish famine shortly after. Lars then gives a relatively detailed account of the early pesticides developed in the late 1800s, i.e. Bordeaux mixture, which was a mixture of copper sulphate and calcium hydroxide. Lars continues along the timeline, detailing the development of maneb fungicide in the 1950s and mancozeb in the 60s, until the eventual arrival of another type of potato blight (A2). Lars describes A1 as male and A2 as female. Through sexual recombination, A1 and A2 were able to interbreed in the fields and produce offspring, which resulted in pesticide resistance. The remainder of the first episode goes into greater detail about the science behind recombination, the societal repercussions hereof, and possible cures. Both Lars and Martin make various cultural and historical references throughout the podcast, e.g. Jurassic Park and Charles Darwin, to better illustrate the information presented. The podcast also features soundscapes and music throughout.

Episode 2: The Threat

The second episode continues where the first episode left off. This episode has fewer elements of storytelling and deals in large parts with the paradigm shift of the 70s, and the challenges we have faced as a society ever since. Lars proposes comprehensive decision support systems as the best possible short-term solution to pesticide resistance. Listeners are then introduced to another guest, Jens, who explains the research on EU41 and EU43 blight, which in 2022 were found to have developed resistance to the fungicide, mandipropamide. Both he and Lars explain the research in depth but they utilise a relatively non-technical language style, with lots of metaphors and common expressions, e.g.

> "***we have to look at it as a game of chess against this mushroom, where we have to think many moves ahead and we have to be more cunning than it, because otherwise it will win. If we don't change our strategy now, then Phytophthora infestans, as the organism that causes potato blight is called, will win.".***

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Metaphors are commonly used in all types of storytelling in order to evoke emotions and to create vivid and relatable representations. This quote also illustrates another important storytelling element, namely the villain of the story, which in this case isn't a human, but a mushroom. The episode ends with an extended discussion of possible short-term and long-term solutions as well as a summary.

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Why is this case relevant?

NARRATIVE RELEVANCE

Authenticity

The two potato experts are congruent, trustworthy, and compelling, which adds to the overall authenticity of the podcast. One could argue that the historical context of the podcast also adds to the authenticity. As Lars says: “to understand the present, we must also understand the past”. The host, Martin, also adds to the authenticity not only by providing context, but also by asking “simple” questions.

Nonfictional story

The story is predominantly nonfictional. The two experts make references to historic events and research to explain the challenges caused by potato blight.

Cultural/anthropological and ethnological approach

The host and the two experts make many references to the important role of the potato in Europe. They underline how reliant our society is on potatoes, e.g. with reference to the Irish famine in the 1800s, and how potatoes have become integral to many cultures.

Beginning/middle/end structure

As is apparent in the description above, the podcast’s chronological structure is a linear narrative, as it follows a consecutive order of events in order to explain the potato’s important societal role from 1537 to 2023. The podcast also arguably follows an Aristotelian trepidation, with an exposition, confrontation, and a climax.

Protagonist/character presence

There are several characters present in the story. Martin is the narrator, a common character in many stories, while Lars and Jens can be seen as heroes, i.e. those who are solving the problem through science (16). The potato itself as well as the blight can also be viewed as central characters, in which case the potato blight can be viewed as the villain. The podcast also mentions other supporting characters, like Francisco Pizarro, Kong Louis d. 16, and Charles Darwin.

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Personal, emotional, and informal tone
As exemplified in the quotes in the description above, both the host and the two experts use a rather informal tone. When they are explaining something complex, they try to make it more relatable, e.g. by utilising metaphors, cultural references, and common expressions. They also avoid excessive technical jargon, as they e.g. sometimes refer to pesticides as “weapons” and to Sclerotin as tiny “tennis balls”.

Narrative instead of informative
Most of the podcast miniseries are informative, as the two experts explain the challenges we face and the associated research. The narrative comes mostly from the chronology and the characters, as well as from the stylistic devices (style); the distinct tone (tonality); and the immersive form of presentation (modality) (14). In other words, the podcast does not only provide factual statements about potato blight, but sets a captivating scene, which, with the use of music, figurative language, and other storytelling devices, allows the audience to immerse themselves in the episode.

SCIENTIFIC RELEVANCE
The podcast miniseries makes many factual statements about potatoes and potato blight, which are based on scientific findings and historical evidence. As such, the podcast miniseries is scientifically relevant. Furthermore, the two potato experts, who explain the science to the audience, have personally many important scientific contributions to the area of research.

