

Pro-environmental impact on university students: emotions generated and involvement promoted by a UN storytelling

Impacto proambiental en jóvenes universitarios: emociones generadas e implicación promovida por un storytelling de la ONU



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How to cite this article:

Del Moral Pérez, M. E.; López-Bouzas, N.; Castañeda Fernández, J. and Bellver Moreno, M. C. (2023). Pro-environmental impact on university students: emotions generated and involvement promoted by a UN storytelling. *Doxa Comunicación*, 37, pp. 193-212.

<https://doi.org/10.31921/doxacom.n37a1864>



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Received: 17/11/2022 - Accepted: 20/02/2023 - Early access: 27/03/2023 - Published: 01/07/2023

Recibido: 17/11/2022 - Aceptado: 20/02/2023 - En edición: 27/03/2023 - Published: 01/07/2023

Abstract:

The storytelling of the UN environmental campaign seeks to raise awareness among young people. This research (*Fragmento eliminado para anonimizar el artículo*) aims to: 1) find out how storytelling impacts, identifying their affective-emotional responses and detecting the degree of environmental involvement –sensitization, awareness and mobilization– generated; and 2) identify their opinions about the persuasive capacity of the narrative. The methodology is mixed: *quantitative*, as an empirical non-experimental descriptive and correlational study, with an exploratory and analytical nature of data collected with a questionnaire. And, *qualitative*, after analyzing the opinions expressed in focus groups. The results underline that the storytelling message generates a lot of interest and empathy with the protagonist. Its pro-environmental impact is high and is related to the level of ecological awareness of the students. The narrative is highly valued as it promotes a great environmental implication. It raises awareness and raises awareness to reduce the consumption of plastics and, to a lesser extent, mobilizes, since not everyone changes their attitude. Finally, this strategy manages to transform an informative message into a persuasive story, activating the interest of young people. However, it is necessary to design campaigns that invite to carry out concrete actions and propose eco-sustainable behaviors that facilitate their emulation.

Keywords:

Storytelling; environment; emotions; pro-environmental impact; youth.

Resumen:

Se utiliza la campaña medioambiental de la ONU "Rompe con el plástico" dentro del Proyecto Go Green! para sensibilizar a los universitarios sobre el consumo de plásticos. La investigación se propone: 1) conocer las respuestas afectivo-emocionales y nivel de implicación proambiental de estudiantes de grados de Educación tras visionarla; y 2) identificar sus opiniones sobre la pertinencia de su narrativa, mensaje y protagonista. La metodología es mixta: cuantitativa, en tanto estudio empírico no experimental, con muestreo no probabilístico –participantes del proyecto (N=296)–, con carácter descriptivo y correlacional apoyándose en datos recabados con un cuestionario. Y, cualitativa, mediante grupos focales. Los resultados subrayan que el mensaje de la campaña apoyada en la técnica del storytelling genera mucho interés y empatía con la protagonista. La narrativa está muy bien valorada y propicia gran implicación medioambiental. Su impacto proambiental es alto, relacionado con el nivel de conciencia ecológica de los estudiantes. Sensibiliza y conciencia para reducir el consumo de plásticos, aunque no todos cambian su actitud. Concluyendo, la campaña transforma un mensaje informativo en relato persuasivo, activando el interés de la audiencia. Sin embargo, es preciso diseñar campañas más explícitas que inviten a realizar acciones concretas y propongan comportamientos eco-sostenibles emulables.

Palabras clave:

Storytelling; medioambiente; emociones; impacto proambiental; jóvenes.

1. Introduction

Growing public awareness of the need to look after the environment has not always translated into environmentally responsible behaviours (Durán et al., 2010). This has led to a more intensive search for strategies for changing behaviours in various sectors of the population in an attempt to ensure prosperity for all as part of a new agenda of sustainable development (United Nations, 2015). The *Sustainable Development Goals* call for international engagement with the environment, which

requires publicity campaigns –of a clear social nature– aimed not only at encouraging pro-environmental attitudes, but also at achieving emotional engagement, leading to collective engagement that would translate into measurable environmental behaviours.

Non-Governmental Organizations (NGOs) –as members of civil society– play a key role in the creation and promotion of basic sustainable objectives by encouraging social activism to channel criticism, demands, and grievances in the face of the over-exploitation of the planet (Kramcsak-Muñoz, 2021). They also promote synergies between different groups, reinforcing people’s collaborative attitudes and making projects feasible, managed with good intentions (Argüello et al., 2022). This makes them crucial factors, and their publicity campaigns are aimed at attracting people who are at least aware of the issues –mostly young people– who can get involved in environmentally-sustainable action (Zarzuela & Antón, 2015).