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Reflections on science - Podcast series

Name of organisation: Università di Trento
Type of organisation: Public University
Country: Italy
Website: www.unitn.it
Author/Responsible: Università di Trento
Language: Italian
Link: www.unitn.it/riflessi-di-scienza

Description:
In the world of podcasts, where content covers an astonishing array of topics, **“Riflessi di Scienza”** (“Reflections on science”) stands out as a captivating exploration of science, humanity, and the deeply personal motivations that drive researchers. Hosted by Andrea Brunello, this podcast takes listeners on an enlightening journey, demystifying the often distant and cold perception of science.

Unveiling Personal Motivations: At the heart of “Riflessi di Scienza” lies a profound understanding that those who dedicate their lives to research often harbour deeply personal and compelling reasons for doing so. The podcast opens with a simple yet resonant question: “Ehi... ehi tu, lo sai che chi si dedica alla ricerca molto spesso ha dei motivi personali e profondi per farlo?” (“Hey... hey you, do you know that those who engage in research often have personal and profound reasons for doing so?”). This question sets the stage for an exploration of the human side of scientific endeavours.

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A Collaborative Effort: “Riflessi di Scienza” is not just the work of one individual but a collaborative effort that includes the musical talents of Stefano Oss. The original music composed by Stefano Oss adds a unique and evocative dimension to the podcast, enhancing the overall listening experience.

Scientific and Human Themes: The podcast delves into important scientific and human themes, weaving together a tapestry of knowledge and emotion. While the scientific content is both engaging and informative, it’s the human element that truly shines. Each episode is a window into the personal and professional lives of researchers, shedding light on their motivations, aspirations, and the impact of their work on society.

University of Trento’s Involvement: “Riflessi di Scienza” is produced by the University of Trento, a prominent institution of higher learning in Italy. This affiliation ensures a commitment to academic rigour and excellence in the content presented. It also underscores the university’s dedication to public engagement and the dissemination of knowledge beyond traditional academic boundaries.

Frequency and Accessibility: The podcast releases new episodes every fifteen days, providing a regular dose of intellectual stimulation and inspiration. This consistent schedule allows listeners to stay engaged and look forward to fresh perspectives on a wide range of scientific topics.

A Celebration of Diversity: The podcast celebrates diversity in every sense—diversity of thought, culture, and scientific disciplines. By featuring researchers from various backgrounds and fields of study, it promotes inclusivity and demonstrates that science is a collaborative, multidimensional endeavour. This celebration of diversity not only enriches the podcast’s content but also reinforces the idea that knowledge knows no boundaries.

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Why is this case relevant?

NARRATIVE RELEVANCE
"Riflessi di Scienza" maintains a high level of narrative relevance by focusing on the profound and personal motivations driving researchers. The podcast's narrative revolves around the exploration of the human side of scientific endeavours, creating a rich and resonant tapestry that goes beyond the conventional perception of science. The opening question sets the stage for a narrative that delves into the deeply personal aspects of research, aligning each episode with a broader theme of humanity within the scientific context.

Nonfictional story
The podcast adheres to a nonfictional structure, rooted in the reality of researchers' lives and motivations. The genuine exploration of personal and profound reasons for engaging in research reflects a commitment to authenticity and truthfulness in the narrative. The nonfictional approach adds a layer of authenticity, making the podcast a genuine window into the world of scientific inquiry.

Protagonist/Character presence
At the heart of "Riflessi di Scienza" are the researchers themselves, serving as the protagonists and characters in this captivating exploration. Each episode unfolds as a narrative journey, with individual researchers stepping into the spotlight. The podcast's distinctive feature lies in its ability to cast scientists not merely as conveyors of facts but as protagonists with deeply personal motivations. The opening question directly addresses the listener, inviting them to recognize and connect with these protagonists, turning the spotlight on the human side of scientific inquiry. This narrative choice enriches the storytelling, making each episode a character-driven experience that goes beyond the scientific facts and delves into the intricate lives and motivations of those driving research forward.

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Personal and Informal Tone

"Riflessi di Scienza" embraces a personal and informal tone, evident in the opening question that directly addresses the listener. The podcast aims to demystify science by humanising researchers and presenting their motivations in a relatable manner. The collaborative effort, including musical contributions, adds an artistic and personal touch, enhancing the overall informal and engaging atmosphere.

SCIENTIFIC RELEVANCE

Scientific relevance is a core element of the podcast's narrative, seamlessly interwoven with human themes. While engaging and informative scientific content forms the backbone, it is the exploration of the personal lives, motivations, and aspirations of researchers that distinguishes "Riflessi di Scienza." This dual focus ensures that the podcast remains scientifically rigorous while providing a more holistic and human perspective on the world of research.