It is worth emphasizing that practices such as *goodvertising* –used to persuade and educate society to look after the planet (Viñarás, 2018)– are not a definitive solution. With reference to the Spanish Royal Academy (*Real Academia Española*), sensitising people about the environment means making them aware of the problems so that they feel, think, and act with an awareness of the consequences of their actions. This means considering attitude as a source of behaviour, a higher level than the preassociative learning required by awareness (Froufe, 2011). This needs interventions that lead to the acquisition of knowledge that can provoke certain feelings (attachment or rejection) and thus change consolidated habits. That means that sensitization campaigns must be formulated so that they can change attitudes, incorporate discourse that appeals to emotions, and openly invite mobilization, converting good intentions into tangible, sustainable action (Rodrigo-Cano et al., 2019).

In this regard, social advertising is opting for rational and emotional arguments, using storytelling as a narrative strategy seeking audience involvement and identification in order to invite young people to make committed decisions (Senes & Ricciulli-Duarte, 2019). The technique of storytelling captures attention better and leads to better engagement from young people, encouraging them to identify and connect emotionally with characters, involving them in persuasive –or dissuasive– storylines involving specific problems (Viñarás, 2018). Sundin et al. (2018) noted that pro-environmental campaigns supported by storytelling techniques minimized the rejection of data-heavy scientific discourse while at the same time making it easier for people to empathize with and understand these problems (pollution, desertification, climate change, species extinction, etc.) (Estupiñán & Molina, 2020; Sánchez-Serrano et al., 2022).

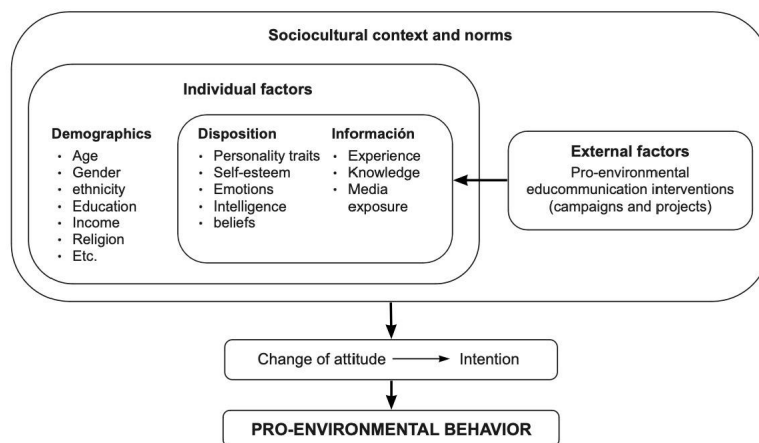
Nowadays, there is a drive for narrative strategies, such as storytelling, that bring together cognitive, affective, and behavioural components to spur young people’s mobilization, appealing to their social engagement (Wall et al., 2019). This includes seeking immersion in gamified stories to promote acquisition of certain knowledge and attitudes (Salazar & Escobar, 2022). However, despite storytelling’s potential, not all campaigns have the same impact on this audience –inheritors of the devastation of natural resources and called on to lead notable change– as individual factors can determine what that impact is. This article focuses on a case study about environmental sensitization, which is specified below.

2. Keys for increasing young people's pro-environmental engagement

2.1. From environmental awareness to pro-environmental behaviour

Ajzen and Fishbein (2000) and Ajzen et al. (2007) reported being able to predict subjects' behaviour –about a given topic– from the individual traits defining them: predispositions, demographic factors, socio-cultural norms where they came from, prior knowledge, etc. In addition, people's role models about caring for the environment could determine their behaviour. Positive role models in particular were able to contribute to creating a climate that encouraged pro-environmental behaviours (Vanegas-Rico et al., 2022). Interiorizing these norms, along with the subjects' own knowledge and beliefs, promoted individual emotional reflection, which reinforced the formation of attitudes which led, in turn, to behavioural intentions, leading to distinctly different behaviours. In this case, analysis of this complex process allowed the prediction of subjects pro-environmental behaviour, and the detection of where it was lacking to provide interventions that produced attitudinal change, in line with social norms (Figure 1).