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CLUSTER 5

LIVE EVENTS

BEST PRACTICES COLLECTION

Public University Lectures – Coffee

European Researchers' Night

Food & Science Festival

Pint of Science Festival

Researchers at Schools

3 Minute Thesis Competition

Public University Lectures – Coffee

Name of organisation: : Aarhus University
Type of organisation: University
Country: Denmark
Website: www.ofn.au.dk/
Author/Responsible: Aske Bosselmann, Anders Barfod, and Kjeld Hermansen
Language: Danish

Description:
Several times a year, Aarhus University hosts free public lectures on natural sciences. For each public lecture, an expert will take the podium at one of Aarhus University's lecture halls and present their field of work to the audience, namely the general public. As such, the lectures can cover everything, from the corona virus and astrophysics, to coffee and bats (chiroptera), depending on the expert's background. About two hours long, each presentation usually includes a general introduction to the field and some personal anecdotes from the expert, such as how she/he got into the field, as well as the research methods, data collection, analyses, and findings. Since the lectures are offered to the general public, they are usually presented in a relatively simple language, with minimal use of technical jargon and more storytelling elements, as compared to traditional university lectures. Even so, the content can be quite complex, and certainly more challenging to comprehend than most mass

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media science communication, e.g. news broadcasts, documentaries, etc. The difficulty level is summarised in the following quote from the university website:

> ***"The lecturers are researchers, the level is high, and you will be challenged, but you can benefit from all lectures regardless of your professional qualifications."***

The lectures are live streamed to cinemas, libraries, public universities, cultural centres, high schools, elementary schools, cafeterias, etc. in different cities in Denmark and abroad. The audiences seated in the lecture hall, as well as those watching online, can ask questions during the lecture. After a lecture has been given, the organisers will take additional questions from the audience, and the answers will be made publicly available on the university website. The lecture itself, however, will not be available for download or stream after the lecture and live stream have ended. Moreover, it is only possible to attend the lectures in the lecture hall or at the designated host locations where the live stream can be seen, and therefore not in your private home.

The lecture series is organised by the Faculty of Natural Sciences, Aarhus University, and is offered in collaboration with hosts in a number of cities and the Carlsberg Foundation.

Coffee:
This lecture was given on March 21, 2023, by the three "**coffee experts**", Aske Bosselmann, lecturer in natural resource economics at the Department of Food and Resource Economics; Anders Barfod, lecturer in botany at the Department of Biology, Aarhus University; and Kjeld Hermansen, doctor and associate professor in diabetes and nutrition at the Department of Clinical Medicine, Aarhus University. The narrative structure of the lecture is built around Danes' coffee consumption patterns in historical perspective. As such, it follows the chronological developments through different time periods, from the year 1665, when coffee first became available in Denmark, to the latest research of today. Along the way, the lecture covered the biology of the coffee plant, i.e. how it is grown and how the plant is turned into coffee. It also dealt with the health aspects of coffee as well as the concept of sustainable coffee, including how climate change will affect coffee in the future. The experts also challenged some of the many myths about coffee, like how much coffee is too much coffee.