Figure 1. Prediction of pro-environmental behaviour



Source: Adapted from the Theory of Reasoned Action (Ajzen et al., 2007)

According to Ajzen et al. (2007), to stimulate pro-environmental attitudes, there needs to be more information about environmental topics along with appeals to subjects' emotions, which will trigger reflection and identification with the message. This means interventions are needed that encourage involvement in projects and initiatives which lead to tangible pro-environmental behaviours. In particular, audio-visual environmental awareness campaigns have been tailored to different audiences' tastes and mores, adopting –in the present case– narrative strategies that are similar to young people's modes of expression and communication.

2.2. *Effective, storytelling-supported intervention*

Storytelling fronted by real people has become the most powerful narrative for educating audiences about environmental issues by appealing to emotions (Rodrigo-Cano, 2019). The persuasiveness of this technique is linked to the creative use of audiovisual scripts that can provoke empathy, supported by metaphors that connect to young people on an affective-motivational level (Castelló & Del Pino, 2019). The versatility of being able to break up the message into small pieces and tailor it to different media means stories can be reconstructed and can go viral on social networks (Renó & Flores, 2018), increasing their reach. This narrative strategy manages to transform informative messaging into persuasive stories, activating young people's interest (Marcos et al., 2021) and promoting acquisition of knowledge (Salazar & Escobar, 2022).

However, despite storytelling's potential, whether the young audience assimilate the message is influenced by their backgrounds: beliefs, self-awareness and emotional regulation, level of environmental awareness, etc. (Chan, 2019). This means that appropriate edu-communicative proposals should promote a common starting point that would help manage the emotional component and promote positive attitudes, which would in turn lead to measurable pro-environmental behaviours. There are storytelling-based social publicity campaigns along these lines which serve as social wake-up calls from NGOs such as *Greenpeace*, *Ecologistas en acción*, *WWF*, *Amigos de la Tierra*, *SEO/BirdLife*, etc. (Miranda, 2007). There is no doubt that they seek to sensitize audiences appealing to various affective-emotional elements (Jiménez-Gómez, 2017). In this regard, Carrillo-Quiroga et al. (2022) recently proposed analyzing the affective, cognitive, and behavioural impact of environmental communication. To that end, it would be interesting to determine how messages are perceived, what emotions they trigger, and what levels of pro-environmental engagement they produce.

3. **Pro-environmental campaigns: *Breaking up with plastic* (UN)**

Various efforts are being made in different media addressing environmental issues. Campaigns with edu-communicative components are aimed at raising younger generations' awareness of the need to behave in ways that respect the environment. This has included audiovisual spots through diverse channels that encourage sustainable development and encourage proactive attitudes (Porcelli, 2020) in line with most of the objectives in the 2030 Sustainable Development Agenda (United Nations, 2015).

There has been an increase in recent years in governmental and NGO-led campaigns aimed at young people that appeal to their environmental responsibility and seek to motivate them to change unsustainable habits and behaviours. These include reducing the use of plastics, wasting less water, sorting rubbish for recycling, saving energy, and recycling clothes and containers (Lopes & Teixeira-Veiga, 2019). Some campaigns empathize more with this young audience, seeking their involvement and engagement, giving them role models to imitate, and looking to make an emotional impact in order to activate positive pro-environmental behaviours (Jung et al., 2020).

Looking at the potential impact of these campaigns, the present study examines young people's opinions about a story-based pro-environmental campaign that was part of an awareness campaign from a supra-national organization, the United Nations (UN). The study aims to determine its emotional impact and the engagement it is able to generate with regard to looking after

the environment. More specifically, the study looks at *Breaking up with plastic*, the most recent UN campaign aimed at young people (<https://n9.cl/60fjj>). It is a 2 minute video which is available on YouTube and has 130,928 views. The main character is breaking up, metaphorically, with plastic, and describes it as if it were a toxic relationship.

The story looks for the WOW factor (Reunanen et al., 2017) to surprise and positively affect its young audience, using the format of a TV drama and incorporating multicultural characters. It presents a series of images showing landscapes full of rubbish (Figure 2), justifying the need to condemn something that causes the destruction of nature –plastic products and containers (Figure 3) –and replacing it with *something else*– a metal bottle –that provides a healthier relationship (Figure 4). It uses humor to show the main character’s emotional hurt, going from sadness (“you’re suffocating me”) to anger (“It’s not me, it’s you”), inviting the audience to act and end toxic relationships, alluding to plastic.

Figures 2, 3 and 4. Scenes from the break-up of a toxic relationship



Source: UN Breaking up with plastic (<https://n9.cl/60fjj>)

4. Methodology

The study was an analysis of the impact of a specific case –the recent UN campaign, *Breaking up with plastic*– and was part of the inter-university project *Go Green!*, involving 296 university students doing degrees in education at three Spanish universities, detailed below. The objectives of the study were: 1) to determine the students’ affective-emotional responses and level of pro-environmental engagement after watching the UN video story aimed at young people; and 2) identify their opinions about the relevance of the story, message, and main character. This was to determine the impact, the extent to which it led to pro-environmental behaviours in the young audience, and through that, whether it contributed to the construction of responsible citizens –as indicated by Senes and Ricciulli-Duarte (2019).

The study used a mixed methodology, suitable for research linked to the field of communication according to Jensen (2021). It was *quantitative*, as it was a non-experimental, descriptive, correlational empirical study, which was exploratory and analytical according to Cohen et al. (2011), using non-parametric tests to compare means. The data were collected via an opinion questionnaire. It was also *qualitative*, supported by analysis of students’ opinions on certain pre-established topics in focus groups, as recommended by Nyumba et al. (2018).

4.1. Procedure

Phase 0. Project implementation

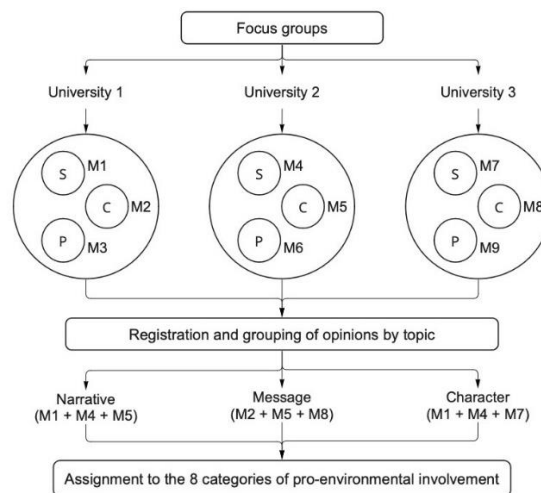
- Case study: the impact of *Breaking up with Plastic*, a video that was part of the UN pro-environment campaign aimed at young people.
- Training sessions about narrative audiovisual strategies and techniques.
- Watching the video.

Phase 1. Opinion questionnaire and construction of variables

- Initial identification of subjects' self-perceived levels of environmental awareness and the environmental-sustainable actions they do most often, producing the variable *Level of Environmental Awareness (LEA)* with five categories: very low=1 (cases scoring 0.00 to 0.20), low=2 (cases scoring 0.21 to 0.40), moderate=3 (cases scoring 0.41 to 0.60), high=4 (cases scoring 0.61 to 0.80), and very high=5 (cases scoring 0.81 to 1.00).
- Students' opinions were also sought on two issues: the video's *emotional impact* and the *level of environmental engagement* it produced. From those two responses, the variable *Environmental Impact* of the video was created, with four categories: none=1 (scores between 0.00 and 0.25), little=2 (scores between 0.26 and 0.50), some=3 (scores between 0.51 and 0.75), and a lot=4 (scores between 0.76 and 1.00).

Phase 2. Focus groups

- Participants: Three focus groups were created in each university to discuss three topics: 1) the persuasiveness of the story (S), 2) the level of conviction of the message (C), and 3) the credibility of the protagonist (P). The opinions of the nine moderators (M), one for each group, were also subsequently collected (Figure 5).
- Researchers: Following Frame Theory (Scheufele, 1999), the records for each of the three topics were grouped together in 8 categories adapted from Buil et al. (2017) –inspired by the behavioural prediction model from Ajzen and Fishbein (2000)–referring to four levels of environmental engagement noted by Musitu et al. (2020) and Vanegas-Rico et al. (2022): inaction, awareness, sensitization, mobilization.