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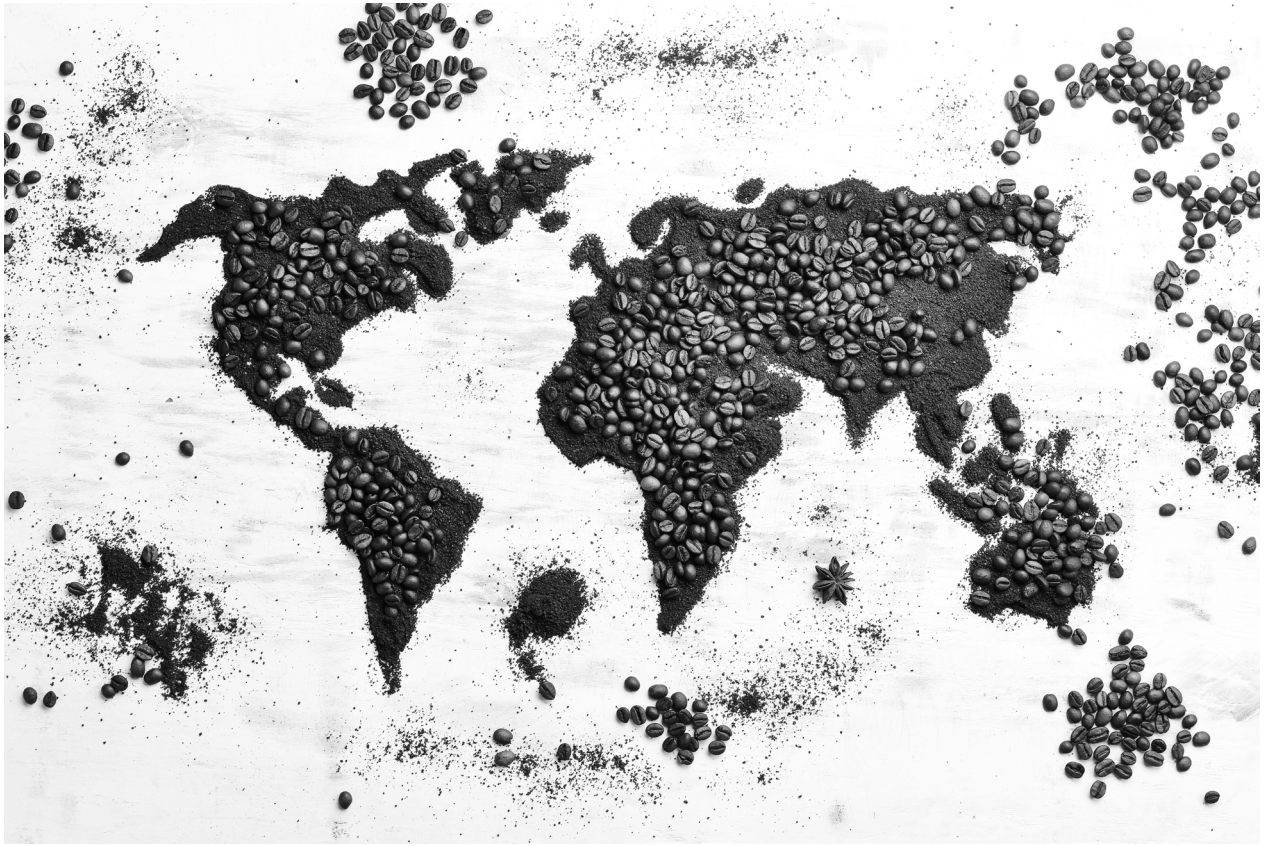
The experts also provided insight into their research techniques, e.g. Kjeld Hermansen's research group's work on the risk of developing type 2 diabetes as a result of coffee consumption.

The use of storytelling elements is arguably less prominent compared to other best practice cases, since the lecture did not necessarily follow the typical cause-effect relationship between events related to the character(s), but rather to the coffee bean itself. As such, it is difficult to identify a clear beginning/ middle/end structure. Yet one could argue that the three researchers are the main characters, while their colleagues are supporting characters in a larger story about the history of the coffee bean, which in turn follows a chronological timeline of events. Otherwise, the plot structure resembles a classic logical-scientific university lecture, except for the additional personal anecdotes provided by the three researchers, such as funny stories from their data collection process. Using anecdotes to illustrate general trends is a common way for science communicators to incorporate narrative in their presentations. Moreover, the three researchers make comparisons that make the information more understandable to non-researchers, e.g., they state that the coffee produced in the so-called coffee belt amounts to 31.000 cups of coffee per second.



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Why is this case relevant?

NARRATIVE RELEVANCE

Authenticity

The three respected researchers add to the authenticity. The lectures are hosted by Aarhus University, which arguably also adds to the authenticity. References are provided both in the lecture and in the description online.

Nonfictional story

The lecture is mainly concerned with history and research related to coffee. The three experts use slideshows to convey information, through e.g., graphs and maps.

Cultural/anthropological and ethnological approach

The lecture takes on a historical perspective to explain coffee's role in society through different eras.

Protagonist/character presence

Researchers are the main characters, who are solving the challenges. The three experts could be seen as representatives of the science community.

Personal, emotional, and informal tone

The tone is professional, but probably less formal than classic university lectures, i.e. more humour, less technical jargon etc. Comparisons, such as metaphors, add to the emotional impact of the lecture.

Narrative instead of informative

While the lecture has less prominent plot structure and characters, it does fulfil the basic definition of storytelling, i.e. causality, temporality, and character representation , and incorporates some classic storytelling elements, such as conflicts, call to action, comparisons, and humour. Even so, this case is probably more aligned with classic logical-scientific communication than most of the other FoodStories cases. On this note, it is important to remember that even most research papers have a basic plot, i.e. a definition of a challenge and the establishing of character relationships across time and space. And so, this public lecture arguably has less elements of storytelling than e.g., a documentary film about coffee, but more storytelling elements than a standard

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university lecture on the same topic, which in turn has more storytelling elements than most research articles. Storytelling seems to play a big role in the effectiveness of a university lecture.

SCIENTIFIC RELEVANCE

The three researchers present their own research and findings, as well as research on coffee in general, similar to a literature review. In this sense, the lecture is perhaps similar to an introductory lecture at a university level course.