Figure 5. The focus group methodology

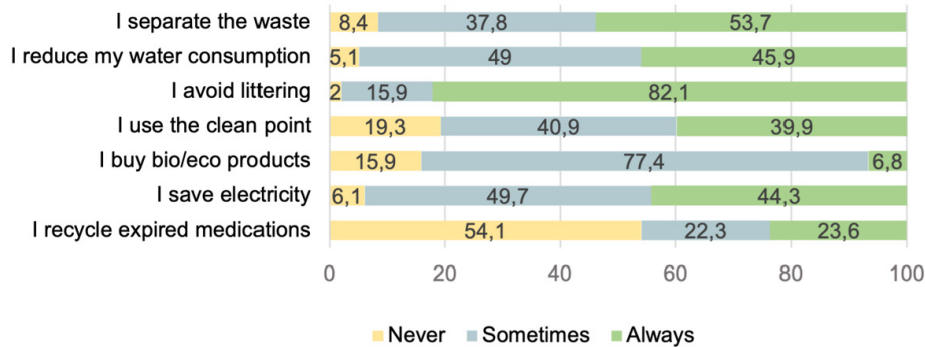
Source: prepared by the authors

4.2. Sample

The sample was dependent on voluntary participation in the Project. More specifically, we used a questionnaire to collect the opinions from 296 university students doing degrees in education after they had watched the UN video, *Breaking up with Plastic*. The students were attending three Spanish Universities: 20.8% from the University of XX; 38.9% from the University of XX, and 40.5% from the University of XX. Most of the sample were women (87.5% vs. 12.5%).

At the beginning, the participants were asked about their levels of environmental awareness: 68.9% indicated being somewhat aware, 8.8% indicated being very aware, 22% reported having little awareness, and 0.3% reported having no awareness. With regard to sustainable actions and their frequency, most subjects indicated avoiding littering (82.1%), while 54.1% indicated that they did not take expired medicines to the pharmacy, and 20% indicated that they did not dispose of harmful rubbish at an appropriate refuse center (Graphic 1).

Graphic 1. Sustainable actions



Source: prepared by the authors

Based on the above variables, the students could be classified according to their Levels of Environmental Awareness (LEA), with 67.9% having a high level, 23% having a very high level, 8% having a moderate level, 0.3% having a low level, and nobody having a very low level.

4.3. Instruments

1) The questionnaire created and validated for this study (Cronbach alpha=0.900) allowed us to –among other things– determine the *pro-environmental impact* of the video via the responses about:

- a) *Emotional impact.* In line with the classic work from Hill and Mazis (1986), and Stout and Leckenby (1986), the students were asked to indicate how much the video had triggered: interest, empathy, calmness, happiness, and hope (not at all = 1, a little =2, somewhat = 3, a lot = 4).
- b) *Level of environmental engagement (LEE)* produced. The students were asked to indicate their levels of agreement –using the same scale– with various statements linked to the four levels of environmental engagement inferred from Musitu et al. (2020) and Vanegas-Rico et al. (2022), inspired by the behavioural model from Ajzen and Fishbein (2000):
 - a. *Inaction:* I1. I don’t identify with it; I2. It’s not appropriate.
 - b. *Awareness:* A1 I identify with the message; A2 It made me think about my actions.
 - c. *Sensitization:* S1. It has changed my attitude; S2. I know how to contribute to improvements.
 - d. *Mobilization:* M1. I would like to lend my support; M2. I need to know how to get involved.

A descriptive analysis was performed on the study variables based on this questionnaire (frequencies, percentages, means, and standard deviations). The Kolmogorov-Smirnov test was used to determine that the sample did not fit the criteria for normality (p values = 0.0000 in all items). Due to that, the tests on the variables were carried out using the non-parametric Kruskal-Wallis test. In addition, the Pearson correlation coefficients were calculated for the variables. The analysis was done using SPSS v26.

Virtual record panels (documents shared on Google Drive) allowed the mediators at each university to note the opinions voiced by the group members about the three topics, narrative, message, and protagonist. These opinions were grouped and categorized considering the levels of environmental engagement. To that end, we used open coding to link certain words or phrases to each level.

5. Results

5.1. Pro-environmental impact

The emotional impact produced by the story-based video was associated with the emotions it triggered. The most commonly produced emotion was *interest*, responsible for the viewers focusing their attention on it. The next most-indicated emotion was empathy with the message. As one might expect, there was hardly any joy or calmness indicated by the viewers, as the video addressed the bleak implications of the accumulation of rubbish in the oceans. Nonetheless, the explicit suggestion of changing from plastic to a more sustainable material did allow an increase in hope about saving the planet (Table 1).

Table 1. Percentage distribution of subjects based on emotions triggered by the video

Emotional impact	Not at all (1)	Little (2)	Somewhat (3)	A lot (4)	\bar{x}	DT
Interest	1,4	8,1	18,6	72,0	3,6	0,69
Empathy	8,4	25,0	26,4	40,2	3,0	1,00
Tranquillity	11,5	42,6	32,8	13,2	2,5	0,86
Happiness	18,6	35,1	32,8	13,5	2,4	0,94
Hope	2,4	21,3	51,7	24,7	3,0	0,75

Source: prepared by the authors

Following that, to determine statistically significant differences with regard to the subjects' Levels of Environmental Awareness and the emotions they felt, we compared means. There were only differences in relation to interest, with a higher LEA being associated with increased interest in the video ($p=0.044$; Low: $\bar{x}=4.0$; Moderate: $\bar{x}=3.4$; High: $\bar{x}=3.6$; Very high: $\bar{x}=3.7$).

In terms of the *Level of Environmental Engagement* produced by the storytelling-supported campaign, the subjects indicated that it had made them think about their actions (S2: $\bar{x}=3.2$) and had also motivated them to lend their support to the cause (M1: $\bar{x}=3.2$). They also indicated that they identified somewhat with the message being transmitted (S1: $\bar{x}=3.1$), they wanted to know more about the topic (C2: $\bar{x}=3.0$), and they wanted to learn how to get involved in similar projects (M2: $\bar{x}=2.9$). To a lesser extent, there was a change in attitudes about reducing the use of plastics suggested by the video (C1: $\bar{x}=2.6$) (Table 2).

Table 2. Descriptive statistics related to Levels of Environmental Engagement (LEE)

GIM	Not at all (1)	A little (2)	Somewhat (3)	A lot (4)	\bar{x}	DT
I1. I don't identify with the message	100,0	0,0	0,0	0,0	1,0	0,00
I2. It's not suitable	100,0	0,0	0,0	0,0	1,0	0,00
A1. I identify with the message	0,3	11,8	62,8	25,0	3,1	0,61
A2. It made me think	0,7	14,5	50,0	34,8	3,2	0,70
S1. It changed my attitude	2,7	40,2	49,7	7,4	2,6	0,66
S2. I want to know more	2,0	18,9	56,1	23,0	3,0	0,71
M1. I would like to lend my support	1,0	7,8	56,8	34,5	3,2	0,64
M2. I need to know how to get involved	3,0	27,0	46,6	23,3	2,9	0,79

Source: prepared by the authors

Subsequent comparisons between the LEE due to the video and the LEA the students had did not show significant differences in most cases. However, students with higher LEAs indicated identifying more with the video's message ($p=0.009$; Low: $\bar{x}=2.0$; Moderate: $\bar{x}=2.9$; High: $\bar{x}=3.1$; Very high: $\bar{x}=3.3$), wanting to know more about the topic ($p=0.049$; Low: $\bar{x}=3.0$; Moderate: $\bar{x}=2.7$; High: $\bar{x}=3.0$; Very high: $\bar{x}=3.2$), and being more disposed to lending their support to environmental causes ($p=0.012$; Low: $\bar{x}=3.0$; Moderate: $\bar{x}=2.9$; High: $\bar{x}=3.2$; Very high: $\bar{x}=3.4$).

Finally, once the variable *Pro-environmental impact of the video* was constructed from the *Emotional Impact* on the students and the *Level of Environmental Engagement* produced by the video –as outlined in the procedure section– it became apparent that the video had something of an impact on 61.2% of the students and a strong impact on 38.5%, while it had had a small impact on 0.3% and no one reported being indifferent.

5.2. Correlations between variables

Table 3 shows that the *Level of Environmental Awareness* only correlated with a single element of each *Level of Environmental Engagement*. The higher the LEA, the greater the identification with the message in the video (awareness), the greater the interest in learning more about the topic (sensitization) and the greater the desire to support the environmental cause (mobilization).

The *Emotional impact* of the video was positively and highly significantly correlated with all of the emotions. The *Level of Environmental Engagement* produced by the storytelling-based campaign was positively correlated with the other variables in the study, except for the emotions of joy, empathy, and calmness –which was unsurprising given that the message was about the need to combat the deterioration of the planet caused by the accumulation of plastic waste.

Finally, the *Pro-environmental impact* of the story was positively and highly significantly correlated with all of the variables in the study. The greater the emotional impact of the video and the higher the level of environmental engagement in the students, the greater the pro-environmental impact of telling this story.

Table 3. Correlations

	Level of environmental awareness	Emotional impact	Level of Environmental Engagement	Pro-environmental impact
Interest	0.034	.295**	.276**	.275**
Empathy	-0.086	.729**	-.143*	.334**
Calmness	-0.068	.599**	-.126*	.301**
Joy	-0.055	.635**	-.278**	.182**
Hope	0.079	.162**	.260**	.241**
A1. I identify with the message	.236**	0.018	.492**	.407**
A2. It made me think	0.088	-0.093	.580**	.372**
S1. It changed my attitude	0.049	-0.079	.619**	.444**
S2. I want to know more	.162**	-.128*	.737**	.407**
M1. I would like to lend my support	.194**	-0.070	.633**	.396**
M2. I need to know how to get involved	0.089	-.123*	.637**	.407**

** The correlation is significant at the level of 0.01 (bilateral).
* The correlation is significant at the level of 0.05 (bilateral).