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European Researchers' Night

Name of organisation: European Researchers' Night

Type of organisation: Science communication and public engagement sector

Country: Portugal and EU

Website: www.marie-sklodowska-curie-actions.ec.europa.eu/event/2022-european-researchers-night

Author/Responsible: European Commission and several universities, science and research institutes, museums etc.

Language: Several languages as this event occurs in several cities across the EU

Link: https://noitedosinvestigadores.org/

Description:

The **European Researchers' Night** is a large-scale event held annually across Europe to celebrate and promote the world of science and research, aiming to bridge the gap between researchers and the general public while fostering a sense of curiosity and interest in several scientific areas. The event involves several types of interactive activities such as exhibitions, workshops, talks, demonstrations, and hands-on experiments.

The event is designed to be accessible to people of all ages and backgrounds, making science more approachable. It involves researchers from several different fields such as biology, astronomy, chemistry and more. During the event, several researchers conducted workshops, public lectures and displays and exhibitions. The European Researchers Night often incorporates elements of entertainment such as art, music and other forms of creativity to make science more enjoyable and engaging.

This night/event serves as a platform to showcase the importance of research, promote scientific literacy, and inspire the next generation of scientists, while also allowing the public to directly engage with the fascinating world of science.

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Why is this case relevant?

NARRATIVE RELEVANCE

Nonfictional story

The event is built around real scientific research and scientists who talk about subjects such as the research they are currently conducting but also their everyday life and the challenges of being a researcher.

Personal and informal tone

This type of event is organised to allow researchers to reach and engage with a broader audience, enabling the search for knowledge by non-specialised audiences. As such, the communication can be characterised as more informal, to facilitate the understanding of complex scientific discoveries and research projects.

SCIENTIFIC RELEVANCE

The significance of storytelling in the realm of science communication aimed at non-expert audiences has become increasingly apparent. As Dahlstrom asserts, “Narratives offer increased comprehension, interest, and engagement”, which in turn can help scientists communicate their research to any audience regardless of their experience. ElShafie tells us that “Science is a search for evidence, but science communication must be a search for meaning”, introducing storytelling as a key component of any effective scientific communication strategy.

Even though the European Researchers’ Night may happen in unconventional venues such as pubs, not designed for educational or instructional purposes, with distractions such as ambient noise and informal ambience, European researchers manage to convey substantial scientific content. The unique value of this event lies in the fact that it facilitates scientific communication and dissemination in a non-academic setting.

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Food & Science Festival

Name of organisation: Confagricoltura Mantova
Type of organisation: Agricultural association
Country: Italy
Website: www.confagricolturamantova.it
Author/Responsible: Confagricoltura Mantova
Language: Italian
Link:www.foodsciencefestival.it/it/

Description:
The **Food & Science Festival** is a captivating and innovative event that brings together two seemingly distinct worlds – food and science – in a harmonious fusion of culinary exploration and intellectual discovery. With a mission to explore the intersection of these two disciplines, this festival offers a unique and immersive experience for attendees that goes beyond traditional food festivals.

At its core, the Food & Science Festival is a celebration of the profound connections between food and science. It delves into the intricate ways in which science influences our food choices, production methods, and culinary experiences. This exploration extends from the farm to the kitchen, encompassing everything from the science of agriculture and food sustainability to gastronomy, nutrition, and the art of cooking.

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One of the festival's standout features is its diverse lineup of events and activities designed to engage and educate attendees of all ages and backgrounds. From hands-on cooking demonstrations led by renowned chefs to interactive workshops exploring the science behind taste and flavour, there is something for everyone to enjoy and learn from.

Food enthusiasts can embark on a culinary journey through the festival's marketplace, where local and international food vendors showcase their artisanal products and dishes. This is not just a feast for the taste buds but also an opportunity to discover the scientific innovations driving the food industry's evolution.

For those with a thirst for knowledge, the Food & Science Festival offers thought-provoking discussions and presentations by experts in the fields of food science, agriculture, and gastronomy. These sessions shed light on the latest research and breakthroughs shaping the future of food, as well as the critical role science plays in addressing global food challenges.

The festival's commitment to sustainability is evident in its emphasis on eco-conscious practices. From reducing food waste through innovative cooking techniques to showcasing sustainable farming practices, it serves as a model for environmentally responsible events.

Families and children are not left out of the fun; the festival features child-friendly activities and educational exhibits that encourage young minds to explore the science behind their favourite foods. It's a chance for the next generation to develop a deeper appreciation for the culinary world and the science that underpins it.