Source: prepared by the authors

5.3. Factors reinforcing environmental engagement: focus groups

From a qualitative point of view, in an attempt to understand which elements of the video (narrative, message, protagonist) led to greater or lesser levels of environmental engagement (LEE), we recorded the opinions expressed by members of the focus groups in each university. Those records were grouped together and classified using open coding to be then associated with the levels of environmental engagement: inaction, awareness, sensitization, and mobilization, inferred from Musitu et al. (2020) and Vanegas-Rico et al. (2022). These opinions are shown below for each of the topics together with the associated *Level of Environmental Engagement*.

The young woman's first-person account did affect the audience's awareness and motivation to a large extent, based on their opinions (Table 4).

Table 4. Persuasiveness of the story

Opinions	LEE
"It's too serious a topic to make a funny video about"	I2
"We relate to a first-person account of a personal problem"	A1
"It shows real people in a setting like a teen drama (scenes, aesthetics, image)"	A1
"It captures the attention, it connects to a young audience's everyday problems"	A1
"It rejects the ageist stereotypes that stigmatize young people"	S1
"It's a call to action from an original, engaging story"	S1
"It encourages a change to harmful behaviours from a funny story, humor that seems a long way from catastrophizing"	M1
"It invites you to join the cause with a positive contribution (hope)"	M1
"It encourages people to change habits with specific suggestions for people"	M2

Source: prepared by the authors

The *Level of Environmental Engagement* encouraged by the video was greater, able to motivate viewers to replace plastic with other, less damaging materials such as aluminum (Table 5).

Table 5. Level of conviction of the message communicated

Opinions	LEE
"It helps you think about the use of plastic nowadays"	A2
"It successfully presents direct, realistic metaphor so you identify with the message"	A2
"It is an awareness-raising story that is realistic and down to earth"	S1
"It reinforces the viewer's previous beliefs"	S1
"It goes against the apocalyptic stories, it's effective and gives suggestions for pro-environmental behaviour"	M2
"It shows ways individuals can act now"	M2

Source: prepared by the authors

The main character in the monologue was able to make the audience aware of reducing plastic use, sensitising and mobilizing to a lesser extent (Table 6).

Table 6. Credibility of the protagonist

Opinions	LEE
"It encourages young people to identify with it and project onto it, regardless of gender or age"	A1
"It shows an inclusive, multicultural view"	A1
"The metaphor of the toxic relationship is appealing: it empathizes with the audience and their experiences and interests, it immerses them in its own reality connecting emotionally"	A2
"It invites reflection about the use of plastics nowadays"	A2
"Defining the relationship with plastic as toxic helps us reconsider and change our attitudes"	S1
"It suggests change as a solution to a global need"	M1

Source: prepared by the authors

Analysing the focus group opinions (Table 7), the UN video as a whole raised awareness in 42.8%, mobilized 28.6%, and sensitized 23.8%. It only produced inaction in one case who felt that it was not appropriate to deal with such a serious topic comically.

Table 7. Percentage distribution of LEE produced by the video and its elements: conclusions of focus groups

LEE	Persuasiveness of story	Conviction of message	Credibility of protagonist	Total
I1	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
I2	1 (100.0)	0 (0.0)	0 (0.0)	1 (4.8)
A1	3 (60.0)	0 (0.0)	2 (40.0)	5 (23.8)
A2	0 (0.0)	2 (50.0)	2 (50.0)	4 (19.0)
S1	2 (40.0)	2 (40.0)	1 (20.0)	5 (23.8)
S2	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
M1	2 (40.0)	0 (0.0)	1 (20.0)	3 (14.3)
M2	1 (20.0)	2 (40.0)	0 (0.0)	3 (14.3)
Total	9 (42.9)	6 (28.6)	6 (28.6)	21 (100.0)

Source: prepared by the authors

6. Discussion and conclusions

Our study confirmed that the university students who participated in the *Go Green!* project felt that they were mostly aware of environmental issues, although a quarter of them confessed to not being very aware. This underscores the need to continue designing pro-environmental campaigns aimed at this audience, especially through the social networks they spend time on – according to Marcos et al. (2021)– such as Instagram, Facebook, TikTok, and Twitter, which have storytelling-based mechanics. As San Cornelio et al. (2021) noted, environmental activism on social networks could contribute to increased awareness in young people.