The Food & Science Festival is not just an event; it's a movement that encourages attendees to think critically about the food choices they make and their impact on the planet. It promotes sustainability, fosters a deeper connection to the food we eat, and inspires individuals to become more conscious consumers.

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Why is this case relevant?

NARRATIVE RELEVANCE

The Food & Science Festival's narrative relevance lies in its exploration of the intricate connections between food and science, transcending traditional food festivals. This narrative unfolds as a celebration of how scientific principles influence food choices, production methods, and culinary experiences, creating a cohesive and intellectually stimulating experience. The festival's diverse lineup, sustainable practices, and inclusive programming contribute to a narrative that engages diverse audiences in a sensory and educational journey through the captivating intersection of culinary arts and scientific discovery.

Nonfictional story

As a festival in which protagonists are farmers, members of the Italian organisation "Confagricoltura", scientists and professionals in the field of food production, food science and food communication, the stories that are shared during the Festival usually present two essential characteristics. They are non-fictional because they are based on concrete everyday experiences, especially when stories are told by farmers, and are biographical because they focus on the farmer's life.

Personal and informal tone

As usual in the cultural festivals, that, in Italy, is a type of format born with the aim to disseminate culture and scientific research out of the traditional and institutional places in which they are produced and shared, like universities and research laboratories, even the tone of the lectures, book presentation and initiatives organised during the Festival are more personal and non-formal because the objective is to enlarge the audience that traditionally is targeted by food science communication.

SCIENTIFIC RELEVANCE

From a scientific point of view, the Festival is surely connected with society because of its impact; hundreds of people usually take part in it. Furthermore, the event presentation and style are clear and mostly interactive. Indeed, the fact that the Festival involved many people with open-air events held using a non-formal approach made the interaction between the speakers and the participants easier. Despite the informal style, the Festival disseminates scientific and factual content.

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Pint of Science Festival

Name of organisation: Pint of Science
Type of organisation: Non-profit organisation
Country: United Kingdom
Website: www.pintofscience.com
Author/Responsible: Organised by a dedicated team of volunteers
Language: Native language of the country
Link: www.pintofscience.com
Additional resources:
Pint of Science Festival 2016 in Southampton:
www.southampton.ac.uk/news/2016/05/pint-of-science.page
Pint of Science Blog:
www.pintofscience.co.uk/more/blog/
Pint of Science Podcast:
www.pintofscience.co.uk/more/podcast/
Pint of Science Italy Team: www.pintofscience.it/team/
“Only Knowing” animated short film Trailer:
www.youtube.com/watch?v=WXD2EYqMTyo

Description:
Overall, the structure of a **Pint of Science festival** is designed to create an engaging and enjoyable experience for the public to learn about and discuss scientific topics in a relaxed and social environment. For example, the Pint of Science London, held annually, transforms local pubs into hubs of scientific discovery. With engaging talks and interactive sessions, it brings researchers from top institutions like Imperial College London and University College London to the forefront. Attendees explore topics from astrophysics to neuroscience over pints, fostering dialogue and sparking curiosity. This dynamic festival epitomises the motivations of science communication, community building, and inspiring the next generation of scientists. It fulfils the criteria of clear, coherent, and relatable presentations while connecting with society and promoting scientific literacy. Pint of Science London is an impactful celebration of science that leaves a lasting impression.

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1. Venues: Pint of Science events are hosted in local pubs and venues. These venues provide an informal and social setting for the festival.
2. Topics: The festival covers a wide range of scientific topics. Each event or session usually focuses on a specific scientific theme or discipline, such as astronomy, biology, neuroscience, or climate change.
3. Speakers: Scientists and researchers are invited to give talks and presentations on their respective areas of expertise. These talks are designed to be engaging, accessible, and suitable for a general audience.
4. Audience Engagement: The audience has the opportunity to interact with the speakers through questions and discussions. This interactive element encourages dialogue between scientists and the public.
5. Sessions: Pint of Science festivals typically span several days, with multiple sessions or events taking place simultaneously at different venues. Attendees can choose which sessions to attend based on their interests.
6. Tickets: Festival-goers often purchase tickets for individual sessions or events they wish to attend. This helps organisers manage venue capacities and logistics.
7. Socialising: Beyond the scientific presentations, Pint of Science events encourage socialising and networking. Attendees can enjoy drinks and food while discussing science with fellow participants and speakers.
8. Accessibility: Pint of Science aims to make science accessible to all, so efforts are made to ensure that the events are inclusive and welcoming to a diverse audience.
9. Organisers: The festival is organised by a team of volunteers who coordinate with local scientists, venues, and sponsors to make the event happen.
10. Promotion: Promotion and outreach efforts are essential to attract attendees. Marketing materials, social media, and local advertising are often used to spread the word about the festival.

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Why is this case relevant?

NARRATIVE RELEVANCE
The narrative of **Pint of Science Festival** is highly relevant, aligning to create an engaging and enjoyable experience for the public. It weaves together elements of venue selection, diverse topics, speaker engagements, audience interaction, and the overall social atmosphere, ensuring that each component contributes to the overarching narrative of making science accessible and enjoyable in a relaxed setting.

Nonfictional story
The festival's narrative adheres to a non-fictional structure, grounded in the reality of hosting events in local pubs, featuring real scientists, and covering genuine scientific topics. The emphasis on tangible, real-world experiences and interactions underscores the non-fictional nature of the festival's narrative.

Personal and Informal tone
Pint of Science exudes a personal and informal tone throughout its narrative. The transformation of local pubs into hubs of scientific discovery and the emphasis on socialising and networking convey a more personal and approachable atmosphere. The choice of local pubs as venues and the encouragement of dialogue over pints create an informal setting that fosters a relaxed and relatable environment for science discussions.

SCIENTIFIC RELEVANCE
Scientific relevance is a core element of the festival's narrative. The inclusion of talks and presentations by scientists and researchers from esteemed institutions like Imperial College London and University College London ensures a high level of scientific rigour. The diverse range of topics, interactive sessions, and audience engagement all contribute to maintaining scientific relevance while presenting complex subjects in an accessible and engaging manner. The festival's overarching narrative is deeply rooted in the promotion of scientific literacy and community engagement with science.

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Researchers at Schools

Name of organisation: RAISE4Future – Researchers at Schools
Type of organisation: European Project
Country: Portugal
Website: www.raise4future.eu/en/
Author/Responsible: Raise Project
Language: Portuguese
Link: www.aise4future.eu/en/researchers-at-schools/cientista-regressa-a-escola/

Description:

The **"Cientistas nas Escolas" ("Researchers at Schools")** is an initiative within the Raise4Future platform from the European project Raise.

It focuses on connecting scientists and researchers with schools to promote scientific knowledge and inspire students in the field of science.

Through this, researchers go back to their own primary school to carry out 90-minute-long hands-on science workshops, experiments, and discussions for children (9 years old) from their hometown. Priority is given to scientists from low-population density areas and schools with poor levels of academic achievement.

In 2022, 30 "Cientistas Regressam à Escola" (CRE) workshops were held in schools in 14 municipalities in mainland Portugal and the islands, reaching 498 children (363 met a scientist for the first time). For the

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2022/23 school year, 65 CRE workshops are planned in schools in mainland Portugal and the islands.

The presenters use effective science communication as they use plain language that is accessible to a broad audience, avoiding jargon and technical terms that might be confusing to non-experts while using engaging storytelling to make scientific concepts relatable and engaging. A compelling narrative can capture the audience's attention and make complex ideas more understandable.

Another technique used by the presenters is visual aids such as graphics, diagrams, and multimedia, which can help convey complex ideas more effectively. The use of two-way communication allows for questions, feedback, and discussion. This interactive approach can help build understanding and trust. Another useful technique is the use of analogies to relate complex concepts to everyday experiences can be a powerful tool for science communication to bridge the gap between the researcher/scientist and children.

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Why is this case relevant?

NARRATIVE RELEVANCE

Nonfictional story

The workshop follows a completely nonfictional story approach as it relies on the expertise of scientifically trained professionals and scientific techniques. For 90 minutes, researchers show science up close and attempt to reach members of society who are typically not associated with science, making it feel more useful and relevant to all and contributing to a more inclusive landscape in science and education in Portugal.

Protagonist/character presence

The protagonist of this initiative is the scientist who returns to their former primary school to carry out 90-minute science workshops for children in their hometown.

Personal, emotional, and informal tone

The scientists explain their work using an informal tone trying to avoid excessive technical jargon. The personal tone of communication is particularly highlighted, as they are in their childhood school and attempting to make science pleasant and child-friendly while inspiring curiosity to venture into the world of science.

Researchers receive tailored training and have several opportunities to practice and improve their communication skills for non-scientific audiences. Teachers will team up with researchers and the RAISE team to expand and support the development of the programmes. This is expected to help teachers recognise the additional value of exposure to informal science education and diverse role models throughout life, leading to a deeper understanding of science, its representatives (the researchers) and the scientific method.

Narrative instead of informative

The scientists and experiments are the vehicles for explaining science while ensuring a fun experience for the children.