In addition, most of the subjects reported sustainable activities such as avoiding littering, separating waste for recycling, and saving water and energy at home, as a result of their formal and informal sensitization. A quarter of those surveyed did not properly dispose of toxic waste (oils, batteries, lightbulbs, electronic devices, etc.), and more than half did not return unused or expired medicines to pharmacies. This means that, despite the general consolidation of sustainable habits in Spain –as reported by the firm Essity (2021)– there are still things to improve. These aspects should be included in future campaigns in order to promote these groups' interest, as indicated by Marcos et al. (2021).

The Level of Environmental Awareness in these university students was high and they appeared to be particularly receptive to messages of environmental improvement, understanding how that would impact their quality of life. This was emphasized in the study by Jung et al. (2020), who showed evidence of youth-led interventions and mobilization in various contexts, calling

for social change to preserve the ecosystem to make it more habitable. In this regard, various entities have demonstrated the current social concern about this (National Geographic, Greenpeace, UNEP, etc.). More specifically, the UN's *Breaking up with Plastic* campaign message of reducing the use of plastics generated a lot of interest and empathy in university students by addressing the components described by Estupiñán and Molina (2020), and Sánchez-Serrano et al. (2022). Consequently, it had a high pro-environmental impact on the students surveyed. In addition, as one might expect, a higher Level of Environmental Awareness was associated with greater interest in the video.

According to the data from the focus groups, the narrative strategy used in the campaign was the element they rated most highly as producing greater environmental engagement –similar to what was reported by Castelló and Del Pino (2019), and Sánchez-Serrano et al. (2022). As a whole, the video raised young people's awareness and sensitized them, which is a great success given the aim of the UN campaign. It mobilized them to a lesser extent, suggesting a need for more direct, explicit campaigns calling for specific actions and proposing environmentally sustainable behaviours to emulate, using personalities that a young audience can easily identify with, in line with the suggestions from Rodrigo-Cano (2019). In this regard, there are reward-based schemes to reinforce pro-environmental behaviours, such as the one in the community of Valencia that uses a digital application called *Reciclos* to gamify and reward recycling (Bluemedia Estudio, 2019).

The effectiveness of environmental awareness campaigns for the younger audience is associated with their emotional impact, as noted by Renó and Flores (2018). This aspect should be emphasized because emotions are in turn closely linked to pro-environmental impact, as indicated by Del Moral et al. (2022). Our results show that the UN's use of a pro-environmental storytelling narrative strategy managed to raise awareness, sensitize, and mobilize the university students to reduce their consumption of plastic. The hopeful message the main character communicated encouraged audience identification, using a story and situations that they could relate to –as noted by De Miguel (2022). It called on them to think about the issue, and made them aware of a model to follow for reducing plastic use, motivating them to change their own behaviours and get involved with environmental projects and initiatives.

Just as Teso-Alonso (2020) concluded, the way that environmental issues are communicated needs to improve in order to help the audience understand the extent of the risks to survival and encourage changes in attitudes to promote sustainable actions. These types of campaigns must not only appeal to subjects' emotions to help them identify with the message, they must also improve the information about environmental topics to increase reflection, inspire support for the cause, encourage involvement, and drive changes in attitudes that would translate into behaviours that respect and care for the environment, as indicated by Schutz-dos-Santos and Kuhnen (2022), and Del Moral et al. (2023). To be effective, they should be incorporated into the formal educational context, bringing the communicative together with the educational, addressing the Sustainable Development Goals (United Nations, 2015) transversally, as suggested by Gómez-Galán (2019).

There is no doubt that watching this video should be accompanied by an educational discussion group that would help young people think about environmental issues as well as giving them specific information that would spur them on: recycling, beach cleanup projects, replacing plastics with less polluting alternatives, etc. At the same time, there need to be sensitised activities for children and young people that encourage reflection and changes in attitudes, promoting mobilization in a fun way in defense of pro-environmental values –as Salazar and Escobar (2022) emphasized. This may even go so far as to involve

young people in the design of these kinds of audiovisual creations– as suggested by Estupiñán and Molina (2020), and Walsh and Cordero (2019) –to make them more persuasive and better able to generate pro-environmental engagement in their peers, perhaps even making them the protagonists, to improve the level of conviction of the message.

7. Acknowledgment

The translation of this article is funded by the University of Oviedo, thanks to grants from recognized research groups, in this case, the research group Tecn@: Technology and Learning from the University of Oviedo. It has been translated by John Wyke Translation Services.

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