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3 Minute Thesis Competition

Name of organisation: University of Coimbra
Type of organisation: Public University
Country: Portugal
Website: www.uc.pt/en
Author/Responsible: University of Coimbra
Language: English
Link: www.uc.pt/en/3mt/

Description:
The **Three Minute-Thesis (3MT)** competition is an academic communication competition that challenges doctoral students to present their research in a clear and concise manner to a non-specialist audience. The competition originated at the University of Queensland in Australia and has since gained popularity worldwide.

The goal of the 3MT competition is to develop participants' presentation and communication skills, as well as to promote the dissemination of research to a broader audience. Participants are given three minutes to deliver a compelling and engaging presentation that effectively communicates the significance of their research, its potential impact, and its relevance to society.

The competition emphasises the ability to distil complex research topics into concise and accessible presentations, using language and visuals that are understandable to a general audience. It challenges participants to articulate their research in a way that is both informative and engaging, highlighting the importance of effective science communication.

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Why is this case relevant?

NARRATIVE RELEVANCE

Beginning/middle/end structure:
The condensation of the level of research found in a PhD dissertation requires the adoption of a narrative structure, so as to better present results to the audience in the allowed time-frame: only 3 minutes. As such, contestants try to adopt a beginning/middle/end structure to not only connect to the audience for this short time, but also to make their presentation feel more organised, intentionally structured and longer.

Protagonist/character presence:
PhD researchers often adopt the role of protagonists, or place that role on the audience. As protagonists, they place themselves in the middle of their own narrative, the story behind their research and conclusions. On the other hand, they can also place the audience in that role as the recipients and final users of the research produced, highlighting its importance and relevance to society.

Personal, emotional, and informal tone:
The 3-minute thesis presentations generally occur in a personal and informal tone that allows researchers to connect to their audience in this short time-frame. The more personal approach allows for a simple, cohesive explanation of scientific results that would otherwise require a much more complex introduction and framing, especially for non-expert audiences, who are the main target of these presentations.

SCIENTIFIC RELEVANCE

The 3MT is considered a relevant format in science communication and has been used as a subject in scientific research that focuses on academic presentations and writing. Hu and Liu compiled key “moves” that should be incorporated in 3MT presentations for better scientific communication in this particular genre. Jiang and Qiu provide additional knowledge regarding 3MT presentations and their role in the communication of scientific results to non-expert audiences, while Carter-Thomas and Rowley-Jolivet analysed the role of 3MT competitions in the “recontextualisation” of scientific knowledge that must be done by PhD researchers in order to communicate their results to different audiences.

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FOODSTORIES project: partners and info

Project description
The FOODSTORIES project is funded by ERASMUS+ programme and carried out by an **European consortium** composed of 5 partners: Aarhus University, (Denmark), European Food Information Council (Belgium), i-strategies (Italy), LOBA (Portugal) and University College Dublin (Ireland).
The main aim of this project is to produce storytelling-based materials and methodologies to equip present and future food scientists to communicate their findings more effectively, thereby supporting the transition towards healthier and more sustainable diets.
To achieve this goal the project will conduct three main actions:
1. Collect good **storytelling practices** concerning science communication and identify those that can be successfully used for specific food science communication – **the handbook** you have in your hands;
2. Produce **materials and practical exercises** aimed at researchers interested in engagement with the general public and test them with the end-users – **a tool box** to be developed;
3. Provide professors and scientists with a **comprehensive educational tool** to improve or create university curricula on science communication – **a master class** to be developed.

For more information visit:
https://foodstories-project.eu
How to cite: FOODSTORIES (2024). Storytelling in food and science communication- best-practices collection. Erasmus+ project 2022-1-DK01-KA220-HED-000087680

PROJECT CONSORTIUM AND ROLES

Aarhus University (Denmark, Project Coordinator) - Aarhus University is a major Danish university with a strong international reputation across the entire research spectrum.

European Food Information Council EUFIC (Belgium) - EUFIC is a consumer-oriented non-profit organisation, founded to make the science behind food and health more accessible and easier to understand among the public.

i-strategies (Italy) - i-strategies contributes to the project by providing expertise in storytelling techniques and science communication through a narrative approach.
LOBA (Portugal) - LOBA is the first customer experience agency in Portugal, composed of a successful team from marketers to designers to developers.
University College Dublin UCD (Ireland) - UCD has academic and research strengths in agricultural and food sciences and nutrition and health sciences, providing the project with a cohort of students and other early career researchers to test the materials and content developed within the programme.

PROJECT INFORMATION:
Title: FOODSTORIES. Impactful food science communication.
European Programme: Erasmus+
Agreement number: 2022-1-DK01-KA220-HED-0000680.
Key Action: Cooperation for innovation and the exchange of good practices
Start Date: 31 December 2022
End Date: 31 December 2025

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